JOINTLY OWNED
BOULDER COUNTY-LAFAYETTE-LOUISVILLE
OPEN SPACE MANAGEMENT PLAN

covering the following properties:

ADLER/FINGRU
ADMOR
BOULDER COUNTY LAND VENTURE
BOWES
CALLAHAN
ESMAIL
MAYHOFFER (Section 15)
SCRIFFINY (Section 19)
TRILLIUM
WAREMBOURG

Adopted by:

City of Louisville- January 6, 2004
City of Lafayette- January 20, 2004
Boulder County- February 3, 2004

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SUMMARY

Spanning 950 acres in southeastern Boulder County, the Jointly Owned Boulder County-Lafayette-Louisville Open Space is an assemblage of ten protected properties that provide scenic vistas and urban buffers, preserve riparian resources, provide wildlife habitat, and ensure the continuation of agriculture in the local area. These ten properties, acquired between 1996-2001, are jointly owned by Boulder County and the Cities of Lafayette and Louisville. All ten properties are co-owned with Louisville, while Lafayette has an ownership interest in three [Adler/Fingru, Esmail, and Mayhoffer (Section 15)].

Agriculture is the dominant focus of these properties, as they are closed to the public and leased to local farm operators for the production of irrigated grass and hay, dryland crops, and livestock grazing. All of these properties have historically been farmed and are valuable production lands. All of the properties contain prime soils, when irrigated, and are considered agricultural lands of state and/or national significance. Water rights were also purchased and in many cases are permanently dedicated for use in agricultural production.

The majority of the properties are leased for haying and grazing, and as such contain mostly introduced plant species. Two of the properties contain portions of the Coal Creek riparian corridor and host assemblages of native riparian communities. Wetlands co-exist on the majority of the properties and function as important ecological resources. Weed management is an issue on all of the properties and requires planning and diligence.

Agricultural lands play an important role in supporting wildlife. These properties provide food and cover that enable agriculture and wildlife to co-exist. Two of the properties have riparian resources and serve as a significant travel and hunting corridor for area wildlife. Some of the properties contain populations of black-tailed prairie dogs (a candidate species for listing as federally threatened) and management of this species will be guided by Boulder County's *Grassland Management Plan, Prairie Dog Habitat Element*. One of the properties (Trillium) has hosted the burrowing owl, a state threatened species. Nearly all of the properties provide habitat for a number of birds, some requiring special management attention. Opportunities for wildlife and native plant enhancement will be pursued, particularly in the Coal Creek corridor.

Where appropriate and compatible, providing recreational opportunities will be pursued. The Coal Creek-Rock Creek Trail traverses one of the properties and defines recreational access in the area. Elsewhere, the properties provide opportunities to improve neighborhood access to trails and make regional trail connections.

The Cities of Louisville and Lafayette and Boulder County all recognize and acknowledge the importance of continued agricultural use of the properties. At the same time, the properties shall be managed in a manner that ensures the protection of significant plant and animal communities, including native species, wetlands and riparian areas. By embracing a good neighbor policy and maintaining positive relationships, the joint owners seek to preserve and enhance the conservation values of the area.

1.0 INTRODUCTION

From 1982 to 1997, Boulder County lost more than 80,000 acres of farmland, a 47% decline (Colorado Agricultural Statistics Service, 2000). Citizens of Boulder County have responded to this issue by embracing agricultural land preservation because they appreciate the many values and benefits that agricultural lands provide. In a recent independent survey, 89% of respondents indicated that preserving agricultural lands was important (Public Information Corporation, 2002). Preservation of these lands provides relief among growing municipalities, protects significant wildlife habitat, preserves the rural character and agricultural lifestyle of the area, and maintains viable family farms in the county.

Nestled mostly between Coal Creek and Rock Creek and the cities of Lafayette and Louisville, the Jointly Owned Boulder County-Lafayette-Louisville Open Space protects riparian corridors, productive agricultural lands, and scenic vistas. The Jointly Owned Boulder County-Lafayette-Louisville Open Space is comprised of the Adler/Fingru, Admor, Boulder County Land Venture, Bowes, Callahan, Esmail, Mayhoffer (Section 15), Scriffiny (Section 19), Trillium, and Warembourg properties. Collectively, these properties total approximately 950 acres of agricultural land and protected open space. All ten of these properties are agricultural properties and are used for production of forage as hay and grass pasture or dryland crops. For this reason, these properties lend themselves to being treated as a complex of agricultural land. However, the nature of land management planning and the attributes of specific properties dictate that each of them be assessed individually and management directions developed accordingly.

The ten properties outlined in this plan were acquired with combinations of open space sales tax and general funds from the City of Louisville, City of Lafayette, and Boulder County. All of the properties are jointly owned, with ownership interests varying among properties. The parties entered into a partnership to protect and permanently steward these important lands for current and future generations. To this end, we have undertaken the mandate of developing a management plan to aid in making decisions and guide property management over time. We wish to thank the many partners involved in protecting and planning for these properties, including the Bowes, Callahan, Mayhoffer, Scriffiny, and Warembourg Families, the City of Louisville and its citizens, the City of Lafayette and its citizens, the City and County of Broomfield and its citizens, Great Outdoors Colorado (GOCO), and all citizens of Boulder County.

1.1 Planning Process

The first step in the planning process, initiated in August 2002, consisted of the development of a planning approach and framework. Public meetings were conducted with the Lafayette and Louisville advisory boards where issues and anticipated management direction were discussed. Once the planning outline was established, the joint owners contracted the completion of Rapid Resource Assessments for eight of the ten properties. By January 2003, a preliminary draft plan was completed. A revised draft was completed in March and presented at public meetings in April and May with the Lafayette, Louisville, and County open space advisory boards. In September, a working session between the Louisville Open Space Advisory Board and the Louisville City Council was conducted to discuss issues and concerns.

Based on staff, advisory board, and public input, the plan was revised yet again and presented to each of the advisory boards for final review. In November and December, the three respective advisory boards recommended the plan for adoption with some amendments. The plan was revised accordingly and presented to the Louisville and Lafayette City Councils where they adopted the plan on January 6 and

January 20, 2004, respectively. On February 3, 2004, the Board of County Commissioners approved the plan for final adoption.

1.2 Report Organization

This plan presents a summary of the information gathered from rapid resource assessments, or baseline inventories, performed on the properties and develops management direction. The plan is divided into general information that applies to all ten of the properties and then is broken down by individual property. General information is included in *Relevant Goals and Policies, Management Goals and Protocol*, and *Landscape Setting and Physical Characteristics*. More specific information on individual properties is covered in *Property Descriptions, Resource Evaluations, and Management Direction*, where resources are documented and management direction is outlined. Appendices include additional information on relevant policies and provisions, prairie dog management, and the plan advisory team.

2.0 RELEVANT GOALS AND POLICIES

The Boulder County Comprehensive Plan, City of Louisville Municipal Code, and City of Lafayette Comprehensive Plan all outline goals and policies that are relevant to the Jointly Owned Boulder County-Lafayette-Louisville Open Space. These goals and policies are identified in *Appendix 1* and provide direction for land classification, natural resource planning and management. Relevant topics include geology, natural hazards, environmental resources, open space, and agriculture.

The Boulder County *Grassland Management Plan, Prairie Dog Habitat Element*, which was adopted by the Board of County Commissioners on May 28, 2002, provides specific guidance for maintaining appropriate habitat and for removing prairie dogs from unsuitable areas. Prairie dog management on the properties addressed in this document will be handled according to this plan. A summary of the *Grassland Management Plan, Prairie Dog Habitat Element* can be found in *Appendix 2*.

Furthermore, specific provisions from Intergovernmental Agreements (IGAs) apply to some of the properties. These provisions are summarized in *Appendix 3* and generally apply to land use restrictions or the approval of future land uses.

3.0 MANAGEMENT GOALS AND PROTOCOL

In accordance with the previously mentioned and adopted goals and policies, the common management goals for the Jointly Owned Boulder County-Lafayette-Louisville Open Space include:

- Protect unique and significant plant and animal communities, including wetlands and riparian areas.
- Maintain, improve, and promote sustainable agricultural operations.
- Restore marginally productive agricultural lands to native grasslands where feasible.
- Maintain positive relationships among the Cities, County, and neighboring landowners to facilitate cooperation and effective resource management.
- Provide appropriate passive recreational opportunities.

In order to fulfill the goals of maintaining sustainable agricultural operations (both environmentally and economically) and protecting significant natural resources, several key principles should be embraced:

- Maintain the quality of the soil resource and integrity of soil structure, including minimizing

soil loss.
- Exercise water rights and practice efficient application.
- Maintain water quality by employing effective agricultural management practices.
- Evaluate and coordinate agricultural management to enhance plant and wildlife resources.

Additional detail and direction about land management needs, opportunities, and suggested actions are addressed within the *Management Direction* component of individual property descriptions. Of particular note is the fact that any enhancements, restoration, or reclamation of non-croplands be done with native plants or species.

Many of the properties addressed in this plan have severed mineral rights, which often supercede the surface rights. Consequently, there is potential for mining or drilling to occur, subject to a permitting process. The surface owners (in this case the County and its joint owner partners, Lafayette and Louisville) should work with the mineral right owner(s) and its lessees on minimizing adverse impacts to the open space lands. In some instances, the joint owners may also want to consider purchasing the mineral right should this option exist.

Boulder County will continue to manage the subject properties in accordance with the guidance provided in this document. Routine management expenses and agricultural lease revenues shall continue to be the responsibility of the County. Non-routine costs and major capital expenditures shall be shared proportionately among the owner entities, including, but not limited to, extraordinary prairie dog management efforts, recreational facility development, irrigation conveyance system improvements, and agricultural improvements. The parties shall enter into an agreement reflecting these issues so that the language between the management plan and the existing reciprocal conservation easements is consistent and conforming.

Annual meetings should be held between the three agencies to discuss property improvements and needs. These meetings should occur prior to June 1 of each year (or another mutually agreeable schedule) in order to plan for any expenditures or other assistance that may be required in the following budget year. No major projects shall commence without approval of joint owners and without conferring with the respective advisory boards. Similarly, no financial obligation shall be levied without agreement. The joint owners shall embrace a good neighbor policy and strive to cooperate with adjacent landowners.

In many cases, water rights are jointly owned and attached to specific properties. Any transfer of jointly owned water rights related to the properties addressed in this plan shall require the consent of joint owners and shall seek to enhance irrigation on prime agricultural lands, or contribute to dedicated in stream flows. Payment of annual assessments and voting rights are described within the respective property sections.

The management plan shall be reviewed and updated every five years. Furthermore, subject to the terms of the Great Outdoors Colorado (GOCO) conservation easements on the Bowes and Warembourg properties, the management plan shall be updated every five years and submitted to the GOCO Board for approval. Should circumstances change over time that warrant management plan revisions, any one of the owner entities can propose a change at any time; however, this proposed change must be approved by all parties.

4.0 LANDSCAPE SETTING AND PHYSICAL CHARACTERISTICS

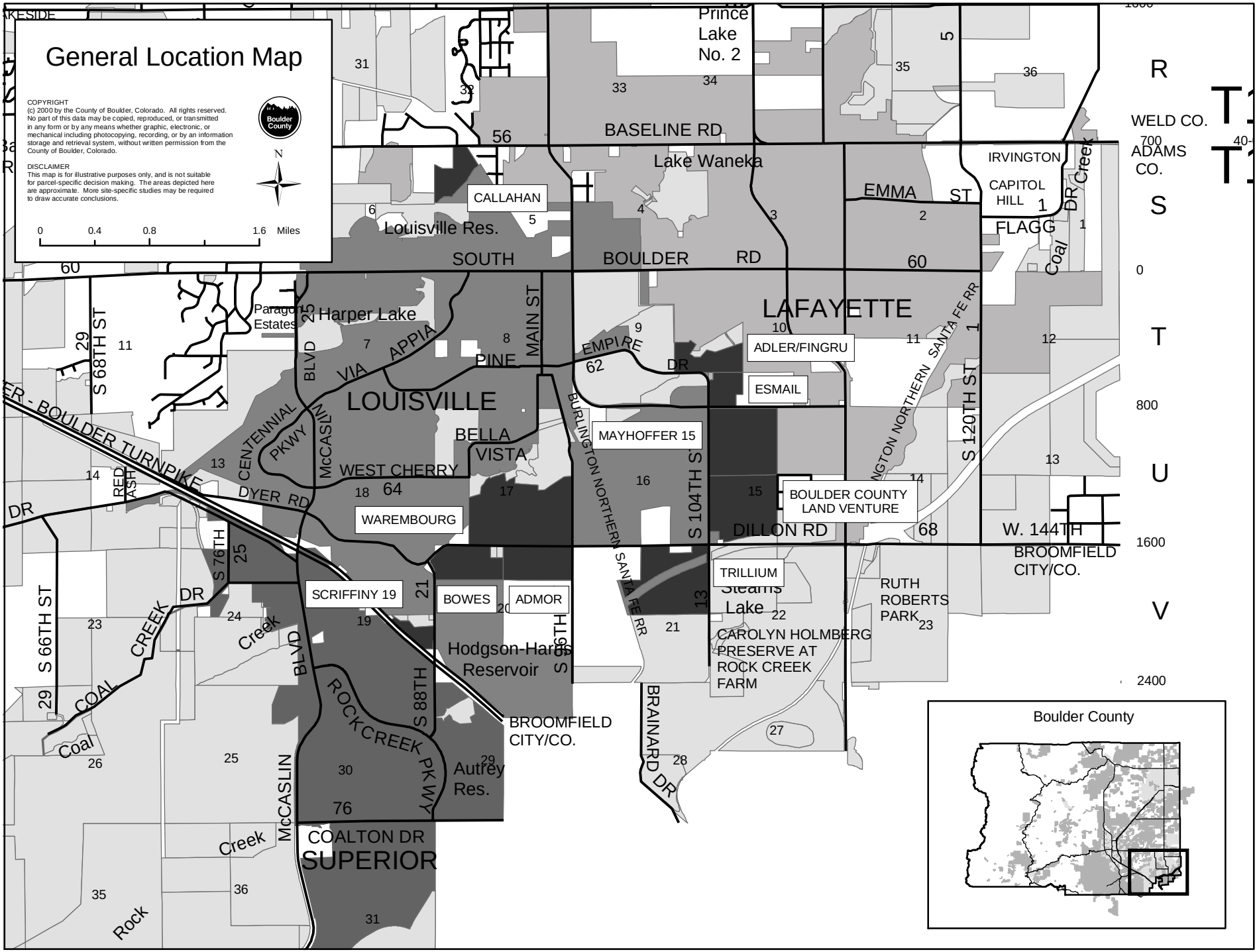
4.1 Location

Jointly Owned Boulder County-Lafayette-Louisville Open Space is located in southeastern Boulder County, Colorado, in between Coal Creek and Rock Creek and near the cities of Louisville and Lafayette. The open space complex contains ten distinct agricultural properties:

1) a 56-acre parcel referred to as the Adler/Fingru Property,
2) a 79-acre parcel referred to as the Admor Property,
3) a 141-acre parcel referred to as the Boulder County Land Venture Property,
4) a 66-acre parcel referred to as the Bowes Property,
5) a 46-acre parcel referred to as the Callahan Property,
6) a 36-acre parcel referred to as the Esmail Property,
7) a 154-acre parcel referred to as the Mayhoffer (Section 15) Property,
8) a 22-acre parcel referred to as the Scriffiny (Section 19) Property,
9) a 133-acre parcel referred to as the Trillium Property,
10) and a 216-acre parcel referred to as the Warembourg Property.

Together, these properties comprise approximately 950 acres of agricultural land and protected open space. Other descriptive locators include:

- Plains lifezone;
- Colorado Piedmont section of the Great Plains physiographic province, eight to ten miles east of the Front Range of the Southern Rocky Mountains;
- Coal Creek-Rock Creek watershed;
- In Township 1 South, Range 69 West, Sections 5, 9, 10, 15, 17, 19, 20, and 21.


General Location Map
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Boulder County
N
0 0.4 0.8 1.6 Miles
Prince Lake No. 2
BASELINE RD
Lake Waneka
CALLAHAN
Louisville Res.
SOUTH BOULDER RD
IRVINGTON
CAPITOL HILL
EMMA ST
FLAGG
DR Creek
Coal
WELD CO.
ADAMS CO.
LAFAYETTE
Paragon Estates
Harper Lake
MAIN ST
EMPIRE DR
ADLER/FINGRU
ESMAIL
SANTA FE RR
S 120TH ST
LOUISVILLE
PINE
VIA APPIA
BLVD
S 68TH ST
CENTENNIAL PKWY
McCASLIN
BELLA VISTA
WEST CHERRY
DYER RD
MAYHOFFER 15
BURLINGTON NORTHERN SANTA FE RR
S 104TH ST
BOULDER COUNTY LAND VENTURE
DILLON RD
W. 144TH
BROOMFIELD CITY/CO.
WAREMBOURG
RED ASH
DR
S 76TH
SCRIFFINY 19
BOWES
ADMOR
TRILLIUM
Steams Lake
RUTH ROBERTS PARK
CAROLYN HOLMBERG PRESERVE AT ROCK CREEK FARM
S 66TH ST
COAL CREEK
Hodgson-Harris Reservoir
S 88TH ST
ROCK CREEK PKWY
BROOMFIELD CITY/CO.
BRAINARD DR
Autrey Res.
COALTON DR
SUPERIOR
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Boulder County

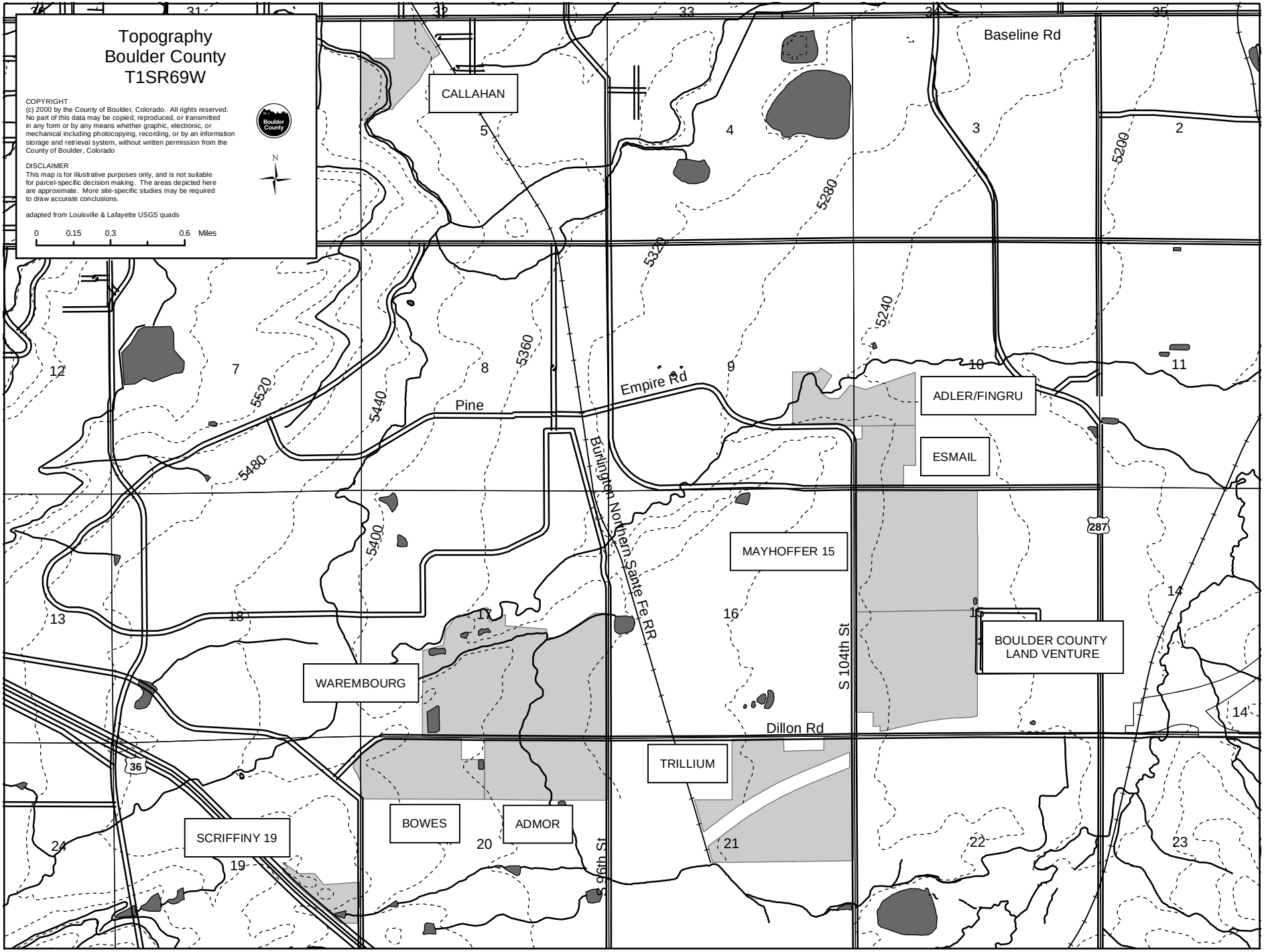
4.2 Climate

With an average elevation of 5,370 feet, the climate of the Louisville/Lafayette area can be described as a high plains, continental climate, with light rainfall and low humidity. The climate is modified considerably from that expected of a typical high plains environment because of the nearby mountains. Winds are channeled from the Continental Divide down the Front Range and can be severe. Prevailing winds are generally from the west.

The average high temperature in July is 88°F, and the average low temperature in January is 14°F (Weatherbase, 2002). Annual precipitation averages 16 inches. Relative humidity is about 30-35 % in summer and about 40-50% in winter. Periods of drought are frequent, usually occurring in the fall and winter. The length of the growing season is approximately 140 days, with the average date of the first killing frost being September 28. The last killing frost occurs around May 11 (USDA, 1975).

4.3 Topography

The area lies within the plains lifezone, about eight to ten miles east of the Front Range of the Southern Rocky Mountains. The site topography is characterized by generally flat lands with some gently rolling terrain trending toward either Coal Creek or Rock Creek. Elevations range from about 5,250 feet on the eastern edge of the subject properties to about 5,530 feet on the western side.


Topography
Boulder County
T1SR69W
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adapted from Louisville & Lafayette USGS quads
0 0.15 0.3 0.6 Miles
N
Baseline Rd
CALLAHAN
Empire Rd
Pine
ADLER/FINGRU
ESMAIL
MAYHOFFER 15
BOULDER COUNTY LAND VENTURE
WAREMBOURG
TRILLIUM
BOWES
ADMOR
SCRIFFINY 19
Dillon Rd
S 104th St
S 96th St
Burlington Northern Sante Fe RR
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5280
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4.4 Geology

The Jointly Owned Boulder County-Lafayette-Louisville Open Space lies on the western edge of the Colorado Piedmont section of the Great Plains physiographic province. The area consists of northeast-trending mesas with a local relief of 100 to 300 feet. In general terms, the regional geology consists of sedimentary rocks of Late Cretaceous age including sandstones, claystones, and shales of the Laramie Formation (Spencer, 1961).

The bedrock is overlain by alluvial, eolian, and colluvial (water, wind and gravity-carried) material deposited during the Quaternary Period. Bedrock generally dips gently to the east and is traversed by a series of northwest/southeast trending, high angle (near vertical) faults. These faults break the bedrock into narrow blocks called horsts and grabens, which have traveled along the faults and create the rolling topography seen in the Louisville area. The faults also lend themselves as channels for the many intermittent streams in the area.

Holocene and Pleistocene eolian deposits of well-sorted, fine to medium-grain sands and silts, usually less than 5 feet thick predominate the surrounding area. Near-surface eolium commonly forms a cap over older alluvial deposits. Together, the eolian and alluvial deposits form small terraces along the drainages, ranging in height from 5 to 8 feet above the creek bed. The Cretaceous Laramie and Upper Fox Hill Formations lie unconformably under the eolian and alluvial deposits. The Laramie Formation is an olive-gray to dark grayish-brown shale, siltstone, lignitic claystone and coal which is interbedded with light-gray to light-brown sandstone. The upper member of the Fox Hills Formation is a massive light-gray to light-brown, crossed-bedded sandstone with mudstone partings and some locally thin coal seams.

The properties lie within the Boulder-Weld Coal Field, which extends roughly from Marshall in Boulder County to Firestone in Weld County. Coal is found in roughly five zones in the lower portion of the Laramie Formation. Coal in this area is largely sub bituminous B (Spencer, 1961). These coal deposits have low importance in the current National Coal Resource Assessment and it is unlikely that they will be utilized within the next 20-30 years because they are of lower quality than other coal available in nearby areas. Oil and gas resources are prevalent in the area as well.

4.5 Soils

All but one of the properties in the Jointly Owned Boulder County-Lafayette-Louisville Open Space generally lie within the Nunn-Heldt soil association. This association is characterized as nearly level to moderately sloping, deep soils on terraces and uplands. Soils in this association are formed from clay parent materials, with slopes ranging from 0-9 % and moderate to slow permeability. Nunn soils have a surface layer of clay loam or sandy clay loam and a subsoil of clay. Heldt soils have a surface layer and subsoil of clay. Good water management helps control erosion and prevents waterlogging (U.S.D.A., 1975). Most areas of this soil association are used for irrigated and dryland crops and for pasture. Roots can penetrate to a depth of 60 inches or more. The native vegetation is mainly short and mid grasses. Other soil series represented within this region include Ascalon, Calkins, Manter, and Valmont.

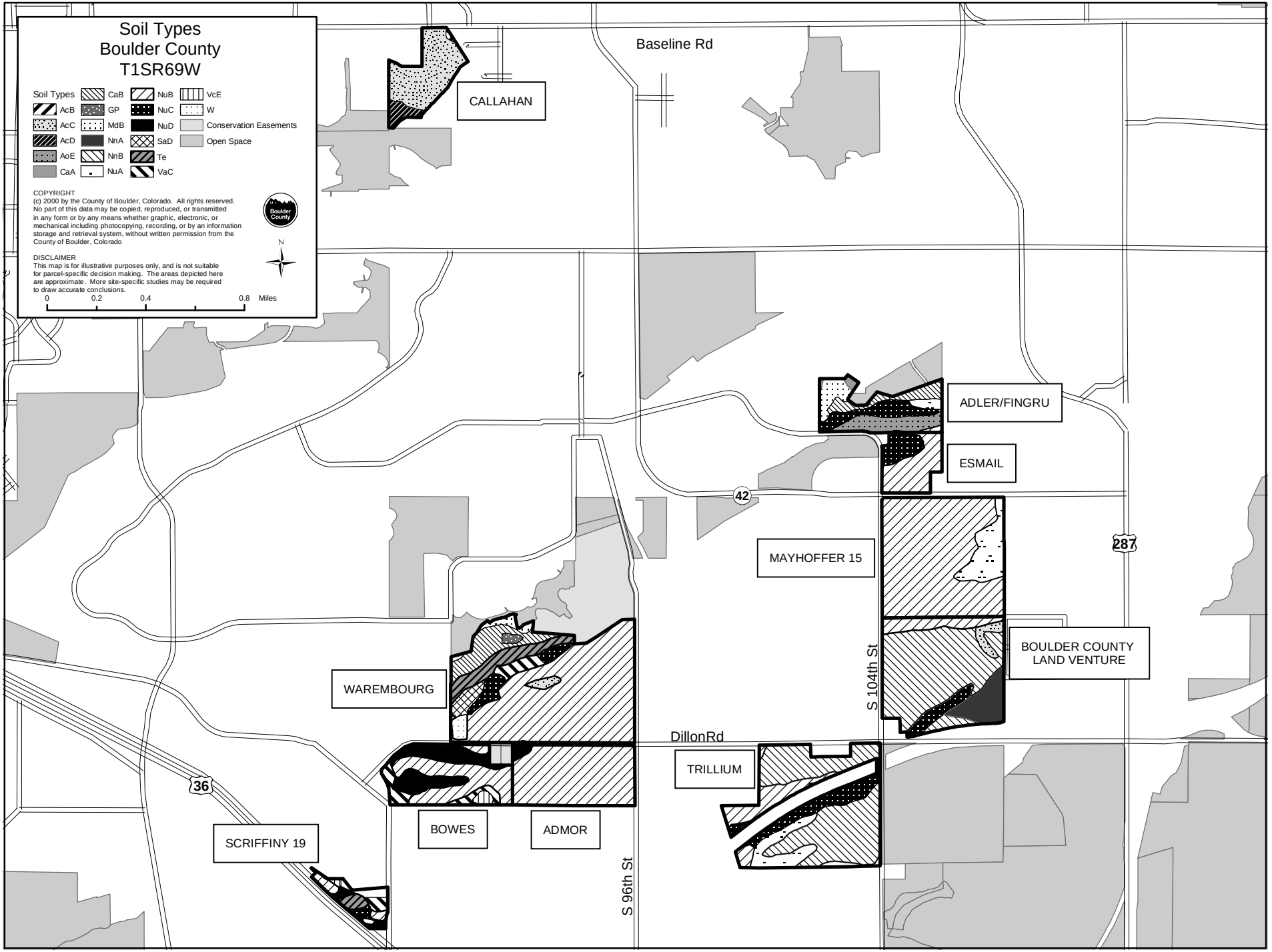
The Callahan Property lies within the Ascalon soil series. This series is made up of deep, well-drained soils. These soils formed on terraces and uplands in loamy mixed alluvium and windblown materials. These soils have moderate permeability and are typically used for irrigated and dry cropland. Roots can penetrate to a depth of 60 inches or more. The native vegetation is mainly shortgrass prairie species such as blue grama and western wheatgrass.

Refer to the *Soils* map for the location of specific soil types.

4.6 Significant Agricultural Land

Eastern Boulder County contains agricultural lands of national significance due to its soil resources and their production capability. These lands are considered prime farmland because of the soils and their associated irrigability. All of the properties outlined in this plan contain prime soils. Even as a dryland farms, the properties are significant at both the state and local levels. Protecting prime farmland from conversion to development is a formidable task- one that has already been accomplished for the properties outlined in this plan.

Refer to the map of *Significant Agricultural Land* for more detail.


Soil Types
Boulder County
T1SR69W
Soil Types
AcB
AcC
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AoE
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Conservation Easements
Open Space
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0 0.2 0.4 0.8 Miles
N
Baseline Rd
CALLAHAN
ADLER/FINGRU
ESMAIL
42
MAYHOFFER 15
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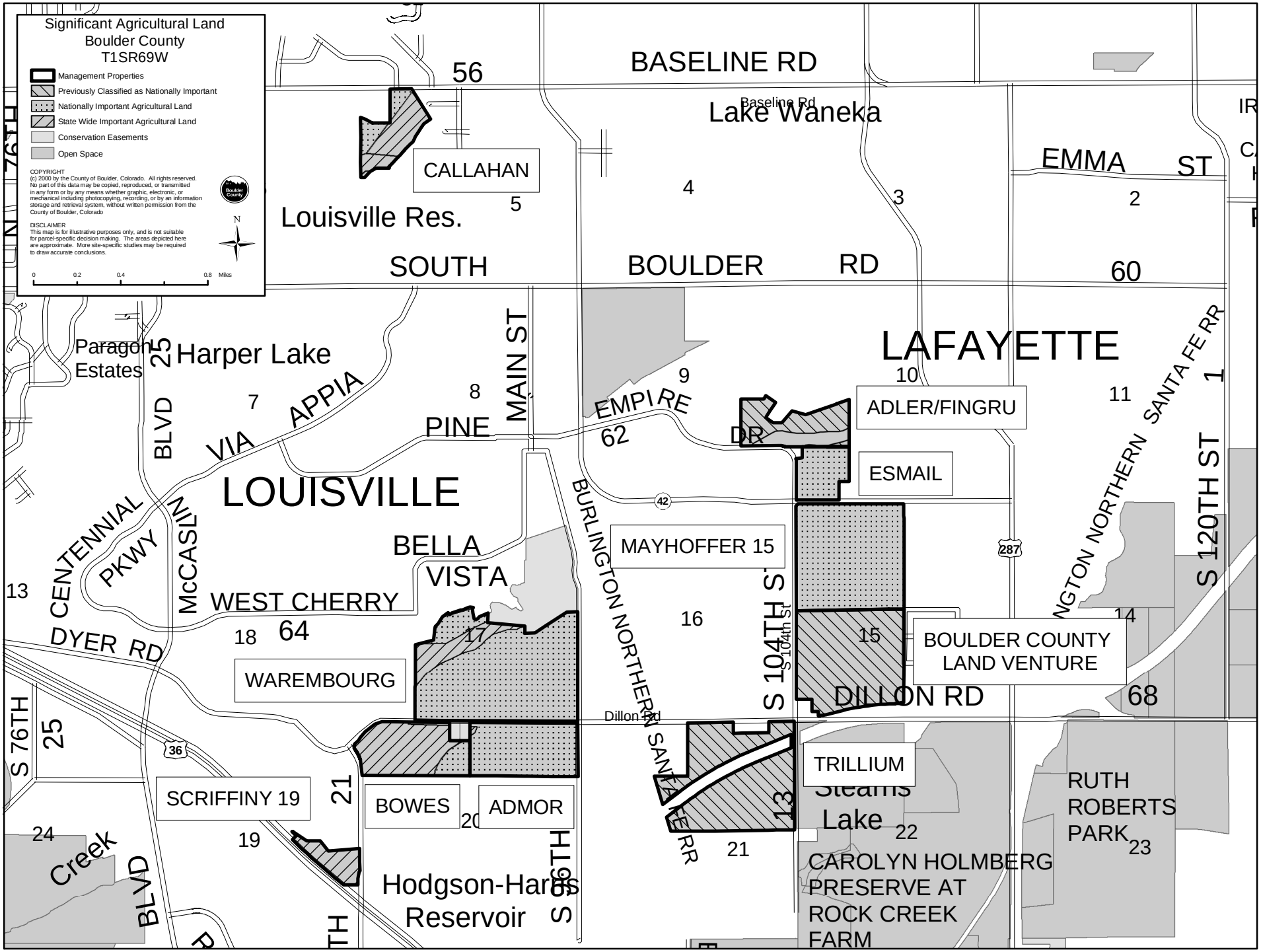
BOULDER COUNTY LAND VENTURE
S 104th St
WAREMBOURG
DillonRd
TRILLIUM
36
BOWES
ADMOR
SCRIFFINY 19
S 96th St


Significant Agricultural Land
Boulder County
T1SR69W
Management Properties
Previously Classified as Nationally Important
Nationally Important Agricultural Land
State Wide Important Agricultural Land
Conservation Easements
Open Space
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0 0.2 0.4 0.8 Miles
N
BASELINE RD
Baseline Rd
Lake Waneka
CALLAHAN
Louisville Res.
EMMA ST
SOUTH BOULDER RD
LAFAYETTE
Paragon Estates
Harper Lake
MAIN ST
EMPIRE DR
ADLER/FINGRU
ESMAIL
VIA APPIA BLVD
PINE
LOUISVILLE
CENTENNIAL PKWY
McCASLIN
BELLA VISTA
MAYHOFFER 15
BURLINGTON NORTHERN SANTA FE RR
SANTA FE RR
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WEST CHERRY
DYER RD
WAREMBOURG
BOULDER COUNTY LAND VENTURE
DILLON RD
Dillon Rd
S 76TH
TRILLIUM
SCRIFFINY 19
BOWES
ADMOR
Steams Lake
RUTH ROBERTS PARK
Creek
Hodgson-Harris Reservoir
CAROLYN HOLMBERG PRESERVE AT ROCK CREEK FARM
56
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287

4.7 Hydrology

All of the subject properties are located within the Rock Creek and Coal Creek watersheds. Two of the properties, Warembourg and Adler/Fingru, contain sections of Coal Creek, a perennial stream that reaches its confluence with Rock Creek about 3 to 4 miles northeast of the project area. Extensive irrigation ditch systems and some stock ponds exist on the properties and account for the majority of any open water.

The actual direction of ground water flow on the subject properties is unknown, but is anticipated to be generally eastward based on the site topography. Groundwater depth and flow direction is variable and is influenced by the time of year, the presence or absence of irrigation, and soil and aquifer characteristics. Depth to groundwater in the unconsolidated alluvium is estimated to be 10 to 20 feet (Hillier, 1983). The bedrock aquifer consists of the sandstones of the Laramie Formation. Abandoned coal mine shafts under the area may also serve as conduits for groundwater flow.

Wetlands exist on the Boulder County Land Venture, Callahan, Mayhoffer (Section 15), Scriffiny (Section 19), Trillium, and Warembourg properties. Also, ditches and laterals on the properties support hydrophytic vegetation that is generally confined to the bed and banks of ditches and is dependent on irrigation practices. Detailed information about the wetland resources on each property can be found in the resource evaluation section of individual property plans.

Hydrologic features, including surface waters, ditches, laterals, and wetlands are depicted on maps within each property description.

4.8 Historic Ecology

During pre-settlement time, the wildlife of the area was characteristic of the faunal assemblage that extended over a vast expanse known as the High Plains Section of the North Temperate Biome. Shortgrass prairie dominated the region and probably supported bison during some seasons of the year. Grasslands are noted for their large numbers of plant eating animals, or herbivores, which include many insect, bird, and mammal species. As the urban area along the Front Range has grown, wildlife habitat and many wildlife species have been displaced.

The properties were once dominated by short and mixed grass prairie, which is characterized by species such as yucca (*Yucca glauca*), blue grama (*Condrosum gracille),* buffalograss (*Buchloe dactyloides*), sideoats grama (*Bouteloua curtipendula*), western wheatgrass (*Pascopyrum smithii*), and little bluestem (*Schizachyrium scoparium*). The historic fire interval for shortgrass prairie is about every eight to ten years; however, ranchers typically set fires in the grasslands more frequently to clear the area for improved cattle grazing. Remnant areas of this historic plains plant community still persist on a few of the properties and in surrounding areas. The majority of this vegetation community within Boulder County has been lost due to conversion of land for agriculture and urbanization.

5.0 PROPERTY DESCRIPTIONS, RESOURCE EVALUATIONS, AND MANAGEMENT DIRECTION

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5.1 ADLER/FINGRU

5.1.1 Acquisition History

The Adler/Fingru Property ("Property") was jointly purchased from Fingru AG., Inc. by Boulder County and the Cities of Lafayette and Louisville in November 2001 for $2,300,000. Boulder County paid half of the total purchase price and owns a 50% undivided interest. The Cities of Lafayette and Louisville each paid one-quarter of the purchase price and each own a 25% ownership interest. The purchase consisted of 55.7 acres of fee simple land. Each entity owns a conservation easement over the other entities' ownership interest. The purpose of the acquisition was to preserve riparian resources and agricultural land and provide an open space buffer between the nearby urban areas of Lafayette and Louisville.

5.1.2 Location and Access

The Property is located about one mile east of the City of Louisville and is bordered by Empire Road (County Road 62) to the south. Coal Creek generally serves as the northern border.

Access to the Property is by way of several farm gates located on the north side of Empire Road.

5.1.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Adler/Fingru Property are:

North: The City of Lafayette's Coal Creek open space lies due north. High-density residential development lies to the northwest and northeast.
East: A 123-acre subdivision (currently undeveloped) known as Creekside Estates lies to the east.
South: To the south sits a residence on 1.2 acres, at the bend in Empire Road, and is adjacent to the Esmail open space further south. To the southwest lies the City of Louisville's Aquarius open space.
West: A large, privately owned agricultural property lies to the west.

5.1.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for dryland crop production and livestock grazing. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- Reciprocal conservation easements between Boulder County and the Cities of Lafayette and Louisville were exchanged and restrict the use of the subject property to open space and agriculture.

- An 30 foot wide easement granted to Boulder County for flood plain protection, flood control maintenance, access and public recreation on the Coal Creek Trail.

- Easement for utility lines and utility boxes along the northern property line.

- The mineral rights have been reserved by Albion Realty and Securities Company since 1927.

5.1.5 Vegetative Resources

5.1.5.1 Vegetative Communities

The Property is alluvial agricultural land and consists of a forested riparian area, dryland crop area, disturbed grassland upland, and weedy grassland adjacent to the residential area to the northwest.

Much of the bottomland on the Property is tilled and currently in dryland crop production primarily for wheat. At the time of the site visit, Canada thistle (*Cirsium arvense*) and common purslane (*Portulaca oleracea*) dominated the tilled areas. Prevalence of these weeds indicates that the tilled soils probably remain moist much of the time. Under current management, dryland wheat production is somewhat marginal. Potential production is probably good, however, as the bottomland contains valuable soil moisture.

The disturbed grassland lies on the south side of the Property on the upland terrace above the Coal Creek floodplain. Much of the area has been planted to non-native pasture grasses including intermediate wheatgrass (*Agropyron intermedium*) and crested wheatgrass (*Agropyron cristatum*). However, several native grasses including western wheatgrass (*Agropyron smithii*), blue grama, and buffalograss (*Buchloe dactyloides*) persist.

A short reach of Coal Creek and its associated riparian corridor in the floodplain characterize the northwest corner of the Property. Woody vegetation in the riparian area is characterized by plains cottonwood (*Populus deltoides*), narrowleaf cottonwood (*Populus angustifolia*), and coyote willow (*Salix exigua*). Siberian elm (*Ulmus pumila*) and Russian-olive (*Elaeagnus angustifolia*) are also scattered throughout the canopy. The wetlands along the creek are linked hydrologically directly to Coal Creek and are dominated by coyote willow and broadleaf cattail (*Typha latifolia*). Moist, bottomland areas adjacent to Coal Creek are dominated primarily by smooth brome (*Bromus inermis*) and have a significant component of Canada thistle (*Cirsium arvense*). Other species include showy milkweed (*Asclepias speciosa*) and curly dock (*Rumex crispus*). Wetlands on the Property are associated with Coal Creek.

A weedy grassland community dominates the Property directly adjacent to the residential area on the north side of Coal Creek. Plant species include intermediate wheatgrass, crested wheatgrass, smooth brome, alfalfa (*Medicago sativa*), wild licorice (*Glycyrrhiza lepidota*), and diffuse knapweed (*Centaurea diffusa*).

5.1.5.2 Rare and Imperiled Plants

No rare plants or plant communities have been identified on the Property by BCPOS staff or the Colorado Natural Heritage Program (CNHP) [Natural Diversity Information Source (NDIS), 2002]. However, two threatened species that have the potential to occur in wetland or riparian habitats on the Property are the Ute ladies'-tresses orchid (*Spiranthes diluvialis*) and the Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*).

The following types of habitat are considered to potentially support populations of the Ute ladies'-tresses orchid:

- Areas determined to be jurisdictional wetlands,

- Seasonally moist areas near springs, lakes, irrigation ditches, or perennial streams and their associated flood plains,
- Old stream channels and alluvial terraces,
- Sub-irrigated meadows,
- Areas supporting vegetation indicative of seasonally wet areas or areas dominated by vegetation considered to be facultative wet.

Based on these criteria, the riparian area could potentially support the orchid. A full survey for the presence or absence of the orchid was not part of the rapid resource assessment conducted by ERO in 2002. The Property contains gravelly, sub-irrigated soils of the type typically associated with known occurrences of the orchid. Although vegetation along Coal Creek and is dense, the area should be considered to contain potential habitat.

The Colorado butterfly plant was listed as a threatened species on October 18, 2000; however, the U.S. Fish and Wildlife Service has not yet published formal survey guidelines for this species. The Colorado butterfly plant occurs on sub irrigated alluvial soils on level or slightly sloping floodplains and drainage bottoms between 5,000 and 6,400 feet in elevation in north-central Colorado, southeastern Wyoming, and western Nebraska. Colonies are often found in low depressions along wide, active stream channels.

The Colorado butterfly plant typically occurs in habitats created and maintained by streams that are active within their floodplains, with vegetation that is relatively open and not overly dense or overgrown. A full survey for the presence or absence of the Colorado butterfly plant was not part of the rapid resource assessment conducted by ERO in 2002. As with the Ute ladies'-tresses orchid, Coal Creek should be considered to contain potential habitat for the butterfly plant.

5.1.5.3 Exotic Species and Noxious Weeds

The Property has the following weed species in these locations: diffuse knapweed (*Centaurea diffusa*) occurs along the east fence line and in the weedy grassland community on the north side of Coal Creek; Canada thistle (*Cirsium arvense*) occurs within the tilled area of the Property and throughout the riparian community; downy brome (*Bromus tectorum*) is found scattered along Empire Road, in the weedy grassland, and in the riparian corridor; field bindweed (*Convolvulus arvensis*) is found throughout the prairie dog colony; Russian-olive (*Elaeagnus angustifolia*) trees are scattered along the Coal Creek corridor.

5.1.6 Wildlife Resources

5.1.6.1 Mammals

The riparian corridor along Coal Creek, as well as the drier uplands on the Property, provide potential habitat to a variety of wildlife species. Common mammal species in the riparian habitat on the Property include white-tailed deer (*Odocoileus virginianus*), mule deer (*Odocoileus hemionus*), fox squirrel (*Sciurus niger*), and eastern cottontail (*Sylvilagus floridanus*). These eastern species have moved westward along riparian corridors with abundant food and cover. Fox squirrel and eastern cottontail were observed during a site visit. Small mammals including deer mouse (*Peromyscus maniculatus*), eastern cottontail (*Sylvilagus floridanus*), and prairie vole (*Microtus ochrogaster*) likely inhabit areas within the riparian corridor as well as drier upland areas.

Other mammals that occur or are likely to occur on the Property based on suitable habitat include striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*). These species have adapted well and actually thrive in and near urban and agricultural areas. All of these species probably frequent the riparian habitat along Coal Creek, although the coyote may be more common in more open areas.

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002). However, there is an active black-tailed prairie dog (*Cynomys ludovicianus)* colony on the south side of the Property. Tilling activities inhibit further expansion of the colony north onto the Property or south onto the adjacent Esmail Open Space.

Due to population declines across its historical range, on February 4, 2000, the U.S. Fish and Wildlife Service (USFWS) issued a 12-month petition finding that stated:

> *"The Fish and Wildlife Service has determined that the current status of the black-tailed prairie dog warrants its listing as a Threatened species pursuant to section 4(b)(3)(A) the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.), subject to the approval of a final rule. The Service believes that sufficient information is currently available to support a finding that listing the black-tailed prairie dog as threatened is warranted, but that a proposed rule at this time is precluded by work on other higher priority species. The Service will reevaluate the status of the species 1 year after publication of this finding in the Federal Register."*

This finding establishes the black-tailed prairie dog as a candidate species for listing as federally threatened, and subject to annual review by the U.S. Fish and Wildlife Service. Currently, there are no federal restrictions placed on the overall management or control of black-tailed prairie dogs. However, species such as burrowing owl (*Athene cunicularia*), prairie rattlesnake (*Crotulus viridis*), and mountain plover (*Charadrius montanus*) are closely linked to prairie dog burrow systems for food and/or cover. Prairie dogs provide an important prey resource for numerous predators including badger, coyote, fox, golden eagle, ferruginous hawk and other raptors. However, these avian predators may be absent from the Property due to its small size and the presence of human disturbance.

Furthermore, the Preble's meadow jumping mouse (PMJM) (*Zapus hudsonius preblei*) is a federally threatened species with the potential to occur in riparian habitats in this part of Colorado. Preble's mice typically inhabit areas characterized by well-developed plains riparian vegetation with relatively undisturbed grassland and a water source in close proximity (Armstrong et al., 1997). Recent studies have suggested that Preble's may have a wider ecological tolerance than previously thought, and that the requirement for diverse vegetation and well-developed cover can be met under a variety of circumstances (Meaney et al., 1997). Radio-tracking studies conducted by the Colorado Division of Wildlife (CDOW) have documented Preble's using upland habitat adjacent to wetlands and riparian areas (Shenk and Sivert, 1999). Additional research by CDOW has suggested that habitat quality for PMJM can be predicted by the amount of shrub cover available at a site (White and Shenk, 2000).

Based on the above criteria, Coal Creek fits the description of potential Preble's habitat; however, there have been no recent captures of Preble's in the vicinity of the Property despite numerous trapping surveys. In 2000, the reach of Coal Creek at South 96th Street was surveyed. Also included in this survey was the irrigation ditch to the north. Results of the survey were negative (ERO, 2002). The added report of a domestic cat returning to its owner with a dead Preble's near

the Property also suggests that the reach of Coal Creek through the Property could support the species.

Boulder County is currently working with the U.S. Fish and Wildlife Service on a draft countywide Habitat Conservation Plan (HCP) for the Preble's meadow jumping mouse. To date, the reach of Coal Creek that borders the Property is not included as a "Mouse Management Area" by USFWS. Suitable habitat and mouse populations are generally limited to that area of Coal Creek west of U.S. Highway 36. East of Highway 36, conditions are considered more urbanized and characterized by weed infestations and fragmented habitat. It is likely that the riparian corridor within the vicinity of the Property could be classified as "Potential Restoration, Noncontiguous" under the HCP.

5.1.6.2 Birds

Although essentially all aspects of wildlife use of the Coal Creek riparian corridor can be considered important, probably the most important include nesting, resting, and feeding sites for neotropical migrant birds, many species of which occur almost exclusively in mixed deciduous riparian woodlands and shrublands. Some of the neotropical migrants pass only briefly through the area on their way between more northerly and southerly climes, but others stay to breed. Both the transient and summer resident groups include a variety of smaller flycatchers, warblers, vireos, wrens, and finches, as well as larger species such as the brown thrasher (*Toxostoma rufum),* gray catbird (*Dumetella carolinensis),* and yellow-billed cuckoo (*Coccyzus americanus),* all of which are unlikely to occur regularly outside the Coal Creek corridor. More familiar migrants such as the American robin (*Turdus migratorius),* Bullock's oriole (*Icterus bullockii),* eastern and western kingbirds (*Tyrannus tyrannus, T. verticalis),* and American and lesser goldfinches (*Carduelis tristis, C. psaltria*), plus many year-round residents such as the northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens),* blue jay (*Cyanocitta cristata*), and black-capped chickadee (*Parus atricapillus*) are probably present in greater abundance along the creek than most other parts of the general area.

In addition to the arboreal species named above, other migrants are attracted by wetland habitats along the creek. These also include neotropical species such as the northern yellowthroat (*Geothlypis sp.)* and yellow-headed blackbird (*Xanthocephalus xanthocephalus)* in cattails and the song sparrow (*Melospiza melodia)* in shrubby coyote willows (ESCO, 2001).

Not all of the birds supported by the Coal Creek riparian complex meet all of their needs within the woodland. Many, such as flycatchers and some finches, may nest in the trees but feed in adjacent pastures, parks, or wetlands. Tree-nesting raptors (birds of prey) also fit this model. While some, such as the Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*), may nest and hunt for small birds among the trees, other species such as the American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis),* Swainson's hawk (*Buteo swainsoni*), great horned owl (*Bubo virginianus),* and eastern screech-owl (*Otus asio*) are more likely to hunt in adjacent open terrain—as may the turkey vulture (*Cathartes aura)* (ESCO, 2001).

The dense vegetation along Coal Creek may provide forage and cover for a number of migratory songbirds such as yellow warbler (*Dendroica petechia*), Wilson's warbler (*Wilsonia pusilla*), and western tanager (*Piranga ludoviciana*). Bird species observed during an October 2001 site visit include black-billed magpie (*Pica pica*), killdeer (*Charadrius vociferus*), American robin, grackle (*Quiscalus quiscula*), belted kingfisher (*Ceryle alcyon*), northern flicker, black-capped chickadee, and red-tailed hawk. The timing of the site visit in October influenced the number of bird species observed. ESCO Associates, Inc. conducted a quantitative breeding bird survey for the City of

Louisville on its reach of Coal Creek further west. This survey provides a good indication of species that might be found along the Coal Creek corridor on the Property.

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water. Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

Other species of concern that may use the Property include great blue heron (*Ardea herodias*), Lewis' woodpecker (*Melanerpes lewis*), red-headed woodpecker (*Melanerpes erythrocephalus*), American bittern (*Botaurus lentiginosus*), long-eared owl (*Asio otus*), American dipper (*Cinclus mexicanus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

Waterfowl likely to frequent Coal Creek include Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), Green-winged teal (*Anas crecca*), Blue-winged teal (*Anas discors*), Cinnamon teal (*Anas cyanoptera*), American coot (*Fulica americana*), and Northern shoveler (*Anas clypeata*).

5.1.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property. This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, no cultural or historic sites occur on the Property (OAHP, 2002). The Boulder County Comprehensive Plan identifies an Archaeological Travel Route along Coal Creek on the Property. Other potential unidentified cultural resources may exist within the Property. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.1.8 Agricultural Resources

5.1.8.1 Water Rights

Purchase of the Property did not include any water rights. The Property was historically irrigated with Goodhue water from a Coal Creek ditch with a head gate upstream on the Mayhoffer property. The head gate washed out in the late 1930s and was not repaired. The Property could be served from the Goodhue Ditch, but there is no indication that shares in the Goodhue Ditch were ever appurtenant to the Property. Lafayette annexed the Property before it had a water dedication requirement.

The Phase I Environmental Assessment Report identified some ground water monitoring wells on the Property that are not registered with the Colorado Division of Water Resources.

5.1.8.2 Soil Resources and Production Potential

Seven soil types have been mapped on the Property representing four soil series, including Ascalon, Calkins, Manter, and Nunn (USDA, 1975). Refer to the *Soils* map for additional detail.

In general, these soils are deep and well-drained. However, over half of the land currently in crop production is located in an alluvial floodplain and has limitations for plant growth or cultivation due to excessive soil water. Water-tolerant grasses such as tall wheatgrass, tall fescue, or slender wheatgrass are good when this soil is used for pasture. The other soils have limitations regarding the risk of erosion. In non-irrigated areas, these soils are used mainly for dryland crops, such as a wheat-summer fallow cropping system. On the sloped upland area, erosion potential is high and good dry pasture management is necessary. The soil types on the Property have been traditionally used for irrigated and dryland crops and pasture.

5.1.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property consists of fences, gates, ditches, laterals, and diversion structures. Fencing along the northern and southern boundaries is in poor condition or nonexistent. No farm related or other buildings exist on the Property. Refer to the Property maps for the location of these elements.

5.1.9 Management Direction

5.1.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The Property's recommended classification is "Multiple Objective Area" (MOA) and will be managed to allow prairie dogs to inhabit the Property unless a conflict or excess resource depredation occurs.

In the future, tilling practices on the Property could be abandoned allowing for further expansion of the existing colony. However, restoration of the area should take place before prairie dogs are allowed to disperse. Establishment of a vegetative cover is important to prevent soil erosion, weed infestations, and also for providing future forage to the prairie dog complex.

5.1.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important, as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be

given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they can provide excellent competition against invading noxious weeds.

In concert with an overall weed management effort along Coal Creek, Russian-olives should be removed from the riparian corridor. This invasive, non-native tree is capable of displacing many native trees and shrubs over time.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.1.9.2.1 Diffuse Knapweed

Control of diffuse knapweed should be the top priority for weed management on the Property because of the tumbleweed characteristic of this plant and its potential for spread. The predominate west-northwest winds of the area are probably responsible for depositing diffuse knapweed plants, and seed, along the fence line and creating heavy infestations along the eastern border of the Property. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective.

Diffuse knapweed is susceptible to Tordon (picloram) and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Tordon is classified as a restricted use herbicide due to mobility and residual activity of this product. Applicators of Tordon need to be properly certified, and proximity to trees and water needs to be considered. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

Less dense diffuse knapweed infestations should be monitored for presence of biological control insects, which have migrated from release sites to the south. The two primary insects, *Laurinus minutus*, a seed head-feeding weevil, and *Cyphocleonus achates*, a root-feeding weevil, have been successful in minimizing diffuse knapweed populations on nearby research sites. Where these insects are present, satisfactory diffuse knapweed control may be attained.

5.1.9.2.2 Canada Thistle

Canada thistle can be effectively managed by a combination of mowing and herbicide application. In wheat/fallow rotations, an application of Tordon following wheat harvest and an application of 2,4-D the following summer is the most common recommendation. Shallow tillage is not an effective Canada thistle management tool. Where Canada thistle is present outside the farmed area, mowing prior to seed set followed by a fall application of Tordon or Transline provides best control.

5.1.9.3 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain the Property in dryland crop.
2. Control weeds on field edges and along ditches.
3. Restore the riparian area and adjacent areas to native vegetation.
4. Enhance the quality of the riparian habitat by removing Russian-olive trees and improving conditions for native plants, and by increasing the vegetation buffer between the tilled cropland and riparian corridor.
5. Monitor the condition of the rangeland on the Property and improve where feasible.
6. Evaluate the feasibility of conversion to native grassland.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.1.9.4 Ecosystem Restoration and Enhancement

Removing the concrete debris pile located in the northwest corner of the Property is an action that could be implemented immediately. A medium or long-term management action could include addressing the aesthetics of the weedy grassland area on the north side of the Creek near the homes. Social trails, the two-track roads, and the weedy nature of the area should be addressed to enhance the interface with the Centaur Village neighborhood. This field, along with any future improvements in it, will be managed by the City of Lafayette.

Should plague ever occur within the prairie dog community on the Property, aggressive weed control and revegetation should be initiated.

The Property should be considered for conversion to a native vegetation community due to its limits for agricultural production. Establishment of a native grass stand would complement the integrity of the riparian corridor and improve wildlife habitat.

Russian-olive trees should be removed from the riparian corridor, as they are capable of displacing many native trees and shrubs. Further enhancement of the riparian corridor should be preceded by a riparian survey that inventories plants, wetlands, and wildlife.

5.1.9.5 Visitor Access and Recreation

The Coal Creek Trail, a 10 foot wide path made of crushed gravel, passes through the western portion of the Property and is accessed through a gate in the southwest corner of the Property at County Road 62 (Empire Road). From this point, the Coal Creek Trail follows the western fence line north across Coal Creek. The trail then generally follows the north side of Coal Creek and enters the City of Lafayette's 34-acre Coal Creek Open Space, to the adjacent north of the Property. That portion of the trail located within the Property is maintained by the City of Lafayette. Passive recreational use includes, but is not limited to, walking/jogging, bicycling, wildlife viewing, and nature photography. Prohibited trail activities include equestrian use, motorized vehicles of any kind, and dogs off leash. Continued public use of this recreational amenity is acceptable and presents little conflict as the regional trail only passes through a small portion of the Property.

Other than use of the designated Coal Creek Trail, public access is not permitted on the Property. This closure reflects the current rules and regulations for County Parks and Open Space lands that are being managed for agricultural purposes. Extensive and dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of production.

Visitation and use of the Coal Creek Trail is intense. Illegal, off-road parking is occurring in the right-of-way of Empire Road, directly south of the Property. For public safety reasons, staff should work with the County Transportation Department to sign the right-of-way for no parking and have it enforced. An existing trailhead and parking lot to the southwest already serve this trail section. This trailhead is located on the City of Louisville's Aquarius Open Space and is accessed from Highway 42. Should visitation continue to increase, further investigation should be performed to determine if a trailhead and parking area should be developed on the Property. The topography in the southwestern portion of the Property provides an opportunity to do so.

A readily used social trail exists in the northwest corner of the Property. The trail passes near the fence line of the adjacent townhome community and continues north off of the Property through a drainage corridor along the western border of the residential area. This connection provides access to Centaurus High School. Further exploration is needed to determine if there is a practical opportunity to formally establish this route. If so, it should be pursued. If not, then the status quo can be tolerated or the area should be signed to prevent illegal use and resource damage. The City of Lafayette will maintain all trail improvements and new amenities related to the Coal Creek Trail.

The N-S drainage corridor described above intersects with another drainage corridor that runs west to the jointly-owned Lastoka property. This corridor could provide access to the Lastoka historic site and the Louisville baseball complex. At the eastern boundary of the Lastoka property, another drainage corridor continues north to South Boulder Road, where a sidewalk exists on the south side of the road. These corridors should be further assessed for trail feasibility and pursued if consistent with municipal trail plans.

Due to the acquisition of the Adler/Fingru, Esmail, Mayhoffer (Section 15), and Boulder County Land Venture properties, there is an opportunity to connect the Coal Creek Trail with Rock Creek Farm via the S. 104th Street corridor. This connection would provide a link between two regional trails and allow residents of Lafayette and Louisville to access Rock Creek Farm and its trail system. Opportunities for making this connection include the utilization of the S. 104th Street right-of-way, the western boundaries of the open space properties themselves, or through the Colorado Technology Center. Any and all combinations of these possibilities should be explored and pursued. If a trail should pass through an open space property, all efforts should be made to preserve the integrity and function of the agricultural resource, including irrigation concerns.

5.1.9.6 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular riparian and wildlife values, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent residential properties on the north side of Coal Creek should be contacted and given information regarding the point of contact for the Property.

Staff should also coordinate with the City of Lafayette and the agricultural operator to encourage him/her to expand the buffer between the riparian corridor and cultivated fields on the open space parcel to the adjacent north. In several areas, establishing a wider buffer zone between the farm field and creek corridor would likely improve wildlife habitat and water quality.

5.1.9.7 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.1.9.7.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Lafayette Police Department, as the Property is currently annexed within the incorporated city. However, commissioned Boulder County Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only. De-annexation of the Property should be considered in order to promote consistency between the policies of the land management agency and the jurisdiction of the parcel; however, this may only be pursued with the support and approval of all the contributing parties.

Since the Property is in agricultural production and closed to the public (other than the designated Coal Creek Trail), visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations. Should the Property be converted from agricultural use to a natural area, law enforcement presence and activities should be reevaluated.

5.1.9.7.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Lafayette Fire Department, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.1.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Prairie dog survey----------Annual----------BCPOS
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Breeding bird survey-------Every 3-5 yrs.----Volunteer
Riparian plant inventory---W/in 5 yrs.--------BCPOS
Preble's baseline survey---W/in 5 yrs.--------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Agricultural Infrastructure
Adler/Fingru, Boulder County
T1SR69W
gates
roads
Coal Creek Trail
fences
Adler/Fingru
N
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are approximate. More site-specific studies may be required
to draw accurate conclusions.
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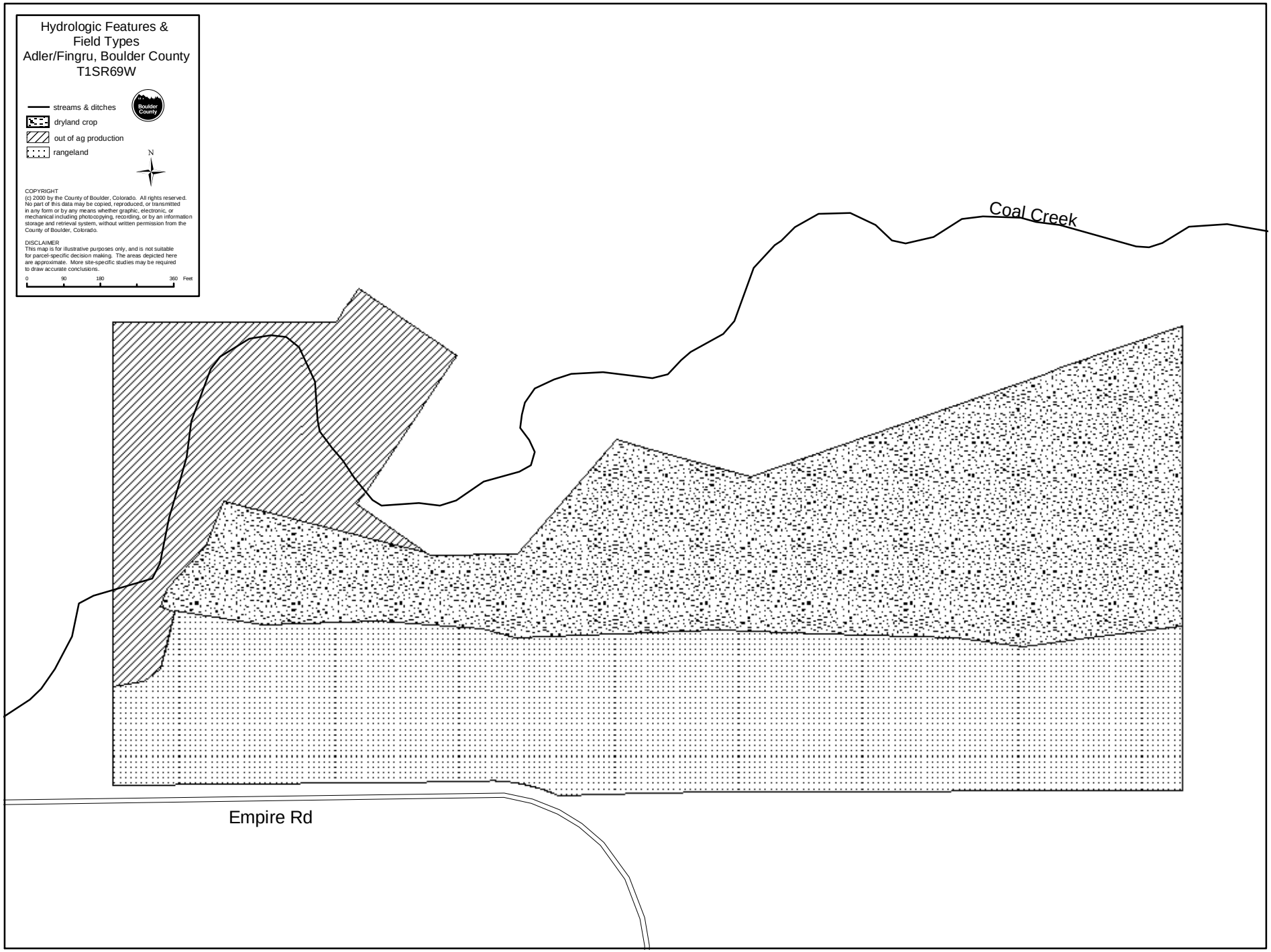
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Coal Creek
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5.2 ADMOR

5.2.1 Acquisition History

The Admor Property ("Property") was originally purchased from Admor Investment Trust by Boulder County. In 1996, the County sold the west half of the Property and a 50 % undivided interest in the east half to the City of Louisville for $1,419,080. The City originally proposed to develop the western half, but in October 1999 the City sold the County a 50% undivided interest in the west half of the Property for $395,950, thereby achieving joint ownership of the entire Property. Each entity paid one-half of the total purchase price and owns a 50% undivided interest. The purchase consisted of 80.558 acres of fee simple land and included water rights. Each entity owns a conservation easement over the other entity's ownership interest. The purpose of the acquisition was to preserve agricultural land and provide an open space buffer on the south side of Louisville.

5.2.2 Location and Access

The Property is located immediately south of the City of Louisville and is bordered by Dillon Road to the north and South 96th Street to the east. U.S. Highway 36 is located approximately one-half mile to the southwest.

Access to the Property is by way of farm gates located near the barns in the southeast corner of the Property.

5.2.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Admor Property are:

North: Warembourg open space lies due north; rural residential and a church property lie to the northeast, across the intersection.
East: A 77-acre agricultural property lies to the east.
South: Several small privately owned agricultural properties with rural residences lie to the south.
West: Bowes open space is due west.

5.2.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for hay production and livestock grazing. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- Reciprocal conservation easements between Boulder County and the City of Louisville were exchanged and restrict the use of the subject property to open space and agriculture.

- Easement and right-of-way for the Goodhue Ditch.

- Easement and right-of-way for the South Boulder and Coal Creek Ditch (old and new).
- Easement and right-of-way for communication facilities to Mountain States Telephone and Telegraph Company.

- Reservation of all minerals, together with the ability to explore and extract, to Boulder Valley Coal Company.

- Existing right-of-way and future right-of-way acquisition for expansion of County Road 68 (Dillon Rd.) and County Road 19 (S. 96th St.)

5.2.5 Vegetative Resources

5.2.5.1 Vegetative Communities

The Property consists of irrigated fescue (*Festuca* spp.) grass pasture. Given the current drought conditions and shortage of irrigation water, the pasture appeared to be in relatively good condition. Areas of significant disturbance include a strip of land along Dillon Road and the area surrounding the old homestead and barn. Overstory tree species, including large cottonwoods (*Populus deltoides*), are limited primarily to fencelines and the area immediately adjacent to the Goodhue Ditch.

Portions of the Goodhue Ditch contained hydrophytic vegetation such as a species of sedge (*Carex* spp.), a rush species (*Scirpus pallidus*), two smartweed species (*Polygonum* spp.), and reed canarygrass (*Phalaris arundinacea*). Most wetland species were located along the southern portion of the Goodhue Ditch on the Property and were primarily associated with the interior and bottom of the ditch. Smooth scouringrush (*Equisetum laevigatum*), sandbar willow (*Salix exidua*) and other wetland species were, however, associated with the northern end of the Goodhue Ditch and with the roadside ditch along Dillon Road.

Two additional wetland areas were located immediately adjacent to, but outside the property boundary. One is a small pond approximately ¼ acre in size which is located on the Bowes Open Space immediately adjacent to the west boundary of the Property. Some standing water was present in the pond on October 1, 2002. The second was a small depression approximately one acre in size, which is located immediately south of the southeast corner of the property on land owned by Elmer Crider. No water was present in that wetland at the time of the site visit on October 1, but wetland plant species were evident.

No rare plants or plant communities have been identified by Colorado Natural Heritage Program (CNHP) on the Property [Natural Diversity Information Source (NDIS), 2002].

5.2.5.2 Exotic Species and Noxious Weeds

The Property has the following weed species in these locations: diffuse knapweed (*Centaurea diffusa*), lambsquarters (*Chenopodium album*), chicory (*Cichorium intybus*), field bindweed (*Convolvulus arvensis*), Canada thistle (*Cirsium arvense*), Scotch thistle (*Onopordum acanthium*), musk thistle (*Carduus nutans*), and pigweed (*Amaranthus* spp.) are scattered in disturbed areas mostly along Dillon Road and the southern 1/3 of the Property. Russian-olive (*Elaeagnus angustifolia*) dominates most of the southern fenceline, and is also found along portions of the western boundary. A small stand of teasel (*Dipsacus fullonum*) is located in the southwest portion of the Property.

5.2.6 Wildlife Resources

5.2.6.1 Mammals

Species probably found on the Property such as striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*) have adapted well and actually thrive in and near urban and agricultural areas. Mammals observed during field inspection include the coyote, desert cottontail (*Sylvilagus audubonii*), and pocket gopher (*Thomomys* spp.)

Small rodents that probably occur in the irrigation ditch on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*).

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002). The neighboring open space parcel to the north (Warembourg) contains a colony of black-tailed prairie dogs (*Cynomys ludovicianus*), a candidate species for listing as threatened under the Endangered Species Act. However, no burrows or animals were present on the Property at the time of the field inspection.

5.2.6.2 Birds

The Property hosts the Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), several sparrow species, and western meadowlarks (*Sturnella neglecta*), all of which were observed during field inspections. Several special status bird species could potentially utilize the Property, including the golden eagle (*Aquila chrysaetos*) and some migratory songbird species.

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water. Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

Other species of concern that may use the Property include long-eared owl (*Asio otus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

5.2.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property (OAHP, 2002). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, no cultural or historic sites occur on the Property. The original farmstead was not considered historically significant and the house was later removed. Further

investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.2.8 Agricultural Resources

5.2.8.1 Water Rights

The following water rights were purchased with the Property and are available for irrigation use on the Property:

- one and three-fortieths (1 3/40) shares of the capital stock of the South Boulder and Coal Creek Irrigation Ditch Company,
- one and three-fortieths (1 3/40) shares of the capital stock of the South Boulder and Coal Creek First Extension Ditch Company,
- four (4) shares of the capital stock of the Farmers Reservoir and Irrigation Company, A/K/A Farmers Lake (Marshall Lake Reservoir Division),
- and all surface and subsurface water.

Some of the above mentioned water rights are owned jointly by both the City and County, while others are owned exclusively by the City of Louisville. Of the 1 3/40 shares in both the South Boulder and Coal Creek Irrigation Ditch Company and the South Boulder and Coal Creek First Extension Ditch Company, five-eights of one share (5/8) are owned solely by the City. The remaining nine-twentieths of one share (9/20) are owned jointly by both the City and County. Of the 4 shares of capitol stock in the Farmers Reservoir and Irrigation Company, 2.3 shares are owned solely by the City. The remaining 1.7 shares are owned jointly by both the City and County. Of those rights owned solely by the City, they are tied to the Property through the conservation easement. The City and County are currently working on combining their respective ownership interests so that all water is owned as tenants in common.

The City of Louisville holds the stock certificates and pays annual assessments, while Boulder County reimburses the City in even years. The City votes the shares in even years and the County votes in odd years.

5.2.8.2 Soil Resources and Production Potential

Two soil types have been mapped on the Property from the Nunn soil series (USDA, 1975). Refer to the *Soils* map for additional detail. In general, these soils are deep and well-drained with slow permeability. The erosion hazard is moderate. These soils are suited to all irrigated crops of the area. A systematic crop rotation should be followed in order to maintain soil tilth. To minimize erosion losses and maintain soil tilth, row crops should be limited to no more than three consecutive years. Crops grown on these soils respond well to applications of fertilizer containing nitrogen and phosphorous. The soil types on the Property have been traditionally used for irrigated crops and pasture.

5.2.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property consists of fences, gates, ditches, laterals, diversion structures, a livestock watering system (including a well, pipeline, and stock tank), a well house, and several barns and storage sheds. The Property has historically been irrigated from the Goodhue Ditch complex. A number of side ditches branch laterally through concrete or earthen

diversion structures to distribute water. All ditches are earthen, including the Goodhue Ditch. Refer to the Property maps for the location of these elements.

5.2.9 Management Direction

5.2.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The Property is irrigated grass for hay and pasture and its recommended classification is "No Prairie Dog" (NPD). If necessary, a removal strategy will be pursued to protect the integrity of the agricultural resource, which includes species relocation, contributions to predator recovery programs, and extermination.

5.2.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important, as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, as they can provide excellent competition against invading noxious weeds.

Consider removing the Russian-olive trees and replanting windbreaks with native trees over time.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.2.9.2.1 Diffuse Knapweed

Control of diffuse knapweed should be the top priority for weed management on the Property because of the tumbleweed characteristic of this plant and its potential for spread. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective. Insect biological control has shown promising results for control of diffuse knapweed,

particularly during dry years. If insects that prey on diffuse knapweed are not present, a release should be considered.

Diffuse knapweed is susceptible to Redeam, Curtail, and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of any of these herbicides prior to seed set. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.2.9.2.2 Other Weeds

Canada thistle, a perennial weed, can be effectively managed by combination of mowing and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control.

Where musk thistle, Scotch thistle, teasel and chicory are found, spot spray applications of Tordon or Transline prior to seed set should provide effective control.

5.2.9.3 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain the Property in perennial grass aimed at forage production for hay and grazing.
2. Control weeds in fields and along ditches, particularly diffuse knapweed and Canada thistle.
3. Follow up revegetation efforts in the disturbed area along Dillon Road.
4. Replant fescue dominated fields when production declines over time, possibly converting to orchardgrass, perennial ryegrass, or meadow brome.
5. Evaluate adequacy of irrigation water and perform conveyance system improvements.

Past grazing management can be described as seasonal grazing coordinated with hay production. Livestock was typically pastured in the fields from winter into early spring. Cattle were then removed for production and harvest of hay and then were brought back on the land to pasture after grass dormancy in the fall.

Current grazing practices can be described as adaptive grazing management that is guided by forage production and environmental conditions. Temporary fencing is used by agricultural resource managers to control the timing, number of cattle, and size of pastures in order to control plant utilization and vigor. Growing season grazing requires close management and an adequate rest and recovery period between uses. Grazing is also used to stress weeds and improve desirable plant vigor.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.2.9.4 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. Extensive and dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of agricultural production.

The City of Louisville is scheduled to widen Dillon Road to the immediate north of the Property between S. 88th St. and S. 96th Street. This project will include the addition of paved bicycle lanes.

The County Trails Map in the 1999 Boulder County Comprehensive Plan depicts a trail "corridor" running N-S along the Goodhue Ditch on the Property. Given the current recreation infrastructure in the area, this corridor is not considered a priority.

5.2.9.5 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife values of agricultural lands, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property.

5.2.9.6 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.2.9.6.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Boulder County Sheriff's Department, as the Property is located within the unincorporated county. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.2.9.6.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. A few structures do exist on the Property, but are limited to agricultural barns, sheds and well houses. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.2.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Irrigation water----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Agricultural Infrastructure
Admor, Boulder County
T1SR69W
gates
fences
pump
roads
waterer
Admor
N
Boulder County
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DISCLAIMER
This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The areas depicted here are approximate. More site-specific studies may be required to draw accurate conclusions.
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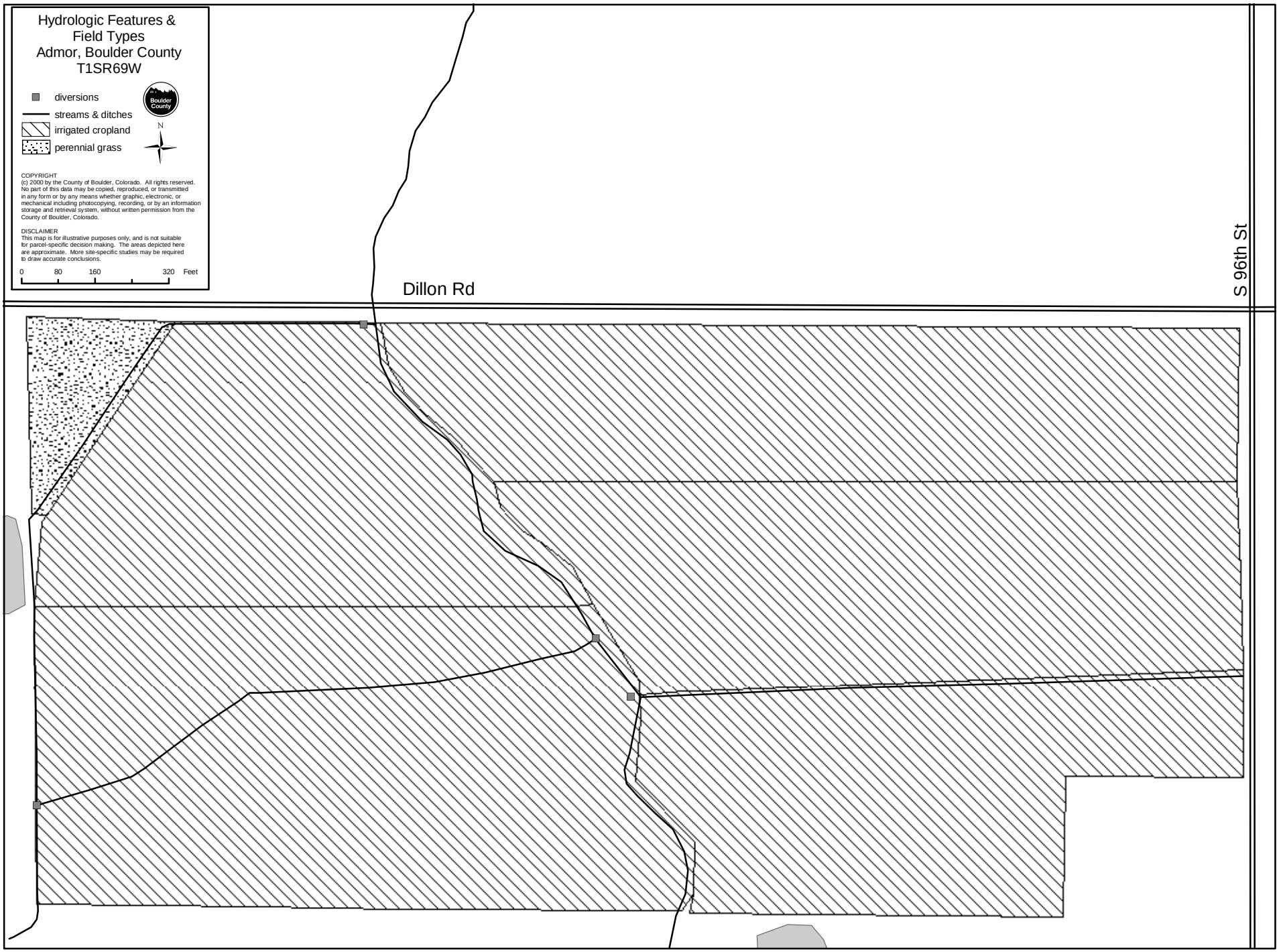
Dillon Rd
S 96th St


Hydrologic Features &
Field Types
Admor, Boulder County
T1SR69W
diversions
streams & ditches
irrigated cropland
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Boulder County
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0 80 160 320 Feet
Dillon Rd
S 96th St

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5.3 BOULDER COUNTY LAND VENTURE

5.3.1 Acquisition History

The Boulder County Land Venture Property ("Property") was purchased by Boulder County in May 1999 for approximately $6,621,000, or $43,560/acre. The original purchase consisted of 152 acres of fee simple land and included water rights. The City of Louisville purchased a 50% undivided interest in the Property in 2001. Also, 10.68 acres was sold to Broomfield for development of the Northwest Parkway. The Property now consists of 140.8938 acres. The County's total cost after these sales was $1,878,442.50. The purpose of the acquisition was to preserve agricultural land and provide an open space buffer between the urban areas of nearby Lafayette and Louisville.

5.3.2 Location and Access

The Property is located about 2 miles southeast of the City of Louisville, Colorado at the northeast corner of the intersection of Dillon Road and South 104th Street.

Access to the Property is by way of a farm gate located near the intersection of Cherry Street and S. 104th Street.

5.3.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Mayhoffer (Section 15) Property are:

North: Mayhoffer (Section 15) open space lies due north; Lafayette's South Pointe Subdivision lies to the northeast.
East: Several rural residences and a 55-acre farm property lie to the east; a portion of the Northwest Parkway corridor lies to the southeast.
South: Directly adjacent to the southwest boundary are two rural residences and a 1-acre manufacturing/processing facility; Northwest Parkway highway corridor lies to the immediate south and is followed by Rock Creek Farm/Carolyn Holmberg Preserve open space.
West: The Colorado Technology Center, a business and industrial park, lies to the west.

5.3.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for dryland hay and crop production and livestock grazing. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.
- Oil and gas lease by and between Trillium Corp. and Martin Exploration Management Company recorded April 9, 1992. A lease amendment and affidavit of lease extension were both recorded in 1995.
- Easement and right-of-way for pipeline purposes granted to Gerrity Oil & Gas.
- Mineral rights (coal only) are severed and owned by three parties, Helen and William Peltier, Colorado and Utah Land Company, and Bob Richardson.
- Right-of-way for the Northwest Parkway along the south and southeast portions of the Property.

5.3.5 Vegetative Resources

5.3.5.1 Vegetative Communities

The Property has been used for both irrigated and dryland crop production. The Property originally was irrigated grass for hay and pasture. The present condition of the Property is tilled cropland and was recently planted in oats (*Avena sativa*), alfalfa (*Medicago sativa*), and sorghum (*Sorghum bicolor*). Introduced grasses and weedy species dominate the fence lines. General categories can be used to describe the vegetation on the Property, including cropland, disturbed grassland, and wetland.

The majority of the Property is currently in crop production. Canada thistle (*Cirsium arvense*) and smooth brome (*Bromus inermis*) dominate some areas within the irrigation ditches on the Property. Vegetation along the fence lines includes diffuse knapweed (*Centaurea diffusa*), intermediate wheatgrass (*Agropyron intermedium*), yellow sweet clover (*Melilotus officinalis*), and common sunflower (*Helianthus annuus*). Intermediate wheatgrass, an introduced pasture grass, dominates the northeast corner of the Property. Smooth brome dominates moister soils adjacent to the irrigation ditch.

Disturbance from black-tailed prairie dog activity is apparent in the north-northeast portion of the Property. The vegetation here includes intermediate wheatgrass, but is denuded in several areas in the vicinity of prairie dog burrows where field bindweed is a dominant component.

The National Wetlands Inventory mapped an emergent wetland in the northeast corner of the Property (NWI 1975). Historically this corner of the Property was probably seasonally inundated with water and/or augmented with irrigation water from the adjacent ditch. A series of three stock ponds in the wetland area were dry at the time of the site visit. Threesquare bulrush (*Scirpus americanus*), an obligate wetland species, dominates a large portion of the vegetation community. Sandbar willow (*Salix exigua*) occurs in and around the stock ponds. Several large cottonwoods (*Populus deltoides*) occur in this area. Canada thistle and showy milkweed (*Asclepias speciosa*) dominate transitional areas adjacent to the disturbed grassland.

No rare plants or plant communities have been identified by Colorado Natural Heritage Program (CNHP) on the Property [Natural Diversity Information Source (NDIS), 2002].

5.3.5.2 Exotic Species and Noxious Weeds

The Property has the following noxious weed species in these locations: Diffuse knapweed (*Centaurea diffusa*) is scattered along the fence lines, on all four sides of the Property; Canada thistle (*Cirsium arvense*) occurs in the irrigation ditches and dominates a large portion of the wetland area in the northeast corner on the Property; Musk thistle (*Carduus nutans*) is scattered in the disturbed grasslands in the northeast corner of the Property; and Russian-olive (*Elaeagnus angustifolia*) occurs in the irrigation ditch along the north side of the Property.

5.3.6 Wildlife Resources

5.3.6.1 Mammals

Species likely to occur on the Property, such as striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*), have adapted well and actually thrive in and near urban and agricultural areas. Small rodents that probably occur in the irrigation ditches on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*).

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS 2002). However, a small colony of black-tailed prairie dogs (*Cynomys ludovicianus*), a candidate species for listing as threatened under the Endangered Species Act, is present in the northeast corner of the Property. Black-tailed prairie dogs also occur on private property adjacent to the east side of the Property. A single prairie dog burrow was observed in the southeast corner of the Property.

Due to population declines across its historical range, on February 4, 2000, the U.S. Fish and Wildlife Service issued a 12-month petition finding that stated:

> *"The Fish and Wildlife Service has determined that the current status of the black-tailed prairie dog warrants its listing as a Threatened species pursuant to section 4(b)(3)(A) the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.), subject to the approval of a final rule. The Service believes that sufficient information is currently available to support a finding that listing the black-tailed prairie dog as threatened is warranted, but that a proposed rule at this time is precluded by work on other higher priority species. The Service will reevaluate the status of the species 1 year after publication of this finding in the Federal Register."*

This finding establishes the black-tailed prairie dog as a candidate species for listing as federally threatened, and subject to annual review by the U.S. Fish and Wildlife Service. Currently, there are no federal restrictions placed on the overall management or control of black-tailed prairie dogs. However, species such as burrowing owl (*Athene cunicularia*), prairie rattlesnake (*Crotulus viridis*), and mountain plover (*Charadrius montanus*) are closely linked to prairie dog burrow systems for food and/or cover. Prairie dogs provide an important prey resource for numerous predators including badger, coyote, fox, golden eagle, ferruginous hawk and other raptors.

5.3.6.2 Birds

Although no nest was observed, a single large cottonwood on the Property may provide roosting and nesting habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*) and Swainson's hawk (*Buteo swainsoni*). The cottonwood is also suitable for cavity nesters such as northern flicker (*Colaptes auratus*), black-capped chickadee (*Parus atricapillus*), and American kestrel (*Falco sparverius*). ERO Resources Corporation was given permission to place artificial raptor nest structures on the Property in relation to nest loss that occurred near Dillon Road from Northwest Parkway construction activities.

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a

popular winter resident and are seldom seen far from water. Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

Other species of concern that may use the Property include long-eared owl (*Asio otus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

5.3.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property (OAHP, 2002). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, no cultural or historic sites occur on the Property. Other potential unidentified cultural resources may exist within the Property. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.3.8 Agricultural Resources

5.3.8.1 Water Rights

The following water rights were purchased with the Property and are available for irrigation use on the Property:

- 123.9508 shares in the Goodhue Ditch & Reservoir Company

The County holds the stock certificate, pays annual assessments, and votes the shares.

Historically, the Property was irrigated from the Goodhue Ditch, however, it is currently maintained as dryland. A culvert under Dillon Road has collapsed and needs to be repaired in order for irrigation water to be delivered to the Property.

5.3.8.2 Soil Resources and Production Potential

Five soil types have been mapped on the Property from the Nunn and Ascalon soil series (USDA, 1975). Refer to the *Soils* map for additional detail. In general, these soils are deep and well-drained with slow to medium runoff, slow to moderate permeability, and slight to moderate risk of erosion. These soils are suited to all of the irrigated crops of the area. A systematic crop rotation should be followed in order to maintain soil tilth. To minimize erosion losses and maintain soil tilth, row crops should be limited to no more than three consecutive years. Crops grown on these soils respond well to applications of fertilizer containing nitrogen and phosphorous. The soil types on the Property have been traditionally used for irrigated crops and pasture.

5.3.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property is minimal and consists of fences, ditches, laterals, and diversion structures. No farm related or other buildings exist on the Property. Refer to the Property maps for the location of these elements.

5.3.9 Management Direction

5.3.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The Property is cropland and its recommended classification is "No Prairie Dog" (NPD). If necessary, a removal strategy will be pursued to protect the integrity of the agricultural resource, which includes species relocation, contributions to predator recovery programs, and extermination.

In addition, the prairie dog colony east of the Property should be monitored for expansion onto the Property. The installation of a visual barrier along the east side of the Property may inhibit expansion of the adjacent colony.

If the Property is ever converted and restored to native grassland, then its classification shall be changed and designated as a Multiple Objective Area (MOA).

5.3.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Weed management on the Property should focus on efforts to control diffuse knapweed and Canada thistle. Weed problems are most severe along fence lines and in irrigation ditches. Diffuse knapweed occurs primarily along the west fence line and on the north side of the Property. Canada thistle should be controlled within the wetland and irrigation ditches.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term. Smooth brome in particular thrives along irrigation ditches providing much needed competition to Canada thistle.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.3.9.2.1 Diffuse Knapweed

Control of diffuse knapweed should be the top priority for weed management because of the tumbleweed characteristic of this plant and potential for spread. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective. Insect biological control has shown promising results for control of diffuse knapweed, particularly during dry years. If insects that prey on diffuse knapweed are not present, a release should be considered.

Diffuse knapweed is susceptible to Tordon (picloram) and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Tordon is classified as a restricted use herbicide due to mobility and residual activity of this product. Applicators of Tordon need to be properly certified, and proximity to trees and water needs to be considered. If irrigation on the Property is restored, Tordon can not be used. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.3.9.2.2 Canada Thistle

Canada thistle, a perennial weed, can be effectively managed by combination of mowing and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control. In sensitive areas, the best choice for control is spot-spray applications of Round Up (glyphosate) when no water is running in the ditch and where water has receded in the wetland. Round Up is a non-selective herbicide so care must be taken when spot-spraying this product to avoid excessive over spray, which can kill, desired vegetation.

5.3.9.3 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Control weeds along the ditches and fence lines.
2. Replace the damaged culvert under Dillon Road to restore the ability to deliver water.
3. Restore irrigation to the Property and establish perennial grass over the next several years.
4. Purchase additional water rights for the Property, as the Property has been identified as water short and is utilizing tenant-owned water.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.3.9.4 Ecosystem Restoration and Enhancement

Remove Russian-olive trees from the irrigation ditch and consider replanting native trees.

With respect to enhancement of wetlands, further evaluation of the hydrology of the northern portion of the Property is necessary. A wetland inventory should also be performed for the Property before a direction can be made for wetland enhancement.

If agriculture no longer becomes feasible or is ceased on the Property, then it shall be restored to native grassland.

5.3.9.5 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. Extensive and dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of agricultural production.

Due to the acquisition of the Adler/Fingru, Esmail, Mayhoffer (Section 15), and Boulder County Land Venture properties, there is an opportunity to connect the Coal Creek Trail with Rock Creek Farm via the S. 104th Street corridor. This connection would provide a link between two regional trails and allow residents of Lafayette and Louisville to access Rock Creek Farm and its trail system. Opportunities for making this connection include the utilization of the S. 104th Street right-of-way, the western boundaries of the open space properties themselves, or through the Colorado Technology Center. Any and all combinations of these possibilities should be explored and pursued. If a trail should pass through an open space property, all efforts should be made to preserve the integrity and function of the agricultural resource, including irrigation concerns.

5.3.9.6 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife values of agricultural lands, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property.

5.3.9.7 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.3.9.7.1 Law Enforcement

According to the terms of the Louisville Intergovernmental Agreement (IGA), the City of Louisville shall provide law enforcement for the Property. Typically, primary law enforcement responsibility for properties located within the unincorporated county rests

with the Boulder County Sheriff's Department. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.3.9.7.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.3.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Wetlands monitoring-------Every 3 yrs.------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Agricultural Infrastructure
Boulder County Land Venture
Boulder County
T1SR69W
gates
access roads
fences
roads
Boulder County Land Venture
N
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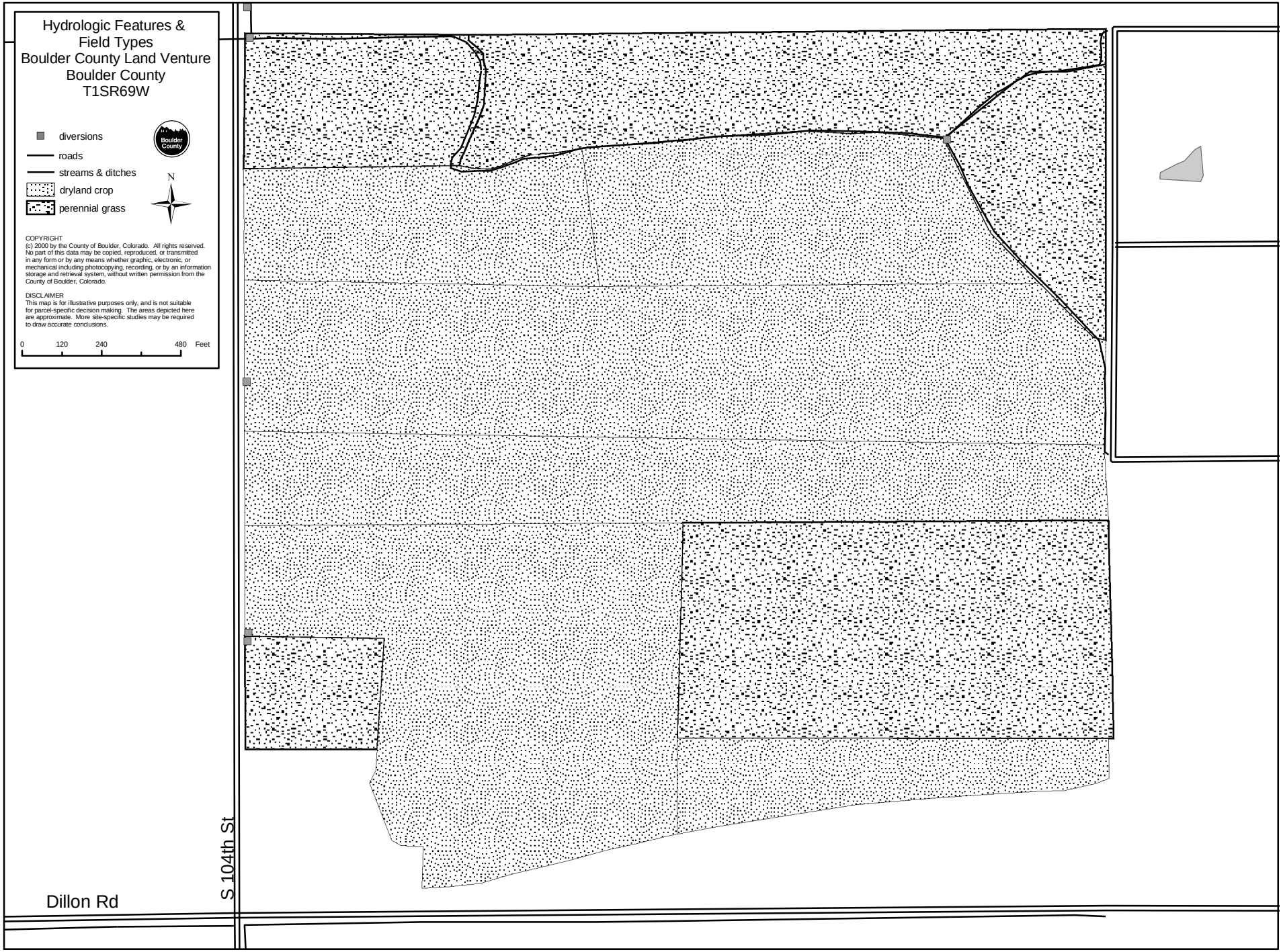
Feet
S 104th St
Dillon Rd


Hydrologic Features &
Field Types
Boulder County Land Venture
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diversions
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dryland crop
perennial grass
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S 104th St
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5.4 BOWES

5.4.1 Acquisition History

The Bowes Property ("Property") was jointly purchased from Bowes Properties Limited Partnership by Boulder County and the City of Louisville in May 2000 for $1,799,307. Each entity paid one-half of the purchase price and owns a 50% undivided interest. The purchase consisted of 66.64 acres of fee simple land. The purchase also included water rights. Great Outdoors Colorado (GOCO) provided a grant of $130,650 for acquisition assistance. Each entity owns a conservation easement over the entities' ownership interest. The purpose of the acquisition was to preserve agricultural land and provide an open space buffer on the south side of Louisville.

5.4.2 Location and Access

The Property is located immediately south of the City of Louisville and is bordered by Dillon Road to the north and South 88th Street to the west. U.S. Highway 36 is located approximately one-half mile to the southwest.

Access to the Property is by way of farm gates located on the western and northwestern boundaries.

5.4.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Bowes Property are:

North: To the adjacent northeast are two residences on 5 acres that are restricted by a conservation easement; Warembourg open space lies further north and northeast; Louisville's Coal Creek Ranch Subdivision lies to the northwest.
East: Admor open space is due east.
South: Monarch High School campus (Boulder Valley RE2) is due south.
West: Additional residential development lies to the west beyond the intersection of Dillon Rd. and S. 88th St.

5.4.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for hay production and livestock grazing. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- Reciprocal conservation easements between Boulder County and the City of Louisville were exchanged and restrict the use of the subject property to open space and agriculture.

- The Property is subject to a GOCO grant and conservation easement. The conservation easement contains land use prohibitions and approval requirements that go beyond the County's standard conservation easement. Furthermore, the easement requires that the Property's land management plan shall be updated every five years and submitted to the GOCO Board for approval. Any material change must also be approved.

- Reservation of all mineral rights, including the right of a proprietor of any penetrating vein or lode to extract his ore.
- Right-of-way, in fee or easement, for communication purposes to Mountain States Telephone and Telegraph Company.
- Right-of-way, in fee or easement, for buried water pipelines to Northern Colorado Water Conservancy District.
- Right-of-way, in fee or easement, for drainage purposes and utilities to City of Louisville.
- Right-of-way for S. 88th St. over the Southwest corner of the NW ¼ , NW ¼ of Section 20, T1S, R69W.
- Right-of-way for culvert, temporary construction easement and irrigation lateral over subject property.
- Existing right-of-way and future right-of-way acquisition for expansion of County Road 68 (Dillon Rd.).

5.4.5 Vegetative Resources

5.4.5.1 Vegetative Communities

The Property is irrigated grass used primarily for pasture and hay production. The lower elevations of the Property are almost entirely occupied by established fescue grass pasture, which is heavily grazed. However, given the current drought conditions, this pasture appeared to be in relatively good condition. Overstory tree species, dominated by plains cottonwood (*Populus deltoides*), are limited primarily to fencelines and the southwest corner of the parcel.

The southeastern 1/3 of the property contains an old grass stand that was planted to a cover crop for weed control and forage. Perrenial grass was then planted for establishment of irrigated hay production and grazing.

The higher elevations of the Property were characterized by the presence of more xeric native plant species such as great plains yucca (*Yucca glauca*), rabbitbrush (*Chrysothamnus nauseosus*), and buffalo grass (*Buchloe dactyloides*). One of these areas was located on the higher ground adjacent to Dillon Road and another was located on high ground along the southern boundary of the property.

A shallow ¼ acre stock pond exists at the extreme east end of the Property and contained hydrophytic vegetation such as spikerush (*Eleocharis palustris*), reed canarygrass (*Phalaris arundinacea*), and a smartweed species (*Polygonum persicaria*).

No rare plants or plant communities have been identified by Colorado Natural Heritage Program (CNHP) on the Property [Natural Diversity Information Source (NDIS), 2002].

5.4.5.2 Exotic Species and Noxious Weeds

The Property has the following weed species in these locations: diffuse knapweed (*Centaurea diffusa*), lambsquarters (*Chenopodium album*), chicory (*Cichorium intybus*), field bindweed

(*Convolvulus arvensis*), Canada thistle (*Cirsium arvense*), Scotch thistle (*Onopordum acanthium*), musk thistle (*Carduus nutans*), pigweed (*Amaranthus* spp.), and kochia (*Kochia scoparia*) are scattered in areas mostly in the south and east. Some Russian-olive (*Elaeagnus angustifolia*) is established along the fencelines. The wetland area in the vicinity of the small pond was dominated around the periphery by reed canarygrass (*Phalaris arundinacea*).

5.4.6 Wildlife Resources

5.4.6.1 Mammals

Species probably found on the Property such as striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*) have adapted well and actually thrive in and near urban and agricultural areas.

Small rodents that probably occur in the irrigation ditch on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*).

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002). The neighboring open space parcel to the north (Warembourg) contains a colony of black-tailed prairie dogs (*Cynomys ludovicianus*), a candidate species for listing as threatened under the Endangered Species Act. However, no burrows or animals were present on the Property at the time of the field inspection.

5.4.6.2 Birds

The Property hosts the Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), several sparrow species, and western meadowlarks (*Sturnella neglecta*), all of which were observed during field inspections. Several special status bird species could potentially utilize the property, including the golden eagle (*Aquila chrysaetos*) and some migratory songbird species.

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water. Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

Other species of concern that may use the Property include long-eared owl (*Asio otus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

5.4.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property (OAHP, 2002). This database contains information on documented federal or state studies or findings regarding any cultural

resources. According to the search, no cultural or historic sites occur on the Property. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.4.8 Agricultural Resources

5.4.8.1 Water Rights

The following water rights were purchased with the Property and are available for irrigation use on the Property:

- one (1) share of the capital stock of the South Boulder and Coal Creek Irrigating Ditch Company,
- one (1) share of the capital stock of the South Boulder and Coal Creek First Extension Ditch Company,
- two (2) shares of the capital stock of the Farmers Reservoir and Irrigation Company, A/K/A Farmers Lake (Marshall Lake Reservoir Division),
- and all surface and subsurface water.

All of the above mentioned water rights are jointly owned by the Boulder County and the City of Louisville. The County holds the original stock certificates and pays annual assessments, while the City reimburses the County in even years. The County votes the shares in odd years and City votes in even years.

5.4.8.2 Soil Resources and Production Potential

Four soil types have been mapped on the Property from the Nunn and Valmont soil series (USDA, 1975). Refer to the *Soils* map for additional detail. In general, these soils are deep and well-drained with rapid runoff, slow permeability, and moderate to high risk of erosion. These soils are suited to most of the irrigated crops of the area. To minimize erosion losses and maintain soil tilth, row crops should be limited to no more than two consecutive years. Crops grown on these soils respond well to applications of fertilizer containing nitrogen and phosphorous. These soils are well suited to pasture, and if they are well managed, the hazard of erosion can be minimized. Pastures should be rotated and grazing limited to leave four-inch stubble. Smooth bromegrass and orchardgrass are suitable pasture grasses. The addition of alfalfa or Alsike clover increases the value of the forage. The soil types on the Property have been traditionally used for irrigated and dryland crops and pasture.

5.4.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property is minimal and consists of fences, gates, ditches, laterals, diversion structures, and a man-made livestock pond. Fences on the Property are in poor condition. The Property has historically been irrigated from the South Boulder and Coal Creek Ditch complex. A number of earthen irrigation laterals distribute water. No farm related or other buildings exist on the Property. Refer to the Property maps for the location of these elements.

5.4.9 Management Direction

5.4.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The Property is irrigated hay and pasture land and its recommended classification is "No Prairie Dog" (NPD). If necessary, a removal strategy will be pursued to protect the integrity of the agricultural resource, which includes species relocation, contributions to predator recovery programs, and extermination.

5.4.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Weed management on the Property should focus on efforts to control diffuse knapweed and Canada thistle, both of which are well established. Infestations were worst in the heavily grazed southern and eastern portions of the Property.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they can provide excellent competition against invading noxious weeds.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.4.9.2.1 Diffuse Knapweed

Diffuse knapweed is the top priority for weed management because of the tumbleweed characteristic of this plant and potential for spread. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective. Insect biological control has shown promising results for control of diffuse knapweed, particularly during dry years. If insects that prey on diffuse knapweed are not present, a release should be considered.

Diffuse knapweed is susceptible to Curtail and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these

herbicides prior to seed set. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.4.9.2.2 Other Weeds

Canada thistle, a perennial weed, can be effectively managed by a combination of mowing, grazing, and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control.

Where musk thistle, Scotch thistle and chicory are found, spot spray applications of Tordon or Transline prior to seed set should provide effective control.

5.4.9.3 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain the Property in perennial grass aimed at hay production and livestock grazing.
2. Control weeds in fields and along ditches, particularly diffuse knapweed and Canada thistle.
3. Revegetate the disturbed area (from previous pipeline construction) along Dillon Road.
4. Replant old grass fields over time.
5. Evaluate adequacy of irrigation water and perform conveyance system improvements.
6. Construct new fences, starting along Dillon Road.

Past grazing management can be described as seasonal grazing coordinated with hay production. Livestock was typically pastured in the fields from winter into early spring. Cattle were then removed for production and harvest of hay and then were brought back on the land to pasture after grass dormancy in the fall.

Current grazing practices can be described as adaptive grazing management that is guided by forage production and environmental conditions. Temporary fencing is used by agricultural resource managers to control the timing, number of cattle, and size of pastures in order to control plant utilization and vigor. Growing season grazing requires close management and an adequate rest and recovery period between uses. Grazing is also used to control weeds and improve desirable plant vigor.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.4.9.4 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. Extensive and dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of agricultural production.

The City of Louisville is scheduled to widen Dillon Road to the immediate north of the Property between S. 88th St. and S. 96th Street. This project will include the addition of paved bicycle lanes. Given the current recreation infrastructure in the area, the Property is not considered a recreation priority.

5.4.9.5 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife values of agricultural lands, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property.

5.4.9.6 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.4.9.6.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Boulder County Sheriff's Department, as the Property is located within the unincorporated county. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.4.9.6.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.4.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about

future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Irrigation water----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


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Bowes, Boulder County
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Dillon Rd
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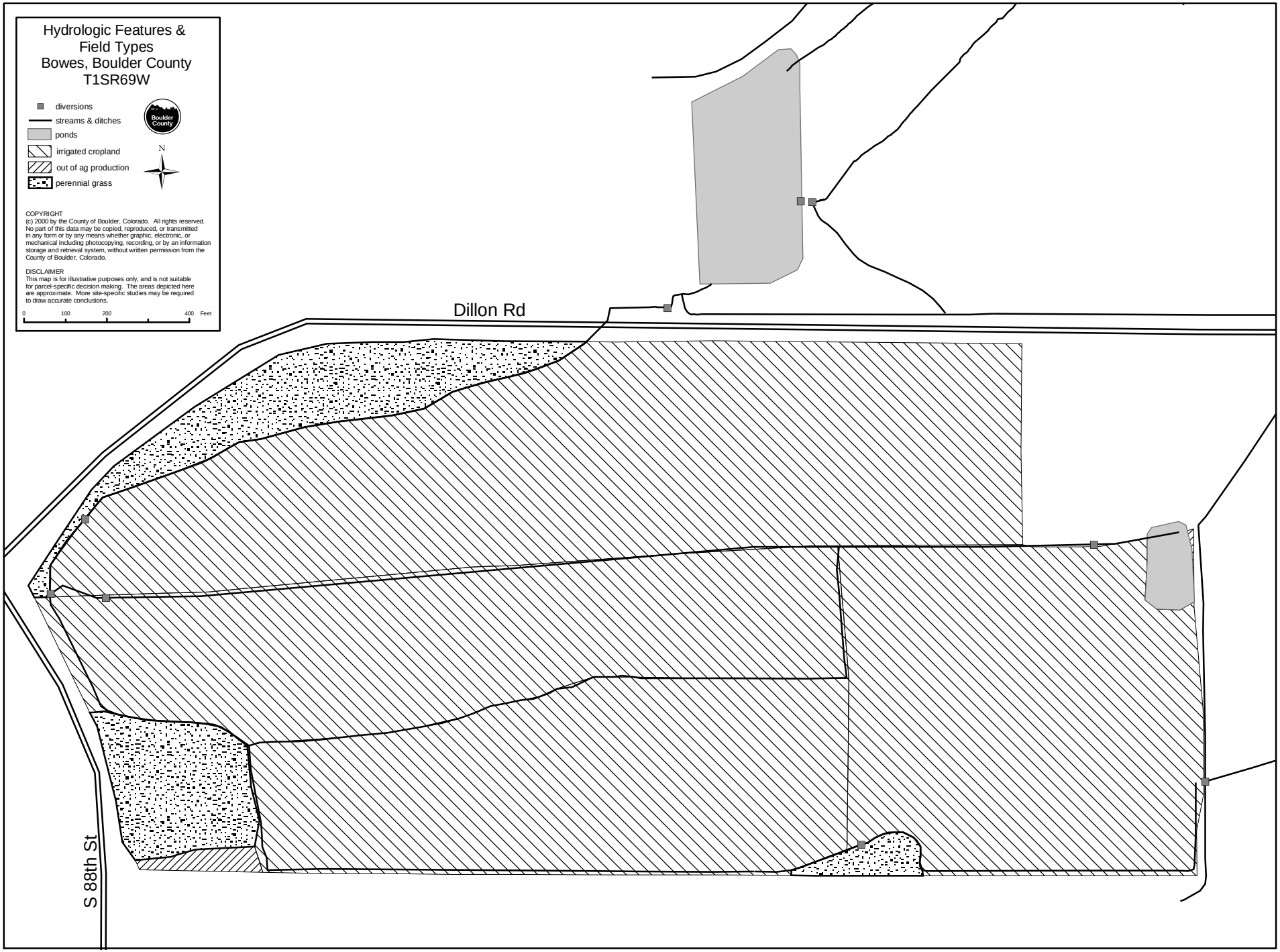
Hydrologic Features &
Field Types
Bowes, Boulder County
T1SR69W
diversions
streams & ditches
ponds
irrigated cropland
out of ag production
perennial grass
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5.5 CALLAHAN

5.5.1 Acquisition History

The Callahan Property ("Property"), formerly owned by the Callahan Family, was jointly purchased from Columbine Land Resources, Inc. by the City of Louisville and Boulder County in January of 1997. The purchase consisted of 46 acres of fee simple land for $400,000 and included water rights. The purchase price was divided evenly between the City of Louisville and Boulder County. The City and County each own a 50% undivided interest in the Property. The purpose of the acquisition was to preserve agricultural land and provide for a visual buffer to the north of Louisville.

5.5.2 Location and Access

Located due north of Louisville, in southeastern Boulder County, the Callahan Property lies in a highly urbanized area. The Property is bounded by Baseline Road to the north, Burlington Northern Santa Fe Railroad to the east, and residential development to the south and west.

Access to the Property is by way of a private drive, Snow Peak Lane, off of Baseline Road. The County has a permanent access easement for use by its employees and agents, allowing for ingress/egress to the Property. This drive is oriented north-south and contains a small parking lot available for use by City and County staff.

5.5.3 Adjacent Land Use and Ownership

The surrounding land uses and adjacent ownerships of the Callahan Property are:

North: The Property is bounded to the north by Baseline Road and mid-density residential development.
East: The Burlington Northern Santa Fe Railroad borders the Property to the northeast, followed by high-density residential development.
South: Hillsborough North Subdivision is located to the southeast (approximately 18 lots border the common boundary); City of Lafayette open space lands are to the southwest; and City of Louisville's Keith Helart Park (on Monarch Ct.) is to the south.
West: Low-density residential development to the adjacent northwest, and agricultural land to the west.

5.5.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for the production of hay and dryland crops. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- A coal lease by and between Frank Digrappa, Robert Roehrs and John Brunel, as Lessors, and ROMAC Exploration Company, Inc., recorded July 8, 1996.

- A non-exclusive easement exists for ingress/egress to the Property along Snow Peak Lane.

- A 20-foot easement for irrigation, tail water, and storm drainage exists along the southeastern boundary line, adjacent to the Hillsborough North Subdivision. A

January 1997 Improvement Location Certificate noted encroachment of a fence in the southwestern portion of the easement area.

- The mineral rights are severed and owned by two parties. Berger Realty and Securities Company owns an undivided ½ interest in all coal, oil, gas, and other mineral rights. Kountze Investment Company owns the other undivided ½ interest. These rights have priority and include the right to access the Property for purposes of mining, drilling, and exploring said land.

- Non-specific rights in and to the Highline Lateral and the Goodhue Ditch as described on file with the Boulder County Assessor.

- A right-of-way over said land, along the northeastern boundary line, for the Colorado and Southern Railroad.

- A right-of-way for County Road 56 (Baseline Road) along the northern boundary line as described on file with the Boulder County Assessor.

5.5.5 Vegetative Resources

5.5.5.1 Vegetation Communities

The Property is maintained in dryland production and consists of tilled cropland, introduced grasses for hay production, and a ditch corridor of mature trees, shrubs, and non-native grasses. The Property was probably once dominated by shortgrass prairie. Remnants of this vegetation community still persist on the City of Louisville Open Space property to the south of Callahan.

The Property is divided by the Goodhue Ditch. The area on either side of the ditch corridor is farmed and supports dryland crops and hay production. The northern 1/3 of the property is maintained as a hay field and is composed of smooth brome (*Bromopsis inermis*) and meadow fescue (*Festuca pratense*). The southwestern field was last planted to winter wheat, but has been fallow for most of 2002 and is infested with cheatgrass (*Anisantha tectorum*), hoary cress (*Cardaria draba*), and Canada thistle (*Breea arvense*).

The Goodhue Ditch corridor overstory is composed of mature plains cottonwood (*Populus deltoides*) trees and native shrubs, including coyote willow (*Salix exigua*), peachleaf willow (*Salix amygdaloides*), leadplant (*Amorpha fruticosa* var. *angustifolia*), and wild plum (*Prunus americana*). The understory is characterized by a mixture of non-native grasses, noxious weeds, and species that prefer wetter areas. Dominant species include smooth brome, Kentucky bluegrass (*Poa pratensis*), orchard grass (*Dactylis glomerata*), wild licorice (*Glycyrrhiza lepidota*), and horsetail (*Hippochaete* sp.).

A wetland occurs in the east-central portion of the Property. This approximately 2-acre area appears to be fed by a swale and former ditch lateral that originates to the west. Furthermore, the railroad embankment causes water to collect in this area. Two large peachleaf willows indicate that this area has been wet and avoided in farming for many years. Currently, most of the vegetation consists of young even aged plains cottonwoods, about 3 to 7 years old. Water may have pooled in this area in the wet years of the mid-1990s, preventing this area from being farmed and providing a fresh disturbed site for cottonwood establishment as the water receded. This site also supports hydrophytic vegetation including three-square bulrush (*Schoenoplectus pungens*),

broad-leaved cattail (*Typha angustifolia*), coyote willow, and showy milkweed (*Asclepias speciosa*). The wetland area is also dominated by a large infestation of Canada thistle, as well as kochia (*Bassia sieversiana*) and prickly lettuce (*Lactuca serriola*) in the drier areas.

No rare plants or plant communities have been identified by Colorado Natural Heritage Program (CNHP) on the Property [Natural Diversity Information Source (NDIS), 2002].

5.5.5.2 Exotic Species and Noxious Weeds

The Property has the following weed species: Canada thistle, common mullein (*Verbascum thapsus*), downy brome (*Bromus tectorum*), chicory (*Cichorium intybus*), field bindweed (*Convolvulus arvensis*), diffuse knapweed (*Centaurea diffusa*), kochia, and Russian-olive (*Elaeagnus angustifolia*).

5.5.6 Wildlife Resources

5.5.6.1 Mammals

Species probably found on the Property such as striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*) have adapted well and actually thrive in and near urban and agricultural areas. Mule deer (*Odocoileus hemionus*) have also been known to pass through the Property.

Small rodents that probably occur in the irrigation ditches on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*).

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002).

5.5.6.2 Birds

Large cottonwoods on the Property may provide roosting and nesting habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*) and Swainson's hawk (*Buteo swainsoni*). The trees contain cavities generally suitable for northern flicker (*Colaptes auratus*), black-capped chickadee (*Parus atricapillus*), and American kestrel (*Falco sparverius*). These species may utilize the trees along the ditch corridor. The black-billed magpie (*Pica pica*) probably nests on the Property. Willows and young cottonwoods associated with the wetland that exists in the east-central portion of the Property provide a vegetation island that is used by many birds.

Species observed during a September 2002 field visit include northern flicker, black-billed magpie, white-crowned sparrow (*Zonotrichia leucophrys*), red-tailed hawk (*Buteo jamaicensis*) and turkey vulture (*Cathartes aura*).

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeast portion of the County contains suitable habitat. Bald eagles are a popular winter resident and are seldom seen far from water.

Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

Other species of concern that may use the Property include long-eared owl (*Asio otus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

5.5.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property. This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, cultural resources of Euro American descent do occur on the Property and relate to the history and development of agriculture.

- Sites 5BL.453.1 and 5BL.2719.2 include the Highline Lateral of the Davidson Ditch and the Goodhue Ditch that date to 1872 and 1890, respectively. Both of these historic ditches run north-south and parallel each other through the approximate center of the Property.

- Sites 5BL.7010, 5BL.9017, 5BL.9018, and 5BL.9019 include isolated finds of historic agricultural machinery ruins. These pieces date from the 1920s to the 1950s.

None of these resources are eligible for inclusion on any historic register. The machinery ruins will be further evaluated to see if they are worthy of inclusion at the Lastoka interpretive site in Louisville. If not, they will remain on site and undisturbed. Current and proposed management activities are compatible with these resources.

5.5.8 Agricultural Resources

5.5.8.1 Water Rights

The following water rights were purchased with the Property and are available for irrigation use on the Property:

- 17.444 shares of the Davidson Ditch & Reservoir Company,
- 12.939 shares of the Goodhue Ditch and Reservoir Company.

Shares of the Goodhue and Davidson Ditch & Reservoir Companies were acquired as part of the transaction, but are unable to be applied to the Property for irrigation due to delivery complications. The diversion box located in the Goodhue Ditch in the northwest corner of the Property is set near the top of the ditch bank. Therefore, water levels in the ditch must be very high in order for water to reach the diversion box that serves the Property. Modifications and/or repairs must be undertaken to deliver water to and irrigate the Property. Consequently, these water rights are being used by the City and County on other joint agricultural properties.

The water rights are owned jointly by both the City and County. The County holds the stock certificates and pays annual assessments, while the City reimburses the County in even years. The County votes the shares in odd years and the City votes in even years.

5.5.8.2 Soil Resources and Production Potential

Two soil types have been mapped on the Property from the Ascalon soil series (USDA 1975). Refer to the *Soils* map for additional detail. In general, these soils are deep and well-drained with moderate permeability, medium runoff, and high risk of erosion. Keeping tillage to a minimum helps reduce soil washing and blowing. Row crops should be limited to no more than two years in the rotation. If maintained as dryland, a suitable cropping system is wheat-summer fallow. Stubble mulching and strip-cropping are helpful in reducing erosion. These soils are well-suited to grasses. The soil types on the Property have been traditionally used for irrigated and dryland crops and pasture.

5.5.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property is minimal and consists of fences, ditches, laterals, and diversion structures. Both the Goodhue and Highline Ditches run through the central portion of the Property but do not actively serve the Property. No farm related or other buildings exist on the Property. Refer to the Property map for the location of these elements.

5.5.9 Management Direction

5.5.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The Property is cropland and its recommended classification is "No Prairie Dog" (NPD). Currently, no prairie dogs exist on the Property. If necessary, a removal strategy will be pursued to protect the integrity of the agricultural resource, which includes species relocation, contributions to predator recovery programs, and extermination.

If ever taken out of agricultural production and revegetated, the site is still unsuitable as prairie dog habitat given its sandy loam soil types, small size and adjacent land uses.

5.5.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Weed management on the Property should focus on efforts to control diffuse knapweed and Canada thistle. These two weed species are of highest control priority because of their extent and/or aggressive nature. A short-term objective that could proceed immediately includes the

planning and scheduling of herbicide spraying in the interior infestation and along the Property boundaries.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they can provide excellent competition against invading noxious weeds.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.5.9.2.1 Diffuse Knapweed

Diffuse knapweed, occurring only minimally in the southwest portion of the site, should be the top priority for weed management because of the tumbleweed characteristic of this plant and its potential for spread. This weed is a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective.

Diffuse knapweed is susceptible to Tordon (picloram) and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Tordon is classified as a restricted use herbicide due to mobility and residual activity of this product. Applicators of Tordon need to be properly certified, and proximity to trees and water needs to be considered. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.5.9.2.2 Other Weeds

Canada thistle, a perennial weed that is infested within the wetland area in the northeast portion of the Property, can be effectively managed by combination of mowing and herbicide application. Mowing prior to seed set followed by a fall application of Telar or Escort provides best control.

Where common mullein and chicory are found, spot spray applications of Telar or Escort prior to seed set should provide effective control.

5.5.9.3 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain the Property in agricultural production as long as feasible.
2. Control weeds along the field edges, in the wetland, and along the ditch corridor.
3. Expand the wetland to the east by eliminating soil disturbance and reseeding.
4. Evaluate the potential for irrigation water delivery.
5. Evaluate alternative uses of the Property, including specialized agricultural uses such as

native plant propagation and community gardening, and the potential for grassland restoration and trail development.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.5.9.4 Ecosystem Restoration and Enhancement

Eliminating the disturbance to the eastern boundary of the wetland area would allow it to expand further east and tie into the coyote willows lining the railroad embankment. The willow community lies only 40 or 50 feet to the east, so the productive agricultural loss would be minimal. Furthermore, this area appeared not to be planted, but simply used as a tractor passage way. Staff should coordinate with the operator and inform him/her to discontinue discing this area. The area should be seeded with grass and allowed to recover. Application of water could enhance the wetland; however, due to problems associated with the location of the head gate and ditch water levels, no water can be delivered to the Property.

Russian-olive trees should be removed as they are capable of displacing many native trees and shrubs over time.

Opportunity exists for grassland restoration on the Property. Converting the Property from cropland to native short and mixed-grass prairie would enhance its potential to host valuable wildlife. The soils on the Property are of good quality, contain less clay, and appear to have good tilth. This factor combined with a slight northeast aspect that would hold moisture and shade seedlings would aid in a successful reseeding effort. The fact that it has been continuously farmed has also reduced the weeds existing in these areas. Plants that could be expected to do well include typical short and midgrass species, such as blue grama, sideoats grama, little bluestem, western wheatgrass, possibly buffalograss, and any number of native forbs. The cost of conversion (including only seedbed preparation, seed, and seed drilling) could range between $250-$550/acre, depending on the cost of seed, availability of equipment, and whether or not the work was performed by County staff or a private contractor.

Similarly, the Property could be used to grow native plants that would provide a source of seed for restoration projects on other BCPOS and Louisville lands or within the region. A native seed source that provides reasonably priced and locally available seed has been identified as a significant need with demands likely to increase over time.

5.5.9.5 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. Dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations.

The Property could provide future passive trail and wildlife viewing opportunities. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of agricultural production. The Property is currently being used illegally by area residents and a

social trail has been established along the southwest boundary and runs north along the ditch corridor.

No visitor services are contemplated for the Property, therefore it is likely that any future trail system through the Property would be composed of a small network of soft surface trails. Further investigation would be necessary to establish suitable locations for such trails. Trails or other related facilities on the Property can be open to public use if designated by the joint owners.

The Property provides opportunities for regional trail connections. The BNSF rail line is a corridor that could provide access from Baseline Road to south of the Property where trails link to both Louisville and Boulder's systems. The County Trails Map in the 1999 Boulder County Comprehensive Plan depicts the BNSF rail line bordering the Property as a trail "alignment". Opportunities also exist to the west of the Property where City of Lafayette open space extends north following a gully almost to Baseline Road.

In 1998 the City of Louisville researched and proposed the development of a concrete trail along the southeast boundary shared with the subdivision. This proposed trail would connect the existing trails to the southeast and southwest of the Property and eliminate having to traverse through the subdivision streets to make the connection. This connection could be accommodated within the agricultural operation and is currently being evaluated for funding priority by the Boulder County Regional Trails Committee.

5.5.9.6 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife values of agricultural lands, and agricultural resources and history (including the Goodhue Ditch). Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property. A short-term action could include providing assistance with removal of the debris and brush piles located along the southeast boundary line that abuts the Hillsbourough North Subdivision. Other outreach efforts might include disseminating information on the appropriate use of the Property and existing open space rules and regulations. This could be achieved through direct mail, attendance at a HOA meeting, or contacts with ranger staff during site patrols.

5.5.9.7 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.5.9.7.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Boulder County Sheriff's Department, as the Property is located within the unincorporated county. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.5.9.7.1 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.5.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Wetlands monitoring-------Every 3 yrs.------BCPOS
Breeding bird survey-------Every 3-5 yrs.----Volunteer
Cropland----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Baseline Rd
Goodhue Ditch
Highline Lateral
BNSF Railroad
Agricultural Infrastructure,
Hydrologic Features &
Field Types
Callahan, Boulder County
T1SR69W
diversions
fences
ditches
roads
Callahan
dryland
wetland
perennial grass
riparian
Boulder County
N
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DISCLAIMER
This map is for illustrative purposes only, and is not suitable
for parcel-specific decision making. The areas depicted here
are approximate. More site-specific studies may be required
to draw accurate conclusions.
0
150
300
600
Feet

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5.6 ESMAIL

5.6.1 Acquisition History

The Esmail Property ("Property") was jointly purchased from Al Barakah, LLC (c/o Karim Esmail) by Boulder County and the Cities of Lafayette and Louisville in August 2000 for $450,000. Boulder County paid one-half of the purchase price while the two cities each paid and own a one-quarter interest. The purchase consisted of 36.061 acres of fee simple land. The purchase also included water rights in the Goodhue Ditch. Each entity owns a conservation easement over the other two entities' undivided interests. The purpose of the acquisition was to preserve agricultural land and provide an open space buffer between the urban areas of nearby Lafayette and Louisville.

5.6.2 Location and Access

The Property is located about 1.5 miles east of the City of Louisville, Colorado at the northeast corner of the intersection of State Highway 42 (Empire Road) and County Road 62 (Empire Drive), just east of the Louisville Cemetery.

Access to the Property is by way of farm gates located on the western and southern boundaries.

5.6.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Esmail Property are:

North: Adler/Fingru open space lies due north; additional private farmland is to the northeast; and a single-family residence sits directly northwest.
East: Several rural residences and a llama ranch lie to the east.
South: Mayhoffer (Section 15) open space lies due south; the Colorado Technology Center, a business and industrial area, lies to the southwest.
West: Due west is the City of Louisville's cemetery property and Aquarius open space.

5.6.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for dryland crop production. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- Oil and gas lease by and between William Peltier (individually and as surviving partner of Boulder Valley Coal Company) and Helen Peltier, as Lessors, and Martin Exploration Management Company recorded May 20, 1991.

- Reciprocal conservation easements were exchanged between the three owner entities over each others undivided ownership interests.

- All coal and mineral rights as conveyed by Rocky Mountain Fuel Company to Boulder Valley Coal Company recorded March 31, 1997.

- Right-of-way for County Road 62 (Empire Drive) over the westerly portion of the Property and southerly portion for State Highway 42 (Empire Road).

5.6.5 Vegetative Resources

5.6.5.1 Vegetative Communities

The Property is tilled cropland, currently in dryland crop production primarily for wheat with the option of spring barley. Introduced grasses and weedy species dominate the fence lines. At the time of the site evaluation field bindweed (*Convolvulus arvensis*) dominated the tilled areas. A small area of intermediate wheatgrass occurs in the northwest corner of the Property. Smooth brome (*Bromus inermis*), Siberian elm (*Ulmus pumila*), and several weed species were present in the irrigation ditch along the west side. Siberian elm is an introduced species resistant to Dutch elm diseases and planted widely on the plains for windbreaks.

No rare plants or plant communities have been identified by Colorado Natural Heritage Program (CNHP) on the Property [Natural Diversity Information Source (NDIS), 2002].

5.6.5.2 Exotic Species and Noxious Weeds

The Property has the following weed species in these locations: diffuse knapweed (*Centaurea diffusa*) is scattered along the fence lines, especially on the west side along County Road 62; Canada thistle (*Cirsium arvense*) occurs in the irrigation ditch; and field bindweed (*Convolvulus arvensis*) was present in the tilled area.

5.6.6 Wildlife Resources

5.6.6.1 Mammals

Species probably found on the Property such as striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*) have adapted well and actually thrive in and near urban and agricultural areas.

Small rodents that probably occur in the irrigation ditch on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*). All of these species probably frequent the riparian habitat of nearby Coal Creek.

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002). However, three burrows of the black-tailed prairie dog (*Cynomys ludovicianus*), a candidate species for listing as threatened under the Endangered Species Act, are present in the northwest corner of the Property. These burrows are probably part of the larger colony complex that occurs on the Adler/Fingru Open Space property to the adjacent north. Tilling activities inhibit further expansion of the colony onto the Property.

Due to population declines across its historical range, on February 4, 2000, the U.S. Fish and Wildlife Service issued a 12-month petition finding that stated:

> *"The Fish and Wildlife Service has determined that the current status of the black-tailed prairie dog warrants its listing as a Threatened species pursuant to section 4(b)(3)(A) the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.), subject to the approval of a final rule. The Service believes*

that sufficient information is currently available to support a finding that listing the black-tailed prairie dog as threatened is warranted, but that a proposed rule at this time is precluded by work on other higher priority species. The Service will reevaluate the status of the species 1 year after publication of this finding in the Federal Register."

This finding establishes the black-tailed prairie dog as a candidate species for listing as threatened, and subject to annual review by the U.S. Fish and Wildlife Service. Currently, there are no federal restrictions placed on the overall management or control of black-tailed prairie dogs. However, species such as burrowing owl (*Athene cunicularia*), prairie rattlesnake (*Crotulus viridis*), and mountain plover (*Charadrius montanus*) are closely linked to prairie dog burrow systems for food and/or cover. Prairie dogs provide an important prey resource for numerous predators including badger, coyote, fox, golden eagle, ferruginous hawk and other raptors.

5.6.6.2 Birds

The Property provides marginal habitat for black-billed magpie (*Pica pica*), northern flicker (*Colaptes auratus*), mourning dove (*Zenaida macroura*), and American kestrel. These species may utilize the trees along the east side of the Property. The black-billed magpie probably nests on the Property.

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water. Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

Other species of concern that may use the Property include long-eared owl (*Asio otus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

5.6.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property (OAHP, 2002). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, no cultural or historic sites occur on the Property. The Property is located about ¼ mile from an Archaeological Travel Route along Coal Creek, according to the Boulder County Comprehensive Plan. Other potential unidentified cultural resources may exist within the Property. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.6.8 Agricultural Resources

5.6.8.1 Water Rights

The following water rights were purchased with the Property and are available for irrigation use on the Property:

- 29.165 shares of capital stock in the Goodhue Ditch Company.

Boulder County owns full title to the water rights and is responsible for all ditch assessments and entitled to vote the ditch stock.

The Property is currently maintained in dryland production and the water rights are not utilized on the Property. However, the Property can be irrigated if some repairs are made to the ditch and a diversion box. The Property is irrigated from a lateral that runs across the center of the Property, which is served by a diversion box to the northwest. The diversion box is located on the west side of Empire Drive and is currently inoperable and prevents water delivery. Repair may be as simple as removing a concrete plug so that water flow is restored.

5.6.8.2 Soil Resources and Production Potential

Three soil types have been mapped on the Property from the Nunn and Ascalon soil series (USDA, 1975). Refer to the *Soils* map for additional detail. In general, these soils are deep and well-drained with slow permeability, medium runoff, and moderate risk of erosion. These soils are suited to all of the irrigated crops of the area. A systematic crop rotation should be followed in order to maintain soil tilth. Crops grown on these soils respond well to applications of fertilizer containing nitrogen and phosphorous. If maintained as dryland, a suitable cropping system is wheat-summer fallow. Stubble mulching is helpful in reducing erosion, in maintaining the content of organic matter, and in improving tilth. Strip-cropping at right angles to the prevailing winds also aids in protection from erosion. The soil types on the Property have been traditionally used for irrigated and dryland crops and pasture.

5.6.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property is minimal and consists of fences, ditches, laterals, and diversion structures. No farm related or other buildings exist on the Property. Refer to the Property map for the location of these elements.

5.6.9 Management Direction

5.6.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The Property is cropland and its recommended classification is "No Prairie Dog" (NPD). If necessary, a removal strategy will be pursued to protect the integrity of the agricultural resource, which includes species relocation, contributions to predator recovery programs, and extermination.

5.6.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the

loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Weed management on the Property should focus on efforts to control diffuse knapweed and Canada thistle. Diffuse knapweed occurs primarily along the fence line on the west side of the Property. Canada thistle occurs in the irrigation ditch. A short-term objective that could proceed immediately includes the planning and scheduling of herbicide spraying along the road rights-of-way.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they provide excellent competition to invading noxious weeds. Smooth brome in particular thrives along irrigation ditches providing much needed competition to Canada thistle.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds..

5.6.9.2.1 Diffuse Knapweed

Diffuse knapweed should be the top priority for weed management because of the tumbleweed characteristic of this plant and its potential for spread. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective.

Diffuse knapweed is susceptible to Tordon (picloram) and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Tordon is classified as a restricted use herbicide due to mobility and residual activity of this product. Applicators of Tordon need to be properly certified, and proximity to trees and water needs to be considered. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.6.9.2.2 Canada Thistle

Canada thistle, a perennial weed, can be effectively managed by combination of mowing and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control. In sensitive areas, the best choice for control

is to spot-spray Round Up (glyphosate) when no water is running in the ditch. Round Up is a non-selective herbicide so care must be taken when spot-spraying this product to avoid excessive over spray that can kill desired vegetation.

5.6.9.3 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain the Property in dryland crop.
2. Control weeds in the fields and along the ditches.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.6.9.4 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. Extensive and dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of production.

Due to the acquisition of the Adler/Fingru, Esmail, Mayhoffer (Section 15), and Boulder County Land Venture properties, there is an opportunity to connect the Coal Creek Trail with Rock Creek Farm via the S. 104th Street corridor. This connection would provide a link between two regional trails and allow residents of Lafayette and Louisville to access Rock Creek Farm and its trail system. Opportunities for making this connection include the utilization of the S. 104th Street right-of-way, the western boundaries of the open space properties themselves, or through the Colorado Technology Center. Any and all combinations of these possibilities should be explored and pursued. If a trail should pass through an open space property, all efforts should be made to preserve the integrity and function of the agricultural resource, including irrigation concerns.

5.6.9.5 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife value of agricultural lands, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property. A short-term action could include providing assistance with removal of the concrete debris pile and fence repair on the east side of the Property.

5.6.9.6 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.6.9.6.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Boulder County Sheriff's Department, as the Property is located within the unincorporated county. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.6.9.6.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.6.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Agricultural Infrastructure, Hydrologic Features and Field Types
Esmail, Boulder County
T1SR69W
diversions
gates
roads
fences
out of ag production
dryland crop
Esmail
N
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0 45 90 180 Feet
Empire Rd
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5.7 MAYHOFFER (SECTION 15)

5.7.1 Acquisition History

The Mayhoffer (Section 15) Property ("Property") was purchased from the John D. Mayhoffer Trust, and David and Robert Mayhoffer in October 2001 by Boulder County for $3,006,386.00 with funds it received under the Northwest Parkway Intergovernmental Agreement (IGA). The purchase consisted of 154.478 acres of fee simple land. The purpose of the acquisition was to preserve agricultural land and provide an open space buffer between the urban areas of nearby Lafayette and Louisville. In December 2003, the City of Louisville purchased an undivided 25% interest in the Property from Boulder County and the two parties exchanged reciprocal conservation easements. The City of Lafayette has agreed to purchase an undivided 25% interest in the Property from the County at the time they receive their payments under the Northwest Parkway IGA (anticipated for 2008).

5.7.2 Location and Access

The Property is located about 3 miles south of the City of Lafayette, Colorado at the southeast corner of the intersection of State Highway 42 and South 104th Street.

Access to the Property is by way of two farm gates located on S. 104th Street.

5.7.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Mayhoffer (Section 15) Property are:

North: Esmail open space lies due north; several rural residences and a llama ranch lie to the northeast.
East: Lafayette's South Pointe residential area lies to the east.
South: Boulder County Land Venture open space lies due south.
West: The Colorado Technology Center, a business and industrial area, lies to the west; and the City of Louisville's cemetery property is to the northwest.

5.7.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for dryland crop production. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- The Property lies east of the easterly right-of-way line of South 104th Street and south of the southerly right-of-way of State Highway 42.

- Reciprocal conservation easements were exchanged between Boulder County and the City of Louisville that restrict the use of the subject property to open space and agriculture. The City of Lafayette is expected to be added as an owner and easement grantor at a later date.

- Easement to Colorado Tech Center Metropolitan District for construction, operation and maintenance of a drainageway for stormwater and runoff, a service road, and the relocation of existing natural gas pipeline within the drainageway.

- The Boulder Valley Coal Corporation reserved the mineral rights in 1949.

- Terms, conditions, and provisions of Agreement recorded August 3, 1994 regarding the location of a disputed boundary line.
- Right-of-way to Mountain States Telephone and Telegraph Company.

5.7.5 Vegetative Resources

5.7.5.1 Vegetative Communities

The present condition of the Property is tilled cropland, currently in dryland crop production primarily for wheat. Introduced grasses and weedy species dominate the fence lines. Canada thistle (*Cirsium arvense*) and smooth brome (*Bromus inermis*) dominate the irrigation ditches on the Property. Vegetation along the fence lines includes diffuse knapweed (*Centaurea diffusa*), Siberian elm (*Ulmus pumila*), intermediate wheatgrass (*Agropyron intermedium*), yellow sweet clover (*Melilotus officinalis*), and common sunflower (*Helianthus annuus*). Cattail (*Typha latifolia*), foxtail barley (*Hordeum jubatum*), and scouringrush (*Equisetum laevigatum*) occur within the irrigation ditch on the south end. Several large cottonwood (*Populus deltoides*) trees occur on the Property.

The National Wetlands Inventory mapped an emergent wetland in the extreme southeast corner of the Property (NWI, 1975). Historically, this corner of the Property was probably seasonally inundated with water. However, construction of the east-west irrigation ditch appears to have significantly altered the hydrology in this portion of the Property. The area is dominated by weedy species including Canada thistle.

No rare plants or plant communities have been identified by Colorado Natural Heritage Program (CNHP) on the Property [Natural Diversity Information Source (NDIS), 2002].

5.7.5.2 Exotic Species and Noxious Weeds

The Property has the following weed species in these locations: diffuse knapweed is scattered along the fence lines, on all four sides of the Property. A strip of land 12 to 15 feet wide between the east-west irrigation ditch and the south fence line is dominated by diffuse knapweed; Canada thistle occurs in the irrigation ditches and southeast corner on the Property; musk thistle (*Carduus nutans*) is scattered along the irrigation ditch adjacent to the oil and gas well; and Russian-olive (*Elaeagnus angustifolia*) occurs in the irrigation ditch along the south side of the Property.

5.7.6 Wildlife Resources

5.7.6.1 Mammals

Species probably found on the Property such as striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*) have adapted well and actually thrive in and near urban and agricultural areas.

Small rodents that probably occur in the irrigation ditches on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*).

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002). The neighboring open space parcel to the south (Boulder County Land Venture) contains a colony of black-tailed prairie dogs (*Cynomys ludovicianus*), a candidate species for listing as threatened under the Endangered Species Act, in its northeast corner. No burrows or animals were present on the Property at the time of the field inspection.

5.7.6.2 Birds

Large cottonwoods on the Property may provide roosting and nesting habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*) and Swainson's hawk (*Buteo swainsoni*). The trees contain cavities generally suitable for northern flicker (*Colaptes auratus*), black-capped chickadee (*Parus atricapillus*), and American kestrel (*Falco sparverius*). These species may utilize the trees along the east side of the Property. The black-billed magpie (*Pica pica*) probably nests on the Property. ERO Resources Corporation was given permission to place artificial raptor nest structures on the Property in relation to nest loss that occurred near Dillon Road from Northwest Parkway construction activities.

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water. Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

Other species of concern that may use the Property include long-eared owl (*Asio otus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

5.7.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property (OAHP, 2002). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, no cultural or historic sites occur on the Property. Other potential unidentified cultural resources may exist within the Property. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.7.8 Agricultural Resources

5.7.8.1 Water Rights

The purchase of the Property did not include the acquisition of any water rights. The seller reserved the shares in the Goodhue Ditch Company previously used to irrigate the Property. There is, however, a Goodhue lateral running across the Property from southwest to northeast.

5.7.8.2 Soil Resources and Production Potential

Two soil types have been mapped on the Property from the Nunn soil series (USDA, 1975). Refer to the *Soils* map for additional detail. In general, these soils are deep and well-drained with slow permeability, medium runoff, and moderate risk of erosion. These soils are suited to all of the irrigated crops of the area. A systematic crop rotation should be followed in order to maintain soil tilth. To minimize erosion losses and maintain soil tilth, row crops should be limited to no more than three consecutive years. Crops grown on these soils respond well to applications of fertilizer containing nitrogen and phosphorous. If maintained as dryland, a suitable cropping system is wheat-summer fallow. Stubble mulching is helpful in reducing erosion, in maintaining the content of organic matter, and in improving tilth. Strip-cropping at right angles to the prevailing winds also aids in protection from erosion. The soil types on the Property have been traditionally used for irrigated crops and pasture.

5.7.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property is minimal and consists of fences, ditches, laterals, and diversion structures. No farm related or other buildings exist on the Property. Refer to the Property maps for the location of these elements.

HS Resources Inc. owns and operates a gas/oil well and associated facilities on the Property. The well passed Colorado Oil and Gas Conservation Commission inspections on April 2, 1996 and September 3, 2000 (ERO, 2002). No visible soil staining was observed during the site visit.

There is a dirt roadway that services the oil and gas well and a two-track road along the irrigation ditch that runs through the bottom third of the Property.

5.7.9 Management Direction

5.7.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. Given the fact that the Property is in crops and is presently classified as a "No Prairie Dog" (NPD) area, a removal strategy will be pursued, if necessary, to protect the integrity of the agricultural resource, which includes species relocation, contributions to predator recovery programs, and extermination.

5.7.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities.

Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Weed management on the Property should focus on efforts to control diffuse knapweed and Canada thistle on the Property. Diffuse knapweed occurs primarily along the west fence line and on the south side of the Property. Canada thistle occurs in the irrigation ditches. A short-term objective that could proceed immediately includes the planning and scheduling of herbicide spraying along the road rights-of-way.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they can provide excellent competition against invading noxious weeds. Smooth brome in particular thrives along irrigation ditches providing much needed competition to Canada thistle.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.7.9.2.1 Diffuse Knapweed

Diffuse knapweed should be the top priority for weed management because of the tumble-weed characteristic of this plant and its potential for spread. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective.

Diffuse knapweed is susceptible to Tordon (picloram) and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Tordon is classified as a restricted use herbicide due to mobility and residual activity of this product. Applicators of Tordon need to be properly certified, and proximity to trees and water needs to be considered. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.7.9.2.2 Canada Thistle

Canada thistle, a perennial weed, can be effectively managed by combination of mowing and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control. Repeated applications of aquatic 2, 4-D is best for controlling Canada thistle in irrigation ditches.

5.7.9.3 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain the Property in dryland crop production.

2. Control weeds in the fields and along the ditches.
3. Protect the wetland in the southeast corner of the Property and explore its enhancement.
4. Evaluate the long-term conversion of the Property to irrigated cropland.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.7.9.4 Ecosystem Restoration and Enhancement

Vegetation within the east-west irrigation ditch on the south side of the Property could be enhanced in the future as additional water becomes available due to increased sheet flow from the development of the Colorado Technological Center. In general, the hydrology in the southeast corner of the Property should be investigated in conjunction with the larger wetland area in the northeast corner of the Boulder County Land Venture Property. A wetland inventory of the Property should be performed prior to initiating any restoration activities.

5.7.9.5 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. Extensive and dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of production.

Due to the acquisition of the Adler/Fingru, Esmail, Mayhoffer (Section 15), and Boulder County Land Venture properties, there is an opportunity to connect the Coal Creek Trail with Rock Creek Farm via the S. 104th Street corridor. This connection would provide a link between two regional trails and allow residents of Lafayette and Louisville to access Rock Creek Farm and its trail system. Opportunities for making this connection include the utilization of the S. 104th Street right-of-way, the western boundaries of the open space properties themselves, or through the Colorado Technology Center. Any and all combinations of these possibilities should be explored and pursued.

The Property provides an opportunity to offer recreational access and a trail connection for the adjacent South Pointe neighborhood. The City of Lafayette owns a drainageway immediately south of the subdivision that could be used as a trail corridor that would continue west across the Property to 104th Street. This E-W connection would provide access to the regional trail systems to the north and south described above. The existing drainage ditch on the south boundary of the Property provides a feasible corridor to continue this trail with no impact to the agricultural operation. Lafayette has expressed interest in pursuing this connection and will be the lead agency for this project. BCPOS will work as partners with them to secure any necessary permits and/or agreements.

The Property also offers an opportunity to provide a N-S trail corridor on the eastern boundary. This corridor would provide another recreational opportunity and local trail connection to the adjacent subdivision residents. It appears this alignment could be developed with little loss of productive land and little impact to the agricultural operation. This alignment should be further

evaluated and pursued if feasible. Adjacent homeowners will need to be considered in such a decision.

If a trail should pass through an open space property, all efforts should be made to preserve the integrity and function of the agricultural resource, including irrigation concerns.

5.7.9.6 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife value of agricultural lands, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property. A short-term action could include providing assistance with removal of the concrete debris pile and fence repair on the east side of the Property.

5.7.9.7 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.7.9.7.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Boulder County Sheriff's Department, as the Property is located within the unincorporated county. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.7.9.7.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.7.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Wetlands monitoring-------Every 3 yrs.------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Agricultural Infrastructure
Mayhoffer 15, Boulder County
T1SR69W
natural gas structure
gates
roads
access roads
fences
Mayhoffer 15
Boulder County
N
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0 130 260 520 Feet
42
S 104th St


Hydrologic Features &
Field Types
Mayhoffer 15, Boulder County
T1SR69W
diversions
streams & ditches
dryland cropland
out of ag production
N
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S 104th St

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5.8 SCRIFFINY (SECTION 19)

5.8.1 Acquisition History

The Scriffiny (Section 19) Property was purchased from the Scriffiny Family by Boulder County in April 1997. The purchase consisted of a total of approximately 99 acres of fee simple land, 21 of which are located north of U.S. Highway 36 and are referred to as the Scriffiny (Section 19) Property ("Property"). The purchase price for the Property was $22,000/acre or about $737,000. In 1999, the County conveyed conservation easements on the Property to the City of Broomfield and the City of Louisville. Broomfield received their conservation easement per the terms of the IGA, while Louisville purchased theirs for $126,000. The conservation easements were later amended to accommodate the conveyance of right-of-way to CDOT and a land exchange with Avista Hospital. The total acreage remains at just over 21 acres. The purpose of the acquisition was to preserve open space and provide for a visual buffer along U.S. Highway 36.

5.8.2 Location and Access

Located immediately south of Louisville at the northwest corner of S. 88th Street and U.S. Highway 36, the 33.5-acre Scriffiny 19 Property lies in a highly urbanized area. The Property lies west of S. 88th Street and south of the Avista Hospital.

Access to the Property is by way of a gated access road along S. 88th Street. The Property can also be accessed from the northwest via a two-track road that is shared with the hospital.

5.8.3 Adjacent Land Use and Ownership

The surrounding land uses and adjacent ownerships of the Scriffiny (Section 19) Property are:

North: The Avista Hospital campus owned by Porter Care Adventist Health System is located to the northwest, including the adjacent vacant acreage. To the north is the Centennial Peaks Hospital, also known as Charter Behavioral Health System. A single residence off of S. 88th St. is also owned by the hospital.`
East: The campus of Storage Technology Corporation is located across S. 88th Street.
South: Along the south and southwest boundaries is the right-of-way for U.S. Highway 36, which is technically owned by Boulder County.
West: The property is bounded by Hwy. 36 and additional hospital land.

5.8.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- A repeater lease agreement exists between Linda Scriffiny and US West New Vector Group, Inc.
- An oil and gas lease exists between Linda Scriffiny and Robert A. Shryock.
- The County conveyed conservation easements on approximately 22 acres of the Property to the City of Broomfield and City of Louisville. This easement assures the Property's preservation in perpetuity as open space and a visual buffer.
- An easement was granted to South Boulder and Coal Creek 1st Extension Ditch Company.

- An easement and also a temporary construction easement was granted to the Northern Colorado Water Conservancy District.

- The mineral rights (including all oil, coal, and others) are severed and owned by the Union Pacific Railway and Telegraph Company. These rights have priority and include the right to access the Property for purposes of mining, drilling, and exploring said land.

- Terms, conditions, and provisions of agreement regarding the vacation of County Road 76.

5.8.5 Vegetative Resources

5.8.5.1 Vegetation Communities

The Property was historically used for pasture and the production of hay. However, due to recent land use practices and the activity of black-tailed prairie dogs on the Property, the overall vegetation community is limited and of poor quality. Vegetation is virtually nonexistent in areas.

Where vegetation does exist, the Property is dominated by introduced grasses such as smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), tall wheatgrass (*Elytrigia elongata*) and various weed species. Native species observed include buffalograss (*Buchloe dactyloides*), three awn (*Aristida purpurea),* fringed sage (*Artemisia frigida*), goldenrod (*Solidago* sp.), common sunflower (*Helianthus annuus*), cranesbill (*Erodium cicutarium*), common ragweed (*Ambrosia psilostachya*), curly cup gumweed (*Grindelia squarrosa*), yucca (*Yucca glauca),* and prickly pear cactus (*Opuntia polyacantha).* Trees on the Property consist of a few plains cottonwoods (*Populus deltoides*) along the ditch corridor, a peach-leaf willow (*Salix amygdaloides*), and a group of Russian-olives (*Elaeagnus angustifolia*) and white poplars (*Populus alba*) near the former homestead site.

A wetland occurs in the extreme southern portion of the Property and is fed by local runoff, irrigation ditches, and drainage from west of Highway 36 that is routed east under the road. This man-made pond supports a palustrine, emergent wetland complex that consists of about one acre. Dominant vegetation consists of narrow leaf cattail *(Typha angustifolia*), showy milkweed (*Asclepias incarnata*), rush (*Eleocharis* sp.), saltgrass (*Distichlis stricta*), and foxtail barley (*Hordeum jubatum*). Just east of the pond's dam, vegetation is dominated by reed canarygrass (*Phalaroides arundinacea*).

No rare plants or plant communities have been identified by Colorado Natural Heritage Program (CNHP) on the Property [Natural Diversity Information Source (NDIS), 2002].

5.8.5.2 Exotic Species and Noxious Weeds

The Property has the following weed species: Canada thistle (*Cirsium arvense*), mullein (*Verbascum thapsus*), chicory (*Cichorium intybus*), field bindweed (*Convolvulus arvensis*), diffuse knapweed (*Centaurea diffusa*), and Russian-olive.

5.8.6 Wildlife Resources

5.8.6.1 Mammals

Species probably found on the Property such as striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*) have adapted well and actually thrive in and near urban and agricultural areas.

Small rodents that probably occur near the wetland and irrigation ditches on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*).

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002). A colony of black-tailed prairie dogs (*Cynomys ludovicianus*), a candidate species for listing as threatened under the Endangered Species Act, are present in all but the extreme southern portion of the Property. Lands to the north and east also contain prairie dog colonies. Expansion from the general area is limited by barriers such as major highways, roads, and development.

Due to population declines across its historical range, on February 4, 2000, the U.S. Fish and Wildlife Service issued a 12-month petition finding that stated:

> *"The Fish and Wildlife Service has determined that the current status of the black-tailed prairie dog warrants its listing as a Threatened species pursuant to section 4(b)(3)(A) the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.), subject to the approval of a final rule. The Service believes that sufficient information is currently available to support a finding that listing the black-tailed prairie dog as threatened is warranted, but that a proposed rule at this time is precluded by work on other higher priority species. The Service will reevaluate the status of the species 1 year after publication of this finding in the Federal Register."*

This finding establishes the black-tailed prairie dog as a candidate species for listing as threatened, and subject to annual review by the U.S. Fish and Wildlife Service. Currently, there are no federal restrictions placed on the overall management or control of black-tailed prairie dogs. However, species such as burrowing owl (*Athene cunicularia*), prairie rattlesnake (*Crotulus viridis*), and mountain plover (*Charadrius montanus*) are closely linked to prairie dog burrow systems for food and/or cover. Prairie dogs provide an important prey resource for numerous predators including badger, coyote, fox, golden eagle, ferruginous hawk and other raptors.

5.8.6.2 Birds

The Property provides marginal habitat for black-billed magpie (*Pica pica*), northern flicker (*Colaptes auratus*), mourning dove (*Zenaida macroura),* and red-winged blackbird (*Agelaius phoeniceus*). The black-billed magpie probably nests on the Property. The few cottonwoods that exist on the Property are suitable for cavity nesters such as the northern flicker, black-capped chickadee (*Parus atricapillus*), and American kestrel (*Falco sparverius*).

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is

documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water. Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

5.8.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property. This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, cultural resources of Euro-American descent exist on the Property (OAHP, 2002).

- Site 5BL.6937 includes foundations and remnants of homestead structures that date to the 1930s. The County razed several buildings on the Property in 1997 after performing a historic structure inventory and receiving approval for demolition. The structures were in serious disrepair and posed safety and liability issues.

- Site 5BL.5678 includes scattered artifacts of unknown prehistoric descent. A bifacial fragment of chert was also documented near the Property signaling prehistoric use or occupation.

- Site 5BL.7529 includes U.S. Highway 36 (Denver-Boulder Turnpike), which was listed as a historic road that dates to 1950.

None of these resources are eligible for inclusion on any historic register. These resources will remain on site and undisturbed. Current and proposed management activities are compatible with these resources. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.8.8 Agricultural Resources

5.8.8.1 Water Rights

No water rights were acquired as part of the transaction. However, the infrastructure for water delivery from the northeast is in place.

5.8.8.2 Soil Resources and Production Potential

Five soil types have been mapped on the Property representing two soil series, including Nunn and Valmont, and a terrace escarpment (USDA, 1975). Refer to the *Soils* map for additional detail. In general, the soils are deep and well-drained with slow permeability, medium runoff, and moderate to high risk of erosion. These soils are best suited for pasture and hay production due to their potential for erosion. If unirrigated, this area can be used as range or pasture, but requires good grazing management. The terrace escarpment, which occupies much of the Property, consists of shallow soil with cobble and stones on the surface. Only limited moisture is available for plants. Runoff is rapid and erosion hazard is high on the terrace. This area can be used as native range, but has little or no agricultural value. The soil types on the Property have been traditionally used for irrigated hay and pasture.

5.8.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property is minimal and consists of fences, ditches, laterals, and diversion structures. No farm related or other buildings exist on the Property. However, remnants of former agricultural and residential structures and a pump house are located near the pond and northeast of the pond near the cluster of Russian-olive trees. Refer to the Property maps for the location of these elements.

5.8.9 Management Direction

5.8.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's Grassland Management Plan, Prairie Dog Habitat Element, which is designed to balance wildlife, ecological, and agricultural resource concerns. The Property's recommended classification is "Multiple Objective Area" (MOA) and will be managed to allow prairie dogs to inhabit the Property unless a conflict or excess resource depredation occurs.

5.8.9.2 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. However, due to the farm operators' limitations on equipment and labor, the County often assists with weed management by providing herbicide, equipment, labor and technical assistance. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Diffuse knapweed should be the top priority for weed management on the Property because of the tumble-weed characteristic of this plant and its potential for spread.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they can provide excellent competition against invading noxious weeds.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.8.9.2.1 Diffuse Knapweed

This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective. Insect biological control has shown promising results for control of diffuse knapweed, particularly during dry years, but should be integrated with other tools. If insects that prey on diffuse knapweed are not present, a release should be considered.

Diffuse knapweed is susceptible to Tordon (picloram) and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Tordon is classified as a restricted use herbicide due to mobility and residual activity of this product. Applicators of Tordon need to be properly certified, and proximity to trees and water needs to be considered. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.8.9.2.1 Other Weeds

Canada thistle, a perennial weed, can be effectively managed by combination of mowing and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control.

Where common mullein and chicory are found, spot spray applications of Telar or Escort prior to seed set should provide effective control.

5.8.9.3 Land Resources

The Property was historically irrigated and used for pasturing livestock and the irrigation system is still in place. The Property is not currently leased nor in agricultural production, but is maintained as wildlife habitat. For public health and safety reasons, property managers should prevent standing water that may contribute to mosquito production.

5.8.9.4 Ecosystem Restoration and Enhancement

Reseeding efforts will have limited success if initiated under current prairie dog pressure. However, staff should experiment with using various seed mixes and planting techniques to improve vegetation conditions. Should plague ever occur within the prairie dog community on the Property, aggressive weed control and revegetation should be initiated.

5.8.9.5 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. However, visitor access and recreational opportunities should be reevaluated if conditions change.

The Property borders U.S. Highway 36, where the Boulder-Denver Regional Trail is proposed to be routed in the southern right-of-way of Highway 36. Given this proposed alignment, connection to the Property would only be achieved by utilizing S. 88th Street. It is feasible that the Property could provide future passive trail and wildlife viewing opportunities, however, user experience would be limited. The County Trails Map in the 1999 Boulder County Comprehensive Plan depicts a trail “alignment” along the northern ROW of Highway 36.

5.8.9.6 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife value of agricultural lands, managing prairie dog habitat, and agricultural resources and history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property.

5.8.9.7 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.8.9.7.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Boulder County Sheriff's Department, as the Property is located within the unincorporated county. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.8.9.7.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.8.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Prairie dog survey----------Annual----------BCPOS
Weed monitoring----------Annual----------BCPOS
Weed inventory----------Every 5 yrs.------BCPOS
Wetlands monitoring-------Every 3 yrs.------BCPOS
Infrastructure----------Ongoing----------BCPOS

Agricultural Infrastructure
Scriffiny 19, Boulder County
T1SR69W

- gates
- fences
- access roads
- Scriffiny

N

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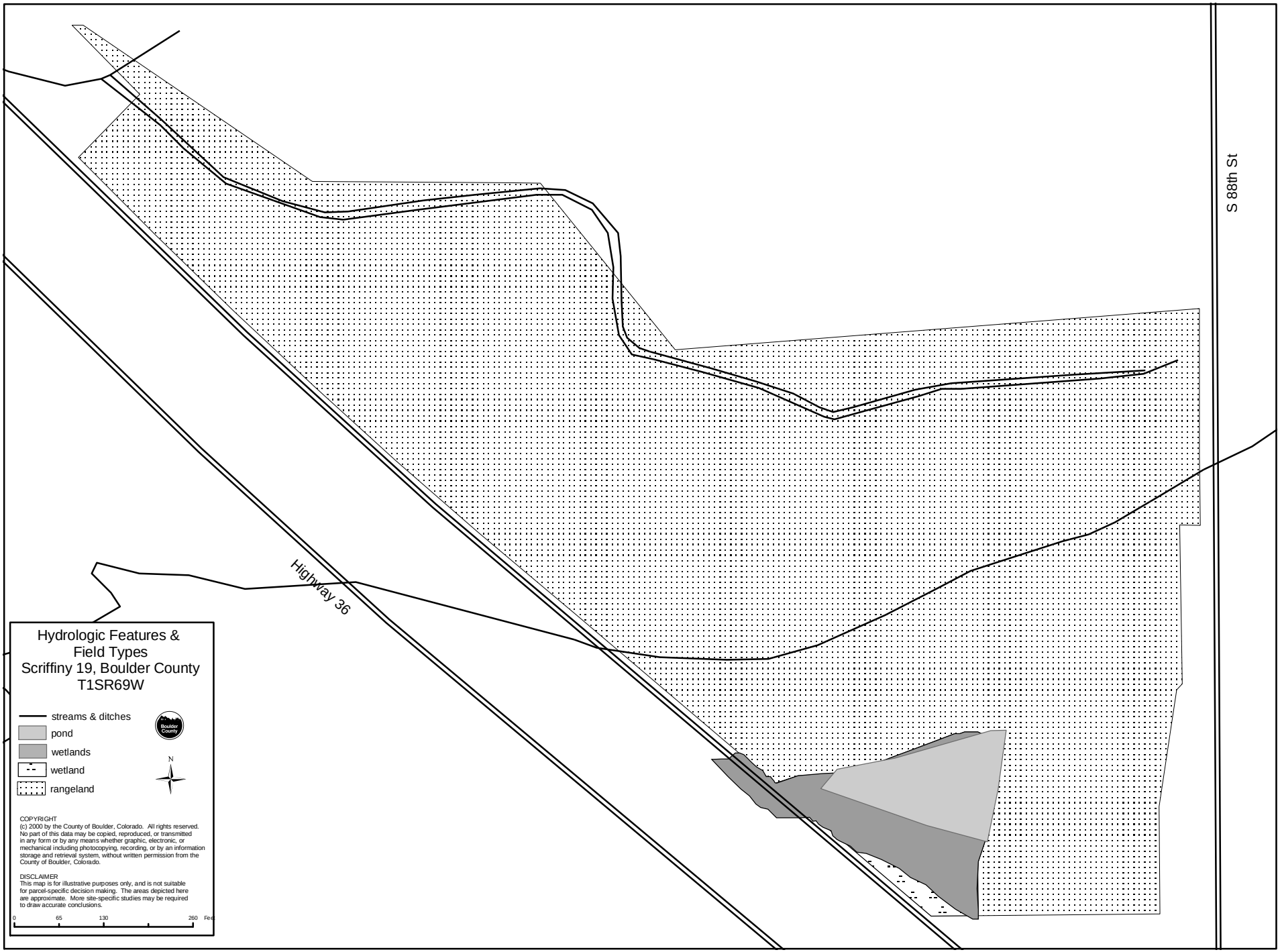
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5.9 TRILLIUM

5.9.1 Acquisition History

The Trillium Property ("Property") was jointly purchased from Trillium Corporation by Boulder County and the City of Louisville in May 1999 for $1,848,626. Boulder County and the City of Louisville each paid one-half of the total purchase price and each own a 50% undivided interest. The purchase consisted of 133.33 acres of fee simple land. Each entity owns a conservation easement over the other entity's ownership interest. The purpose of the acquisition was to preserve agricultural land and provide an open space buffer between the nearby urban areas of Lafayette and Louisville.

5.9.2 Location and Access

The Property is located about two miles southeast of the City of Louisville at the southwest corner of the intersection of Dillon Road and South 104th Street. The Northwest Parkway right-of-way bisects the Property roughly in its center, running from southwest to northeast.

Access to the Property is by way of several farm gates: one located in the northwest corner off of Dillon Road, one located in the northeast corner off of S. 104th Street, and one in the southeast corner off of S. 104th Street.

5.9.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Trillium Property are:

North: Immediately north along Dillon Road are two residences on lots totaling about 7 acres. Further north lies the Colorado Technology Center, which is currently undeveloped along Dillon Road. To the northeast lies the Boulder County Land Venture open space property.
East: To the adjacent east lies Rock Creek Farm open space property.
South: Rural residential/agricultural lands lies to the south.
West: To the west lie several privately owned agricultural properties.

5.9.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for hay production and livestock grazing. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- Reciprocal conservation easements between Boulder County and the City of Louisville were exchanged and restrict the use of the subject property to open space and agriculture.

- Oil and gas lease by and between Trillium Corp. and Martin Exploration Management Company recorded April 9, 1992. A lease amendment and affidavit of lease extension were both recorded in 1995.

- Easement and right-of-way for pipeline purposes granted to Gerrity Oil & Gas.

- Easement and right-of-way for County Road 68 (Dillon Road).

- All coal owned by Union Pacific Land Resources Corporation, who merged with Anadarko Petroleum in 2000.

- Right-of-way for the Northwest Parkway bisecting the Property from northeast to southwest.

5.9.5 Vegetative Resources

5.9.5.1 Vegetative Communities

The Property is mostly irrigated pasture with a wetland complex supported by seepage and overflow from irrigation ditches. The irrigation ditches that run through the Property typically support Emory's sedge (*Carex emoryi*) along their edges. The Property can be roughly described as three vegetation community types- irrigated pasture, disturbed pasture, and wetlands.

The majority of the Property is irrigated grass for hay production and grazing. Much of the Property is used for pasture, but some hay production is possible. Non-native grasses, such as smooth brome (*Bromus inermis*) and orchardgrass (*Dactylis glomerata*), dominate the majority of the pasture area. Intermediate wheatgrass (*Agropyron intermedium*) dominates a small pasture in the southwest corner of the Property. Alfalfa (*Medicago sativa*) dominates an adjacent field to the east. Forbs such as Canada thistle (*Cirsium arvense*), yellow sweet clover (*Melilotus officinalis*), and common sunflower (*Helianthus annuus*) are scattered throughout the pasture areas.

The northeast corner of the Property is a heavily disturbed pasture dominated by weedy species such as pigweed (*Amaranthus palmeri*), common ragweed (*Ambrosia artemisiifolia*), and field bindweed (*Convolvulus arvensis*). Disturbance in this pasture is due to prairie dog activity and, more recently, construction work associated with the Northwest Parkway.

5.9.5.2 Wetlands

A large complex of mostly palustrine-emergent-persistent wetlands exists on the Property. These wetlands occur in the south-central and east-central portions of the Property and occupy about 25 acres. Wetlands on the Property, except for those within the irrigation ditches, are jurisdictional even though they may be the result of agricultural activity. Waters of the U.S. such as stock ponds and other open waters are jurisdictional when they are located within natural drainages. Stock ponds and other open waters are non-jurisdictional when they are constructed in upland areas into which no natural drainage flows. All the stock ponds and open water on the Property occur within natural drainages and are therefore under the jurisdiction of the U.S. Army Corps of Engineers (Corps) (ERO, 2002e).

Wetlands on the Property are likely supplied by seepage and overflow from irrigation ditches but also may be the result of natural drainage and a perched water table from the clay soils. The wetland complex consists of several irrigation ditches, stock ponds, and alkali flats. The Corps considers alkali flat areas as special aquatic sites that fall under its jurisdiction.

According to a wetland inventory completed by BCPOS, wetlands on the Property are significant due to their large size and high functional ratings (DeLeo, 1999). Two noteworthy plant communities exist within the wetlands: spikerush (*Eleocharis palustris*) and Nutall alkali grass-sandspurry (*Puccinellia airoides-Spergularia media)*. The Colorado Natural Heritage Program (CNHP) identifies the spikerush community as locally rare in parts of its range while the alkali grass community is uncommon on BCPOS properties.

Wetlands on the Property were also delineated by ERO Resources Corporation in 2000 in conjunction with environmental assessment work the firm conducted for the Northwest Parkway alignment and are included in the *Trillium Rapid Resource Assessment* completed by ERO in 2002. The following is a summary of dominant wetland vegetation, soils, and function. Please refer to the map of *Trillium Vegetation Communities* for specific wetland locations.

Wetland #1

This wetland is an area between and including two small stock ponds that are waters of the U.S. The wetland is supported by a shallow water table and dominated by cattails (*Typha latifolia*) with scattered Canada thistle. The soils are characterized by 10YR 4/2 matrix with 5YR 4/6 mottles. This wetland area likely provides sediment and nutrient retention, ground water recharge, and habitat for various species.

Wetland #2

A monoculture of lambsquarters (*Chenopodium album*), a facultative species, characterizes this wetland. The wetland has been disturbed due to its location within an agricultural field. Ground water is likely shallow and near the surface for a portion of the growing season as evidenced by evaporates on the soil surface. Numerous hoof prints from cattle also suggest that the soil is saturated at times. Soil chroma is 10YR 4/2 with mottles present indicating hydric soils. This wetland likely provides sediment and nutrient retention and habitat for insects and small mammals.

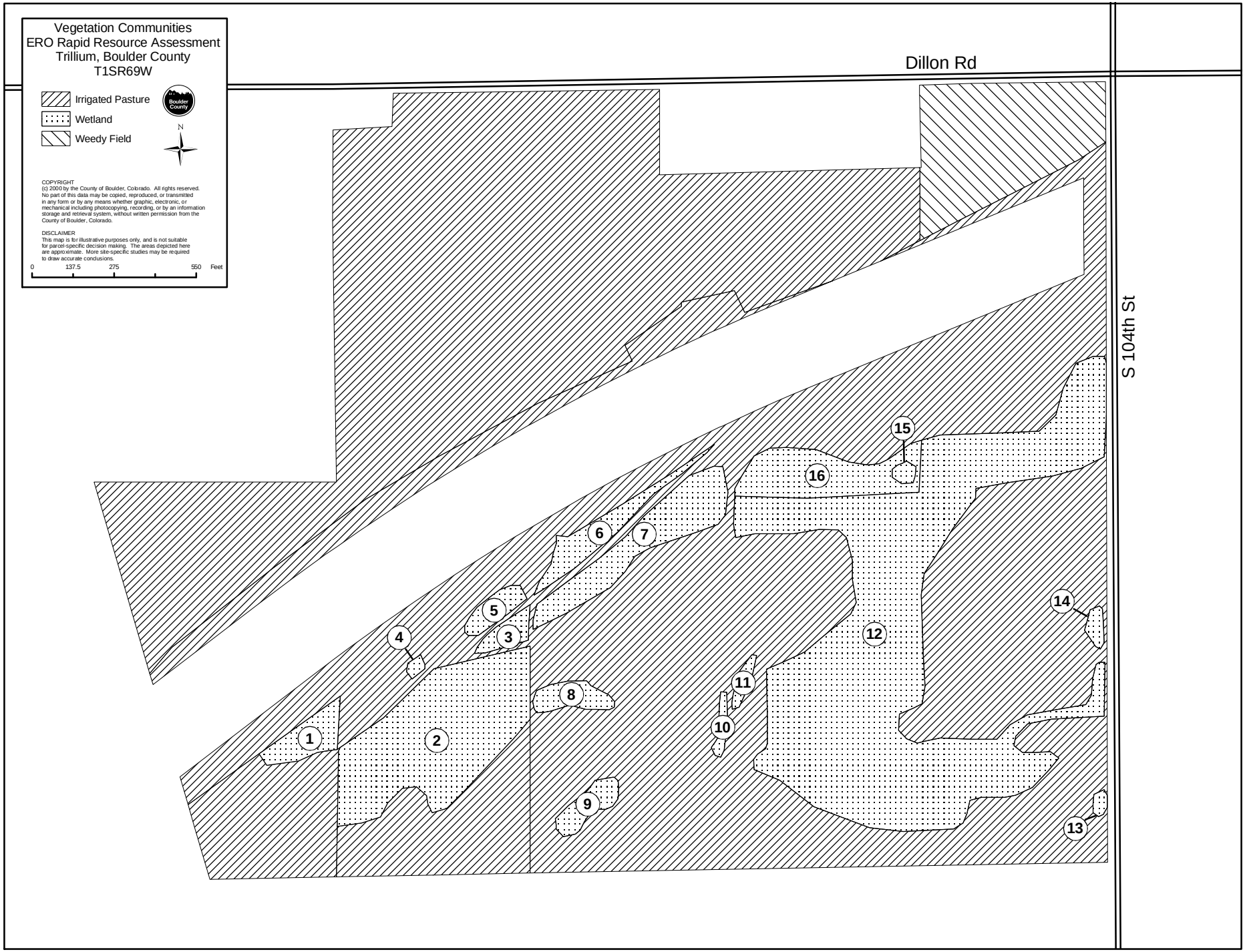
The delineation of this specific area as a wetland was questionable. According to personal communication with BCPOS staff, a Corps representative encouraged ERO to include this area. Furthermore, this area is currently planted in alfalfa, which is known to be intolerant of high water tables and wet conditions. This piece of information should be kept in mind when evaluating grazing management and exploring wetland restoration.

Wetlands #3-15

In addition to any surface runoff and ground water, irrigation ditches likely overflow periodically and recharge ground water, which supports wetland hydrology for low-lying areas and areas adjacent to ditches. These areas are periodically flood irrigated. Wetland vegetation is dominated by Emory's sedge, spikerush, barnyard grass (*Echinochloa crus-galli*), foxtail barley (*Hordeum jubatum*), rushes (*Juncus ensifolius*), saltmarsh sandspurry (*Spergularia marina*), lambsquarters and meadow fescue (*Festuca pratensis*). Cattle have disturbed these wetlands. Typically, soils are characterized by a low chroma (10YR 3/2) with mottles. Wetland hydrologic indicators are evidenced by surface water. Drier areas have alkali on the surface indicating a shallow water table when evapotranspiration rates are high. These wetlands likely retain sediment and nutrients and recharge ground water. They may provide habitat for insects and small mammal species.

Wetland #16

Water drains to the east and pools to form this wetland. The wetland is characterized by open water with Emory's sedge and spikerush on the margins. An aquic moisture regime indicates hydric soils. This wetland area likely provides habitat for waterfowl, retains sediment and nutrients, and recharges ground water.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5.9.5.3 Exotic Species and Noxious Weeds

The Property has the following weed species in these locations: diffuse knapweed (*Centaurea diffusa*) is scattered along the fence lines and is especially prevalent along the railroad right-of-way; Canada thistle (*Cirsium arvense*) occurs in all of the irrigation ditches and within all of the pastures including the wetlands; musk thistle (*Carduus nutans*) is scattered throughout the Property; chicory (*Cichorium intybus*) is prevalent along fence lines and irrigation ditches on the south side of the Property; field bindweed (*Convolvulus arvensis*) is found throughout the Property.

5.9.6 Wildlife Resources

5.9.6.1 Mammals

Species likely to occur on the Property such as the striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*) and coyote (*Canis latrans*), have adapted well and actually thrive in and near urban and agricultural areas. Red fox and coyote have both been observed on the Property (ERO, 2002e).

Small rodents that probably occur in the irrigation ditches on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*).

A large black-tailed prairie dog (*Cynomys ludovicianus*) colony largely defines the wildlife resources on the Property. The colony occupies the majority of the Property north of the Northwest Parkway right-of-way and a significant portion of the Property south of the right-of-way. The black-tailed prairie dog is a candidate species for listing as threatened under the Endangered Species Act.

Due to population declines across its historical range, on February 4, 2000, the U.S. Fish and Wildlife Service issued a 12-month petition finding that stated:

> *"The Fish and Wildlife Service has determined that the current status of the black-tailed prairie dog warrants its listing as a Threatened species pursuant to section 4(b)(3)(A) the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.), subject to the approval of a final rule. The Service believes that sufficient information is currently available to support a finding that listing the black-tailed prairie dog as threatened is warranted, but that a proposed rule at this time is precluded by work on other higher priority species. The Service will reevaluate the status of the species 1 year after publication of this finding in the Federal Register."*

This finding establishes the black-tailed prairie dog as a candidate species for listing as federally threatened, and subject to annual review by the U.S. Fish and Wildlife Service. Currently, there are no federal restrictions placed on the overall management or control of black-tailed prairie dogs. However, species such as burrowing owl (*Athene cunicularia*), prairie rattlesnake (*Crotulus viridis*), and mountain plover (*Charadrius montanus*) are closely linked to prairie dog burrow systems for food and/or cover. Prairie dogs provide an important prey resource for

numerous predators including badger, coyote, fox, golden eagle, ferruginous hawk and other raptors.

5.9.6.1.1 Black-Tailed Prairie Dog History and Current Status

In past years, the prairie dog colony, when it spanned the entire Property, was ecologically significant. The colony previously occurred throughout the Northwest Parkway right-of-way, but prairie dogs in this area were trapped and removed in the summer and fall of 2002 in preparation for construction.

Many prairie dogs and associated species were significantly impacted by the late summer 2002 construction of the Northwest Parkway. The prairie dog colony within the right-of-way was either eliminated or displaced to the north or south, significantly increasing the species density of those areas. In the winter of 2002, many of the displaced prairie dogs were removed by the Northwest Parkway Authority from the south parcel based on its proposed designation as a No Prairie Dog area guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*.

A large number of prairie dogs were displaced onto the north parcel. As a result, there has been a significant increase in negative impacts to the soil and agricultural resources. Prairie dogs are colonizing areas further into alfalfa fields and pasturelands and subsequently affecting the ability of the current tenant to properly irrigate alfalfa and pasture areas. Their continued expansion has also resulted in the conversion of other areas of the parcel (particularly the extreme northeast corner) into large expanses of bare soil. In 2002, Louisville elected to lease the northern parcel for agricultural use (in connection with the County managed lease of the southern parcel). As described earlier, prairie dogs moved onto the northern parcel due to the disturbance and loss of former habitat, not due to natural expansion. Consequently, an argument could be made that these animals do not belong in this area and should be removed. Efforts were made in early 2003 to stabilize soil resources in the northeast section of the Property, but long-term effectiveness of this effort with prairie dogs in place is uncertain.

5.9.6.2 Birds

Prairie dog colonies provide habitat for avian species such as mountain plover (*Charadrius montanus*) and burrowing owl. The burrowing owl, a species closely linked to prairie dog burrow systems for food and/or cover, is known to have occurred on the Property. The burrowing owl is listed as a state threatened species by the Colorado Division of Wildlife. On May 16, 2002, a pair of breeding adult burrowing owls was observed on the Property (ERO, 2002e). A nest burrow was located on May 17, 2002 (ERO, 2002e). At that time a 75-yard buffer zone was established around the nest burrow and construction-related work on the Northwest Parkway was delayed. Six juvenile burrowing owls were observed at the nest burrow on June 17, 2002 and the owls apparently fledged and dispersed around July 1, 2002 (ERO, 2002e). Individuals were not observed in 2003. While the south parcel may provide appropriate habitat for the owl, the vegetation height, composition and structure of the north parcel likely precludes it from hosting this species in the future.

In addition to the burrowing owl nest, an active Swainson's hawk (*Buteo swainsoni*) nest was observed in the northwest corner of the Property during April 2002 and a red-tailed hawk (*Buteo jamaicensis*) nest was identified during raptor surveys for the Northwest Parkway (ERO, 2002e). The Property falls within an area used by a wintering ferruginous hawk (*Buteo regalis*) (ERO,

2002e). Cottonwoods in the northwest corner are suitable for cavity nesters such as northern flicker (*Colaptes auratus*), black-capped chickadee (*Parus atricapillus*), and American kestrel (*Falco sparverius*).

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water.

Other species of concern that may use the Property include long-eared owl (*Asio otus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

According to the Natural Diversity Information Source (NDIS) and CNHP databases for the area, there are no federally threatened or endangered species on the Property (NDIS, 2002).

5.9.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property (OAHP, 2002). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, multiple sites occur on the Property.

- Site 5BL.2386 is classified as an isolated archaeological find of quartzite groundstone fragment and is found in the northeast corner of the Property, just south of Dillon Road and west of S. 104th Street. This site was permanently altered by the construction of the Northwest Parkway.

- Site 5BL.6644 consists of an historic find of a cast iron pump from the 1920s.

- Site 5BL.6645 consists of an historic find of a trailer dating from 1890-1940.

- Site 5BL.6653 is an historic agricultural complex consisting of a foundation and artifacts from 1941.

- Site 5BL.6654 is an historic agricultural complex consisting of a concrete well and artifacts dating from 1880-1950.

- The Colorado & Southern Railroad site (5BL.400.1) dates to the 1870s and is located to the adjacent southwest of the Property.

Other potential unidentified cultural resources may exist within the Property. None of the documented resources are eligible for listing in the National Register of Historic Places. The historic resources will be further evaluated to see if they are worthy of inclusion at the Lastoka interpretive site in Louisville. If not, they will remain on site and undisturbed. Current and proposed management activities are compatible with these resources. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.9.8 Agricultural Resources

5.9.8.1 Water Rights

The following water rights were purchased with the Property and are available for irrigation use on the Property:

- 29.164 shares of capital stock in the Goodhue Ditch Company.

Water rights ownership is divided among four legal parcels. The County owns all water appurtenant to Parcels 3 and 4, while the City owns water appurtenant to Parcels 1 and 2. After all payments are made under the IGA, the City and County will each effectively own a 50% undivided interest in all land and water.

5.9.8.2 Soil Resources and Production Potential

Four soil types have been mapped on the Property from the Nunn soil series (USDA, 1975). Refer to the *Soils* map for additional detail. In general, these soils are deep and well-drained with slow permeability, slow to medium runoff, and slight to moderate risk of erosion. These soils are suited to all of the irrigated crops of the area, but they must have an adequate supply of water. Crops grown on these soils respond well to applications of fertilizer containing nitrogen and phosphorous. These soils are suited to irrigated pasture. The soil types on the Property have been traditionally used for irrigated crops and pasture.

5.9.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property consists of fences, gates, corrals, ditches, laterals, and diversion structures. Three wells exist on the Property. There is a small agricultural outbuilding located on the south side of the Northwest Parkway right-of-way in the center of the Property. Refer to the Property maps for the location of these elements.

Also, Gerrity Oil and Gas Corporation owns an abandoned gas well (MD #21-1D) on the Property. The well passed inspections on December 10, 1993 and March 23, 2000 (ERO, 2002e).

5.9.9 Management Direction

5.9.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The recommended classification for the north half of the Property is "Multiple Objective Area" (MOA) and will be managed by the City of Louisville to allow prairie dogs to inhabit the Property unless a conflict or excess resource depredation occurs.

Prairie dogs are present throughout the north parcel. While considered by some as incompatible with agricultural activities and objectives, management of the parcel to date has been tolerant of prairie dogs in spite of agricultural activities. In the event that agricultural or natural resource damage occurs, or significant conflicts arise because of the presence of these animals on the

property, Louisville has the right to control or completely remove the animals. No visual barriers are recommended at this time.

The vegetative composition of the north parcel is not ideally suited for long-term prairie dog conservation. The vegetative structure is introduced pasture grasses, alfalfa, and row crops and does not meet the total suitable vegetative cover requirement for suitable prairie dog habitat. Prairie dogs are not adapted to the non-native environment of the north parcel (and vice versa) and existence on these areas may lead to severe habitat degradation. Already, increasing prairie dog numbers have created areas of significant soil erosion in the northeastern corner of the parcel that have required the establishment of costly cover crops to stabilize soil resources. Although these cover crops appear to be working in that area, their long-term effectiveness is uncertain if prairie dogs remain. Consequently, converting this portion of the Property to native vegetation may be a long-term option.

The recommended classification for the south half of the Property is "No Prairie Dog" (NPD) and will be maintained and managed as irrigated agricultural land by Boulder County. A removal strategy that includes species relocation, contributions to predator recovery programs, and extermination will be pursued in this area to protect the integrity of the agricultural resource.

Any efforts to eradicate prairie dogs or destroy abandoned towns should not occur between March 1 and October 31 when owls may be present.

5.9.9.2 Raptors

The burrowing owl is particularly sensitive to human encroachment. No human encroachment or disturbance should occur within 75 yards of the nest site from April 1 through July 31 in order to avoid disturbing nesting owls. However, owls may be present at burrows up to a month before egg laying and several months after young have fledged. Therefore it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 1 and October 31 when owls may be present (Craig, 2002). Although owls may occur throughout a prairie dog colony, they have a propensity to frequent the colony margins and buffer zones should be applied to the colony perimeter. This species exhibits high levels of site fidelity and may likely re-use the same colony, if not the same burrow location, in subsequent years. Measures that protect and enhance prairie dog colonies will benefit this species.

The identified raptor nests should be surveyed in 2003. Depending on survey results, management should focus on protecting nest sites while defining important foraging areas that support the pair's nesting effort. The Colorado Division of Wildlife has outlined recommended buffer zones and seasonal restrictions for Colorado raptors (Craig, 2002) that provide guidance for land managers and should be consulted. In general, human encroachment (beyond that which has historically occurred in the area) should be restricted within ¼ mile of the nest from March 1 to July 15. Any prairie dog management on the Property should also be considered within the context of nesting and foraging raptors.

Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

5.9.9.3 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the

loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Weed management on the Property should focus on efforts to control diffuse knapweed, chicory, and Canada thistle. Diffuse knapweed occurs primarily along the railroad right-of-way. A short to long-term objective could involve working with the Burlington Northern Sante Fe Railroad to coordinate herbicide spraying along the right-of-way. Controlling Canada thistle within the wetlands could be the first step in an overall enhancement effort for the wetland complex.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they provide excellent competition to invading noxious weeds. Smooth brome in particular thrives along irrigation ditches providing much needed competition to Canada thistle.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.9.9.3.1 Diffuse Knapweed

Diffuse knapweed should be the top priority for weed management because of the tumble-weed characteristic of this plant and its potential for spread. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective. Insect biological control has shown promising results for control of diffuse knapweed, particularly during dry years, but should be integrated with other tools. If insects that prey on diffuse knapweed are not present, a release should be considered.

Diffuse knapweed is susceptible to Redeam, Curtail, and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.9.9.3.2 Other Weeds

Canada thistle, a perennial weed, can be effectively managed by combination of mowing and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control. In sensitive areas such as these the best choice

for control is spot-spray applications of Round Up (glyphosate) when no water is running in the ditch and where water has receded in the wetland. Round Up is a non-selective herbicide so care must be taken when spot-spraying this product to avoid excessive over spray that can kill desired vegetation.

Where musk thistle and chicory are found, spot spray applications of Tordon or Transline prior to seed set should provide effective control.

5.9.9.4 Wetlands

The Property contains significant wetlands that should be protected and enhanced. The enhancement and maintenance of the wetland complex is a long-term management commitment that could include the removal of prairie dogs, altering of grazing management practices, and manipulation of water management.

Prairie dog removal from the south side of the Property may create more opportunities for wetland enhancement. Any removal would have to consider culverts under the future highway and the ease with which prairie dogs on the north side could disperse.

Livestock grazing practices should be evaluated to determine the impact on wetland resources. Additional fencing may be required to limit or exclude cattle from sensitive areas.

Wetlands are dependent on their water source, therefore, attention should be paid to changes in irrigation practices and their impact on wetland resources. A tile drain located in the southwest corner of the Property provides much of the water that supports the wetland complex. A "wick" system was installed under the Northwest Parkway overpass to help keep the source of springs in place. The hydrology of the Property should be evaluated in conjunction with Rock Creek Farm, which appears to be of the same hydrologic system. This information will help inform future decisions and will be useful in analyzing the effects of Northwest Parkway construction.

5.9.9.5 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain perennial grass for hay production and livestock grazing.
2. Evaluate grazing management and its affect on wetlands.
3. Control weeds in the fields and along ditches.
4. Monitor the rehabilitation of disturbed areas.
5. Evaluate adequacy of irrigation water, as tenant-owned water is currently used on the Property.

Past grazing management can be described as seasonal grazing coordinated with hay production. Livestock was typically pastured in the fields from winter into early spring, at which time they were removed for production and harvest of hay. Stock was then brought back on the land to pasture after grass dormancy in the fall.

Current grazing practices can be described as adaptive grazing management that is guided by forage production and environmental conditions. Temporary fencing is used by agricultural resource managers to control the timing, number of cattle, and size of pastures in order to control plant utilization and vigor. Growing season grazing requires close management and an adequate

rest and recovery period between uses. Grazing is also used to control weeds and improve desirable plant vigor.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.9.9.6 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public. Dispersed recreational use would not be appropriate in the context of agriculture and public access would interfere with the ongoing agricultural operations. However, visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of production.

The County Trails Map in the 1999 Boulder County Comprehensive Plan depicts the BNSF rail line, which borders the southwest boundary of the Property, as a trail "alignment". Plans for this route are unknown at this time.

5.9.9.7 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular the wildlife value of agricultural lands, the relationship between wetlands and irrigation practices, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues.

5.9.9.8 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.9.9.8.1 Law Enforcement

According to the terms of the Louisville Intergovernmental Agreement (IGA), the City of Louisville shall provide law enforcement for the Property. Typically, primary law enforcement responsibility for properties located within the unincorporated county rests with the Boulder County Sheriff's Department. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.9.9.8.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.9.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Prairie dog survey----------Annual----------BCPOS
Burrowing owl survey-----Annual----------BCPOS
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Wetlands monitoring-------Every 3 yrs.------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Irrigation water----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Agricultural Infrastructure
Trillium, Boulder County
T1SR69W
gates
roads
access roads
fences
Trillium
N
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0 105 210 420 Feet
Dillon Rd
S104th St


Hydrologic Features &
Field Types
Trillium, Boulder County
T1SR69W
diversions
streams & ditches
wetlands
irrigated cropland
out of ag production
rangeland
N
Boulder County
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0 110 220 440 Feet
Dillon Rd
S 104th St

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5.10 WAREMBOURG

5.10.1 Acquisition History

The Warembourg Property ("Property") was jointly purchased from Warembourg Colorado Ranches, LLC by the City of Louisville and Boulder County in August 1999 for $2,952,000. Great Outdoors Colorado (GOCO) provided a grant of $194,350 for acquisition assistance. The purchase consisted of 215.76 acres of fee simple land and a 72-acre conservation easement (both jointly owned as tenants in common by the City and County), and 4.5 acres of fee simple land purchased solely by the City and is to be used for road right-of-way purposes. The purchase also included water rights. The purpose of the acquisition was to preserve agricultural land, protect the Coal Creek riparian corridor, and provide a buffer between the urban areas of nearby Louisville, Superior, and Lafayette.

5.10.2 Location and Access

The Warembourg Property is located about 1.5 miles south of the City of Louisville. The Property is bounded by Dillon Road to the south, S. 96th Street to the east, and Coal Creek to the north.

Access to the Property is by way of several farm gates located on the north side of Dillon Rd. and also from S. 96th Street.

5.10.3 Adjacent Land Use and Ownership

The surrounding land uses and ownerships of the Warembourg Property are:

North: To the immediate north is a 72-acre conservation easement with rural residences and City of Louisville open space for the Coal Creek Trail and riparian corridor; further north and west is the Coal Creek Golf Course.
East: Mid-density residential development is located to the east across S. 96th St.; further east is the Colorado Technology Center.
South: The Bowes and Admor open space properties are due south.
West: A Public Service gas compressor station lies to the southwest; Coal Creek Ranch Subdivision lies to the west.

5.10.4 Current Leases, Easements, Encumbrances, and Rights-of-Way

- The Property is leased for hay production and livestock grazing. The lease agreement calls for the Property to be managed consistent with a soil and water conservation plan.

- Oil and gas lease between Walter Warembourg and Todd Hitchings recorded June 5, 1981.

- Oil and gas lease between Klubert Warembourg and Martin Exploration Management Corp. recorded June 18, 1981.

- Easement granted to Mountain States Telephone and Telegraph Company.

- Easements for pipeline purposes granted to Colorado-Wyoming Gas Company,

Western Slope Gas Company, and Northern Natural Gas Company.

- Easement for water pipeline purposes granted to Northern Colorado Water Conservancy District.

- Easements for the South Boulder and Coal Creek Ditch and Goodhue Ditch.

- An access easement across the Property granted to Warembourg Colorado Ranches, LLC for agricultural purposes.

- Nonexclusive easements to Warembourg Colorado Ranches, LLC over the Property for purposes of utilizing the existing pond, open irrigation ditch, and pipeline to store and convey irrigation water to the Warembourg CE Property.

- Reciprocal conservation easements between the City of Louisville and Boulder County limiting the property's use to open space and agriculture

- The Property is subject to a GOCO grant and conservation easement. The conservation easement contains land use prohibitions and approval requirements that go beyond the County's standard conservation easement. Furthermore, the easement requires that the Property's land management plan shall be updated every five years and submitted to the GOCO Board for approval. Any material change must also be approved.

- Minerals on the Property are severed and owned by Anadarko Petroleum and John H. Brunel. A mineral lease appears to be in place with Cybermedic, Inc.

- The Property acquisition included all oil, gas, and other minerals owned by the Seller (Warembourg Colorado Ranches, LLC); however, any royalty interests for existing oil and gas wells on the Property were assigned to the Seller for a period of ten years.

- As a condition of purchase, the County agreed to dedicate right-of-way necessary for the improvement of 96th Street or Dillon Road, or both. Any land so dedicated shall be released from the reciprocal conservation easements that apply to the fee property and the County shall be compensated proportionate to its ownership interest.

- Rights-of way for County Roads 19, 64, and 68 (Dillon Road) and N. 96th Street.

5.10.5 Vegetative Resources

5.10.5.1 Vegetative Communities

The Property is largely irrigated pasture with a narrow strip of native grasses along the upland break point above the Coal Creek floodplain. The riparian area along Coal Creek with its associated wetlands defines the extent of the Property in the northwest corner. The irrigation ditches that run through the Property support individual plains cottonwood (*Populus deltoides*) trees in some locations. The Property can be roughly described as three vegetation community types- irrigated pasture, native grassland, and riparian/wetland.

The majority of the Property is primarily irrigated agricultural land dominated by introduced pasture grasses. The pasture areas are used for grazing and hay production. Non-native grasses, such as smooth brome (*Bromus inermis*) and orchardgrass (*Dactylis glomerata*), dominate the majority of the pastures. Intermediate wheatgrass (*Agropyron intermedium*) dominates a pasture just south of Coal Creek in the northwest portion of the Property. Closer to the riparian corridor, smooth brome dominates the ground cover of this pasture. Weedy forbs such as Canada thistle (*Cirsium arvense*) and alfalfa (*Medicago sativa*) are scattered throughout the pastures. The weedy pasture on the west side of the Property, just east of the prairie dog colony, is dominated by diffuse knapweed.

A narrow strip of native grassland occurs along the upland terrace on the break point above the Coal Creek floodplain to the north. This narrow strip occupies an area between the Goodhue Ditch to the north and a pasture fence line to the south. Although this isolated relic of shortgrass prairie provides little overall ecological function, it is a good example of the historic plant community. Grasses in this area are closely cropped due to grazing, but appear to be in good condition. Native species present include buffalograss (*Buchloe dactyloides*), blue grama (*Bouteloua gracilis*), little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), sideoats grama *(Bouteloua curtipendula),* and western wheatgrass (*Agropyron smithii*). The historic vegetation community on the Property was likely similar and was characterized by species such as yucca (*Yucca glauca*), blue grama, sideoats grama, and little bluestem.

Coal Creek and its associated riparian corridor define the northwest corner of the Property. Woody vegetation in the riparian area is characterized by plains cottonwood (*Populus deltoides*), narrowleaf cottonwood (*Populus angustifolia*), and coyote willow (*Salix exigua*). Russian-olive (*Elaeagnus angustifolia*) is also scattered throughout the canopy. The wetlands along the creek are linked hydrologically directly to Coal Creek and are dominated by coyote willow. Moist, bottomland areas adjacent to Coal Creek are dominated primarily by smooth brome and have a significant component of Canada thistle. Other species include showy milkweed (*Asclepias speciosa*) and curly dock (*Rumex crispus*).

5.10.5.2 Wetlands

BCPOS staff surveyed two wetlands located within the bottomlands of Coal Creek near the southwest corner of the Property in June 2000. The westernmost wetland is a temporarily flooded, closed depression that is fed by ground water and sub-irrigation from the adjacent golf course. This 1.2-acre wet meadow was described as diverse and is dominated by arctic rush (*Juncus arcticus*), three square (*Schoenoplectus pungens*), soft-stem bullrush (*Schoenoplectus lacustris* ssp. *acutus*), and water plantain (*Alisma trivale*).

A second wetland is also located within the Coal Creek floodplain just east of the wetland described above. This roughly 0.5-acre wet meadow is an intermittently flooded, closed depression that was likely the result of former mining activities. This wetland is fed by the flooding of Coal Creek and is dominated by foxtail (*Critesion jubatum*), three square, and sandbar willow (*Salix exigua*).

Wetlands on the Property, associated with the riparian corridor along Coal Creek, are jurisdictional (ERO, 2002f).

5.10.5.3 Rare and Imperiled Plants

No rare plants or plant communities have been identified on the Property by BCPOS staff or the Colorado Natural Heritage Program (CNHP) [Natural Diversity Information Source (NDIS), 2002]. However, two threatened species that have the potential to occur in wetland or riparian habitats on the Property are the Ute ladies'-tresses orchid (*Spiranthes diluvialis*) and the Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*).

The following types of habitat are considered to potentially support populations of the Ute ladies'-tresses orchid:

- Areas determined to be jurisdictional wetlands,
- Seasonally moist areas near springs, lakes, irrigation ditches, or perennial streams and their associated flood plains,
- Old stream channels and alluvial terraces,
- Sub-irrigated meadows,
- Areas supporting vegetation indicative of seasonally wet areas or areas dominated by vegetation considered to be facultative wet.

Based on these criteria, the riparian area and portions of the irrigated pasture adjacent to the riparian area could potentially support the orchid. A full survey for the presence or absence of the orchid was not part of the rapid resource assessment conducted by ERO in 2002. The Property contains gravelly, sub-irrigated soils of the type typically associated with known occurrences of the orchid. Although vegetation along Coal Creek and the nearby meadow is dense, the area should be considered to contain potential habitat.

The Colorado butterfly plant was listed as a threatened species on October 18, 2000; however, the U.S. Fish and Wildlife Service has not yet published formal survey guidelines for this species. The Colorado butterfly plant occurs on sub irrigated alluvial soils on level or slightly sloping floodplains and drainage bottoms between 5,000 and 6,400 feet in elevation in north-central Colorado, southeastern Wyoming, and western Nebraska. Colonies are often found in low depressions along wide, active stream channels.

The Colorado butterfly plant typically occurs in habitats created and maintained by streams that are active within their floodplains, with vegetation that is relatively open and not overly dense or overgrown. A full survey for the presence or absence of the Colorado butterfly plant was not part of the rapid resource assessment conducted by ERO in 2002. As with the Ute ladies'-tresses orchid, Coal Creek should be considered to contain potential habitat for the butterfly plant.

5.10.5.4 Exotic Species and Noxious Weeds

The Property has the following weed species in these locations: diffuse knapweed (*Centaurea diffusa*) is scattered along the fence lines and dominates the weedy pasture area in the west-central portion of the Property; Canada thistle occurs in all of the irrigation ditches, within the Coal Creek riparian corridor, and scattered within the pasture areas; musk thistle (*Carduus nutans*) is scattered throughout the Property; field bindweed (*Convolvulus arvensis)* can be found throughout the Property; chicory (*Cichorium intybus*) is prevalent along the two-track road through the center of the Property; common teasel (*Dipsacus fullonum*) occurs scattered in the Coal Creek riparian corridor; bouncing bet (*Saponaria officinalis*) occurs scattered along the banks of Coal Creek; Russian-olive trees are scattered throughout the riparian corridor along Coal

Creek and individual trees occur along the irrigation ditches, including a small stand in the southeast corner of the Property.

5.10.6 Wildlife Resources

5.10.6.1 Mammals

Two small colonies of black-tailed prairie dogs (*Cynomys ludovicianus*) occur on the Property. One colony occupies a portion of the pasture on the west side of the Property directly adjacent to the Coal Creek Ranch Subdivision. The other colony occurs in a tract of land on the south side of Coal Creek below the top of the slope. The black-tailed prairie dog is a candidate species for listing as threatened under the Endangered Species Act.

Due to population declines across its historical range, on February 4, 2000, the U.S. Fish and Wildlife Service (USFWS) issued a 12-month petition finding that stated:

> *"The Fish and Wildlife Service has determined that the current status of the black-tailed prairie dog warrants its listing as a Threatened species pursuant to section 4(b)(3)(A) the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.), subject to the approval of a final rule. The Service believes that sufficient information is currently available to support a finding that listing the black-tailed prairie dog as threatened is warranted, but that a proposed rule at this time is precluded by work on other higher priority species. The Service will reevaluate the status of the species 1 year after publication of this finding in the Federal Register."*

This finding establishes the black-tailed prairie dog as a candidate species for listing as threatened, and subject to annual review by the U.S. Fish and Wildlife Service. Currently, there are no federal restrictions placed on the overall management or control of black-tailed prairie dogs. However, species such as burrowing owl (*Athene cunicularia*), prairie rattlesnake (*Crotulus viridis*), and mountain plover (*Charadrius montanus*) are closely linked to prairie dog burrow systems for food and/or cover. Prairie dogs provide an important prey resource for numerous predators including badger, coyote, fox, golden eagle, ferruginous hawk and other raptors.

Other species observed on the Property include mule deer (*Odocoileus hemionus*), red fox (*Vulpes*), and eastern cottontail (*Sylvilagus floridanus*).

In addition to these species, small rodents that probably occur along Coal Creek and in the irrigation ditches on the Property include deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*). Other probable mammal species in the riparian habitat on the Property include whitetail deer (*Odocoileus virginianus*) and fox squirrel (*Sciurus niger*).

According to the NDIS and CNHP databases for the area, there are no threatened or endangered species on the Property (NDIS, 2002). However, the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) is a federally threatened species with the potential to occur in riparian habitats in this part of Colorado. Preble's mice typically inhabit areas characterized by well-developed plains riparian vegetation with relatively undisturbed grassland and a water source in close proximity (Armstrong et al., 1997). Recent studies have suggested that Preble's may have a

wider ecological tolerance than previously thought, and that the requirement for diverse vegetation and well-developed cover can be met under a variety of circumstances (Meaney et al., 1997). Radio-tracking studies conducted by the Colorado Division of Wildlife (CDOW) have documented Preble's using upland habitat adjacent to wetlands and riparian areas (Shenk and Sivert, 1999). Additional research by CDOW has suggested that habitat quality for PMJM can be predicted by the amount of shrub cover available at a site (White and Shenk, 2000).

Based on the above criteria, Coal Creek fits the description of potential Preble's habitat; however, there have been no recent captures of Preble's in the vicinity of the Property despite numerous trapping surveys. In 2000, the reach of Coal Creek at South 96th Street was surveyed. Also included in this survey was the irrigation ditch just north of the Property. Results of the survey were negative (ERO, 2002f). The added report of a domestic cat returning to its owner with a dead Preble's mouse east of the Property also suggests that the reach of Coal Creek through the Property could support the species.

Boulder County is currently working with the U.S. Fish and Wildlife Service on a draft countywide Habitat Conservation Plan (HCP) for the Preble's meadow jumping mouse. To date, the reach of Coal Creek that borders the Property is not included as a "Mouse Management Area" by USFWS. Suitable habitat and mouse populations are generally limited to that area of Coal Creek west of U.S. Highway 36. East of Highway 36, conditions are considered more urbanized and characterized by weed infestations and fragmented habitat. It is likely that the riparian corridor within the vicinity of the Property could be classified as "Potential Restoration, Noncontiguous" under the HCP.

5.10.6.2 Birds

Although essentially all aspects of wildlife use of the Coal Creek riparian corridor can be considered important, probably the most important include nesting, resting, and feeding sites for neotropical migrant birds, many species of which occur almost exclusively in mixed deciduous riparian woodlands and shrublands. Some of the neotropical migrants pass only briefly through the area on their way between more northerly and southerly climes, but others stay to breed. Both the transient and summer resident groups include a variety of smaller flycatchers, warblers, vireos, wrens, and finches, as well as larger species such as the brown thrasher (*Toxostoma rufum),* gray catbird (*Dumetella carolinensis)*, and yellow-billed cuckoo (*Coccyzus americanus),* all of which are unlikely to occur regularly outside the Coal Creek corridor. More familiar migrants such as the American robin (*Turdus migratorius)*, Bullock's oriole (*Icterus bullockii),* eastern and western kingbirds (*Tyrannus tyrannus, T. verticalis),* and American and lesser goldfinches (*Carduelis tristis, C. psaltria*), plus many year-round residents such as the northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens)*, blue jay (*Cyanocitta cristata*), and black-capped chickadee (*Parus atricapillus*) are probably present in greater abundance along the creek than most other parts of the general area.

In addition to the arboreal species named above, other migrants are attracted by wetland habitats along the creek. These also include neotropical species such as the northern yellowthroat (*Geothlypis sp.)* and yellow-headed blackbird (*Xanthocephalus xanthocephalus)* in cattails and the song sparrow (*Melospiza melodia)* in shrubby coyote willows (ESCO, 2001).

Not all of the birds supported by the Coal Creek riparian complex meet all of their needs within the woodland. Many, such as flycatchers and some finches, may nest in the trees but feed in adjacent pastures, parks, or wetlands. Tree-nesting raptors (birds of prey) also fit this model. While some, such as the Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*), may nest and hunt for small birds among the trees, other species such as the American

kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis),* Swainson's hawk (*Buteo swainsoni*), great horned owl (*Bubo virginianus),* and eastern screech-owl (*Otus asio*) are more likely to hunt in adjacent open terrain—as may the turkey vulture (*Cathartes aura)* (ESCO, 2001).

In an open space inventory conducted by ESCO Associates in 2001 for the City of Louisville, avian species observed on the Property between the top of the slope and Coal Creek included Cooper's hawk, Swainson's hawk, American kestrel, western kingbird, loggerhead shrike (*Lanius ludovicianus*), lark sparrow (*Chondestes grammacus*), and blue grosbeak (*Guiraca caerulea*). The City of Louisville open space inventory presents the results of a quantitative breeding bird survey conducted along Coal Creek. Thirty-three nesting pairs and 25 species along a transect adjacent to the Property were documented.

In March 2002, artificial raptor nest structures were placed on the Property as part of a mitigation plan related to construction of the Northwest Parkway. Nest structures were placed high in existing trees located along the Goodhue Ditch in the center of the Property, above typical nest heights for great horned owl and in locations within the tree that replicates typical nest placement of the target species (i.e., red-tailed or Swainson's hawk). The structures were monitored throughout late spring 2002 and into the summer for raptor activity, but none was recorded (ERO, 2002f). The cottonwoods where these structures were placed, as well as those along Coal Creek, are also suitable for cavity nesters such as northern flicker and black-capped chickadee.

The bald eagle (*Haliaeetus leucocephalus*), found only in North America, is listed as a state and federally threatened species. According to NDIS, the southeastern portion of the County contains suitable habitat. More specifically, this area is defined as a winter foraging area and a roost site is documented in that area west of U.S. Highway 287 and south of Highway 42. Bald eagles are a popular winter resident and are seldom seen far from water.

Other species of concern that may use the Property include great blue heron (*Ardea herodias*), Lewis' woodpecker (*Melanerpes lewis*), red-headed woodpecker (*Melanerpes erythrocephalus*), American bittern (*Botaurus lentiginosus*), long-eared owl (*Asio otus*), American dipper (*Cinclus mexicanus*), Northern harrier (*Circus cyaneus*), Northern bobwhite (*Colinus virginianus*), bobolink (*Dolichonyx oryzivorus*), and sandhill crane (*Grus canadensis*).

Waterfowl likely to frequent Coal Creek include Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), Green-winged teal (*Anas crecca*), Blue-winged teal (*Anas discors*), Cinnamon teal (*Anas cyanoptera*), American coot (*Fulica americana*), and Northern shoveler (*Anas clypeata*).

5.10.7 Cultural Resources

The Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) conducted a search of the Colorado Inventory of Cultural Resources database for the Property (OAHP, 2002). This database contains information on documented federal or state studies or findings regarding any cultural resources. According to the search, three historic sites occur on the Property. All three are of Euro-American descent and relate to the history and development of agriculture.

- Sites 5BL.2719.16 and 5BL.2719.17 include the Goodhue Ditch primary channel and collector, respectively, that date to 1873.

- 5BL.5664.1 includes the South Boulder and Coal Creek Ditch that dates to 1872.

None of these resources are eligible for listing in the National Register of Historic Places. Other potential unidentified cultural resources may exist within the Property. Current and proposed management activities are compatible with these resources.

In addition, the Boulder County Comprehensive Plan identifies an Archaeological Travel Route along Coal Creek on the Property. Further investigation would be required if any significant disturbance, other than the existing use, is proposed for the Property.

5.10.8 Agricultural Resources

5.10.8.1 Water Rights

The following water rights are available for irrigation use on the Property:

- 100 shares of the Goodhue Ditch and Reservoir Company,
- 6 shares of Farmer's Reservoir and Irrigation Company,
- and the well and water rights associated with the Warembourg #1 well.

These water rights are owned by Boulder County and the City of Louisville as tenants in common.

Furthermore, additional water rights were purchased in a later agreement that included:

- 3 shares of Farmers Reservoir and Irrigation Company,
- 4 shares of South Boulder and Coal Creek Irrigation Ditch Company,
- and 4 shares of South Boulder and Coal Creek 1st Extension Ditch.

These water rights were purchased and conveyed to the City of Louisville. Louisville then conveyed a 50% interest to Boulder County in these additional water rights.

The City owns original stock certificates and pays annual assessments. The County will reimburse the City in even years. The City votes the shares in even years, and the County votes in odd years.

5.10.8.2 Soil Resources and Production Potential

Nine soil types have been mapped on the Property representing five soil series, including Ascalon, Calkins, Manter, Nunn, and Valmont (USDA, 1975). Refer to the *Soils* map for additional detail. Above the floodplain, the soils are deep and well-drained with slow permeability, medium runoff, and moderate risk of erosion. These soils are suited to all of the irrigated crops of the area. A systematic crop rotation should be followed in order to maintain soil tilth. To minimize erosion losses and maintain soil tilth, row crops should be limited to no more than three consecutive years. Crops grown on these soils respond well to applications of fertilizer containing nitrogen and phosphorous. These soils are suited to irrigated pasture.

In the alluvial floodplain, soils are deep and somewhat poorly drained with slow runoff, moderate to rapid permeability, and moderate risk of erosion. These soils are suited to all of the irrigated crops of the area, especially water-tolerant crops. To maintain maximum crop production, the soils need to be drained. Water-tolerant grasses such as tall wheatgrass, tall fescue, or slender wheatgrass are good when this soil is used for pasture.

The soil types on the Property have been traditionally used for irrigated crops and pasture.

5.10.8.3 Agricultural Infrastructure

Agricultural infrastructure on the Property consists of fences, gates, ditches, laterals, windmills, and diversion structures. No farm related or other buildings exist on the Property. Refer to the Property maps for the location of these elements.

5.10.9 Management Direction

5.10.9.1 Black-Tailed Prairie Dog

Management of this species on the Property will be guided by the County's *Grassland Management Plan, Prairie Dog Habitat Element*, which is designed to balance wildlife, ecological, and agricultural resource concerns. The portion of the Property that is irrigated hay and pasture land is recommended for classification as "No Prairie Dog" (NPD). The non-irrigated portion of the Property that contains a remnant native plant community and an existing prairie dog colony is recommended for classification as "Multiple Objective Area" (MOA). The MOA boundary should be mapped for clarity and use in management.

The City of Louisville will manage and thin the colony on the Property as necessary in order to prevent significant migration to the productive land.

5.10.9.2 Raptors

The artificial raptor nests should be surveyed in 2003 for use and monitored thereafter depending on survey results. If use of the structures is confirmed, these nest sites should be protected through recommended buffers and seasonal restrictions in addition to any important foraging areas that support the nesting efforts (Craig, 2002).

Possible use of the Property by bald eagles should be monitored through general wildlife observations and resource monitoring activities.

5.10.9.3 Noxious Weeds

One of the most serious and fastest growing problems in the West today is the spread and establishment of invasive non-native plants. Noxious weed infestations have contributed to the loss of productivity and ecological functions on both public and private lands, seriously impacting agriculture, native plants and wildlife. Weeds are rapidly becoming the most pressing management issue for many private landowners and public land managers.

According to the agricultural lease, the lessee or tenant is responsible for weed management on the Property. Weed management activities are typically guided by an annual plan that is developed with the BCPOS Agricultural Resources Division. Depending on the degree and extent of infestations, BCPOS and the operator coordinate weed management activities. Ultimately, according to the Colorado Noxious Weed Act adopted as State statute (CRS 35-5.5) in 1990, property owners are responsible for controlling noxious weeds on the Property.

Weed management on the Property should focus on efforts to control the diffuse knapweed in the weedy pasture area in the western portion of the Property, and chicory that is concentrated along the two-track road in the center of the Property.

Weed management within the riparian community on the Property should be consistent with an overall effort along the Coal Creek corridor, including the control of Canada thistle and removal of Russian-olive. Russian-olive, an invasive, non-native tree, is capable of displacing many native trees and shrubs over time.

The establishment of favorable plant species is important for providing competition to weed species. Grass species in particular are important as they are tolerant of selective weed management practices such as mowing and herbicide applications. Consideration should be given to conserving existing non-native grasses in areas infested with noxious weeds, at least in the short-term, since they provide excellent competition against invading noxious weeds. Smooth brome in particular thrives along irrigation ditches providing much needed competition to Canada thistle.

All available methods should be used for eradication and control of noxious weed species, including mechanical, biological, cultural, and chemical control. Integrated pest management should be embraced for weed management and, whenever practical, non-chemical methods should be used. The County, through its Weed Management Program, should continue to map, manage, and monitor noxious weeds.

5.10.9.3.1 Diffuse Knapweed

Diffuse knapweed is the top priority for weed management because of the tumble-weed characteristic of this plant and its potential for spread. This weed is usually a biennial and can be controlled by preventing seed production and/or dispersal; thus hand pulling, where feasible, can be very effective. Insect biological control has shown promising results for control of diffuse knapweed, particularly during dry years, but should be integrated with other tools. If insects that prey on diffuse knapweed are not present, a release should be considered.

Diffuse knapweed is susceptible to Redeam, Curtail, and Transline (clopyralid) and more extensive and dense infestations can be readily controlled by applications of either of these herbicides prior to seed set. Transline, with less soil residual activity, can be applied beneath trees and near waterways with low risk.

5.10.9.3.2 Other Weeds

Canada thistle, a perennial weed, can be effectively managed by a combination of mowing, grazing, and herbicide application. Mowing prior to seed set followed by a fall application of Tordon or Transline provides best control. Repeated applications of aquatic 2, 4-D can be used to control Canada thistle near water.

Where musk thistle and chicory are found, spot spray applications of Telar and Escort prior to seed set should provide effective control.

5.10.9.4 Land Resources

In order to fulfill the common management goals, the priorities for the Property are as follows:

1. Maintain majority of the Property in perennial grass for hay production and livestock grazing.
2. Control weeds in the fields, particularly diffuse knapweed and Canada thistle.
3. Restore the floodplain and adjacent areas to native vegetation.
4. Enhance the quality of the riparian habitat through restoration, effective grazing management, and weed control.
5. Monitor the condition of the native grass community and improve where feasible.
6. Optimize grass production by relieving compaction in productive fields.
7. Improve irrigation conveyance systems and analyze conversion to sprinklers for gains in water efficiency.
8. Improve fences.
9. Close and restore social trails.

Past grazing management can be described as seasonal grazing coordinated with hay production. Livestock was typically pastured in the fields from winter into early spring, at which time they were removed for production and harvest of hay. Stock was then brought back on the land to pasture after grass dormancy in the fall.

Current grazing practices can be described as adaptive grazing management that is guided by forage production and environmental conditions. Temporary fencing is used by agricultural resource managers to control the timing, number of cattle, and size of pastures in order to control plant utilization and vigor. Growing season grazing requires close management and an adequate rest and recovery period between uses. Grazing is also used to control weeds and improve desirable plant vigor.

The Agricultural Resources Division of Boulder County Parks and Open Space develops and annually reviews farm management plans with its tenants and works towards improvements in productivity and land condition. For public health and safety reasons, property managers should work with agricultural tenants to prevent standing water that may contribute to mosquito production.

5.10.9.5 Ecosystem Restoration and Enhancement

Vegetation conditions in the disturbed grassland and weedy pasture in the western portion of the Property could be enhanced through weed management and proper grazing management. Consideration should also be given to replacing or enhancing the existing grass stand.

Restoration of the Coal Creek corridor and adjacent lands on the Property should be pursued. The area extending southward from the Creek to the top of the ridgeline above the Goodhue Ditch should be restored to a native plant community. A currently existing east-west fenceline serves as a rough boundary for such a revegetation project. Within the riparian corridor, Russian-olive trees should be removed as they are capable of displacing many native trees and shrubs over time. Natural Resource Conservation Service (NRCS) grant funds should be pursued for habitat improvement projects.

Wetlands on the Property may be improved by limiting or excluding livestock. Any wetland enhancement should be approached in concert with an evaluation of fencing alternatives.

Non-designated trails on the Property, in particular the social trails located on the south side of Coal Creek, should be closed and reclaimed.

5.10.9.6 Visitor Access and Recreation

Consistent with the current rules and regulations for County Parks and Open Space lands that are managed for agricultural purposes, the Property is closed to the public.

The Coal Creek Trail runs along the Property's northwest boundary and has significant public use. Continued public use of this passive recreational amenity presents little or no conflict. Extensive and dispersed recreational use would not be appropriate in the context of agriculture and public access on the Property would interfere with the ongoing agricultural operations. Visitor access and recreational opportunities should be reevaluated if the Property is ever taken out of agricultural production.

The City of Louisville is scheduled to widen S. 96th Street along the Property's eastern boundary and Dillon Road along its southern boundary. As part of this project, bicycle lanes will be added to the roadway and a sidewalk is planned for the east side of 96th St.

The County Trails Map in the 1999 Boulder County Comprehensive Plan depicts a trail "corridor" on the Property traversing E-W along the Goodhue Ditch. Given the current and planned recreation infrastructure in the area, this corridor is not considered a priority.

5.10.9.7 Education and Outreach

Potential education and interpretation themes for the Property address natural and cultural resources, in particular geologic features, riparian and wildlife values, agricultural resources and history, and coal mining history. Appropriate methods for interpretation include trailside displays and signs and special offerings of interpretive programs. Typically, interpretive programs offered on properties closed to the public are done so through staff proposed public programs or special requests by school groups or community organizations.

Outreach efforts should focus on trespass and illegal dumping issues. Owners of adjacent properties should be contacted and given information regarding the point of contact for the Property.

Furthermore, staff could work with the managers of the neighboring golf course to enhance their section of the riparian corridor, including establishing a wider mow-free area along the creek and removing non-native plant species.

5.10.9.8 Emergency Services

Emergency response is provided by a host of agencies, organizations, and fire protection districts. These activities are initially coordinated through a call to the Boulder County Sheriff's Department, Dispatch Division. From here, depending on the nature of the emergency, appropriate response agencies are contacted.

5.10.9.8.1 Law Enforcement

Primary law enforcement responsibility for the Property rests with the Boulder County Sheriff's Department, as the Property is located within the unincorporated county. Commissioned Sheriff's Deputies are assigned full-time to patrol open space properties, as are County Open Space Rangers who have limited commissions and enforce rules and regulations only.

Since the Property is in agricultural production and closed to the public, visitation to the Property and patrol by law enforcement staff is limited to "drive-by" inspection. Law enforcement staff relies heavily on contact and communication from the agricultural operators/tenants to be informed of any problems or potential violations.

5.10.9.8.2 Fire Protection

Fire potential on the Property is generally limited to wildland fire, probably in the form of a grass fire. Primary fire protection responsibility rests with the Louisville Fire Protection District, as the Property falls within its initial attack jurisdiction. County Parks & Open Space does have staff trained in wildland fire response and can assist with coordination and firefighting resources.

5.10.10 Resource Monitoring

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the Property and helps inform decisions about future land management activities. The monitoring of specific resources is performed on a periodic basis in relation to resource sensitivity. Some monitoring takes place through routine staff activities, while others take place annually or every few years. The following monitoring activities are recommended for the Property:

Raptor nest survey---------Annual----------BCPOS/Volunteer
Prairie dog survey----------Annual----------BCPOS/Louisville
Weed monitoring----------Annual----------BCPOS/Lessee
Weed inventory----------Every 5 yrs.------BCPOS
Wetlands monitoring-------Every 3 yrs.------BCPOS
Breeding bird survey-------Every 3-5 yrs.---Volunteer
Riparian plant inventory---W/in 5 yrs.-------BCPOS
Vegetation monitoring-----Every 3 yrs.------BCPOS/Louisville
Preble's baseline survey---W/in 5 yrs.-------BCPOS
Cropland----------Ongoing----------BCPOS/Lessee
Irrigation water----------Ongoing----------BCPOS/Lessee
Infrastructure----------Ongoing----------BCPOS/Lessee


Agricultural Infrastructure
Warembourg, Boulder County
T1SR69W
gates
roads
access roads
fences
Warembourg
N
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DISCLAIMER
This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The areas depicted here are approximate. More site-specific studies may be required to draw accurate conclusions.
0 140 280 560 Feet
S 96th St
Dillon Rd


Hydrologic Features &
Field Types
Warembourg, Boulder County
T1SR69W
well
diversions
roads
streams & ditches
pond
wetlands
riparian
irrigated cropland
out of ag production
rangeland
Boulder County
N
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0 170 340 680 Feet
Coal Creek
Goodhue Ditch
Goodhue Ditch
Dillon Rd
S 96th ST

6.0 SUMMARY OF MAJOR MANAGEMENT RECOMMENDATIONS

Property	Action Item
Adler/Fingru	-Maintain dryland crops and evaluate conversion to native grassland -Weed control: diffuse knapweed, Canada thistle -Map and monitor prairie dog colonies -Remove Russian-olive trees from riparian area and concrete pile from NW corner -Formalize trail and neighborhood access point
Admor	-Exercise water rights and maintain irrigated grass -Weed control: diffuse knapweed, Canada thistle, musk thistle, chicory -Revegetate disturbed area along Dillon Road -Remove Russian-olive trees and replant native trees
Boulder County Land Venture	-Replace damaged culvert -Convert to irrigated grass and exercise water rights -Weed control: diffuse knapweed, Canada thistle -Remove prairie dogs from NE and SE corners; evaluate prairie dog barrier -Map and monitor prairie dog colonies -Remove Russian-olive trees and replant natives
Bowes	-Exercise water rights and maintain irrigated grass -Weed control: diffuse knapweed, Canada thistle, musk thistle, chicory -Revegetate disturbed area along Dillon Road -Repair and replace fences -Remove Russian-olive trees and replant native trees
Callahan	-Maintain dryland crops and evaluate alternative agricultural uses -Exercise water rights on other joint properties -Weed control: diffuse knapweed, Canada thistle -Expand wetland by eliminating machinery disturbance and seeding with grass -Move historic discing equipment to Lastoka site -Remove Russian-olive trees -Support development of trail connection
Esmail	-Maintain dryland crops -Exercise water rights on other joint properties -Weed control: diffuse knapweed, Canada thistle
Mayhoffer (Sec.15)	-Maintain dryland crops -Weed control: diffuse knapweed, Canada thistle, musk thistle -Remove Russian-olive trees and consider replanting native trees -Support development of trail connection(s)
Scriffiny (Sec. 19)	-Map and monitor prairie dog colonies -Weed control: diffuse knapweed, Canada thistle -Remove Russian-olive trees
Trillium	-Exercise water rights and maintain irrigated grass -Protect burrowing owl(s) -Remove prairie dogs from S parcel -Map and monitor prairie dog colonies -Weed control: diffuse knapweed, Canada thistle -Protect wetlands by examining grazing practices and changing if necessary -Ensure proper rehabilitation of NW Parkway construction impacts -Monitor raptor nests
Warembourg	-Exercise water rights and maintain irrigated grass -Weed control: diffuse knapweed, Canada thistle, chicory -Map MOA boundary -Thin and manage prairie dogs in W and NW areas; Map and monitor colonies -Restore bottomlands to native plant community -Remove Russian-olive trees from riparian area and irrigation ditches -Protect wetlands by examining grazing practices and changing if necessary -Ensure proper rehabilitation of 96th and Dillon widening impacts -Close and restore social trails

Warembourg (cont.)	-Monitor artificial raptor nest
General	-Update Grassland Management Plan with recommended prairie dog classifications -Execute an agreement between the parties concerning mgmt. expenses, etc. that supercedes the reciprocal CE's -Update management plan every five years and submit to GOCO

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Appendix 1: Relevant Goals and Policies

Those goals in the Boulder County Comprehensive Plan (as amended, 1999) of particular relevance to the Jointly Owned Boulder County-Lafayette-Louisville Open Space include:

- **Environmental Management**

  B.5 Wetlands which are important to maintaining the overall balance of ecological systems should be conserved.

  B.6 Unique or critical environmental resources [identified pursuant to Goals B.1, B.3, B.4 and B.5] shall be conserved and preserved in a manner which assures their protection from adverse impacts, with the private sector, non-county agencies and other governmental jurisdictions being encouraged to participate.

  B.7 Productive agricultural land is a limited resource of both environmental and economic value and should be conserved and preserved.

  B.9 Riparian ecosystems, which are important plant communities, wildlife habitat and movement corridors, shall be protected.

- **Parks and Open Space**

  C.3 Open space shall be used as a means of preserving the rural character of the unincorporated county and as a means of protecting from development those areas which have significant environmental, scenic or cultural value.

  C.5 The private sector, non-county agencies, and other governmental jurisdictions should be encouraged to participate in open space preservation and trails development in Boulder County.

- **Community Facilities**

  E.1 Preservation and utilization of water for agricultural purposes within the county shall be encouraged.

- **Natural Hazards**

  L.1 Inappropriate development in natural hazard areas should be reduced as much as possible or eliminated in order to minimize potential harm to life, health, and property.

- **Agricultural Resources**

  M.1 Agricultural enterprises and activities are an important sector of the Boulder County economy and the county shall foster and promote a diverse and sustainable agricultural economy as an integral part of its activities to conserve and preserve agricultural lands in the county.

Those policies in the Boulder County Comprehensive Plan (as amended, 1999) of particular relevance to the Jointly Owned Boulder County-Lafayette-Louisville Open Space include:

- **Geology**

  GE1.01 The county shall strongly discourage intensive uses in Major Hazard Areas.

- **Natural Hazards**

  NH1.04 The level of risk from natural hazards should be reduced through positive county action such as guiding development away from areas prone to natural disturbances, mitigating existing development from hazards, and considering the impact on ability to provide emergency services.

- **Environmental Resources**

  ER2.07 The county shall identify and work to assure the preservation of critical wildlife habitats, Natural Areas, environmental conservation areas and significant agricultural land.

  ER2.08 The county shall use its open space program as one means of achieving its environmental resources and cultural preservation goal.

  ER6.05 Management of riparian areas shall encourage use or mimicry of natural processes, maintenance or reintroduction of native species, restoration of degraded plant communities, elimination of undesirable exotic species, minimizing human impacts, and development of long-term ecological monitoring programs.

  ER8.01.01 The county shall work with landowners and other entities to promote sound conservation practices and, where appropriate, to establish cooperative management plans.

- **Open Space**

  OS2.01 The county shall identify and work to assure the preservation of Environmental Conservation Areas, critical wildlife habitats and corridors, Natural Areas, Natural Landmarks, significant areas identified in the Boulder Valley Natural Ecosystems Map, historic and archaeological sites, and significant agricultural land.

  OS2.03 The county shall provide management plans and the means for the implementation of said plans for all open space areas that have been acquired by or dedicated to the county.

  OS2.03.01 The foremost management objectives of individual open space lands shall follow directly from the purposes for which the land was acquired.

  OS2.03.02 Management of county open space lands shall consider the regional context of ecosystems and adjacent land uses.

  OS2.03.03 Management of individual open space lands, including those under agricultural leases, shall follow good stewardship practices and other techniques that protect and preserve natural and cultural resources.

  OS2.05 The county, through its Weed Management Program, shall discourage the introduction of exotic or undesirable plants and shall work to eradicate existing

infestations though the use of Integrated Weed Management throughout the county on private and public lands.

OS5.01 Boulder County shall, in consultation with affected municipalities, utilize open space to physically buffer Community Service Areas, for the purpose of ensuring community identity and preventing urban sprawl.

OS5.02 The county shall utilize Intergovernmental Agreements with one or more municipalities to encourage the preservation of open space lands and the protection of the rural and open character of the unincorporated parts of Boulder County.

OS5.04 The county shall use its open space acquisition program to preserve agricultural lands of local, statewide, and national importance. Where possible, purchase of conservation easements, purchase of development rights, or lease-back arrangements should be used to encourage family farm operations.

OS8.03 In developing management plans for open space areas, Parks and Open Space staff shall solicit public participation of interested individuals, community organizations, adjacent landowners and the Parks and Open Space Advisory Committee. Plans shall be reviewed by the Parks and Open Space Advisory Committee, including public comment, and recommended for adoption after public hearing by the Board of County Commissioners.

- **Agriculture**

AG1.01 It is the policy of Boulder County to promote and support the preservation of agricultural lands and activities within the unincorporated areas of the county, and to make that position known to all citizens currently living in or intending to move into this area.

AG1.02 The county shall foster and encourage varied activities and strategies which encourage a diverse and sustainable agricultural economy and utilization of agricultural resources.

AG1.03 It is the policy of Boulder County to encourage the preservation and utilization of those lands identified in the Agricultural Element as Agricultural Lands of National, Statewide, or Local Importance and other agricultural lands for agricultural or rural uses. The *Boulder County Comprehensive Plan* Agricultural Element Map shall include such lands located outside of the boundaries of any municipality or the Niwot Community Service Area.

AG1.07 The county shall continue to actively participate in state, federal, and local programs directed toward the identification and preservation of agricultural land.

AG1.11 The county shall encourage that water rights historically used for agricultural production remain attached to irrigable lands and shall encourage the preservation of historic ditch systems.

AG1.12 The county shall continue to discourage the fragmentation of large parcels of agricultural land and to encourage the assemblage of smaller parcels into larger, more manageable and productive tracts.

Those needs, goals, and policies identified by the City of Louisville that are of particular relevance to the Jointly Owned Boulder County-Lafayette-Louisville Open Space include:

> To prevent urban sprawl and retain a recognizable identification for Louisville as a community, open space [buffers] land preservation is needed. (Open Space Master Plan, April 1995)
>
> Acquire and preserve land to promote separations of communities while providing an entryway to Louisville. (Open Space Master Plan, April 1995)
>
> Work to promote intergovernmental cooperation with surrounding agencies in preserving land. (Open Space Master Plan, April 1995)
>
> Work with surrounding communities to develop wildlife corridors through continuous open space areas. (Open Space Master Plan, April 1995)
>
> Open space shall be managed in a manner consistent with good stewardship and sound ecological principles that benefits citizens of Louisville by promoting native plants, wildlife, wildlife and plant habitat, cultural resources, agriculture and scenic vistas and appropriate passive recreation. (Louisville Municipal Code, Section 4.03.010)
>
> Open Space-Preserve: This land shall be managed in a manner to preserve and promote the long-term viability of native flora and fauna, restoration, restoration potential and ecologically sound agricultural use. It is intended that there shall be no or very low levels of passive recreational visitation. When there is a real conflict between human use and any area or item of ecological importance in this classification of land, preference shall be given to sustaining the area or item of ecological importance. (Louisville Municipal Code, Section 4.03.010)
>
> Open Space-Protected Land: This land shall be managed in the same manner as Open Space-Preserve land, except that management may permit passive recreational opportunities so long as: the passive recreational opportunities are designed to encourage resource protection, long-term ecological viability of native flora and fauna, restoration, ecologically sensitive agricultural use, research and education; and the recreational impacts can be contained to prevent spillover to Open Space-Preserve land. (Louisville Municipal Code, Section 4.03.010)

Those goals and policies identified in the City of Lafayette's 1997 Comprehensive Plan that are of particular relevance to the Jointly Owned Boulder County-Lafayette-Louisville Open Space include:

- **Open Space**

  Goal 24. To provide open space to meet the needs of the citizens.

  Policies:
  24.4 The City shall explore various means to obtain buffers between communities.
  24.6 The City shall pursue intergovernmental agreements to create joint open space buffers.
  24.7 The City shall attempt to incorporate wildlife habitat, buffers, view corridors, and unique native vegetation into open space preserves.
  24.9 The City shall properly manage open space areas consistent with designated uses.

24.10 The City shall provide access to open space areas consistent with identified uses within a reasonable time frame.

- **Parks and Recreation**

  Goal 21. To serve all Lafayette residents with parks, trails, and high quality recreational opportunities.

- **Environmental**

  Goal 29. To protect the health, safety, and welfare of the citizens through adequately mitigating environmental hazards and by eliminating, reducing, or preventing air, water, and noise pollution.

  Policies:
  29.1 Incompatible development shall not be permitted in the 100-year floodplain. No structure shall be located, constructed, extended, converted, or altered without full compliance with Lafayette's Flood Management Regulations.
  29.15 The reduction or prevention of inappropriate noise will be a consideration in land use planning.

  Goal 30. To conserve environmental resources to insure the most efficient use of such resources.

  Policies:
  30.5 The City shall pursue, whenever possible, the designation of prime agricultural land as open space buffers between municipalities.
  30.6 Lafayette shall discourage development on land constrained by flood or subsidence hazards.

  Goal 31. To preserve and conserve unique or distinctive natural and man-made features in recognition of their irreplaceable character and importance to the quality of life in the City of Lafayette.

  Policies:
  31.1 Use of natural topography and preservation of existing vegetation and trees should be encouraged wherever possible.
  31.2 Historic sites, archaeological sensitive areas, and landmarks as identified on the Special Sites map (and as may be identified from time to time) shall be protected from destruction or harmful alteration.
  31.3 Preservation of these special sites shall be protected through the planning of compatible surrounding land uses. Proposals with potential adverse impact shall be dealt with on a case-by-case basis. Evaluation of impacts may be required by the developer.
  31.4 The City shall strive to protect unique vistas from destruction by conflicting development.
  31.5 Preservation of existing trees and vegetation shall be required in wildlife areas.
  31.6 Wherever possible, given the City's population projections, economic development needs, and other factors, prime agricultural land shall be preserved in the County's jurisdiction in large enough parcels to be farmed economically.
  31.8 Wherever possible, prairie dog colonies will be humanely relocated.
  31.9 Wildlife habitats and wetlands should be protected whenever possible.

  Goal 32. To preserve the rural character of the areas surrounding Lafayette.

Policies:

32.1 The use of buffer zones to insulate critical wildlife habitats shall be developed by adjoining properties as they develop. The size and dimensions of such buffer zones and their vegetation will be determined by the City on the basis of reports which may be required from the developer for the particular habitat.

32.2 Where critical wetlands exist within the City's planning area, the City shall cooperate with Boulder County in establishing a wetlands management plan to avoid degradation of these wetlands.

32.3 Preservation of the rural character of the community will be encouraged through conservation of farmland.

Appendix 2: Summary of *Grassland Management Plan, Prairie Dog Habitat Element*

The plan, adopted by the Board of County Commissioners on May 28, 2002, establishes prairie dog habitat designations and provides management direction. The plan attempts to strike a balance between the sometimes-conflicting goals contained in the County Comprehensive Plan. In particular, the plan seeks to balance wildlife habitat protection goals and goals for preserving agriculture in Boulder County. The Prairie Dog Habitat Element reflects the values and vision of a broad cross-section of county residents, describes the main strategies for achieving the vision, and serves as a decision making guide for property-specific management plans.

Prairie Dog Management Categories:

The plan delineates the areas within the county open space system that contain the most suitable prairie dog habitat and areas that are not suitable habitat by virtue of their ecological characteristics or land uses. It lays out the parameters for maintaining appropriate habitat and guidelines for removing prairie dogs from unsuitable areas.

Three management categories are utilized: Habitat Conservation Area (HCA), Multiple Objective Area (MOA), and No Prairie Dog (NPD). HCAs will ideally allow prairie dogs to function with minimal human intervention without causing or experiencing significant negative impacts to or from adjacent land uses. HCAs will be managed so that prairie dogs may undergo natural processes of expansion and decline and thus fulfill their ecological function. Natural shifts in vegetation dominance and animal use will occur. These areas ideally will have appropriate soils, vegetation, slope, natural or man-made barriers and sufficient acreage to support healthy prairie dog colonies and associated species over time.

Multiple-objective areas will allow prairie dogs to coexist with other uses but they may not be the highest management priority. MOAs are important in the overall prairie dog management strategy as a complement to HCAs. Some MOAs will function as important links between HCAs throughout the county to maintain a viable metapopulation of prairie dogs. This is an important ecological consideration that will allow for reestablishment of colonies should they be decimated by plague. MOAs will support associated wildlife species outside of HCAs. MOAs will have a combination of management goals and require a more intensive management regime. Examples of MOAs are properties with noxious weed or soil erosion problems, or properties that contain suitable habitat but are simply too small to allow the kind of hands off management afforded by an HCA.

NPD areas are not appropriate for prairie dog habitation because of unsuitable ecological conditions or existing agricultural uses. The goal is to remove prairie dogs from these properties.

Prairie Dog Management Activities:

The County will prioritize areas for removal of prairie dogs. Proposed prairie dog removal priorities and strategies will be presented to the County's Parks and Open Space Advisory Committee and the Board of County Commissioners in an annual update, along with a progress report of the previous year's activities.

The County will evaluate the feasibility of relocation as the preferred removal option, and extermination will be used as a last resort. When extermination is necessary, the County will use the most humane method available, applicable permits and clearances will be obtained, and appropriate procedures will be followed to minimize damage to nontarget species.

Predator Recovery Program Contributions- If it is not feasible to relocate any more prairie dogs from NPD or MOA sites to HCA locations, contribution of prairie dogs to several local predator recovery

programs will be initiated. This will be done if populations on HCA sites are at or exceed the 25% occupancy level of available habitat.

Removal and Control in HCAs- Removal or control of prairie dogs in HCAs would be considered only if necessary to protect the underlying habitat. This might be necessary in HCAs if prairie dog populations exceed guidelines for healthy burrow densities or extent of occupation. Given current conditions with 5,043 acres of HCAs containing over 1,100 acres of prairie dogs, and considering the pattern of plague epizootics every five to 10 years, it is unlikely that prairie dog removal will be necessary on HCAs. However, the county prefers to keep this management strategy as an option in the event that these situations do occur. Buffer zones will be established around HCAs to minimize conflicts with adjacent landowners. Buffer zone boundaries will be established according to each property's unique circumstances, but will be a minimum of 50 meters and no more than 10% of the total HCA area. In all cases, the feasibility of relocation will be investigated as the preferred removal option.

Removal and Control in MOAs- Circumstances that might call for prairie dog removal include: prairie dog population encroachment into reclamation/revegetation areas, recreation areas or portions of the property that are under agricultural uses; colony density or extent of occupation exceeding optimal levels; conflicts with other management priorities such as prevention of soil erosion or eradication of noxious weeds; and conflicts with adjacent landowners. Each of these properties has its own unique circumstances and will be managed accordingly. In all cases, the feasibility of relocation will be investigated as the preferred removal option.

Removal and Control in NPDs- The goal is to remove prairie dogs from all No-Prairie Dog areas. Once prairie dogs are removed from these areas, prevention strategies will be used to prevent their return.

Relocation- Potential prairie dog relocation sites will be evaluated for ecological suitability and potential land use conflicts. The County will notify adjacent landowners and take reasonable measures to mitigate land use conflicts in advance of relocations. The County will consider accepting prairie dogs from other public agencies and private property owners on a case-by-case basis after the management plan has been implemented on County owned lands.

Appendix 3: Summary of Relevant Provisions from IGAs

Intergovernmental Agreements (IGAs)

Louisville
County agreed to dedicate necessary right-of-way for improvement of 104th Street and Dillon Road, or both.

County agreed to dedicate necessary right-of-way to Colorado Department of Transportation for improvement of 88th Street.

Trillium
County agreed to dedicate right-of-way from Trillium and BCLV properties to City and County of Broomfield for Northwest Parkway alignment.

The City of Louisville shall provide law enforcement for the Trillium and Boulder County Land Venture properties.

Broomfield
County shall permit access to open space properties to City and County of Broomfield residents upon the same terms and conditions as Boulder County residents.

Boulder County shall convey to Broomfield a conservation easement on all open space properties located south of 40.00 degrees North Latitude (Baseline Road) and east of Highway 93. With respect to those open space properties that are jointly owned, Boulder County shall endeavor to convey a joint conservation easement with the other owner. If this is unachievable, Boulder County shall nevertheless convey a conservation easement effective as to its interest in the property.

Regarding policies and plans proposed for the above-mentioned open space properties, Boulder County shall notify in writing and confer with Broomfield prior to adopting such policies and plans. If and when future trails or recreation facilities are planned for these properties, the two entities shall consider joint funding.

Appendix 4: Plan Advisory Team

Boulder County Parks & Open Space

Patrick Malone, Natural Resource Planner and Project Manager
Ron Stewart, Director
Ben Pearlman, Special Projects Manager
Rich Koopmann, Manager, Resource Planning Division
Peter Conovitz, Water Resource Specialist
Kristi VanDenBosch, GIS/GPS Technician
Luke Stromquist, Manager, Agricultural Resources Division
Rob Alexander, Agricultural Resource Specialist
Tim D'Amato, Weed Management Coordinator
Therese Glowacki, Manager, Resource Management Division
David Bell, Lead Ranger
Mark Brennan, Wildlife Specialist
Dave Hoerath, Wildlife Specialist
Claire DeLeo, Plant Ecologist
Brent Wheeler, Manager, Park Operations Division

City of Lafayette

Rod Tarullo, Director of Parks, Recreation & Golf

City of Louisville

Cindy Lair, Director of Land Management