

**RAPID RESOURCE ASSESSMENT
AND MANAGEMENT PLAN
CAMPBELL OVERLOOK 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

CAMPBELL OVERLOOK PROPERTY		
APPROXIMATE SIZE	ACQUISITION DATE	CURRENT ZONING
4.48	February 9, 2006	Agricultural
MANAGEMENT DESIGNATION	PUBLIC ACCESS	
Habitat Conservation Area	Allowed, but not encouraged (<i>future HCA policies will apply</i>)	

GENERAL DESCRIPTION OF SITE RESOURCES

The property includes grasslands on the north slopes of the Davidson Mesa, and is visually prominent along the U.S. 36 corridor as it enters the Boulder Valley. The property is vegetated with a mix of tallgrasses and mixed grasses, and is considered to be part of the regionally-significant xeric tallgrass communities. A house and driveway currently exist along the southern edge of the property. Areas directly around the house are dominated with narrow-leaf bird's-foot trefoil (*Lotus tenuis*), an introduced perennial forb.

OPEN SPACE VALUES BASED ON RESOURCE ASSESSMENT

The property is important for open space because it maintains—

- The visual integrity of the north side of Davidson Mesa and the gateway to the Boulder Valley
- An additional buffer between open space conservation areas and residential development
- Xeric tallgrass species such as big bluestem (*Andropogon gerardii*) and yellow Indiangrass (*Sorghastrum avenaceum*).

MANAGEMENT ISSUES BASED ON RESOURCE ASSESSMENT

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

- Noxious weeds including houndstongue, musk thistle, Russian olive, and redstem stork's bill
- Degraded grassland from residential disturbance and the introduction of introduced pasture grasses
- Existing house is not consistent with open space values
- Configuration of fencing is not consistent with long-term management needs
- Potential walk-in access from neighboring properties

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 4.48-acre Campbell Overlook 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 15, 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 and animal species identified during the site visit, and Appendix C includes report references.

GENERAL DESCRIPTION

The property is located near the western edge of the Great Plains physiographic province. The property encompasses about 4.5 acres characterized by grasslands along the northern slopes of the Davidson Mesa and the gateway to the Boulder Valley.

LOCATION AND ACCESS

The property is located in south Boulder County about 6 miles southeast of downtown Boulder (Figure 1). Specifically, the property is located in Section 14 in Township 1 South, Range 70 West of the 6th P.M. (Figure 2).

Primary and emergency access is from Red Ash Lane at the southern end of the property. From downtown Boulder, travel south on Broadway Street (Highway 93), turning left at Eldorado Springs Drive and right at Marshall Drive. Follow Marshall Drive for about 2.5 miles before turning left at Red Ash Lane. Turn left (east) at the unpaved 4-way intersection and follow to the southern end of property.

ACQUISITION

The City of Boulder acquired the Campbell Overlook Property jointly with Boulder County on February 9, 2006. The total price for 4.48 acres was \$820,000.

LAND USE

The property was previously used as a rural residential site, and has been historically used for livestock grazing. The property has not been managed for agricultural use since its acquisition by OSMP, and is currently managed by OSMP as undeveloped open space land. There is currently no grazing or active management.

LANDSCAPE CONTEXT

The property is located along the U.S. 36 corridor to the southeast of Boulder, in an area that is known to be a scenic and topographic gateway to the Boulder Valley. It is surrounded by residential properties to the south and east, and a large contiguous block of grassland habitat and protected open space lands to the north and west.

NEIGHBORING PROPERTIES

NEIGHBORING AGRICULTURAL, RESIDENTIAL, AND COMMERCIAL PROPERTIES

Agricultural, residential, or commercial 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
Bittner, Michael J. & Lynn H. 1205 Red Ash Ln. Boulder, CO 80303 Parcel No. 157714000008	South of property Farmland/rural residence
Grasso, Elyse M. 1192 Red Ash Ln. Boulder, CO 80303-9500 Parcel No. 157714000006	East of property Farmland/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 7067 Marshall Real Estate & Open Space (PO Box 791; Boulder, CO 80306-0791) Parcel No. 157714000043	East of property Undeveloped land
City of Boulder 6867 Marshall Dr. (PO Box 741; Boulder, CO 80306-0714) Parcel No. 157714000004	North 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

The property is located along the north facing slope of Davidson Mesa. Elevations on the property range from about 5,650 feet in the along the northern boundary to about 5,680 feet along the southern boundary. The top of Davidson Mesa reaches elevations of about 5,740 feet (off the property). The USGS Topographical map of the property is shown in Figure 2.

GEOLOGY

The property occurs along the western margin of the Denver Basin of northeastern Colorado, which contains sedimentary rocks of the Cretaceous age. Generally the area is composed of Laramie Formation and Fox Hill Sandstone. Laramie Formation contains areas of shale, claystone, sandstone, and major coal beds (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 Te. Terrace escarpments. These areas consist of undifferentiated shallow soils that have many cobbles and stones on the surface. In many places there is merely a thin layer of cobbles over sandstone or shale. Only limited moisture is available for plants because these undifferentiated soils are shallow. Runoff is rapid and the erosion hazard is high.

Mapping Unit VcC. Valmont cobbly clay loam (1 to 5 percent slopes). This soil includes areas of Valmont clay loam and Nunn clay loam. The surface layer is about 8 inches of cobbly clay loam and the subsoil is about 14 inches of cobbly clay loam or cobbly clay. Runoff is medium and the erosion hazard is slight to moderate. Native vegetation is big bluestem, little bluestem, needlegrass, and side-oats gramma.

HYDROLOGY

SURFACE HYDROLOGY

No mapped streams or drainages are located on the property. The property is not located within a designated floodplain.

According to topographic information from the USGS 7.5 minute quadrangle map, surface water on the property flows north toward Davidson Ditch (USGS 1965, revised 1994).

SUBSURFACE HYDROLOGY

Based on a review of the USGS Louisville quadrangle, shallow ground water would flow in a northerly direction towards the Davidson Ditch and the Dry 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 property may have historically been used as an upland pasture land but any recent evidence of grazing is not present. The property is dominated by a western wheatgrass herbaceous alliance. In the western corner of the property, a soapweed yucca shrub savannah herbaceous alliance and a big bluestem herbaceous alliance is present. Vegetation communities are described below and shown in Figure 5. A list of plant species identified during the field visit appears in Appendix B.

WESTERN WHEATGRASS HERBACEOUS ALLIANCE (WWH)

The western wheatgrass herbaceous alliance is present in the southern and in patches in the western portion of the property as well as on slopes and rocky areas. Western wheatgrass, a native perennial cool season grass, is the dominant grass in this community but other native grass species such as needle-and-thread (*Hesperostipa comata*), purple threeawn (*Aristida purpurea*), and Indian ricegrass (*Achnatherum hymenoides*) are present. Introduced annual/biennial forbs such as small flower alyssum (*Alyssum parviflorum*), redstem stork's bill (*Erodium cicutarium*), and tall tumble mustard (*Sisymbrium altissimum*) are common. Native perennial forbs such as Kansas gayfeather (*Liatris punctata*), prairie flax (*Adenolinum lewisii*), scarlet globemallow (*Sphaeralcea coccinea*) are present. Small areas of smooth brome (*Bromopsis inermis*) are intermixed within this community type.

SOAPWEED YUCCA SHRUB SAVANNAH HERBACEOUS ALLIANCE (SYSH)

In the northwestern corner of the property a soapweed yucca shrub savannah herbaceous alliance is present. The dominant overstory species in this alliance is soapweed yucca (*Yucca glauca*). Other common species include purple three awn, needle-and-thread, and western wheatgrass. Native perennial forbs such as little sunflower (*Helianthus pumilus*), and hairy false goldenaster (*Heterotheca villosa*) are common.

BIG BLUESTEM HERBACEOUS ALLIANCE (BBYH)

In the southeastern corner of the property a big bluestem herbaceous alliance is present. This alliance is dominated by big bluestem (*Andropogon gerardii*), a native perennial warm season grass. Other species such as buffalograss (*Buchloe dactyloides*), blue grama grass (*Chondrosum gracile*), and purple threeawn are common.

RARE PLANTS AND PLANT COMMUNITIES

The property has the potential to support rare xeric tallgrass communities. No habitat for any rare plant listed by the CNHP was observed on the property. The property is contained within the CNHP-designated Colorado Tallgrass Prairie Potential Conservation Area, which is considered to have very high biodiversity significance (B2) (CNHP 2007).

STATE NOXIOUS WEEDS

Based on the site visits five List B and three list C noxious weed species occur on the property. Houndstongue was located in the southeast corner of the property in a dense patch. White top was located in the northeast corner of the property in a medium to high density. One Russian olive tree was present in the southeast corner. All other weeds were scattered throughout the property with less than 5% cover.

Table 1. Noxious weeds present on the property.

Common Name	Scientific Name	OSMP Priority	Boulder County Weed List	State of Colorado Noxious Weed List
cheatgrass (downy brome)	<i>Anisantha tectorum</i>	Moderate	not listed	C
common mullein	<i>Verbascum thapsus</i>	None	not listed	C
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
redstem stork's bill	<i>Erodium cicutarium</i>	None	not listed	B
Russian olive	<i>Elaeagnus angustifolia</i>	High	not listed	B
smooth brome	<i>Bromopsis inermis</i>	Moderate	not listed	not listed
white top	<i>Cardaria draba</i>	Moderate	x	B

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.”

WILDLIFE

GENERAL DESCRIPTION

The property provides habitat for a variety of wildlife species associated with mixedgrass prairie in Boulder County. Typical bird species likely include song sparrow (*Melospiza melodia*), vesper sparrow (*Pooecetes gramineus*), western meadowlark (*Sturnella neglecta*), and various species of raptors. Mammals that occur or are likely to occur on the property include coyote (*Canis latrans*), red fox (*Vulpes vulpes*) and mule deer (*Odocoileus hemionus*). A nearby prairie dog

colony provides important raptor habitat, is known to support burrowing owl (*Athene cunicularia*), and could expand onto the property.

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 part of the range for a resident population of mule deer.

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 or surveys occur on the property (OAHF 2008). Other potential unidentified cultural resources may exist within the property boundaries.

OTHER RESOURCES AND DESIGNATION

The property is not located within any areas designated for cultural resources in the Boulder County Comprehensive Plan (Boulder County 2008b)

AGRICULTURE

AGRICULTURAL USE

There is currently no agricultural use of the property, and it is not actively irrigated or grazed.

INFRASTRUCTURE

The property is bounded on the east and west by a barbed-wire fence. The northern edge of the property is bounded by an OSMP fence. Fencing is missing from the southern edge.

BOULDER COUNTY COMPREHENSIVE PLAN DESIGNATIONS

The Boulder County Comprehensive Plan has not identified the property to be Significant Agricultural Lands (Boulder County 2008c).

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 public use or access was evident during the site visit.

PROPERTY INFRASTRUCTURE

STRUCTURES

A residential house (built in 1989) is located in the southwest corner of the property. The City intends to remove the house and restore the area with native vegetation.

INFRASTRUCTURE AND UTILITIES

Fencing surrounding the property is generally in good condition. A second fence is found parallel to the east boundary, about 10 feet from the east boundary fence. This second, interior fence is in poor condition.

Overhead electrical lines meet the southeast corner of the property. Electrical and other underground utilities (serving the house) are most likely located along the driveway corridor.

ROADWAYS AND TRAILS

A gravel driveway enters the property at the southeast corner, and extends along most of the south boundary to reach the house. No other roads or trails were observed on the property.

LEGAL CONSIDERATIONS

WATER RIGHTS

Purchase of the property did not include any water rights.

MINERAL RIGHTS

Purchase of the property included all mineral rights, including sand and 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 Agriculture (Boulder County 2008d).

Boulder County Comprehensive Plan designations on the property include—

- Significant Natural Communities – Xeric Tallgrass Prairie
- Environmental Conservation Area – Boulder Mountain Park/South Boulder
- Natural Area – Tallgrass Prairie

The property is also considered to have major geologic constraints due to expansive soils or the potential for landslides, mudslides, mudfalls, or subsidence.

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: Allowed, but not encouraged (Future HCA policies will apply)

This property does not currently support public access and contains limited recreational opportunities. Since no designated trails exist on the property or are recommended on the property, this status 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. The property contains five List B noxious weeds species and three List C species. Most of these noxious weed species are typical of grassland open space properties in the region.

Grassland management/restoration. Introduced pasture grasses, including intermediate wheatgrass and smooth brome have been encroaching on native grassland species. Light grazing of the property may help reduce the spread of introduced pasture grasses in the area.

Fencing. Fencing along the north and west boundaries is visually obtrusive, is not necessary for open space management, and should be removed.

Local access. Walk-in access from the neighboring properties to enjoy the expansive view is both a recreational opportunity and a potential management concern. For this reason, the

southeast property boundary (driveway) should either be closed and fenced, or managed in a manner that allows limited access while precluding off-trail use and resource damage.

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.

VEGETATION

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

Action: Continue control efforts for noxious weeds identified on the property.

Action: Conduct proactive weed control, monitoring, and management during the home removal and revegetation process.

Action: Provide follow-up monitoring and weed control.

Objective 1: Implement grassland management measures, consistent with regional grassland management goals, to maintain and enhance native prairie on the property.

Action: Manage the property as part of the greater complex of protected open space grassland communities.

Action: Consider light grazing, mowing, or other methods to reduce thatch build up, control introduced pasture grasses, and stimulate native grassland species.

FENCING AND SIGNING

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

Action: Install OSMP signs along property boundary.

Action: Remove unnecessary fencing along boundaries contiguous with other OSMP lands.

Action: Add fencing along the southern property boundary.

Action: Evaluate outer OSMP boundary fence to ensure that it meets OSMP standards for resource management and wildlife passage.

Action: Install and lock a gate across the existing driveway onto the property.

STRUCTURE REMOVAL

Objective 1: Remove the existing house and revegetate to approximate natural conditions.

Action: Deconstruct or relocate the existing house, driveway, and associated utilities from the property.

Action: Revegetate the site with native species.

Action: Provide follow-up monitoring and weed management to ensure successful revegetation.

Action: Evaluate the potential to use the well and associated utilities on the property for a livestock water source.

CONSERVATION AND COORDINATION

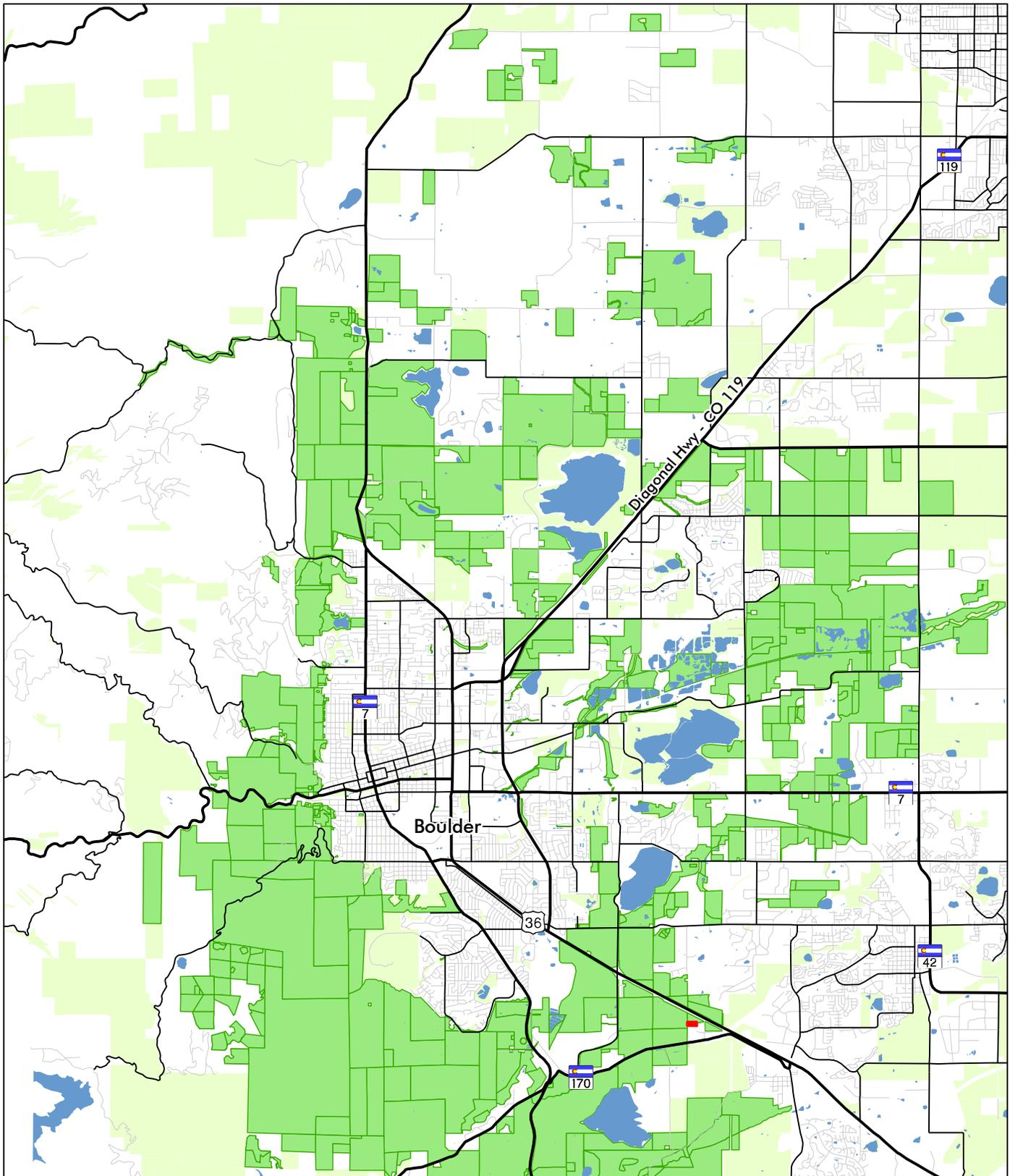
Objective 2: Work with adjacent landowners to provide consistent, sustainable management to the greater Davison Mesa/Southern Grasslands area.

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

Action: Monitor resource conditions (e.g., weeds, prairie dogs) 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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Campbell Overlook Property RRA and Management Plan

- Campbell Overlook Property
- City of Boulder Open Space
- Other Open Space

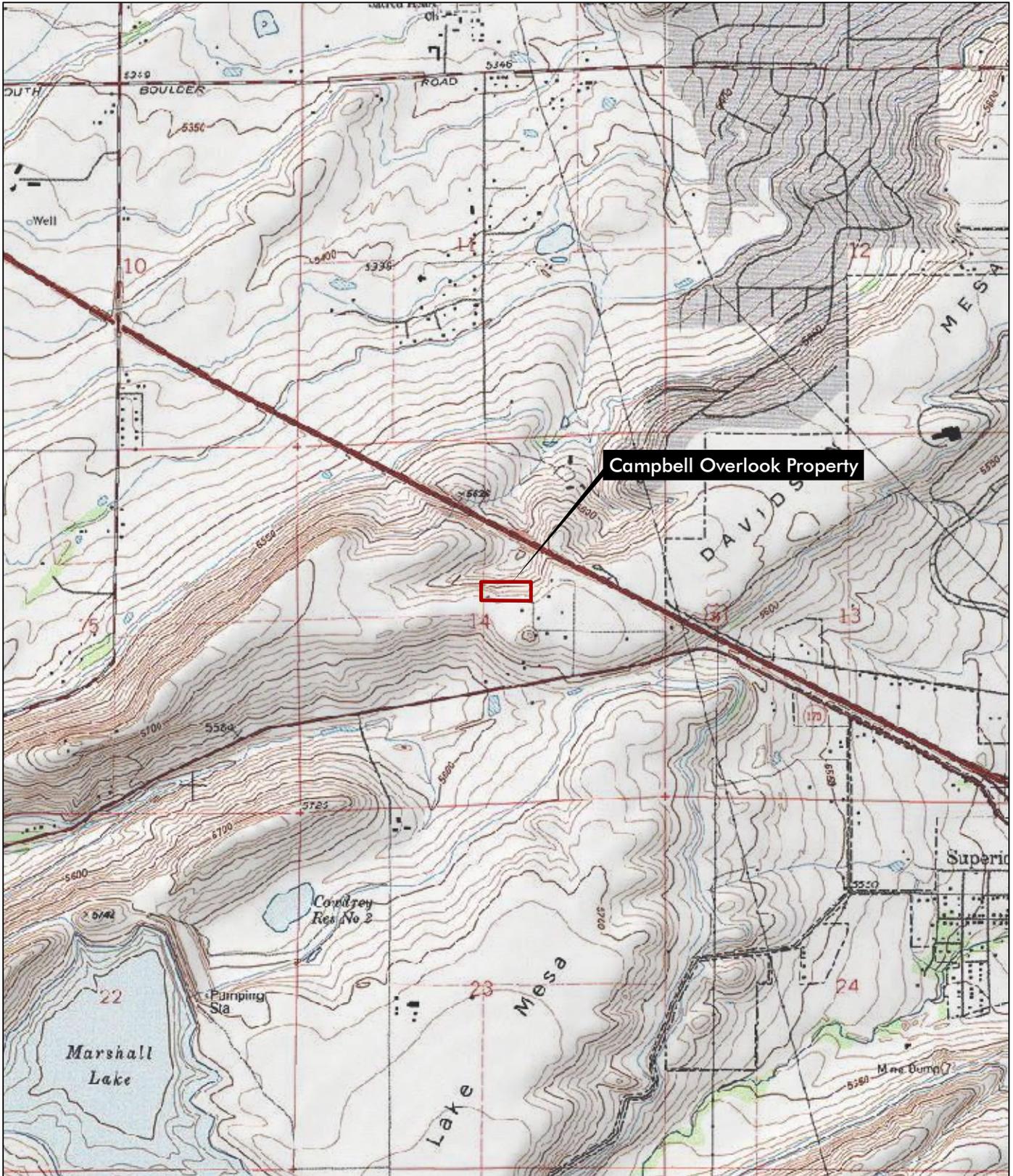


1 inch = 2 miles



**Figure 1
 Vicinity Map**

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



Campbell Overlook Property



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Campbell Overlook Property RRA and Management Plan
 Section 14, T1S, R10W
 UTM NAD83 Coordinate Zone 13N; 483537mE, 4424005mN
 USGS Louisville CO, Quadrangle
 Boulder County, Colorado



**Figure 2
 Location**

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



<p>ERO ERO Resources Corp. 1842 Clarkson Street Denver, CO 80218 (303) 830-1188 Fax: (303) 830-1199</p>	<p>Campbell Overlook Property RRA and Management Plan</p> <ul style="list-style-type: none"> ■ City of Boulder Open Space ■ Other Open Space ■ Weed patch <p>0 200 400 Feet</p> <p>1 inch = 200 Feet</p> <p style="text-align: right;">N </p>	<p>Figure 3 Property Features</p> <p>Prepared for: City of Boulder Open Space and Mountain Parks File: 4089 Figure 3 Campbell Overlook.pdf July 2008</p>
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Campbell Overlook Property RRA and Management Plan



1 inch = 200 Feet



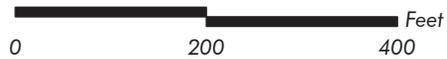
**Figure 4
Soils**

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



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Campbell Overlook Property RRA and Management Plan
 (See following page for for vegetation community names)



1 inch = 200 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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Campbell Overlook Property RRA and Management Plan

●→■ Photo Point



**Appendix A
 Photo Points**

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

APPENDIX B
PLANT SPECIES

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Species Name	Synonym	Common Name	Western Wheatgrass Herbaceous Alliance (WWH)	Big Bluestem Herbaceous Alliance (BBYH)	Soapweed Yucca Evergreen Shrubland (SYSH)
Native Annual/Biennial Forbs					
<i>Cirsium undulatum</i>		wavyleaf thistle	■	■	■
<i>Erigeron divergens</i>		spreading fleabane	■	■	■
<i>Erysimum asperum</i>		western wallflower		■	■
<i>Grindelia squarrosa</i>		curlycup gumweed	■		
<i>Pterogonum alatum</i>	<i>Eriogonum alatum</i>	winged buckwheat	■	■	
Introduced Annual/Biennial Forbs					
<i>Arctium minus</i>		common burdock		■	
<i>Cardaria draba</i>		whitetop	■		
<i>Carduus nutans</i> ssp. <i>macrolepis</i>		nodding plumeless thistle, musk thistle	■		
<i>Cynoglossum officinale</i>		houndstongue	■		
<i>Erodium cicutarium</i>		redstem stork's bill	■		■
<i>Melilotus officinalis</i>		yellow sweetclover			
<i>Sisymbrium altissimum</i>		tall tumbled mustard	■	■	
<i>Tragopogon dubius</i> ssp. <i>major</i>		yellow salsify			
<i>Verbascum thapsus</i>		common mullein	■		
Introduced Annual Grasses					
<i>Anisantha tectorum</i>	<i>Bromus tectorum</i>	cheatgrass	■		
Native Perennial Forbs					
<i>Achillea lanulosa</i>	<i>Achillea millefolium</i>	western yarrow		■	■
<i>Adenolinum lewisii</i>	<i>Linum lewisii</i>	prairie flax			■
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>		Cuman ragweed			
<i>Argemone polyanthemus</i>		crested pricklypoppy			
<i>Asclepias speciosa</i>		showy milkweed	■	■	
<i>Erigeron flagellaris</i>		trailing fleabane	■	■	
<i>Eriogonum umbellatum</i>		sulphur-flower buckwheat			
<i>Erysimum capitatum</i>		sanddune wallflower	■		
<i>Evolvulus nuttallianus</i>		shaggy dwarf morning-glory			■
<i>Gaura coccinea</i>		scarlet beeblossom	■	■	■
<i>Helianthus pumilus</i>		little sunflower			■
<i>Heterotheca villosa</i>		hairy false goldenaster	■	■	
<i>Leucelene ericoides</i>	<i>Chaetopappa ericoides</i>	rose heath	■	■	■
<i>Leucocrinum montanum</i>		common starlily		■	
<i>Liatis punctata</i>		Kansas gayfeather	■	■	
<i>Lithospermum</i> spp.		puccoon		■	■

Species Name	Synonym	Common Name	Western Wheatgrass Herbaceous Alliance (WWH)	Big Bluestem Herbaceous Alliance (BBYH)	Soapweed Yucca Evergreen Shrubland (SYSH)
Mentha arvensis		wild mint		■	
Oenothera villosa	Oenothera strigosa	hairy evening-primrose		■	
Paronychia jamesii		James' nailwort	■	■	
Psoraleidium tenuiflorum	Psoralea tenuiflora	slimflower scurfpea	■	■	
Ratibida columnifera		upright prairie coneflower		■	
Sphaeralcea coccinea		scarlet globemallow	■	■	
Introduced Perennial Forbs					
Breea arvensis	Cirsium arvense	Canada thistle	■		
Convolvulus arvensis		field bindweed	■		
Lotus tenuis		narrow-leaf bird's-foot trefoil	■		
Native Perennial Cool Season Grasses					
Achnatherum hymenoides	Oryzopsis hymenoides, Stipa hym.	Indian ricegrass	■	■	■
Elymus trachycaulus	Agropyron trachycaulum	slender wheatgrass	■	■	■
Hesperostipa comata	Stipa comata	needle and thread	■	■	■
Hesperostipa neomexicana	Stipa neomexicana	New Mexico feathergrass	■	■	■
Juncus arcticus ssp. ater	Juncus balticus	Baltic rush	■	■	■
Koeleria macrantha	Koeleria gracilis	prairie Junegrass	■	■	■
Nassella viridula	Stipa viridula	green needlegrass	■	■	■
Pascopyrum smithii	Agropyron smithii	western wheatgrass	■		■
Introduced Perennial Cool Season Grasses					
Bromopsis inermis	Bromus inermis	smooth brome			
Dactylis glomerata		orchardgrass			
Phleum pratense		timothy			
Native Perennial Warm Season Grasses					
Andropogon gerardii		big bluestem			
Aristida purpurea		purple threeawn			
Bouteloua curtipendula		sideoats grama	■		
Buchloe dactyloides	Bouteloua dactyloides	buffalograss	■		
Chondrosum gracile	Bouteloua gracilis	blue grama grass	■		
Native Shrubs and Subshrubs					
Artemisia frigida		prairie sagewort	■		
Gutierrezia sarothrae		broom snakeweed	■		
Krascheninnikovia lanata	Ceratoides lanata	winterfat			
Native Succulents and Agavoids					
Opuntia macrorrhiza		twistspine pricklypear	■		
Yucca glauca		soapweed yucca	■		
Introduced Trees					
Elaeagnus angustifolia		Russian olive		■	

APPENDIX C
REFERENCES

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REFERENCES

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**PHOTO POINTS
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Photo 1 - View north from southeastern corner.



Photo 2 - View northwest from southeastern corner.

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Photo 3 - View west from southeastern corner. Houndstongue, a List B noxious weed, is pictured in the foreground.



Photo 4 - View west from northeastern corner.

**PHOTO POINTS
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Photo 5 - View southwest from northeastern corner.



Photo 6 - View south from northeastern corner.

**PHOTO POINTS
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Photo 7 - View south from northeastern corner.



Photo 8 - View southeast from northwestern corner.

**PHOTO POINTS
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Photo 9 - View east from northwestern corner.



Photo 10 - View east from southwestern corner.

**PHOTO POINTS
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Photo 11 - View northeast from southwestern corner. House present on the property is pictured in the background.



Photo 12 - View north from southwestern corner.