

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

*Prepared for—*

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ERO Project #4089

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## SUMMARY

| EISENBERG PROPERTY            |                         |                             |
|-------------------------------|-------------------------|-----------------------------|
| <b>APPROXIMATE SIZE</b>       | <b>ACQUISITION DATE</b> | <b>CURRENT ZONING</b>       |
| 65 acres                      | June 7, 2006            | Agricultural                |
| <b>MANAGEMENT DESIGNATION</b> |                         | <b>PUBLIC ACCESS</b>        |
| Passive Recreation Area       |                         | Allowed, but not encouraged |

## GENERAL DESCRIPTION OF SITE RESOURCES

The property includes a large, gently sloping meadow between a hillside to the west and a bluff escarpment to the east. Two ephemeral drainages support riparian vegetation and habitat, while the Silver Lake Ditch meanders across the northern edge of the property. A scenic farmstead area, with a stone house and associated outbuildings is located near the northwest corner of the property, adjacent to a pond and wet meadow area. With undeveloped grasslands and striking views, the property provides a scenic setting for the existing recreational trails that abut the northern boundary and cross the southeast corner of the property.

## OPEN SPACE VALUES BASED ON RESOURCE ASSESSMENT

The property is important for open space because it maintains—

- The visual integrity and scenic value of the property as part of the transition from urban to open space and agricultural land uses along US 36
- Striking views to the south towards Boulder and the Flatirons
- Part of the CNHP-designated North Boulder Grasslands Potential Conservation Area, which is considered to have very high biodiversity significance
- Potential for agricultural management and restoration of native plant communities
- Grassland and riparian communities and associated wildlife habitats

## MANAGEMENT ISSUES BASED ON RESOURCE ASSESSMENT

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

- Occurrences of myrtle spurge, a high priority noxious weed species, and other noxious weeds
- Fencing in marginal to poor condition, and may be unnecessary for long-term management needs
- Past livestock grazing has degraded grassland, riparian, and wetland communities

## 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 65-acre Eisenberg 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 9, 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 65 acres characterized by pasture land and open grasslands near the beginning of the Front Range foothills.

## LOCATION AND ACCESS

The property is located in central Boulder County about 4 miles north of downtown Boulder (Figure 1). Specifically, the property is located in Sections 6 & 7 in Township 1 North, Range 70 West of the 6th P.M. (Figure 2).

Primary access is from Broadway Street along the western edge of the property. From downtown Boulder, travel north on Broadway to US Highway 36. Travel north of Highway 36 for about 1/10 of a mile before turning right to Broadway Street. The western edge of the property is located east of Broadway Street.

Primary vehicle and emergency access is from the gated farmstead complex in the northern half of the western edge (northernmost driveway along Broadway Street).

## ACQUISITION

The City of Boulder acquired the Eisenberg Property on June 7, 2006. The property consists of 50-acre north parcel and a 15-acre south parcel. The total price for 65 acres was \$1,890,000 (\$1,340,000 for the north parcel and \$550,000 for the north parcel).

## LAND USE

The property has been historically used for agriculture, primarily non-irrigated pasture and livestock grazing. The property is currently managed by OSMP as undeveloped open space land. No grazing or active management has occurred since its purchase by OSMP.

## LANDSCAPE CONTEXT

The property is located at the north edge of the City of Boulder and is part of the interface between urban land uses to the south and open space and agricultural land to the north and east. U.S. 36 is located about 400 feet to the west of the property. Adjacent open space lands to the north and east are part of the greater Boulder Valley Ranch complex of open space and trails.

## 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   |
|--|---|
| Xbi Corporation<br>5439 N. Foothills Hwy.<br>(C/O Boulder Valley Real Estate; 1445<br>Pearl St. Ste. 200; Boulder, CO 80302-<br>5343)<br>Parcel No. 146101000018 | West of property<br><br>Warehouse/storage – Myrtle Spurge<br>reported on property. Management plan in<br>place. |
| Patton, Susan E. & Weller, Daniel J.<br>5124 N. Foothills Hwy.<br>Boulder, CO 80302-9363<br>Parcel No. 146307000004  | South of property<br><br>Single family rural residence – knapweed<br>reported on property                       |

### 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<br>N Foothills Hwy.<br>Real Estate & Opens Space<br>(PO Box 791; Boulder, CO 80306-0791)<br>Parcel No. 146306000037<br><i>City of Boulder Open Space</i> | North of property<br><br>Undeveloped land |
| City of Boulder<br>N Foothills Hwy.<br>Real Estate & Opens Space<br>(PO Box 791; Boulder, CO 80306-0791)<br>Parcel No. 146306000036<br><i>City of Boulder Open Space</i> | North of property<br><br>Undeveloped land |

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|  |  |
|--|--|
| <p style="text-align: center;">City of Boulder<br/>N Foothills Hwy.<br/>Real Estate &amp; Opens Space<br/>(PO Box 791; Boulder, CO 80306-0791)<br/>Parcel No. 146306000032<br/><i>City of Boulder Open Space</i></p> | <p style="text-align: center;">North of property<br/>Undeveloped land</p>  |
| <p style="text-align: center;">City of Boulder<br/>N Foothills Hwy.<br/>Real Estate &amp; Opens Space<br/>(PO Box 791; Boulder, CO 80306-0791)<br/>Parcel No. 146306000017<br/><i>City of Boulder Open Space</i></p> | <p style="text-align: center;">Northeast of property<br/>Undeveloped land</p>  |
| <p style="text-align: center;">City of Boulder<br/>N Foothills Hwy.<br/>Real Estate &amp; Opens Space<br/>(PO Box 791; Boulder, CO 80306-0791)<br/>Parcel No. 146307000076<br/><i>City of Boulder Open Space</i></p> | <p style="text-align: center;">East of property<br/>Undeveloped land</p>   |
| <p style="text-align: center;">City of Boulder<br/>N Foothills Hwy.<br/>Real Estate &amp; Opens Space<br/>(PO Box 791; Boulder, CO 80306-0791)<br/>Parcel No. 146307000077<br/><i>City of Boulder Open Space</i></p> | <p style="text-align: center;">East of property<br/>Undeveloped land</p>   |
| <p style="text-align: center;">City of Boulder<br/>N Foothills Hwy.<br/>Real Estate &amp; Opens Space<br/>(PO Box 791; Boulder, CO 80306-0791)<br/>Parcel No. 146307000005<br/><i>City of Boulder Open Space</i></p> | <p style="text-align: center;">South of property<br/>Grazing/Agriculture – Knapweed reported<br/>on property<br/>(Schneider Family property)</p> |
| <p style="text-align: center;">City of Boulder<br/>N Foothills Hwy.<br/>Real Estate &amp; Opens Space<br/>(PO Box 791; Boulder, CO 80306-0791)<br/>Parcel No. 146101000019<br/><i>City of Boulder Open Space</i></p> | <p style="text-align: center;">West of property<br/>Undeveloped land</p>   |

## 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 consists of rolling plains which generally slope to the east. Elevations on the property range from about 5,540 feet in the southwestern corner to about 5,480 feet along the eastern boundary. A broad, low, plateau occurs in the northeast portion of the property with a maximum elevation of about 5,540 feet. 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 Cretaceous age. Generally the area includes the middle unit of Pierre Shale. Pierre Shale contains areas of sandstone (Tweto 1979).

### SOILS

The Natural Resources Conservation Service (NRCS) has mapped four 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 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 blue grama, western wheatgrass, and cactus.

**Mapping Unit ReD. Renohill Loam** (3 to 9 percent slopes). This soil includes a few areas of rock outcrop and small areas of Samsil and Shingle soils. Runoff is rapid and the erosion hazard is high. Native vegetation consists of western wheatgrass, green needlegrass, blue grama and scattered big sagebrush.

**Mapping Unit HeC. Heldt clay** (3 to 5 percent slopes). This soil includes small areas of Renohill silty clay loam and Colby silty clay loam. In some areas near ridgetops scattered gravel is on the surface. Runoff is rapid and the erosion hazard is high. Native vegetation is primarily western wheatgrass, green needlegrass, blue grama, and basin wildrye.

**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.

## HYDROLOGY

### SURFACE HYDROLOGY

An unnamed ephemeral drainage crosses the property flowing from west to east through a shallow ravine. The property is not included within a designated floodplain area.

According to topographic information from the USGS 7.5 minute quadrangle map, surface water on the property flows to the east towards the Boulder and Sixmile Reservoirs (USGS 1966,

photorevised 1979; USGS 1967, photorevised 1979). Silver Lake Ditch follows the contours of the plateau in the northeast corner of the property

#### **SUBSURFACE HYDROLOGY**

Based on a review of the USGS Boulder quadrangle, shallow ground water would flow in an easterly direction towards the Boulder and Sixmile Reservoirs (USGS 1967; photorevised 1979). There are three water wells on the property (CDWR 2008), which are described below under *Water Rights*. No seeps or springs were identified on the property (CDWR 2008).

#### **WETLANDS**

Wetlands were not delineated during the field survey but wetland vegetation was mapped. Wetland vegetation was found adjacent to the two drainages that flow through the property. Baltic rush (*Juncus arcticus* ssp. *ater*), an obligate wetland plant, was the most dominant wetland species in the northern drainage. The southern drainage in the western property corner is dominated by riparian species but has a wetland understory. Plants such as broadleaf cattail (*Typha latifolia*), Baltic rush, softstem bulrush (*Schoenoplectus lacustris* ssp. *creber*) are common.

## **VEGETATION**

#### **GENERAL VEGETATION DESCRIPTION**

Most of the property is dominated by open dry mesic grasslands. Two small drainages flow through the property. 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 the most dominant community type on the property. Western wheatgrass (*Pascopyrum smithii*) is the dominant grass in this community but other native grass species such as needle-and-thread (*Hesperostipa comata*), purple threeawn, and Sandberg bluegrass (*Poa secunda*) are present. Native perennial forbs such as Kansas gayfeather (*Liatris punctata*), prairie flax (*Adenolinum lewisii*), scarlet globemallow (*Sphaeralcea coccinea*) occur in this community type.

#### **NEEDLE-AND-THREAD – BLUE GRAMA HERBACEOUS ALLIANCE (NTH)**

The needle-and-thread – bluegrama herbaceous alliance is present along the slopes in the northeast and the northwest of the property. This alliance is dominated by needle-and-thread, blue grama grass and western wheatgrass. Soapweed yucca (*Yucca glauca*), an agavoid, and twistspine pricklypear, a succulent species, is also dominant in this community type.

#### **EASTERN COTTONWOOD TEMPORARILY FLOODED WOODLAND ALLIANCE (ECTW)**

The eastern cottonwood temporarily flooded woodland alliance is present in the southwestern section of the property along the southern drainage. Plains cottonwood trees (*Populus deltoids* spp. *monilifera*) are the dominant overstory riparian species. Understory species include wetland plants such as Baltic rush, softstem bulrush, and broadleaf cattail. Other riparian species include Russian olive (*Elaeagnus angustifolia*), peachleaf willow (*Salix amygdaloides*), and American plum (*Prunus americana*).

**BALTIC RUSH SEASONALLY FLOODED HERBACEOUS ALLIANCE (BRSH)**

The Baltic rush seasonally flooded herbaceous alliance is found in the northwestern corner of the property. The Baltic rush community is found in lowland depressions along the northernmost drainage in the property. Baltic rush is the dominant plant species but other plants such as hairy evening-primrose (*Oenothera villosa*) and showy milkweed (*Asclepias speciosa*) are present.

**BIG BLUESTEM - (YELLOW INDIANGRASS) HERBACEOUS ALLIANCE (BBYH)**

A small patch of the big bluestem herbaceous alliance was present on the slopes and mesa top in the northeastern corner of the property. Big bluestem (*Andropogon gerardii*) is dominant but other species such as needle-and-thread (*Hesperostipa comata*), prairie Junegrass (*Koeleria macrantha*), and western wheatgrass are common. Native perennial forb species such as hairy false goldenaster (*Heterotheca villosa*), Kansas gayfeather (*Liatris punctata*), and trailing fleabane (*Erigeron flagellaris*) are common. Prairie sagewort (*Artemisia frigida*), a native subshrub, is also common.

**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 visits. The shale-dominated slopes in the eastern portion of the property could provide habitat for Bell's twinpod (*Physaria bellii*), a species that is known to occur on nearby OSMP properties and is believed to be imperiled globally or in the state of Colorado (G2/S2).

**STATE NOXIOUS WEEDS**

Four List B noxious weed species occur on the property. Canada thistle (*Breca arvensis*) and houndstongue (*Cynoglossum officinale*) are present along the southern drainage in the western section of the property. Diffuse knapweed is scattered throughout the property. Largest infestations are in the northeast corner of the property. A type of knapweed weevil (*Larinus* sp.), a biological control insect, was seen feeding on flowering diffuse knapweed plants in the project area. A few Russian olive (*Elaeagnus angustifolia*) were found along the drainage in the western section of the property. Moth mullein (*Verbascum blattaria*) was present in the northeastern corner of the property near the unnamed lateral ditch.

**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 (downy brome) | <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                                   |
| moth mullein             | <i>Verbascum blattaria</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                          |

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 shortgrass prairie and agricultural lands in Boulder County. The irrigation ditch and grasslands on the property contain potential habitat for a variety of wildlife species. Large cottonwoods along the drainage in the southwest corner and around the pond in the northwest corner provide potential nesting sites for raptors, as well as denning sites for mid-sized mammals such as raccoon (*Procyon lotor*). Typical bird species likely include song sparrow (*Melospiza melodia*), vesper sparrow (*Pooecetes gramineus*), western meadowlark (*Sturnella neglecta*), and potentially grasshopper sparrow

(*Ammodramus savannarum*), savannah sparrow (*Passerculus sandwichensis*), and lark sparrow (*Chondestes grammacus*), and various species of raptors.

Small rodents that probably occur along the ditch and in riparian areas include deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*). Other mammals that occur or are likely to occur on the property include mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and raccoon. All of these species probably frequent the areas along the drainages, although coyote may be more common in open areas.

The open grasslands in the central portion of the property was known to support a black-tailed prairie dog (*Cynomys ludovicianus*) colony in recent years. No prairie dog activity was observed during the site visit.

#### **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 North Boulder Grasslands Potential Conservation Area, which is considered to have very high biodiversity significance (B2) (CNHP 2007).

#### **COLORADO DIVISION OF WILDLIFE DESIGNATIONS**

According to the NDIS database, the property does not contain any CDOW-designated wildlife habitat areas.

#### **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, four sites are located on the property (OAHP 2008). (These sites are mainly associated with Silver Lake Ditch.) Other potential unidentified cultural resources, including structures in the farmstead area, 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).

## **AGRICULTURE**

### **AGRICULTURAL USE**

The property has historically been used for cattle ranching, and was also used for goats and horses. No agricultural use of the property has taken place since OSMP purchase.

### **INFRASTRUCTURE**

The property is bounded on all sides by barbed-wire fences. The fence in the northeast corner of the property is in poor condition, and appears to be falling down in some areas. Otherwise, the fences are in marginal to good condition.

The Silver Lake Ditch winds through the northern half of the property. A recent ditch blowout, which has been repaired with plastic culvert piping, is located along the Silver Lake Ditch near the northeast corner of the property.

An earthen dam along the ephemeral drainage in the northwest corner creates a medium-sized stock pond which supports riparian and wetland vegetation.

The farmstead area contains several corrals, a chicken house, a barn, and a small silo.

### **BOULDER COUNTY COMPREHENSIVE PLAN DESIGNATIONS**

The property has not been designated as significant agricultural land by the Boulder County Comprehensive Plan (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 on the property during the site visit.

The property is across the road from the Foothills Trailhead, and is directly adjacent to a secondary trailhead in the northwest corner. The Degge Trail runs along the outside of the north property boundary, while the Hidden Valley Trail crosses the northeast corner of the property.

## **PROPERTY INFRASTRUCTURE**

### **STRUCTURES**

The main farmstead area near the northwest corner of the property contains a stone farmhouse, a garage, a bunkhouse with lean-to and chicken house, a barn, a pump house, and a small silo.

A secondary residence area, consisting primarily of a wood-frame house, is located further south along the west boundary. This residence is occupied by a tenant (consistent with the conditions of the acquisition).

### **INFRASTRUCTURE AND UTILITIES**

Fencing on the property is described above under *Agriculture*.

Overhead power lines run along the west and north property boundaries. Electrical and other utilities serve the main farmstead area and the secondary residence area.

### **ROADWAYS AND TRAILS**

Two gated dirt roads enter the property from North Broadway Street to access the main farmstead area and the secondary residence area. No other roads or trails were identified on the property. OSMP's Hidden Valley Trail crosses the northeast corner of the property.

## **LEGAL CONSIDERATIONS**

### **WATER RIGHTS**

Purchase of the property did not include any water rights.

According to the Colorado Division of Water Resources (CRWR 2008), there are 3 permitted water wells on the property:

- Eisenberg well 53440, groundwater well, ID 5270
- Jones well, groundwater well, ID 5458
- Permitted domestic/stock well, permit #53440

### **MINERAL RIGHTS**

Purchase of the 65 acres (2006) 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 Agriculture (Boulder County 2008d).

Boulder County Comprehensive Plan designations on the property include—

- Environmental Conservation Area – Boulder Valley Ranch/Beech Open Space
- County Open Space Plan – Open Corridor, Roadside

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

## PROPERTY MANAGEMENT PLAN

### MANAGEMENT AREA DESIGNATION

Recommended management area designation: Passive Recreation Area.

The location and features of the property are generally consistent with the characteristics, goals, and strategies outlined for Passive Recreation Areas in the OSMP Visitor Master Plan, including proximity to development, patches of high-quality habitat, higher 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.

With the exception of the Hidden Valley Trail segment in the northeast corner, there is no evidence of recent public access on the property. Given the proximity of the property to existing trails, informal access is a possibility. If informal public access does occur, the potential for resource damage would be minimal. However, should future public use or resource monitoring reveal potential resource impacts, implement incremental measures to re-direct, restrict, or close public access to the property.

The goal of this access status is to allow limited informal access if it should occur, but to prevent a pattern of passive recreational use from forming that is detrimental to natural, agricultural and cultural resources. Should 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), 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 one List A noxious weeds species (Myrtle spurge), five List B species, and several List C species. While most of the noxious weed species are typical of agricultural and open space properties in the region, myrtle spurge is a high priority species for both OSMP and the State of Colorado, and should be aggressively managed to prevent its spread.

**Fencing.** A large extent of the boundary fencing is in marginal condition, while much of the fence along the southern boundary is in poor condition. Depending on long-term agricultural and access management of this and adjacent open space properties, some of this fencing may be unnecessary.

***Vacant buildings.*** The vacant farm house and other buildings could attract trespass/vandalism, transients, or illegal use.

## 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:*** Target and control myrtle spurge on the property, with the goal of eradication.

Action: Implement efforts to aggressively control Myrtle spurge.

Action: Conduct follow-up monitoring and treatments to ensure effectiveness.

***Objective 2:*** 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: Work with agricultural lessee (if any) and ditch maintenance entity to manage agricultural infrastructure in a manner that reduces the potential for noxious weeds.

Action: Provide follow-up monitoring and weed control.

***Objective 3:*** Coordinate long-term management with sensitive breeding periods for wildlife.

Action: Minimize disturbance (burning, mowing, grazing, and chemical spraying) during the nesting season for grassland birds.

***Objective 4:*** Identify opportunities for habitat restoration on the property.

Action: Evaluate potential for restoring native grassland communities on the property, including xeric tallgrass and needle-and-thread grass communities.

Action: Manage future grazing activity, if any, in a manner that is compatible with habitat restoration objectives and prairie dog management.

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

***Objective 2:*** Implement a fencing configuration that is consistent with long-term agricultural and access management needs on both this and adjoining OSMP properties.

Action: Maintain fences that are needed for agricultural management purposes.

Action: Consider need for fence along north boundary to prevent off-trail access from adjacent trail users.

Action: Maintain fences that may be needed to protect sensitive habitats, including ponds and riparian areas.

**Objective 2:** Conduct routine fence repair and maintenance along the property boundary.

Action: Repair areas of downed or poor quality fences, in areas where fencing is needed for long-term management.

Action: Monitor the condition and effectiveness of fencing every 1-3 years.

### **AGRICULTURAL MANAGEMENT**

**Objective 1:** Consider long-term agricultural management strategies that are consistent with system-wide grassland management objectives.

Action: Evaluate the potential to use the water features on the property (wells and ponds) as livestock water sources for this property and surrounding properties.

### **STRUCTURES**

**Objective 1:** Determine the most appropriate long-term use and management of the existing structures on the property.

Action: Secure and patrol vacant structures to minimize trespass, vandalism, or illegal use.

Action: Evaluate the cultural or historical significance of the house and other structures in the farmstead area.

Action: Take appropriate measures to protect significant structures in the farmstead area, and remove structures that have no significance or present a public safety hazard.

Action: Consider options for adaptive re-use of the farmstead area, including use as a maintenance, recreation, or educational facility.

Action: Demolish the secondary residence and restore the site with native vegetation.

### **WILDLIFE MANAGEMENT**

**Objective 1:** Manage prairie dogs consistent with vegetation and agricultural objectives for the property.

Action: Evaluate prairie dog colony for use by burrowing owl and other raptors.

Action: Designate management based on criteria established in the Grassland Ecosystem Management Plan.

### **CONSERVATION AND COORDINATION**

**Objective 1:** Work with adjacent landowners to provide consistent, sustainable management to the greater Boulder Valley Ranch area.

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

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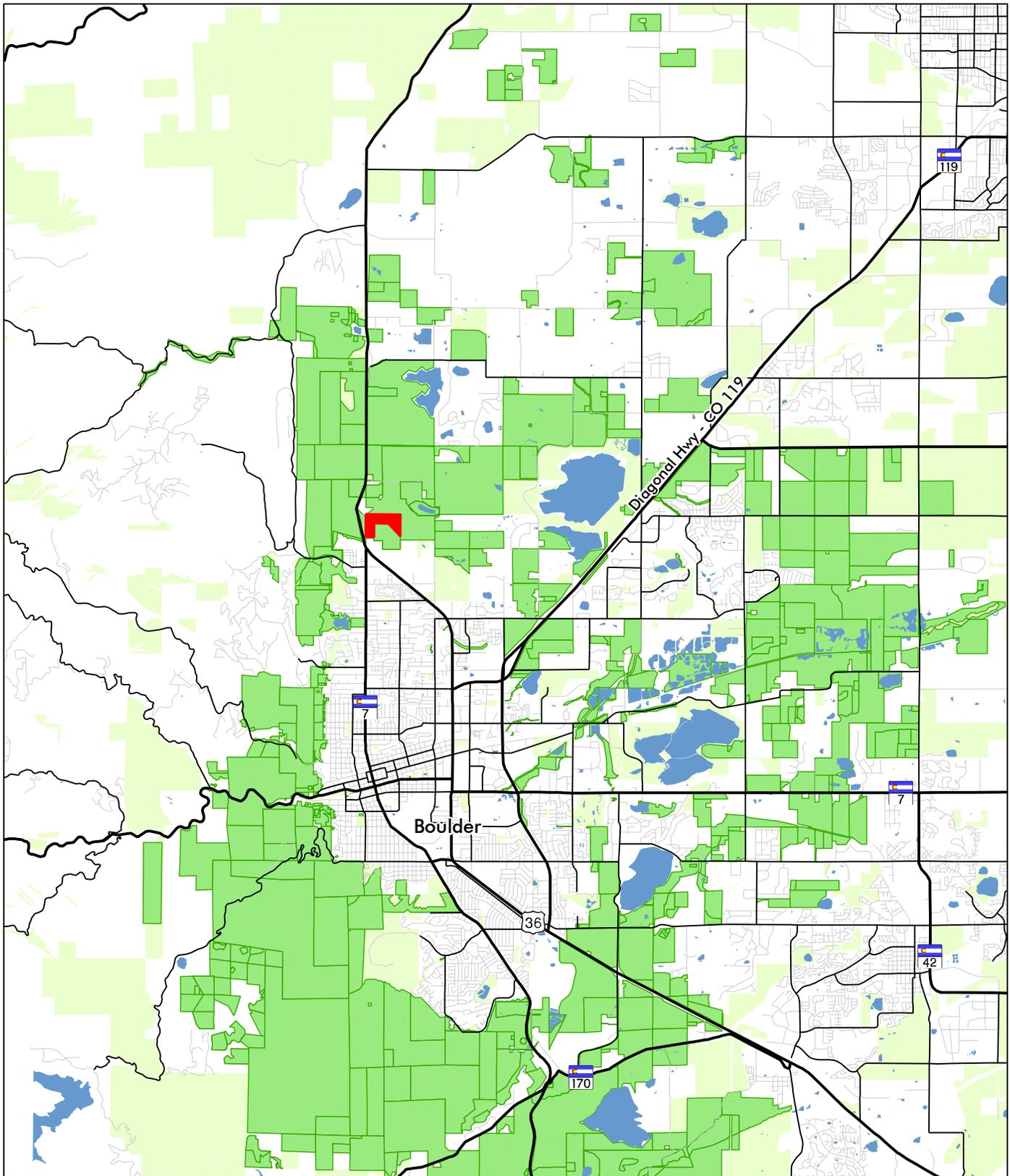
Action: Establish and maintain lines of communication with adjacent landowners.

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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**Eisenberg Property RRA and Management Plan**

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

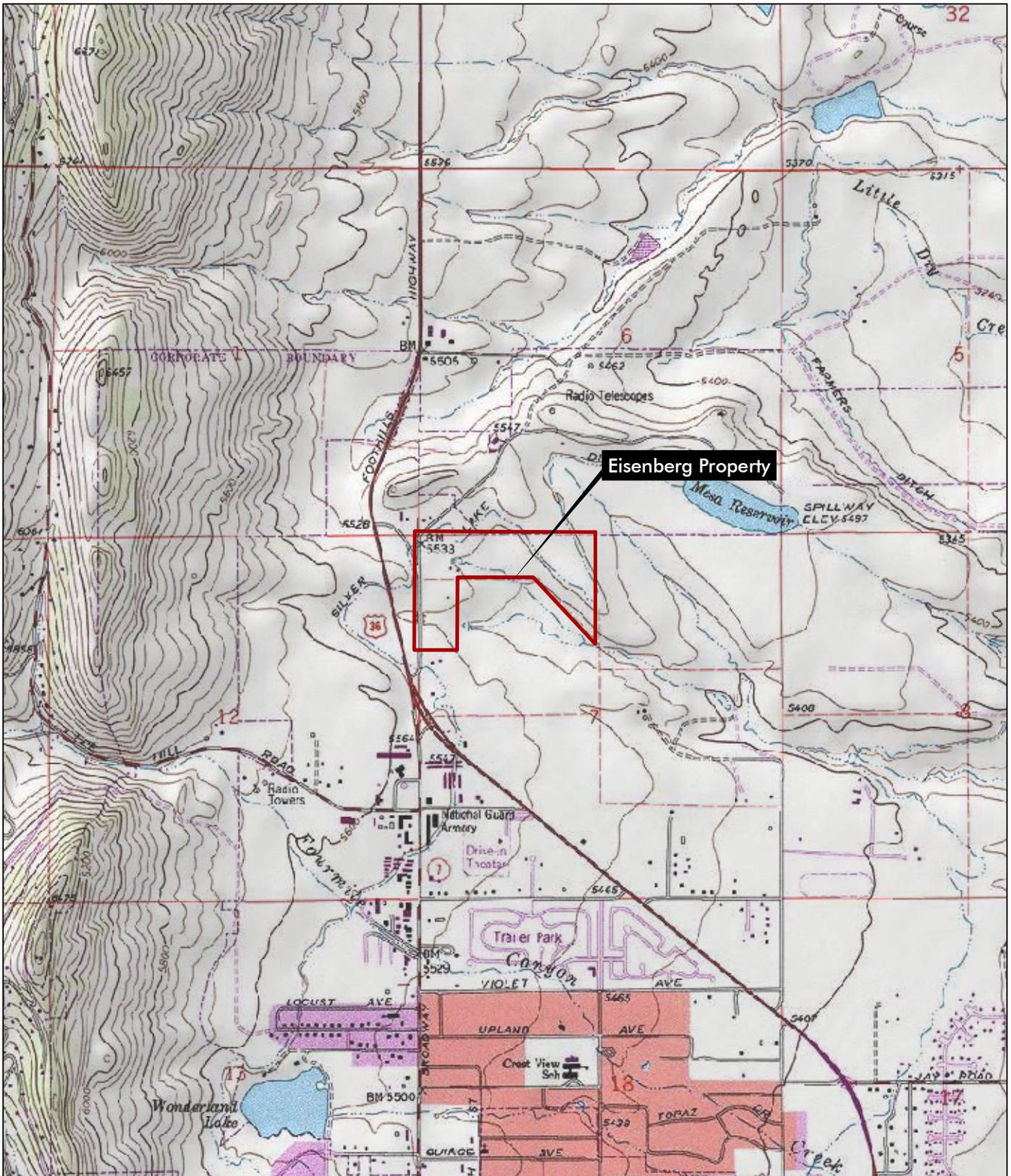


1 inch = 2 miles



**Figure 1  
 Vicinity Map**

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



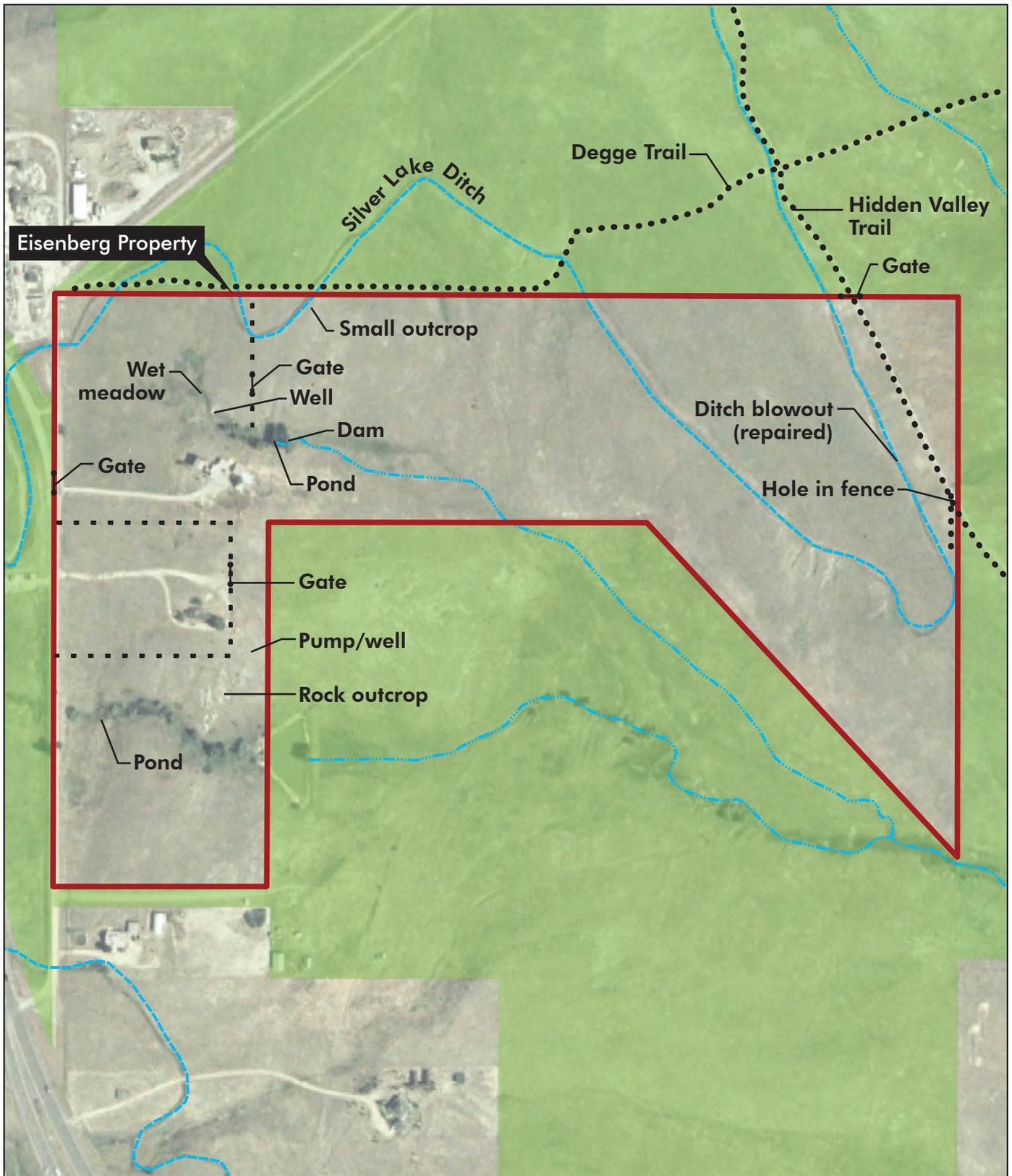
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**Eisenberg Property RRA and Management Plan**  
 Sections 6 & 7, T1N, R70W and Sections 1 & 12, T1N, R70W  
 UTM NAD83 Coordinate Zone 13N; 476317mE, 4435676mN  
 USGS Boulder CO, Quadrangle  
 Boulder County, Colorado



**Figure 2**  
**Location**

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



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### Eisenberg Property RRA and Management Plan

- City of Boulder Open Space
- Other Open Space

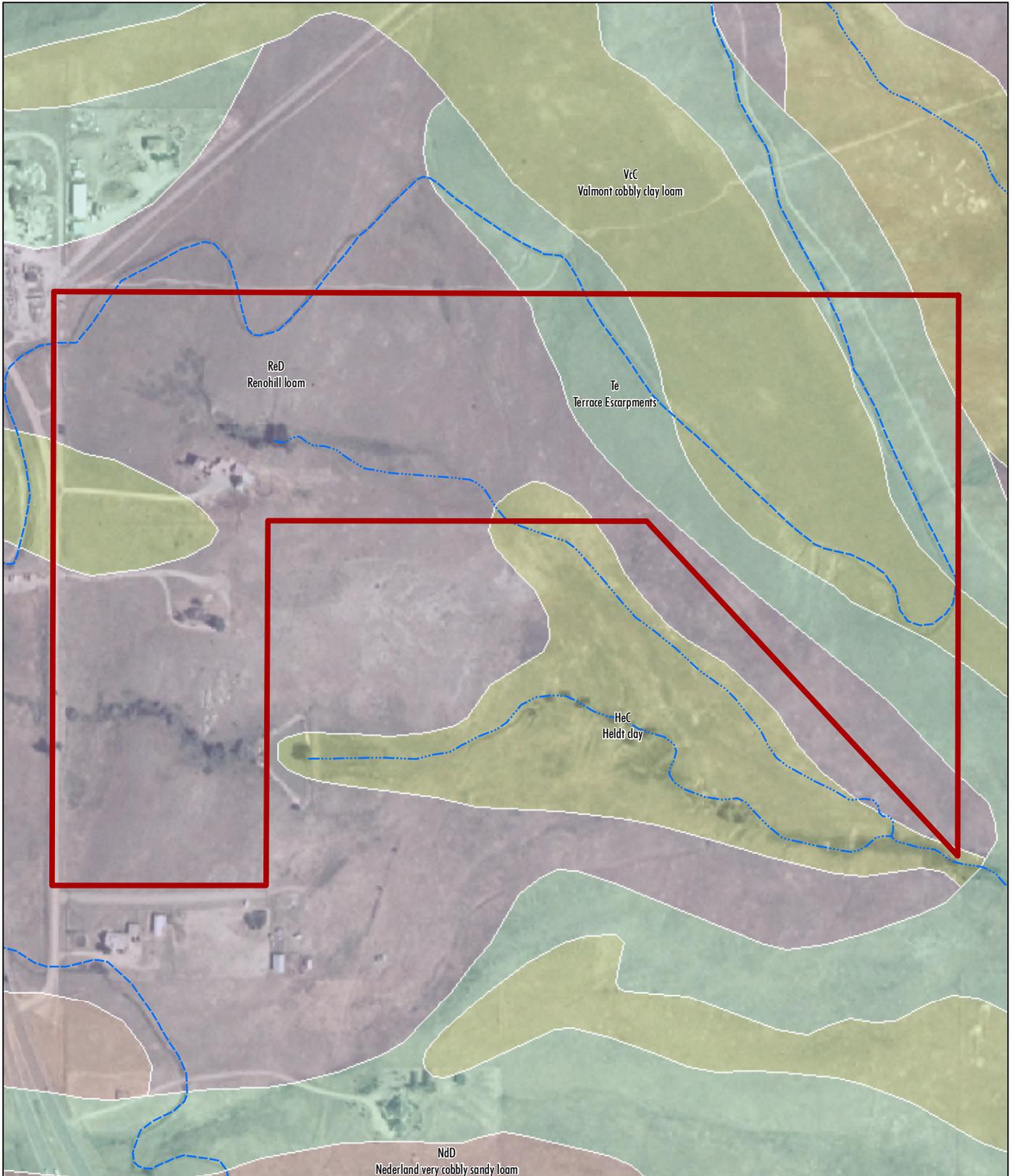


1 inch = 400 Feet



### Figure 3 Property Features

Prepared for: City of Boulder Open Space  
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 File: 4089 Figure 3 Eisenberg.mxd  
 July 2008



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**Eisenberg Property RRA and Management Plan**

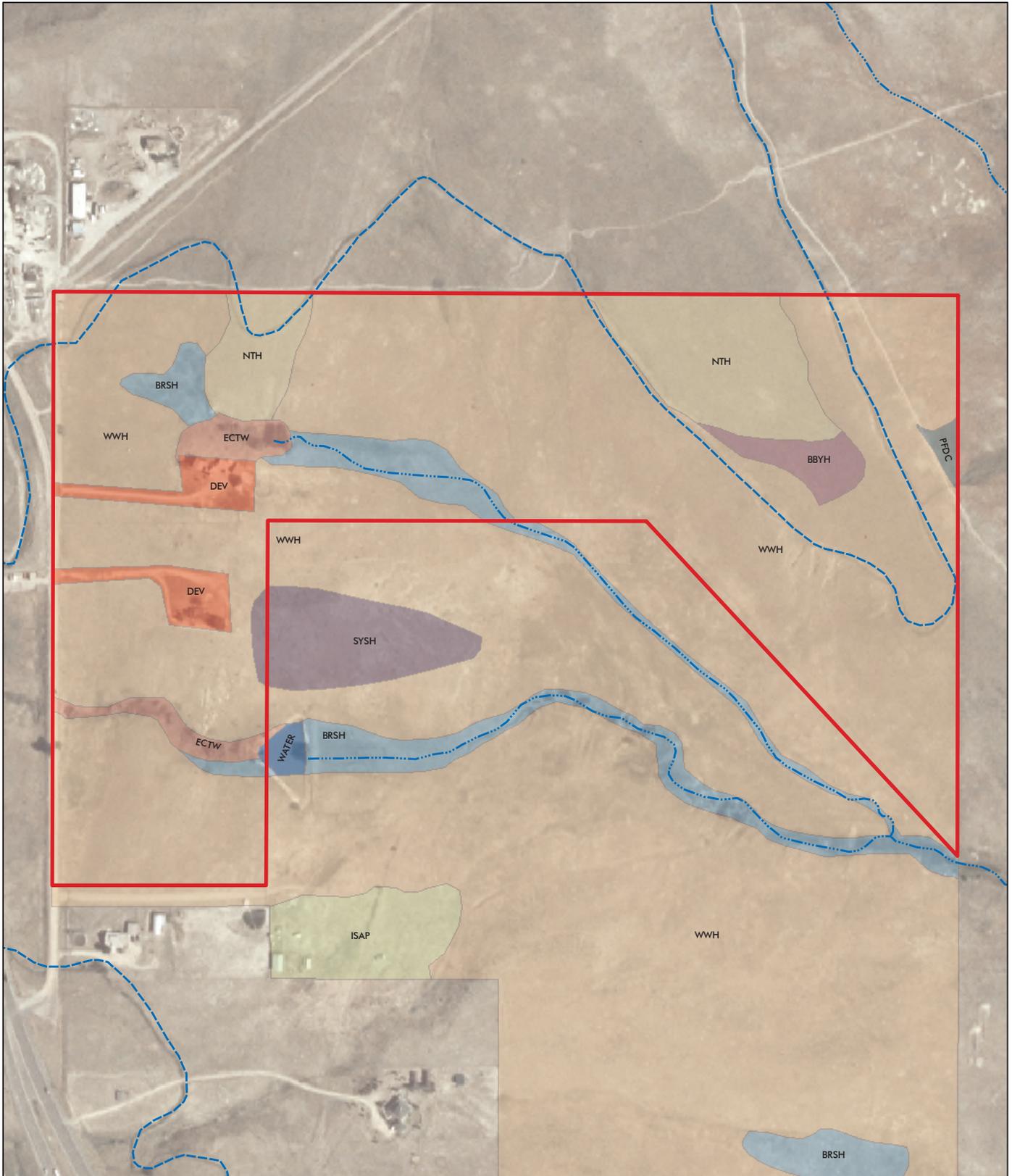


1 inch = 400 Feet



**Figure 4  
Soils**

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



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**Eisenberg Property RRA and Management Plan**  
 (See following page for for vegetation community names)



1 inch = 400 Feet



**Figure 5**  
**Vegetation Communities**

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

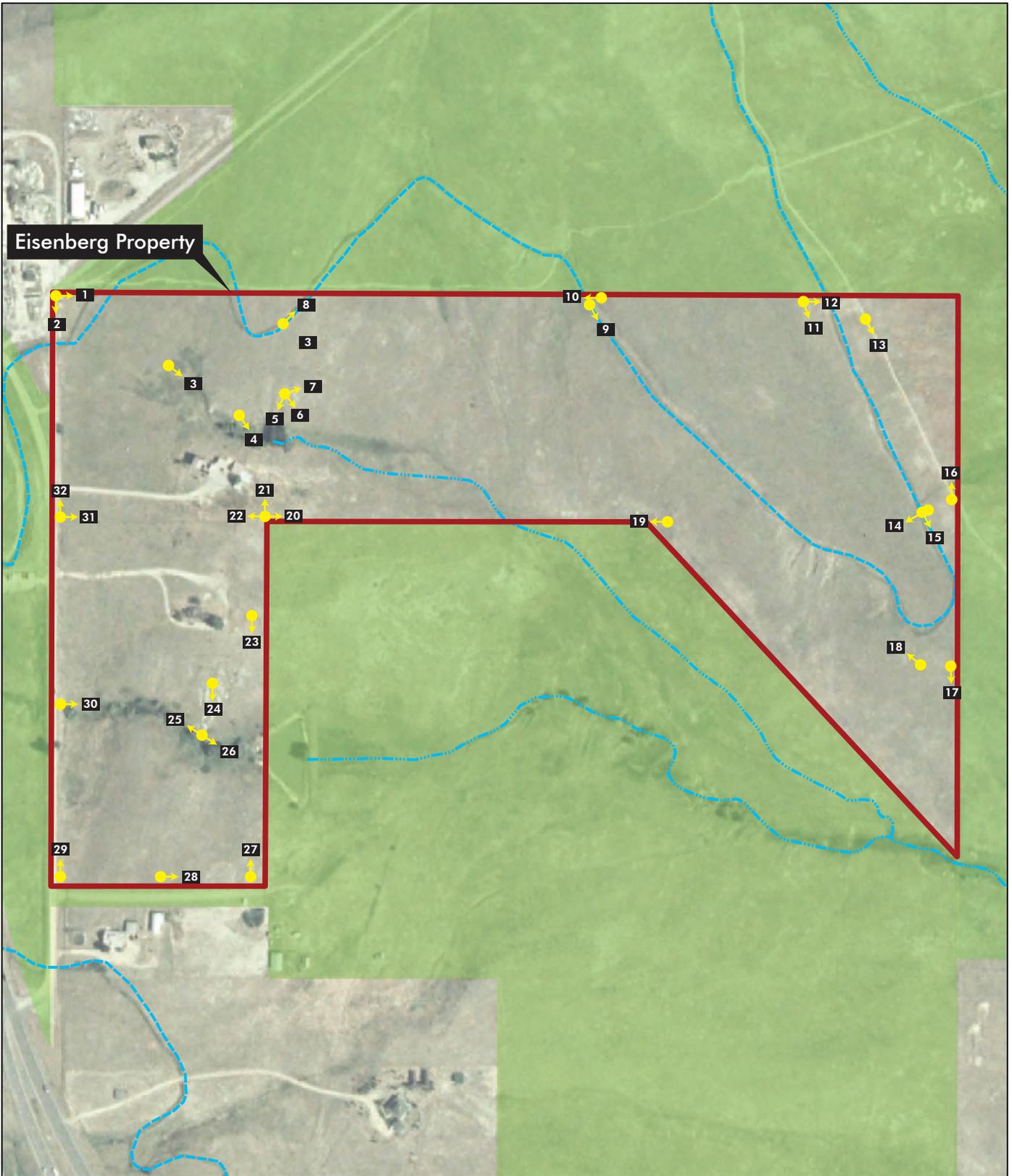
## Vegetation Communities

### 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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**Eisenberg Property RRA and Management Plan**

●➔ 1 Photo Point



1 inch = 400 Feet



**Appendix A  
 Photo Points**

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



**APPENDIX B**  
**PLANT SPECIES**



## APPENDIX B PLANT SPECIES

| Species Name                            | Synonym                         | Common Name           | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|---|---------------------------------|-----------------------|--|---|---|--|---|---|---|
| <b>Native Annual/Biennial Forbs</b>     |                                 |                       |  |   |   |  |   |   |   |
| Cirsium undulatum                       |                                 | wavyleaf thistle      |  |   | ■                                       |  | ■   |   |   |
| Erigeron divergens                      |                                 | spreading fleabane    |  |   | ■                                       |  | ■   |   |   |
| Erysimum asperum                        |                                 | western wallflower    |  | ■   |   |  |   |   |   |
| Grindelia squarrosa                     |                                 | curlycup gumweed      | ■  | ■   |   |  |   |   |   |
| Plantago patagonica                     |                                 | woolly plantain       | ■  |   | ■                                       |  | ■   |   |   |
| Pterogonum alatum                       | Eriogonum alatum                | winged buckwheat      |  |   | ■                                       | ■  |   |   |   |
| <b>Introduced Annual/Biennial Forbs</b> |                                 |                       |  |   |   |  |   |   |   |
| Acosta diffusa                          | Centaurea diffusa               | diffuse knapweed      | ■  |   |   |  |   |   | ■   |
| Alyssum parviflorum                     | Alyssum simplex                 | smallflowered alyssum | ■  | ■   | ■                                       | ■  |   |   | ■   |
| Bassia sieversiana                      | Kochia scoparia, K. sieversiana | burning-bush          |  |   |   |  |   |   | ■   |
| Camelina microcarpa                     |                                 | littlepod false flax  | ■  |   |   |  |   |   | ■   |
| Conyza canadensis                       |                                 | Canadian horseweed    |  | ■   |   | ■  |   |   | ■   |
| Erodium cicutarium                      |                                 | redstem stork's bill  |  |   | ■                                       |  |   |   | ■   |
| Lactuca serriola                        |                                 | prickly lettuce       |  | ■   |   |  |   |   | ■   |
| Medicago lupulina                       |                                 | black medick          |  | ■   | ■                                       |  |   |   | ■   |
| Melilotus officinalis                   |                                 | yellow sweetclover    | ■  |   |   |  |   |   | ■   |
| Podospermum laciniatum                  | Scorzonera laciniatum           | cutleaf vipergrass    | ■  |   |   |  |   |   | ■   |

| Species Name                             | Synonym                     | Common Name          | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|--|-----------------------------|----------------------|--|---|---|--|---|---|---|
| Sisymbrium altissimum                    |                             | tall tumbled mustard |  | ■   |   |  |   |   | ■   |
| Tragopogon dubius ssp. major             |                             | yellow salsify       | ■  | ■   | ■                                       | ■  |   |   | ■   |
| Verbascum thapsus                        |                             | common mullein       | ■  | ■   | ■                                       | ■  |   |   |   |
| <b>Native Annual Grasses</b>             |                             |                      |  |   |   |  |   | ■   |   |
| Critesion pusillum                       | Hordeum pusillum            | little barley        |  |   |   |  |   |   |   |
| <b>Introduced Annual Grasses</b>         |                             |                      |  |   |   |  |   |   |   |
| Anisantha tectorum                       | Bromus tectorum             | cheatgrass           | ■  | ■   | ■                                       | ■  |   | ■   | ■   |
| <b>Native Perennial Forbs</b>            |                             |                      |  |   |   |  |   |   |   |
| Achillea lanulosa                        | Achillea millefolium        | western yarrow       | ■  |   |   |  |   |   |   |
| Adenolinum lewisii                       | Linum lewisii               | prairie flax         | ■  |   | ■                                       |  |   |   |   |
| Ambrosia psilostachya var. coronopifolia |                             | Cuman ragweed        | ■  |   | ■                                       |  |   |   |   |
| Antennaria spp.                          |                             | pussytoes            | ■  |   | ■                                       | ■  |   |   |   |
| Argemone polyanthemus                    |                             | crested pricklypoppy |  |   | ■                                       | ■  |   |   |   |
| Artemisia ludoviciana                    |                             | white sagebrush      |  |   | ■                                       |  |   |   |   |
| Asclepias speciosa                       |                             | showy milkweed       |  |   |   |  | ■   | ■   |   |
| Asclepias stenophylla                    |                             | slimleaf milkweed    |  |   | ■                                       | ■  |   |   |   |
| Asclepias viridiflora                    |                             | green comet milkweed |  |   |   | ■  |   |   |   |
| Astragalus laxmannii                     | A. adsurgens var. robustior | Laxmann's milkvetch  |  |   |   | ■  |   |   |   |

| Species Name                               | Synonym                | Common Name                | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|--|------------------------|----------------------------|--|---|---|--|---|---|---|
| Brickellia rosmarinifolia ssp. chlorolepis | Kuhnia chlorolepis     | false boneset              |  |   | ■                                       |  |   |   |   |
| Calochortus gunnisonii                     |                        | Gunnison's mariposa lily   | ■  |   | ■                                       |  |   |   |   |
| Castilleja sessiliflora                    | Castilleja grandiflora | downy paintedcup           | ■  |   |   |  |   |   |   |
| Cerastium strictum                         | Cerastium arvense      | field chickweed            |  | ■   |   | ■  |   |   |   |
| Comandra umbellata ssp. pallida            |                        | pale bastard toadflax      |  |   |   | ■  |   |   |   |
| Dalea candida var. oligophylla             |                        | white prairie clover       |  | ■   |   |  |   |   |   |
| Dalea purpurea                             |                        | purple prairie clover      |  |   | ■                                       |  |   |   |   |
| Eremogone fendleri                         | Arenaria fendleri      | Fendler's sandwort         | ■  | ■   | ■                                       |  |   |   |   |
| Erigeron flagellaris                       |                        | trailing fleabane          |  |   | ■                                       |  |   |   |   |
| Eriogonum umbellatum                       |                        | sulphur-flower buckwheat   |  | ■   |   |  |   |   |   |
| Erysimum capitatum                         |                        | sanddune wallflower        |  |   | ■                                       |  |   |   |   |
| Evolvulus nuttallianus                     |                        | shaggy dwarf morning-glory |  |   | ■                                       |  |   |   |   |
| Gaillardia aristata                        |                        | common gaillardia          |  |   | ■                                       |  |   |   |   |
| Gaura coccinea                             |                        | scarlet beeblossom         |  | ■   |   |  |   |   |   |
| Helianthus pumilus                         |                        | little sunflower           |  | ■   |   |  |   |   |   |
| Heterotheca villosa                        |                        | hairy false goldenaster    |  |   | ■                                       |  |   |   |   |

| Species Name                         | Synonym                                | Common Name                | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|--------------------------------------|--|----------------------------|--|---|---|--|---|---|---|
| Hymenopappus filifolius              |  | fineleaf hymenopappus      |  | ■   |   |  |   |   |   |
| Iva axillaris                        |  | povertyweed                |  |   | ■                                       |  |   |   |   |
| Lesquerella montana                  |  | mountain bladderpod        |  |   | ■                                       |  |   |   |   |
| Leucelene ericoides                  | Chaetopappa ericoides                  | rose heath                 |  | ■   |   |  |   |   |   |
| Leucocrinum montanum                 |  | common starlily            |  | ■   |   |  |   |   |   |
| Liatris punctata                     |  | Kansas gayfeather          | ■  | ■   | ■                                       | ■  |   |   |   |
| Lithospermum spp.                    |  | puccoon                    | ■  |   |   |  |   |   |   |
| Lomatium orientale                   |  | Northern Idaho biscuitroot |  |   | ■                                       |  |   |   |   |
| Mentha arvensis                      |  | wild mint                  |  |   |   |  | ■   | ■   |   |
| Mertensia lanceolata                 |  | prairie bluebells          |  |   | ■                                       |  |   |   |   |
| Musineon divaricatum                 |  | leafy wildparsley          |  |   |   | ■  |   |   |   |
| Oenothera howardii                   | O. jamesii                             | Howard's evening-primrose  |  |   | ■                                       | ■  |   |   |   |
| Oenothera villosa                    | Oenothera strigosa                     | hairy evening-primrose     |  |   | ■                                       |  |   |   |   |
| Oligosporus dracunculus ssp. glaucus | Artemisia dracunculus ssp. glaucus     | wild tarragon              |  |   | ■                                       |  |   |   |   |
| Onosmodium molle ssp. occidentale    | Onosmodium bejariense var. occidentale | western marbleseed         |  | ■   | ■                                       |  |   |   |   |

| Species Name                      | Synonym             | Common Name                | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|-----------------------------------|---------------------|----------------------------|--|---|---|--|---|---|---|
| Oxalis dillenii                   |                     | slender yellow woodsorrel  | ■  | ■   |   |  |   |   |   |
| Oxybaphus linearis                | Mirabilis linearis  | narrowleaf four o' clock   | ■  |   | ■                                       |  |   |   |   |
| Oxytropis sericea                 |                     | white locoweed             |  | ■   | ■                                       |  |   |   |   |
| Paronychia jamesii                |                     | James' nailwort            |  |   | ■                                       | ■  |   |   |   |
| Penstemon angustifolius           |                     | broadbeard beardtongue     |  |   | ■                                       |  |   |   |   |
| Penstemon secundiflorus           |                     | sidebells penstemon        |  |   |   | ■  |   |   |   |
| Penstemon spp.                    |                     | beard-tongue               |  |   | ■                                       |  |   |   |   |
| Penstemon strictus                |                     | Rocky Mountain penstemon   |  | ■   |   |  |   |   |   |
| Psoralidium tenuiflorum           | Psoralea tenuiflora | slimflower scurfpea        |  | ■   |   |  |   |   |   |
| Ratibida columnifera              |                     | upright prairie coneflower | ■  |   |   |  |   |   |   |
| Senecio integerrimus              |                     | lambstongue ragwort        | ■  | ■   |   |  |   |   |   |
| Sphaeralcea coccinea              |                     | scarlet globemallow        |  | ■   |   |  |   |   |   |
| Tithymalus brachyceras            | Tithymalus montanus | horned spurge              |  | ■   |   |  |   |   |   |
| Vicia americana                   |                     | American vetch             |  |   |   |  |   |   |   |
| <b>Introduced Perennial Forbs</b> |                     |                            |  |   |   |  |   |   |   |
| Asparagus officinalis             |                     | garden asparagus           |  |   |   |  |   | ■   |   |
| Breca arvensis                    | Cirsium arvense     | Canada thistle             |  |   |   |  | ■   |   |   |

| Species Name   | Synonym   | Common Name                         | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|--|---|-------------------------------------|--|---|---|--|---|---|---|
| <i>Convolvulus arvensis</i>                                |   | field bindweed                      |  |   |   |  |   |   | ■   |
| <i>Medicago sativa</i>                                     |   | alfalfa                             |  |   |   |  |   |   | ■   |
| <i>Rumex crispus</i>                                       |   | curly dock                          |  |   |   |  |   |   | ■   |
| <i>Taraxacum officinale</i>                                |   | common dandelion                    |  |   |   |  |   |   | ■   |
| <b>Native Perennial Cool Season Grasses and Grass Like</b> |   |                                     |  |   |   |  |   |   |   |
| <i>Achnatherum hymenoides</i>                              | <i>Oryzopsis hymenoides</i> , <i>Stipa hym.</i>                     | Indian ricegrass                    |  | ■   | ■                                       | ■  |   |   |   |
| <i>Carex pensylvanica</i> ssp. <i>heliophila</i>           | <i>Carex heliophila</i> , <i>Carex inops</i> ssp. <i>heliophila</i> | sun sedge                           |  |   | ■                                       |  |   |   |   |
| <i>Carex praegracilis</i>                                  |   | silver sedge, clustered field sedge |  |   |   |  | ■   |   |   |
| <i>Critesion jubatum</i>                                   | <i>Hordeum jubatum</i>  | foxtail barley                      |  |   |   |  | ■   |   |   |
| <i>Eleocharis palustris</i>                                | <i>Eleocharis macrostachya</i>                                      | common spikerush                    |  |   |   |  | ■   |   |   |
| <i>Elymus longifolius</i>                                  | <i>Sitanion longifolium</i>   | squirreltail                        |  |   |   | ■  |   |   |   |
| <i>Elymus trachycaulus</i>                                 | <i>Agropyron trachycaulum</i>                                       | slender wheatgrass                  |  | ■   |   | ■  |   |   |   |
| <i>Festuca saximontana</i>                                 |   | Rocky Mountain fescue               |  | ■   |   |  |   |   |   |
| <i>Hesperostipa comata</i>                                 | <i>Stipa comata</i>   | needle and thread                   | ■  | ■   | ■                                       | ■  |   |   |   |
| <i>Juncus arcticus</i> ssp. <i>ater</i>                    | <i>Juncus balticus</i>  | Baltic rush                         |  |   |   |  | ■   |   |   |
| <i>Koeleria macrantha</i>                                  | <i>Koeleria gracilis</i>  | prairie Junegrass                   | ■  | ■   | ■                                       | ■  |   |   |   |

| Species Name                                       | Synonym  | Common Name        | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|--|--|--------------------|--|---|---|--|---|---|---|
| <i>Nassella viridula</i>                           | <i>Stipa viridula</i>  | green needlegrass  |  |   |   | ■  |   |   |   |
| <i>Pascopyrum smithii</i>                          | <i>Agropyron smithii</i>                                       | western wheatgrass | ■  | ■   | ■                                       | ■  |   |   |   |
| <i>Poa compressa</i>                               |  | Canada bluegrass   |  |   |   |  | ■   |   |   |
| <i>Poa secunda</i>                                 | <i>P. ampla</i> , <i>P. juncifolia</i>                         | Sandberg bluegrass |  | ■   |   |  |   |   |   |
| <i>Schoenoplectus lacustris</i> ssp. <i>creber</i> | <i>Scirpus validus</i> , <i>Schoenoplectus tabernaemontani</i> | softstem bulrush   |  |   |   |  | ■   |   |   |
| <i>Schoenoplectus pungens</i>                      | <i>Scirpus pungens</i> , <i>S. americanus</i>                  | common threesquare |  |   |   |  | ■   |   |   |
| <b>Introduced Perennial Cool Season Grasses</b>    |  |                    |  |   |   |  |   |   |   |
| <i>Agropyron desertorum</i>                        | <i>A. cristatum</i>  | crested wheatgrass |  |   |   |  |   |   | ■   |
| <i>Agrostis gigantea</i>                           | <i>A. alba</i>   | redtop             |  |   |   |  |   |   | ■   |
| <i>Bromopsis inermis</i>                           | <i>Bromus inermis</i>  | smooth brome       |  |   |   |  | ■   | ■   | ■   |
| <b>Native Perennial Warm Season Grasses</b>        |  |                    |  |   |   |  |   |   |   |
| <i>Andropogon gerardii</i>                         |  | big bluestem       |  | ■   | ■                                       | ■  |   |   |   |
| <i>Aristida purpurea</i>                           |  | purple threeawn    | ■  | ■   | ■                                       | ■  |   |   |   |
| <i>Bouteloua curtipendula</i>                      |  | sideoats grama     |  | ■   | ■                                       | ■  |   |   |   |
| <i>Buchloe dactyloides</i>                         | <i>Bouteloua dactyloides</i>                                   | buffalograss       |  |   |   | ■  |   |   |   |
| <i>Chondrosium gracile</i>                         | <i>Bouteloua gracilis</i>                                      | blue grama grass   |  | ■   | ■                                       | ■  |   |   |   |
| <i>Muhlenbergia montana</i>                        |  | mountain muhly     |  |   | ■                                       |  |   |   |   |

| Species Name                          | Synonym                            | Common Name            | Western Wheatgrass Herbaceous Alliance (WWH) | Soapweed Yucca Evergreen Shrubland (SYSH) | Big Bluestem Herbaceous Alliance (BBYH) | Needle-and-thread Blue Grama Herbaceous Alliance (NTH) | Baltic Rush Seasonally Flooded Herbaceous Alliance (BRSH) | Eastern Cottonwood Temporarily Flooded Woodland Alliance (ECTW) | Perennial Forb Disturbance Community (PFDC) |
|---------------------------------------|------------------------------------|------------------------|--|---|---|--|---|---|---|
| Schizachyrium scoparium               | Andropogon scoparium               | little bluestem        |  |   | ■                                       |  |   |   |   |
| Sporobolus cryptandrus                |                                    | sand dropseed          |  |   | ■                                       |  |   |   |   |
| <b>Native Shrubs and Subshrubs</b>    |                                    |                        |  |   |   |  |   |   |   |
| Padus virginiana ssp. melanocarpa     | Prunus virginiana ssp. melanocarpa | black chokecherry      |  |   |   |  |   | ■   |   |
| Prunus americana                      |                                    | American plum          |  |   |   |  |   | ■   |   |
| Artemisia frigida                     |                                    | prairie sagewort       | ■  | ■   | ■                                       | ■  |   |   |   |
| Gutierrezia sarothrae                 |                                    | broom snakeweed        |  |   | ■                                       | ■  |   |   |   |
| <b>Native Trees</b>                   |                                    |                        |  |   |   |  |   |   |   |
| Negundo aceroides                     | Acer negundo                       | box elder              |  |   |   |  |   | ■   |   |
| Populus deltoides ssp. monilifera     |                                    | plains cottonwood      |  |   |   |  | ■   | ■   |   |
| Salix amygdaloides                    |                                    | peachleaf willow       |  |   |   |  |   | ■   |   |
| <b>Introduced Trees</b>               |                                    |                        |  |   |   |  |   |   |   |
| Elaeagnus angustifolia                |                                    | Russian olive          |  |   |   |  |   | ■   |   |
| <b>Native Succulants and Agavoids</b> |                                    |                        |  |   |   |  |   |   |   |
| Echinocereus viridiflorus             |                                    | nylon hedgehog cactus  |  |   | ■                                       |  |   |   |   |
| Opuntia fragilis                      |                                    | brittle pricklypear    |  |   | ■                                       |  |   |   |   |
| Opuntia macrorhiza                    |                                    | twistspine pricklypear |  |   |   | ■  |   |   |   |
| Opuntia polyacantha                   |                                    | plains pricklypear     |  | ■   | ■                                       | ■  |   |   |   |

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|--------------|---------|----------------|--|---|---|--|---|---|---|
| Yucca glauca |         | soapweed yucca |  | ■   | ■                                       |  |   |   |   |



**APPENDIX C**  
**REFERENCES**



## **APPENDIX C**

### **REFERENCES**

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**Photo 1** - View east from northwest corner.



**Photo 2** - View south from northwest corner.

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**Photo 3** - Wet meadow and farmstead area in northwest corner of property.



**Photo 4** - Pond and riparian area north of farmstead area.

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**Photo 5** - View south from north-central portion of property.



**Photo 6** - View southeast from north-central portion of property.

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**Photo 7** - View northeast from north-central portion of property.



**Photo 8** - Silver Lake Ditch in north-central portion of property.

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**Photo 9** - Silver Lake Ditch from north boundary, looking southeast.



**Photo 10** - North property boundary from bluff, looking west.

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**Photo 11** - View southeast along bluff from north boundary.



**Photo 12** - View of northeast corner area.

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**Photo 13** - View of trail and fence line crossing the northeast corner area.



**Photo 14** - Ditch blowout (repaired) near east property boundary.

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**Photo 15** - Repaired ditch blowout.



**Photo 16** - View north along east property boundary.

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**Photo 17** - View south along east property boundary.



**Photo 18** - View northwest from near the east boundary.

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**Photo 19** - View of property corner fence along south boundary.



**Photo 20** - View east along south boundary fence.

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**Photo 21** - View of farmstead area from property corner.



**Photo 22** - View west from property corner near farmstead.

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**Photo 23** - View south along east boundary in west portion of property.



**Photo 24** - Rock outcrop in west portion of property, looking south.

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**Photo 25** - Riparian corridor in west portion of property, looking west.



**Photo 26** - Rock outcrop and riparian area in west portion of property, looking east.

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**Photo 27** - View north from near the south corner of west portion of property.



**Photo 28** - View of southeast corner, west portion of property.

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**Photo 29** - View north along west boundary.



**Photo 30** - View of riparian corridor from west boundary, looking east.

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**Photo 31** - View of farmstead area and fence line from west boundary, looking east.



**Photo 32** - View of north along west boundary.