

**RAPID RESOURCE ASSESSMENT
AND MANAGEMENT PLAN
OASIS DIRECT SEVEN 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 26, 2008

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SUMMARY

OASIS DIRECT SEVEN PROPERTY		
APPROXIMATE SIZE	ACQUISITION DATE	CURRENT ZONING
71 acres	November 28, 2001	Agricultural
MANAGEMENT DESIGNATION	PUBLIC ACCESS	
Agricultural Area	Closed	

GENERAL DESCRIPTION OF SITE RESOURCES

The property consists of gently rolling terrain dominated by fallow agricultural land. The James Ditch and its associated riparian corridor cross the northeast corner. Most of the property is vegetated with nonnative grasses and noxious weeds. Two small areas on the east and south sides of the property support small but active prairie dog colonies, while the remainder of the property shows evidence of prairie dog use in recent years.

OPEN SPACE VALUES BASED ON RESOURCE ASSESSMENT

The property is important for open space because it maintains—

- Riparian and wildlife habitat along the James Ditch corridor
- Potential for agricultural management
- Open space conservation in an increasingly developing area

MANAGEMENT ISSUES BASED ON RESOURCE ASSESSMENT

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

- Most of the property is in particularly poor condition and is dominated by non-native species
- Major noxious weed infestations include large patches of Canada thistle and musk thistle

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 71-acre Oasis Direct Seven 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 4, 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 71 acres characterized by fallow agricultural land.

LOCATION AND ACCESS

The property is located in central Boulder County about 11 miles northeast of downtown Boulder (Figure 1). Specifically, the property is located in Section 2 in Township 2 North, Range 70 West of the 6th P.M. (Figure 2).

Primary access is from north 65th Street along the western edge of the property. From downtown Boulder, travel north on Highway 36, turning right onto Saint Vrain Road. Follow Saint Vrain Road east to north 65th Street. The northwest corner of the property is located on the east side of 65th Street about a ½ mile south of Saint Vrain Road.

Access to the property is through a gate on the western edge of the property, along 65th Street. Emergency access would be from the same point.

ACQUISITION

The City of Boulder acquired the Oasis Direct Seven Property in a joint purchase with Boulder County on November 28, 2001. The total price for 71 acres was \$1,425,000, split between the city of Boulder and Boulder County (\$712,500 each). The City and County each conveyed to each other a conservation easement over their respective ownership interests in the property.

LAND USE

The property was used for agriculture, including haying, irrigated pasture, and grazing, but it has not been managed for agricultural use since its purchase by OSMP, and is currently managed by OSMP as undeveloped open space land until resources become available to restore agricultural activities. There is currently no grazing or active management. Under previous ownership, the property had been re-contoured to facilitate development. This included the filling in of a wet

meadow area and the construction of a pond. Prior to the City’s purchase in 2001, most of the property was re-contoured to resemble natural conditions.

LANDSCAPE CONTEXT

The property is located in rural Boulder County, and is surrounded primarily by agricultural lands and rural residential areas. The St. Vrain Creek corridor is located about one mile to the northeast, while the Longmont Airport and nearby subdivisions are about 2 miles east of the property.

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
C L D Llc. 6880 St. Vrain Rd. (7088 Indian Peaks Tr.; Boulder, CO 80301) Parcel No. 131702000029	North of property Agriculture – farm/rural residence Owner exploring possibility of NUPUD on 40 acres and an additional residence
Douglas, Mia & Martha A & Douglass, Johansen 10760 N. 65 th St. Longmont, CO 80503 Parcel No. 131702000010	North of property Single family rural residence
Miller Stephen M M D. & Wasson, Maria O. 10594 N. 65th St. Longmont, CO 80503-9073 Parcel No. 131702000012	South of property Agriculture – farm/rural residence
Pinkard, Denise S 10522 N. 65 th St. Longmont, CO 80503-9073 Parcel No. 131702000013	South of property Agriculture – farm/rural residence
Miller, Stephen M. 6928 St. Vrain Rd Longmont, CO 80503 Parcel No. 131702007003 <i>AFU Conservation Easement (Bayne NUPUD Outlot)</i>	East of property Agriculture

Miller, Stephen M. 6928 St. Vrain Rd. Longmont, CO 80503 Parcel No. 131702007001 (Bayne NUPUD)	East of property Vacant PUD lots
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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

Elevations on the property range from about 5,160 feet in the northwest corner to about 5,130 feet along the eastern boundary. 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 upper 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 VaB. Valmont clay loam (1 to 3 percent slopes). This soil includes small areas of Valmont cobbly clay loam and Nunn clay loam. The surface layer is about 9 inches of clay loam and the subsoil is about 6 inches of clay that grades into limy clay loam about 14 inches thick. Runoff is medium and the erosion hazard is moderate. Principal native vegetation is blue grama, western wheatgrass, and cactus

Mapping Unit VcE. Valmont cobbly clay loam (5 to 25 percent slopes). This soil includes small areas of Valmont cobbly clay loam (1 to 5 percent slopes) and a few areas of shale or sandstone underlying gravelly and cobbly soil. Runoff is medium to rapid and the erosion hazard is moderate to high. Native vegetation is blue grama, western wheatgrass, and cactus

Mapping Unit RnD. Renohill silty clay loam (3 to 9 percent slopes). This soil includes small areas of Gaynor silty clay loam, Samsil clay, and Renohill silty clay loam. In a few places this

soil has scattered gravel and cobbles on the surface. Native vegetation consists of western wheatgrass, green needlegrass, blue grama and scattered big sagebrush.

HYDROLOGY

SURFACE HYDROLOGY

No mapped streams or drainages are located on the property. The property is not located within a designated floodplain. However, the property does lie in a drainage channel that historically conveyed elevated surface flows from adjacent lands to the west to the southeast.

According to topographic information from the USGS 7.5 minute quadrangle map, surface water on the property flows southeast towards Dry Creek (USGS 1968, photorevised 1979). The James Ditch crosses the northeastern edge of the property from north to south.

SUBSURFACE HYDROLOGY

Based on a review of the USGS Hygiene quadrangle, shallow ground water would flow in a southeasterly direction towards the Dry Creek drainage (USGS 1968, photorevised 1979). There is one water wells on the property (CDWR 2008), which is described below under *Water Rights*. No seeps or springs were identified on the property. Prior to the City's purchase, a spring existed near the center of the property, but was subsequently buried when the pond was constructed as part of an earlier development plan.

WETLANDS

Potential wetlands were observed in the southeastern corner of the property in a lowland swale area, and a small fringe of wetlands (approximately 1 foot on each side of the bank) were found adjacent to James Ditch. Dominant vegetation in this area included Nebraska sedge (*Carex nebrascensis*), clustered field sedge (*Carex praeegracilis*), and Baltic rush (*Juncus articus* ssp. *ater*).

A wet meadow wetland formerly existed on the property, but was buried and disturbed prior to OSMP ownership.

VEGETATION

GENERAL VEGETATION DESCRIPTION

Most of the property is former agricultural crop land that has been disturbed and re-seeded as part of a prior development plan. The property is currently in a disturbed state and is dominated by non-native vegetation. Vegetation communities are described below and shown in Figure 5. A list of plant species identified during the field visit appears in Appendix B.

DISTURBED CULTIVATED AGRICULTURAL PASTURE (DCAP)

The property at one time was cultivated agricultural pasture. Species that occupy disturbed areas dominate the property. Introduced annual/biennial forbs such as smallflowered alyssum (*Alyssum parviflorum*), littlepod false flax (*Conyza canadensis*), musk thistle (*Carduus nutans* ssp. *macrolepis*), and burning-bush (*Bassia sieversiana*) are the most dominant species. Some introduced annual grasses such as cheatgrass (*Anisantha tectorum*) and Japanese brome (*Bromus*

japonicus) are present. Introduced perennial forbs such as Canada thistle (*Brea arvensis*) and field bindweed (*Convolvulus arvensis*) are dominant in patches throughout the property.

CANADA THISTLE WEED FORB GREAT PLAINS HERBACEOUS VEGETATION (CTH)

One very large patch of Canada thistle was mapped in the property. This patch is also dominated by musk thistle.

SMOOTH BROME SEMI-NATURAL HERBACEOUS ALLIANCE (SBH)

In the northern portion of the property smooth brome (*Bromopsis inermis*) is encroaching. Other introduced perennial cool season grasses such as tall fescue (*Festuca arundinacea*) and orchard grass (*Dactylis glomerata*) are present within this alliance.

NEBRASKA SEDGE SEASONALLY FLOODED HERBACEOUS ALLIANCE (NSH)

In the southeastern corner of the property a small patch of Nebraska sedge is present. Other species in this community type include clustered field sedge and Baltic rush.

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. Habitat for rare plants is limited due to the disturbed state of the property.

STATE NOXIOUS WEEDS

Based on the site visits, four List B, and three list C noxious weed species occur on the property. Canada thistle and musk thistle are the most dominant noxious weeds on the property and were found scattered throughout the entire area. Dense patches of Canada and musk thistle were found in the south-central portion of the property and mapped on Figure 3. Russian olive was found along James Ditch in the eastern section of the property. Redstem stork’s bill was found scattered throughout the property. The heaviest infestations of redstem stork’s bill were in the northeast corner south of the prairie dog town.

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>Breea 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
field bindweed	<i>Convolvulus arvensis</i>	None	not listed	C
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

The Colorado Noxious Weed Act §§ 35-5.5-101 through 119, C.R.S. (2003) states that “List B noxious weed species are species for which the Commissioner of Agriculture, in consultation

with the state noxious weed advisory committee, local governments, and other interested parties, develops and implements state noxious weed management plans designed to stop the continued spread of these species. 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 degraded habitat for a variety of wildlife species associated with shortgrass prairie and agricultural lands in Boulder County. Large cottonwoods along the James Ditch 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 various species of raptors (described below). Small rodents that probably occur along the ditch 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 coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and raccoon. All of these species probably frequent the areas along the ditch, although coyote may be more common in open areas.

Prairie dogs. Most of the property has supported black-tailed prairie dog (*Cynomys ludovicianus*) colonies in recent years, as evidenced by extensive inactive burrows. An active colony still exists in the northeast corner of the property, while smaller colonies are currently located near the south-central boundary, and along the west boundary. Eight prairie dogs were observed during the site visit, and several others were observed on adjacent properties to the north. These areas have potential to support burrowing owl (*Athene cunicularia*).

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 does not contain any CDOW-designated wildlife habitat areas (NDIS 2008).

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 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 was used for haying, irrigated pasture and grazing prior to OSMP acquisition.

INFRASTRUCTURE

The property is bounded on all sides by barbed-wire fences. All of the fences are in good condition. Several small lateral ditches enter the property from the west side. Tile drains on the property convey groundwater to adjacent properties to the southeast.

BOULDER COUNTY COMPREHENSIVE PLAN DESIGNATIONS

The Boulder County Comprehensive Plan has identified portions of the property to be Significant Agricultural Land – Lands of Local Importance (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 evidence of public access or use was evident during the site visit.

PROPERTY INFRASTRUCTURE

STRUCTURES

No structures exist on the property.

INFRASTRUCTURE AND UTILITIES

Fences and ditches on the property are described above. Six groundwater monitoring wells are located in the western half of the property.

An overhead electric line follows the south property boundary, while other utility lines run along North 65th Street on the western edge of the property. No other utilities were observed on the property.

ROADWAYS AND TRAILS

No roadways or trails are evident on the property.

LEGAL CONSIDERATIONS

WATER RIGHTS

Purchase of the 71 acres (2001) included 30 shares of the Swede Ditch Company water and 33 units of Colorado-Big Thompson water. The water rights are valued at \$385,000.00.

According to the Colorado Division of Water Resources (CDWR 2008), there is one permitted water well on the property:

- Permitted use well, permit #21570 (permit expired)

MINERAL RIGHTS

Purchase of the property included all mineral rights, including sand, gravel, coal and oil and gas owned by seller.

EASEMENTS AND RIGHTS-OF-WAY INFORMATION

Boulder County owns a conservation easement over the City of Boulder's one-half interest in the property, while the City has an easement over the County's ownership. A prescriptive easement for the James Ditch exists in the north east portion of the property. 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 Agricultural Land – Lands of Statewide Importance

The property is also considered to have minor 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: Agricultural Area.

The location and features of the property are generally consistent with the characteristics, goals, and strategies outlined for Agricultural Areas in the OSMP Visitor Master Plan, including intensive agricultural production, potential for conflict with visitor use, 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: Closed

The property provides few, if any opportunities or amenities for public access or recreation.

The property will remain closed because it is isolated and not connected to a larger open space area, there is no visitor infrastructure, and property infrastructure is not complete. 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 is dominated by non-native species, including several large infestations of Canada thistle and musk thistle, and Russian olive along the ditch. While these noxious weed species are typical of agricultural and open space properties in the area, and size and density of noxious weeds on this property will require aggressive management to prevent their spread.

Drainage. Neighbors to the west have expressed concerns about the lack of surface water conveyance onto the property. This issue is the result of many years of changes to North 65th Street, culverts, and drainage ditches, resulting in periodic flooding of nearby properties due to heavy rain or an abundance of irrigation tailwater. Future management and restoration of the property may provide an opportunity for drainage alterations that can alleviate these problems in a manner that is consistent and compatible with open space priorities.

Grassland restoration. Most of the property consists of fallow agricultural land that is dominated by nonnative species. Prior to the City's acquisition, much of the property was graded to create luxury home sites and a pond. As part of the City's acquisition process, the pond was filled with soil and the disturbed areas were reclaimed with native seed mix, with the goal of native pasture grasses. These reclamation efforts appear to have been unsuccessful. Prairie dog occupation has

inhibited restoration efforts and has caused neighbor conflict. From a grassland standpoint, most of the property is in particularly poor condition and is vulnerable to additional weed infestations.

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.

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.

VEGETATION

Objective 1: Manage, contain, and potentially reduce the area and concentration noxious weeds from current conditions documented in the resource assessment.

Action: Implement aggressive efforts to contain and control large patches of Canada thistle, musk thistle, and other noxious weeds identified on the property.

Action: Coordinate with Boulder County for weed management along 65th Street.

Action: Monitor irrigation ditch clearing for impacts to vegetation and noxious weed spread.

Action: Provide follow-up monitoring and weed control.

Objective 2: Consider restoring the property consistent with long-term system-wide grassland management priorities and prairie dog management needs.

Action: Map noxious weed infestations on the property and identify areas of concern on adjacent properties.

Action: Revegetate large portions of the property with native species, and develop long-term strategies for monitoring and management.

Action: Consider using grazing or mowing as a prescriptive management tool to facilitate restoration efforts.

Action: Designate and manage prairie dog colony consistent with criteria in the Grassland Ecosystem Management Plan.

Objective 3: Once successful grassland restoration is achieved, 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.

AGRICULTURE

Objective 1: Lease property for irrigated hay production.

Action: Repair irrigation laterals on property.

Action: Seed property with native grasses to support agricultural management.

DRAINAGE

Objective 1: Consider re-establishing the natural surface drainage in the area in a manner that alleviates nearby flooding problems and is consistent with open space management.

Action: Work with adjacent landowners and Boulder County to develop options and opportunities for drainage changes.

Action: Evaluate compatibility of drainage changes with weed management, agricultural management, and general habitat management priorities.

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

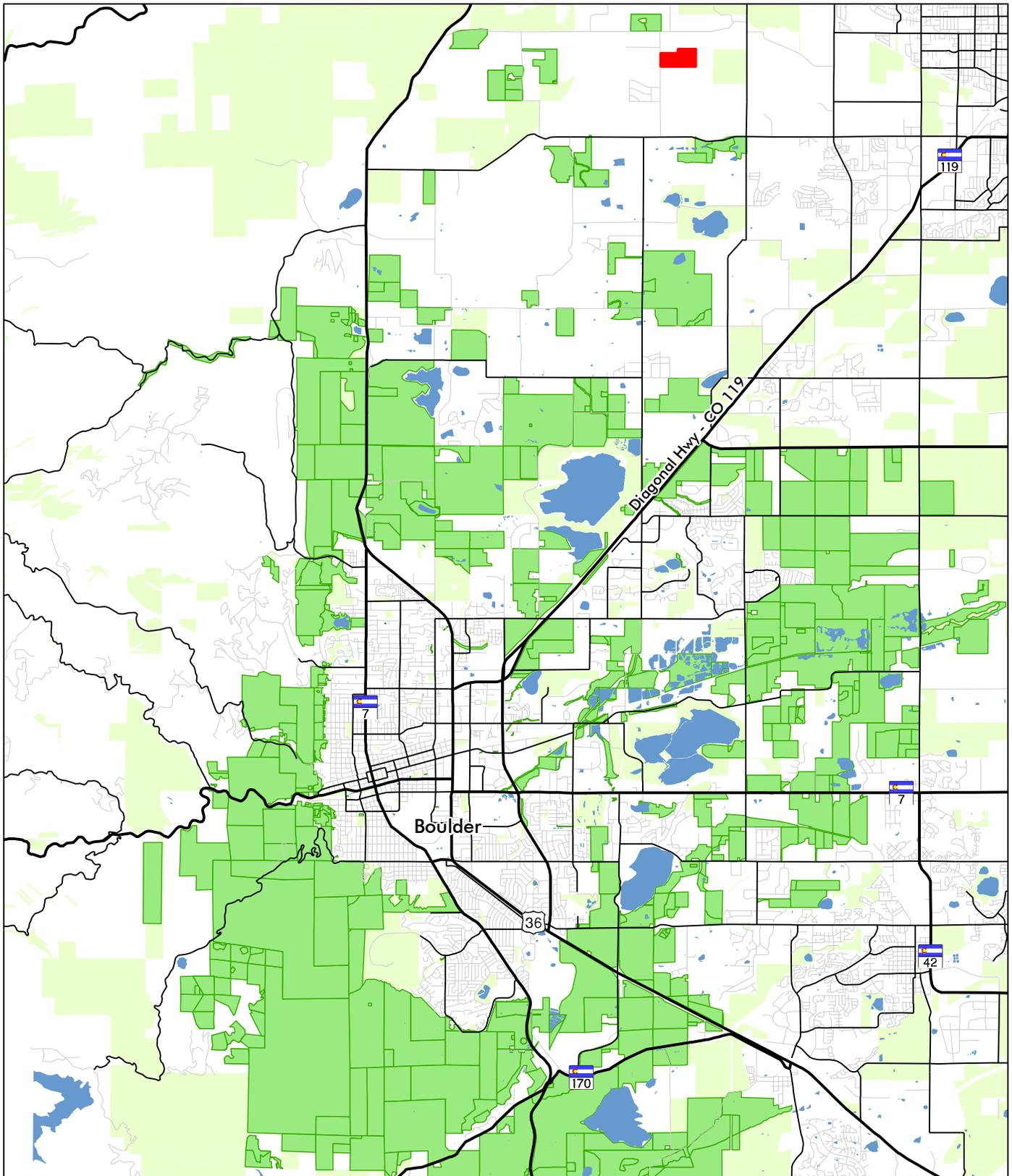
Objective 1: Work with adjacent landowners to provide consistent, sustainable management to the greater area.

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.

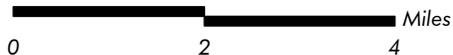
FIGURES



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Oasis Direct Seven Property RRA and Management Plan

- Oasis Direct Seven Property
- City of Boulder Open Space
- Other Open Space

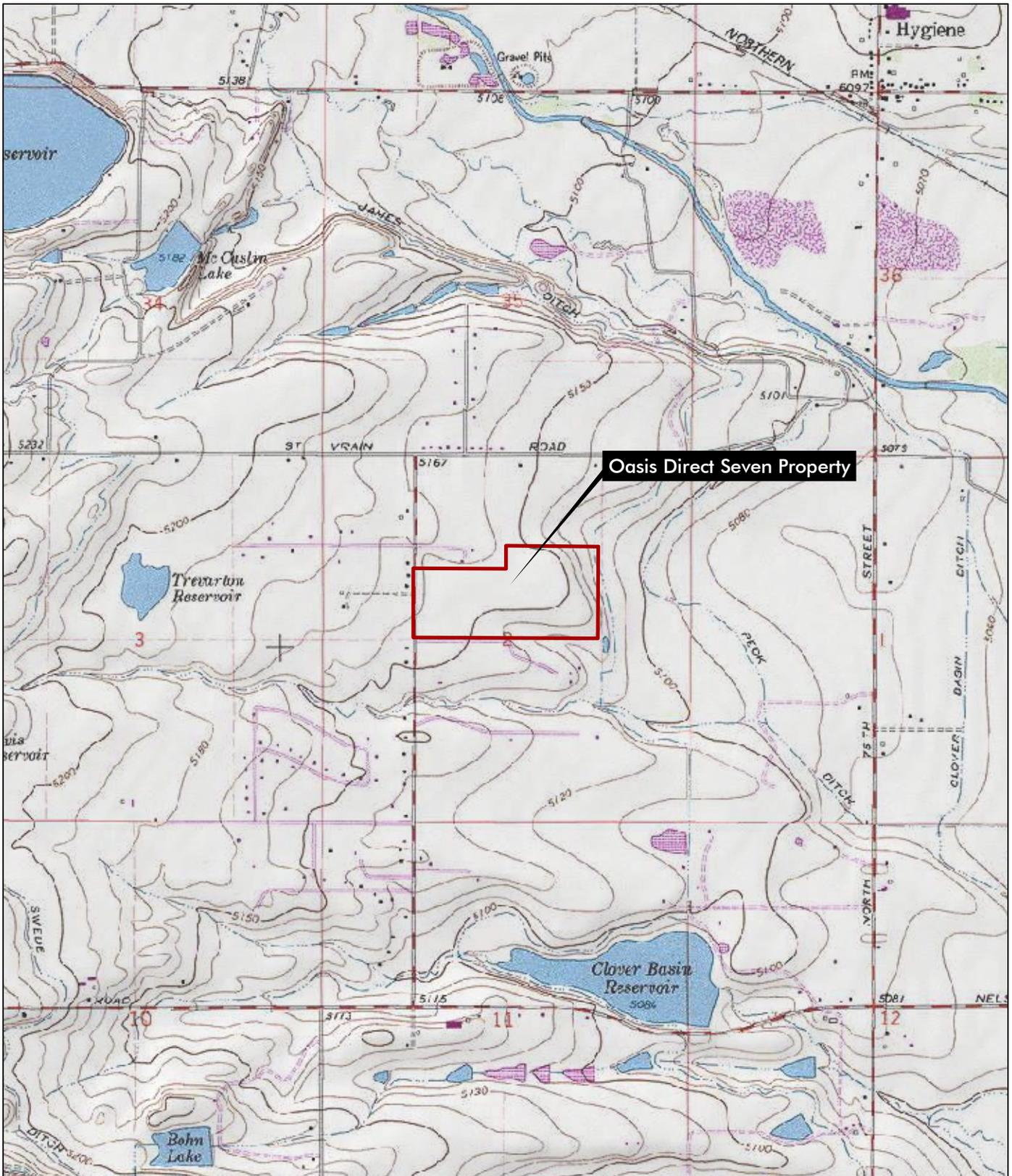


1 inch = 2 miles



**Figure 1
 Vicinity Map**

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



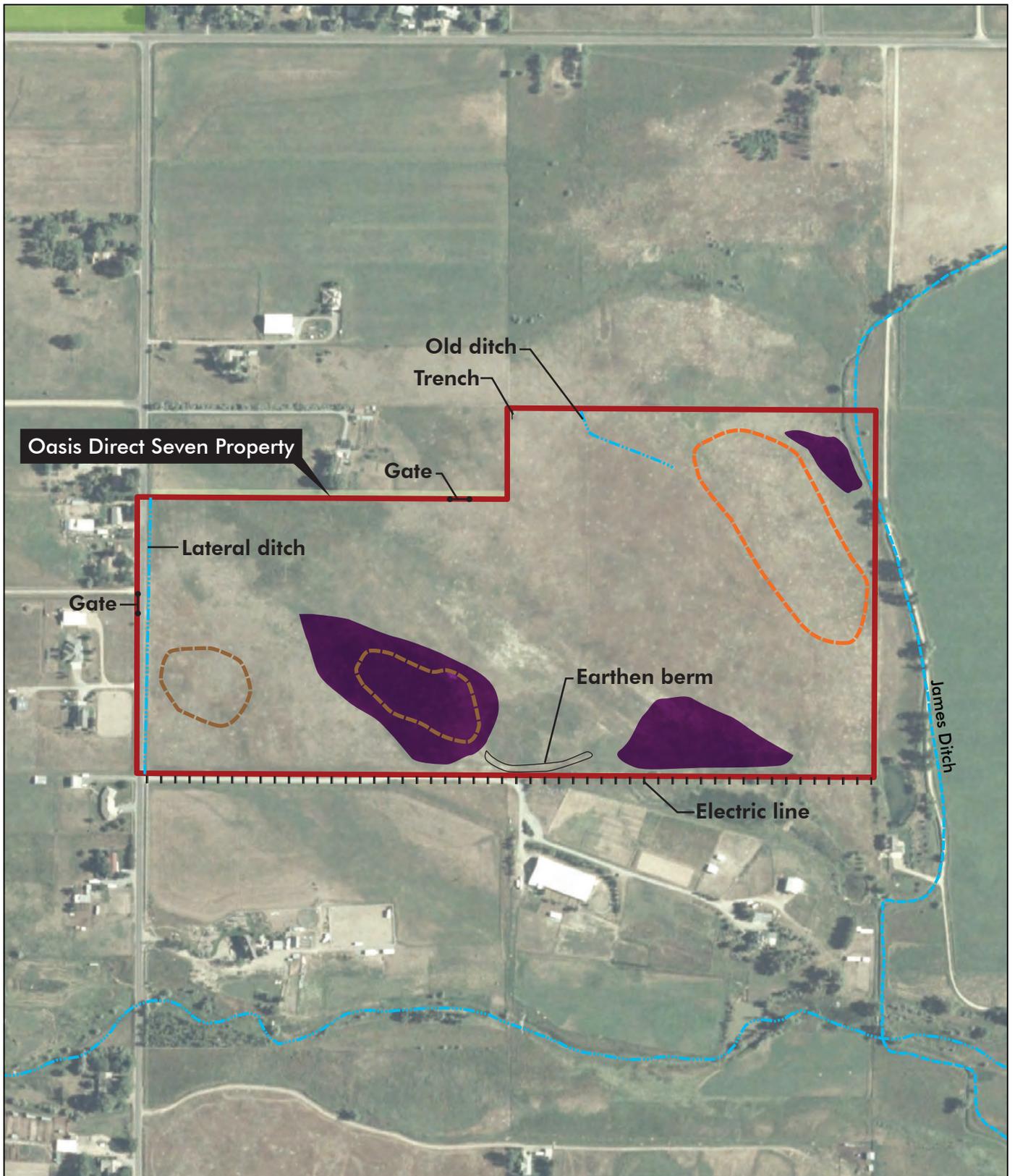
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Oasis Direct Seven Property RRA and Management Plan
 Section 2, T2N, R70W
 UTM NAD83 Coordinate Zone 13N; 483232mE, 4446488mN
 USGS Hygiene CO, Quadrangle
 Boulder County, Colorado



Figure 2
Location

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



Oasis Direct Seven Property

Old ditch

Trench

Gate

Lateral ditch

Gate

Earthen berm

Electric line

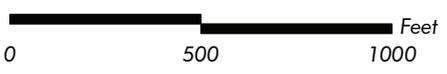
James Ditch



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Oasis Direct Seven Property RRA and Management Plan

- City of Boulder Open Space
- Weed patch
- Other Open Space
- Active prairie dog colony
- Inactive prairie dog colony

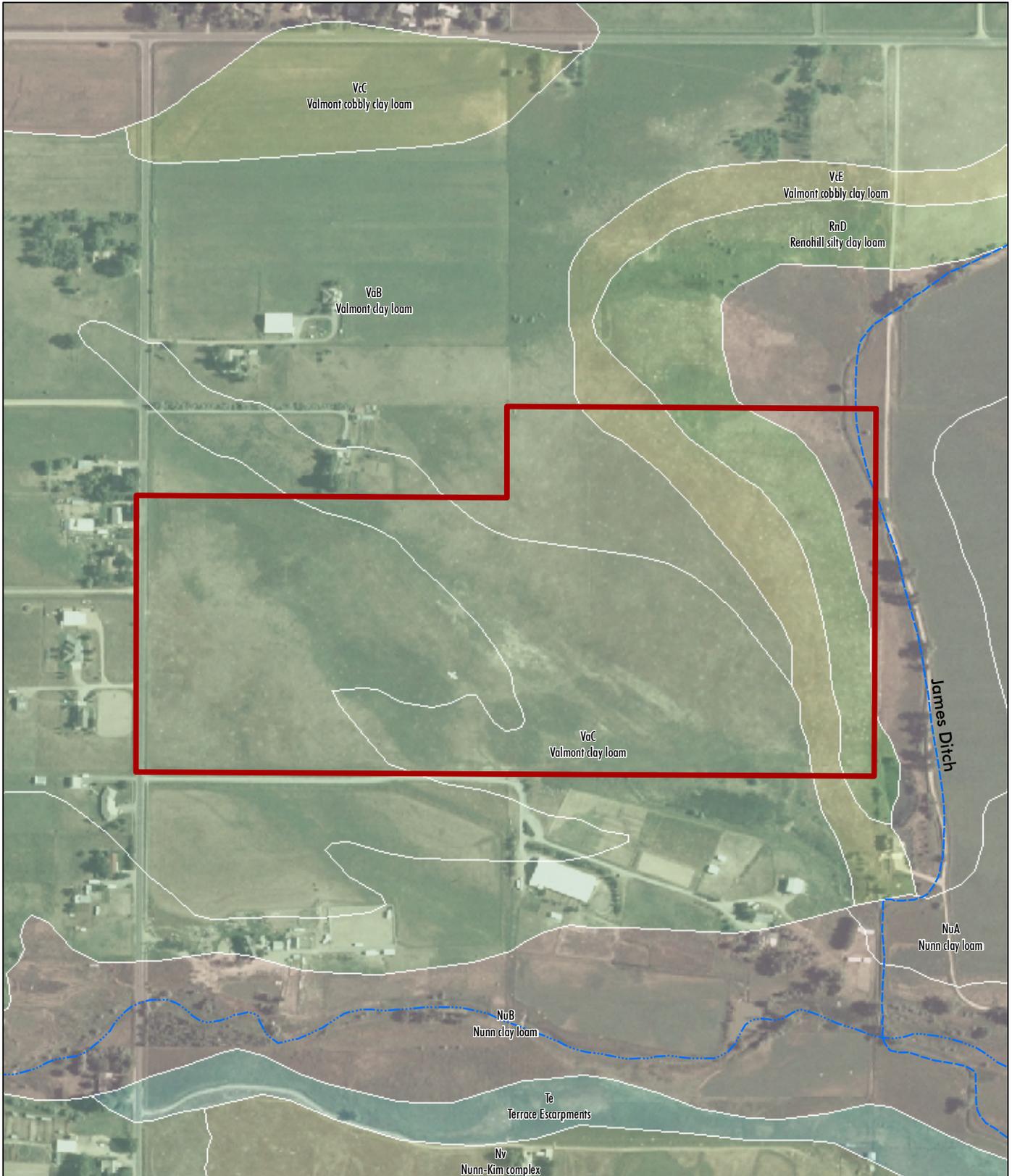


1 inch = 500 Feet



Figure 3
 Property Features

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



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Oasis Direct Seven Property RRA and Management Plan

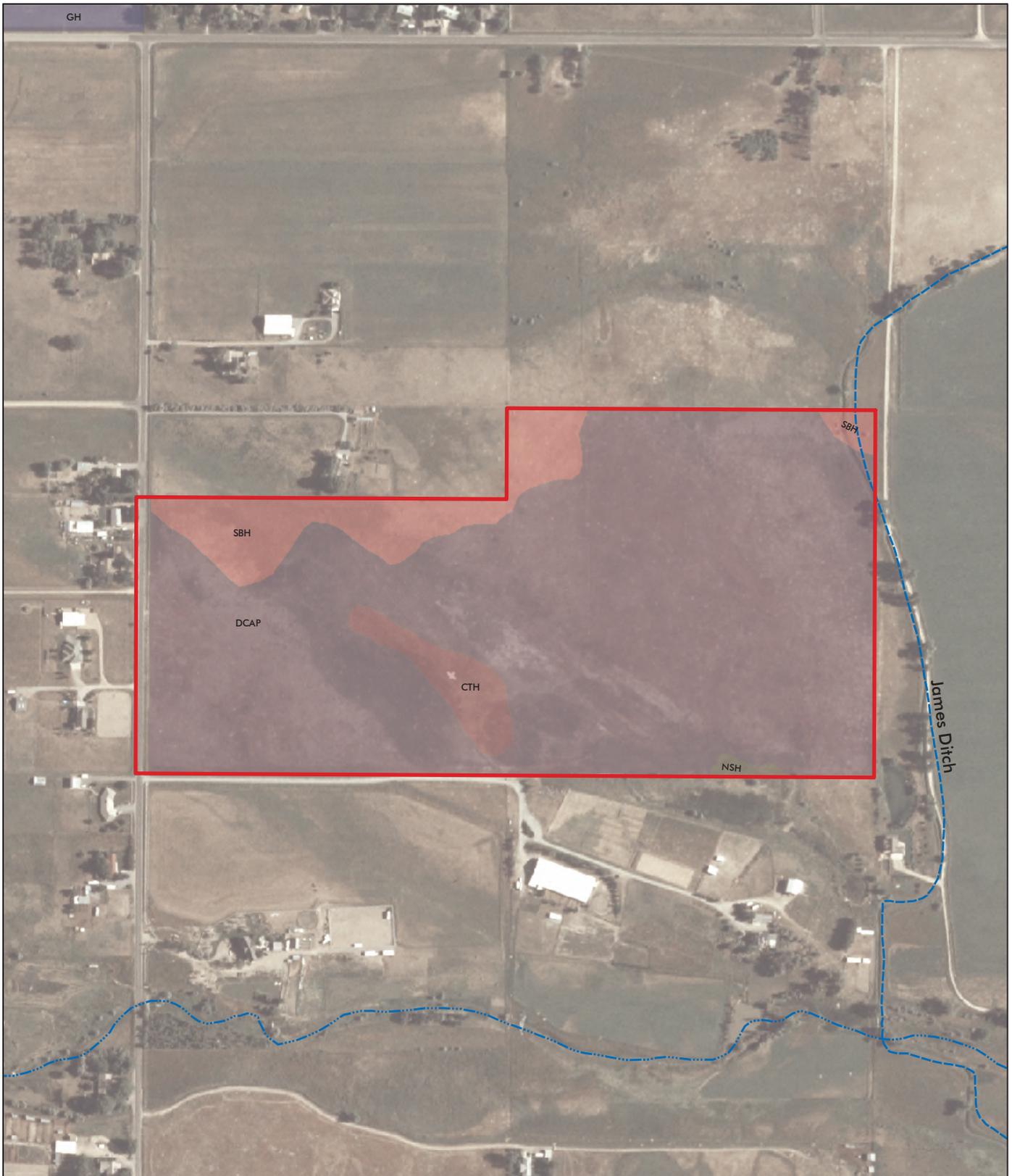


1 inch = 500 Feet



**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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Oasis Direct Seven Property RRA and Management Plan

(See following page for for vegetation community names)



1 inch = 500 Feet



**Figure 5
 Vegetation Communities**

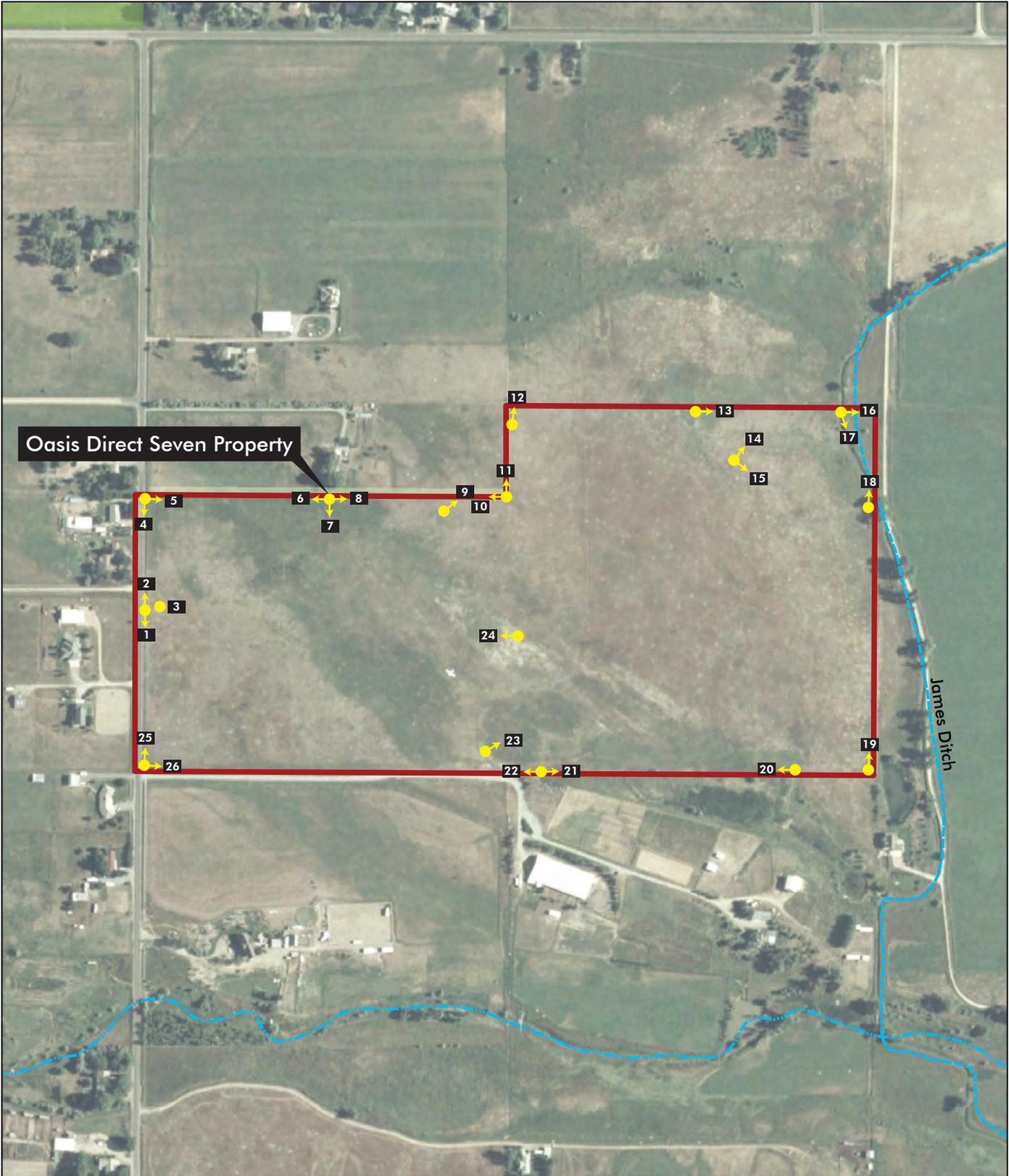
Prepared for: City of Boulder Open Space
 and Mountain Parks
 File: 4089 Figure 5.mxd
 June 2008

Vegetation Communities

Acronym, CmnName

	ADUD, Annual-dominant Upland Disturbance
	APS, American Plum Shrubland Alliance
	BBYH, Big Bluestem - (Yellow Indiangrass) Herbaceous Alliance
	BRSR, 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

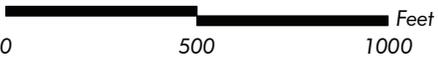
APPENDIX A
PHOTO POINT MAP AND DOCUMENTATION



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Oasis Direct Seven Property RRA and Management Plan

●➔■ Photo Point



1 inch = 500 Feet



Appendix A
 Photo Points

Prepared for: City of Boulder Open Space
 and Mountain Parks
 File: Oasis Direct Seven photo points.pdf
 July 2008

APPENDIX B
PLANT SPECIES

APPENDIX B PLANT SPECIES

Species Name	Synonym	Common Name	Smooth Brome Semi-Natural Herbaceous Alliance (SBH)	Canada Thistle Herbaceous Alliance (CTH)	Disturbed Cultivated Agricultural Pasture (DCAP)	Nebraska Sedge Herbaceous Alliance (NSH)
Native Annual/Biennial Forbs						
Cirsium undulatum		wavyleaf thistle	■			
Grindelia squarrosa		curlycup gumweed	■			■
Introduced Annual/Biennial Forbs						
Alyssum parviflorum	Alyssum simplex	smallflowered alyssum	■		■	
Arctium minus		common burdock		■		
Bassia sieversiana	Kochia scoparia, K. sieversiana	burning-bush			■	
Camelina microcarpa		littlepod false flax			■	
Carduus nutans ssp. macrolepis		nodding plumeless thistle, musk thistle		■	■	
Conyza canadensis		Canadian horseweed			■	
Erodium cicutarium		redstem stork's bill	■		■	
Lactuca serriola		prickly lettuce			■	
Melilotus officinalis		yellow sweetclover			■	
Onopordum acanthium		Scotch cottonthistle			■	
Sisymbrium altissimum		tall tumbledustard			■	

Species Name	Synonym	Common Name	Smooth Brome Semi-Natural Herbaceous Alliance (SBH)	Canada Thistle Herbaceous Alliance (CTH)	Disturbed Cultivated Agricultural Pasture (DCAP)	Nebraska Sedge Herbaceous Alliance (NSH)
Tragopogon dubius ssp. major		yellow salsify			■	
Verbascum thapsus		common mullein			■	
Introduced Annual Grasses						
Anisantha tectorum	Bromus tectorum	cheatgrass	■		■	
Native Perennial Forbs						
Ambrosia psilostachya var. coronopifolia		Cuman ragweed			■	
Asclepias speciosa		showy milkweed				
Heterotheca villosa		hairy false goldenaster			■	
Mentha arvensis		wild mint				
Oenothera villosa	Oenothera strigosa	hairy evening-primrose				
Sphaeralcea coccinea		scarlet globemallow				
Introduced Perennial Forbs						
Breea arvensis	Cirsium arvense	Canada thistle		■		■
Convolvulus arvensis		field bindweed	■	■	■	■
Medicago sativa		alfalfa			■	
Rumex crispus		curly dock			■	
Native Perennial Cool Season Grasses and Grass Like						
Carex nebrascensis		Nebraska sedge				■
Juncus arcticus ssp. ater	Juncus balticus	Baltic rush				■

Species Name	Synonym	Common Name	Smooth Brome Semi-Natural Herbaceous Alliance (SBH)	Canada Thistle Herbaceous Alliance (CTH)	Disturbed Cultivated Agricultural Pasture (DCAP)	Nebraska Sedge Herbaceous Alliance (NSH)
Pascopyrum smithii	Agropyron smithii	western wheatgrass	■			
Schoenoplectus pungens	Scirpus pungens, S. americanus	common threesquare				■
Introduced Perennial Cool Season Grasses						
Agropyron desertorum	A. cristatum	crested wheatgrass	■			
Bromopsis inermis	Bromus inermis	smooth brome	■			
Festuca arundinacea	Schedonorus phoenix	tall fescue				
Native Subshrubs						
Artemisia frigida		prairie sagewort	■			
Native Trees						
Negundo aceroides	Acer negundo	box elder		■		
Populus deltooides ssp. monilifera		plains cottonwood		■		
Salix amygdaloides		peachleaf willow		■		
Introduced Trees						
Elaeagnus angustifolia		Russian olive		■		
Native Agavoids						
Yucca glauca		soapweed yucca	■			

APPENDIX C
REFERENCES

APPENDIX C

REFERENCES

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PHOTO POINTS
OASIS DIRECT SEVEN



Photo 1 - View south from access gate along west property boundary.



Photo 2 - View north from access gate along west property boundary.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 3 - Monitoring well near access gate (similar to others).



Photo 4 - View south from northwest corner.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 5 - View east from northwest corner.



Photo 6 - View west along north boundary.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 7 - View south from north boundary.



Photo 8 - View east along north boundary.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 9 - View of access gate along north boundary.



Photo 10 - View west from property corner along north boundary.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 11 - View north towards northeast property boundary.



Photo 12 - Excavated trench in the west corner of northeast section of the property.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 13 - View east along north boundary in northeast corner of the property.



Photo 14 - Prairie dog colony in northeast corner, looking southeast.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 15 - Prairie dog colony in northeast corner, looking northeast.



Photo 16 - View of northeast property corner.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 17 - James Ditch near the northeast corner.



Photo 18 - View north along east boundary towards the northeast corner.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 19 - View north from southeast corner.



Photo 20 - View west along south property boundary, near the southeast corner.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 21 - View east showing irrigation equipment (not connected) along south property boundary.



Photo 22 - View west along south property boundary.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 23 - Berm and dry pond area in south portion of the property, looking northeast.



Photo 24 - View west from the center of the property.

PHOTO POINTS
OASIS DIRECT SEVEN



Photo 25 - View east from southwest corner.



Photo 26 - View north from southwest corner.