

GUNBARREL HILL AGRICULTURAL OPEN SPACE MANAGEMENT PLAN

covering the following properties:

**AUTREY
AXELSON
CANINO
CITO
CITO COMPANY
DODD/HINDMAN**

**HEATHERWOOD NOTCH
JAFAY
TURUNJIAN
TWIN CORNERS
VON REYN
WASHAM**



**Boulder County Parks & Open Space
City of Boulder, Open Space & Mountain Parks
Gunbarrel Public Improvement District**

**Adopted by the Board of County Commissioners
November 8, 2005**

**Boulder County Parks and Open Space
Mission Statement**

To conserve natural, cultural and agricultural resources and provide public uses that reflect sound resource management and community values.

Vision Statement

Mountain vistas, golden plains, scenic trails, diverse habitats, rich heritage...a landscape that ensures an exceptional quality of life for all.

**City of Boulder, Open Space & Mountain Parks
Mission Statement**

The Open Space and Mountain Parks Department preserves and protects the natural environment and land resources that characterize Boulder. We foster appreciation and use that sustain the natural values of the land for current and future generations.

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APPENDICES

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SUMMARY

Consisting of over 1,800 acres of rolling land east of the Gunbarrel community, the Gunbarrel Hill Agricultural Open Space is an assemblage of twelve protected properties that provide scenic vistas and urban buffers, preserve valuable farmland and wildlife habitat, and ensure the continuation of agriculture in the local area.

Boulder County, the City of Boulder, and the Gunbarrel Public Improvement District (GPID) have been partnering to preserve land in this area for over a decade. The County and City co-own two of the twelve properties: Cito Co. and Turunjian. The City also owns conservation easements on a few of the properties. The Gunbarrel Public Improvement District owns the Heatherwood Notch and Jafay properties. The remaining eight properties are owned by the County.

All of the properties are managed by Boulder County Parks & Open Space (BCPOS) and leased for agricultural production, with one exception. The Heatherwood Notch property is managed by BCPOS but is not under agricultural lease. This property serves as a neighborhood buffer and trail link.

Much of the land management work on the properties is performed by the agricultural lessees, including crop planting and harvesting and weed control. The County directs resource management work on the properties, which has consisted mostly of planting grass waterways, conducting prescribed fires for weed management, and reclaiming a few areas to native grassland.

The future management direction consists mostly of continuing sustainable dryland crop production along with improvements in weed management and enhancement of wildlife habitat. By maintaining positive relationships and embracing a good neighbor policy, the County, the City, and the GPID seek to preserve and enhance the conservation values of the area.

Part I: INTRODUCTION

Boulder County (“County”), the City of Boulder (“City”), and the Gunbarrel Public Improvement District (“GPID”) have been acquiring lands in the Gunbarrel Hill area as open space for over a decade. Preservation of these lands has conserved significant agricultural resources and wildlife habitat, provided relief among growing municipalities, and protected the rural character and lifestyle of the area.

The twelve properties outlined in this plan were acquired with combinations of open space sales tax and general funds from the City, County, and GPID. Two of the properties are jointly owned with the City: Cito Co. and Turunjian. Two other properties, Heatherwood Notch and Jafay, are owned by the GPID and managed by the County. The GPID is operated by a Board of Directors that mirrors the makeup of the Board of County Commissioners (BOCC). The BOCC appoints an advisory committee made up of local Gunbarrel residents to serve as a sounding board for GPID issues. The remaining eight properties are owned by the County. Several of the properties also have conservation easements that are owned by the City.

The three municipalities forged 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 decision-making and to guide property management over time. We wish to thank the many partners involved in protecting and planning for these properties, including the families that sold their property for open space, the City of Boulder and its citizens, the residents of Gunbarrel, and all citizens of Boulder County.

PURPOSE OF THE PLAN

The purpose of the Gunbarrel Hill Agricultural Open Space Management Plan (“Plan”) is to provide specific management direction for natural, cultural, agricultural, and passive recreational resources that occur on properties owned by the City, County, and the GPID. The Plan aims to develop management recommendations that will improve and enhance resource quality. This Plan is based on the best available information and provides a foundation for long-term adaptive management of the respective properties and their resources. Completion and implementation of this Plan will ensure that the three municipalities meet the promises and challenges of their open space legacy.

REPORT ORGANIZATION

The Plan is organized into three major parts- *Introduction*, *Existing Conditions*, and *Management Direction*. The *Introduction* contains important background information and key information on the conservation values and goals of the project area. *Existing Conditions* contains property descriptions and resource evaluations. This section serves as the baseline inventory for the subject properties. The *Management Direction* section contains the resource management objectives and recommended action items that should be implemented.

HOW TO USE THE PLAN

The Gunbarrel Hill Agricultural Open Space Management Plan should be used to:

1. Understand the overall goals of the Gunbarrel Hill area and ensure that all actions support those goals.
2. Understand the resources of the project area and the subject properties (refer to the *Existing Conditions* section for a summary of resource information).

3. Establish management direction and develop priorities (refer to the *Management Direction* section for recommended actions and implementation information).
4. Monitor the status of resources within the project area and evaluate management success.

The Plan is a working document and should change and evolve with the properties. As recommended actions are implemented, and as objectives and goals change, the Plan should reflect those changes. At a minimum, the Plan should be reviewed and evaluated every five years. It is entirely possible that new lands could be acquired or major changes take place that trigger the need for more frequent reviews and updates. According to the terms of the *Boulder County and City of Boulder Jointly Owned Open Space Management Intergovernmental Agreement*, if plans for the jointly owned properties are to be amended, then the County shall notify the City and provide an opportunity for comment and consultation.

AREA DESCRIPTION

Location

The Gunbarrel Hill Agricultural Open Space is located in east-central Boulder County, Colorado, just south of the Niwot community and east of the Gunbarrel community (*Figure 1*). The open space complex contains twelve properties located west of U.S. 287 and mostly south of Highway 52 in Township 1N, Range 69 W, Sections 4, 5, 6, and 9; T2N, R69W, Section 33; and T1N, R70W, Section 12:

- 1) a 237-acre parcel referred to as the Autrey Property,
- 2) a 78-acre parcel referred to as the Axelson Property,
- 3) a 279-acre parcel referred to as the Canino Property,
- 4) a 102-acre parcel referred to as the Cito Property,
- 5) a 148-acre parcel referred to as the Cito Company Property,
- 6) a 160-acre parcel referred to as the Dodd/Hindman Property,
- 7) a 39-acre parcel referred to as the Heatherwood Notch Property,
- 8) a 76-acre parcel referred to as the Jafay Property,
- 9) a 58-acre parcel referred to as the Turunjian Property,
- 10) a 233-acre parcel referred to as the Twin Corners Property,
- 11) a 161-acre parcel referred to as the Von Reyn Property,
- 12) and a 78-acre parcel referred to as the Washam Property.

Landscape Setting and Physical Characteristics

Climate- With an average elevation of 5,260 feet, the climate of the Gunbarrel Hill 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. Chinook winds are channeled from the Continental Divide down the Front Range of the Rocky Mountains 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). The area is also characterized by a fairly large daily temperature range. 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).

Topography- The area lies within the plains lifezone, about eight miles east of the Front Range of the Southern Rocky Mountains. The site topography is characterized by generally flat lands with some rolling terrain. An elevated ridge, known as Gunbarrel Hill, makes the area distinct from the surrounding terrain. Elevations in the project area range from about 5,390 feet in the west to 5,130 feet in the east. A few drainage swales are also present on the properties.

Geology- The subject properties lie 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. 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 five 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 five to eight 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. Oil and gas resources are prevalent in the area.

A portion of the Gunbarrel Hill area in Sections 5 and 6 is classified as a Minor Geologic Constraint Area (Boulder County 1999). Potential problems posing nominal risk include expansive soil or claystone, and landslides/mudslides/mudfalls.

Hydrology- The subject properties are located within the Dry Creek and Boulder Creek watersheds. There is no open water on the properties. Groundwater depth on the properties varies by location and ranges from 5-100 feet. In the central and eastern portions of the complex, groundwater flow is generally to the east-southeast. In the western portion, flows are to the northwest towards the Boulder & Whiterock Ditch. On the Jafay and Heatherwood Notch properties, shallow groundwater flows are to the west towards Twin Lakes and deeper flows are to the east towards Boulder Creek.

Several potential wetlands have been mapped in the area by the U.S. Fish & Wildlife Service (USFWS), including along ditches and in drainage swales.

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 upland portions of the properties were once dominated by short and mixed grass prairie, which is characterized by species such as yucca, blue grama, buffalograss, sideoats grama, western wheatgrass, and little bluestem. 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 in surrounding areas. The majority of this vegetation community within Boulder County has been lost due to conversion of land for agriculture and urbanization. The subject properties have been in intensive crop production agriculture since the late 1800s.

COMMUNITY VALUES AND PRIORITIES

Situated in unincorporated Boulder County about half way between Boulder and Longmont, the subject properties provide a buffer between growing municipalities. The area's natural beauty and growing economy continue to attract new residents each year. The population of Boulder County grew from 225,339 to 291,288 between 1990 and 2000, a 29% change (DOLA 2002). The estimated population for Boulder County in 2025 is 415,323, almost double what it was in 1990. This population growth poses a threat to the natural environment.

The City, County, and GPID have been actively acquiring and protecting lands in the Gunbarrel Hill area for over a decade. The partners have sought both to preserve traditional agriculture in the area and also to restore large blocks of land to native prairie. The focus of the subject properties is to continue the long-standing tradition of dryland agriculture.

Two independent opinion surveys conducted for Boulder County provide some insight into community preferences about open space. According to the National Research Center (2002), 85% of respondents supported protecting farms and ranches. 81% support to some degree the use of herbicides on open space property for controlling noxious weeds.

A survey conducted by the Public Information Corporation (2002) showed that 93% of respondents said that protecting habitat for wildlife was fairly or very important. The next most important activities were hiking (91% stated it was fairly or very important) and preserving agricultural lands (89% felt it was at least fairly important).

The Plan supports these community preferences by protecting and enhancing significant resources in the project area.

CONSERVATION VALUES AND MANAGEMENT NEEDS

Conservation values are those elements that represent the importance of resource preservation and sound management. Conservation values in the project area include:

- Scenic lands and open space
- Agricultural lands
- Cultural resources
- Wildlife and wildlife habitat
- Native plant communities and wetlands
- Recreation opportunities

In order to adequately preserve and enhance these conservation values, the following management needs were documented:

- Erosion control/crop management
- Weed control
- Historic structure stabilization/restoration
- Wildlife habitat enhancement
- Trail maintenance/management

Evaluating management needs required for support of the conservation values is essential. Threats can not be abated and opportunities capitalized upon unless needs are met. Meeting these needs is a formidable challenge and requires planning and diligence. Several issues that need to be considered for successful implementation are funding, landowner and agricultural lessee relations, law enforcement, and balancing agriculture, recreation, and wildlife priorities.

VISION AND GOALS

Establishing a vision and goals for the properties helps to provide a philosophical foundation on which to base the Plan. Goals are centered around four main resource topics and provide the basis for recommended management actions. The vision and goals for the Gunbarrel Hill area are as follows:

Vision Statement

The Gunbarrel Hill area contains natural, cultural, and agricultural resources that provide unique opportunities for conservation. These lands will be well-managed through sustainable agricultural use and strategic habitat enhancement in order to preserve the character of the area for the benefit of all Boulder County residents.

Goals

- **Agricultural-** Protect agricultural resources and practices to ensure the legacy and rural character of the area.
- **Cultural-** Protect significant historic structures.
- **Wildlife-** Protect and enhance wildlife habitat and movement corridors.
- **Vegetation-** Improve vegetative conditions through weed management and appropriate restoration.

MANAGEMENT PROTOCOL

Boulder County will manage the subject properties in accordance with the terms of the *Boulder County and City of Boulder Jointly Owned Open Space Management Intergovernmental Agreement* (IGA) (*Appendix 2*) as well as the guidance provided in this document. The IGA, adopted on October 18, 2005, essentially states that the County will be the “lead agency” for management of those properties that are co-owned with the City and identified in this Plan. Management expenses and agricultural lease revenues shall continue to be the responsibility of the County, as should patrol and enforcement of applicable rules, regulations, and policies.

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 subject properties will be handled according to this plan. A summary of the *Grassland Management Plan, Prairie Dog Habitat Element* can be found in *Appendix 3*.

Many of the properties have existing easements or encumbrances that may affect future management activities. Rights-of-way for utilities, pipelines, ditches, and roads are common. Mineral rights are severed on some of the properties and may be subject to the right of a proprietor to access and extract a vein or lode. Others have existing oil and gas leases or the condition that such a right may be executed. The surface owners (in this case the City, County, or GPID) should work with the mineral right owner(s) and its lessees on minimizing adverse impacts to the open space lands. In some instances, the surface owners may also want to consider purchasing the mineral right should this option exist.

The County shall embrace a good neighbor policy and strive to cooperate with adjacent landowners.

PLANNING PROCESS AND GUIDANCE

The project was initiated in September 2004 when key staff members met to discuss the issues and develop the planning approach and framework. Crude resource evaluations were conducted that fall. An open house was held in January 2005 to introduce the project to the public. A summary of the area's issues and preliminary management direction was presented to the County Parks & Open Space Advisory Committee (POSAC) in April. A Draft Plan was completed in May and presented to the GPID Advisory Committee. The Draft Plan was then reviewed and recommended for approval by POSAC on October 27. The Board of County Commissioners adopted the Plan on November 8, 2005.

The Comprehensive Plans of the City and County both outline goals and policies that are relevant to the Gunbarrel Hill Agricultural Open Space. These goals and policies are identified in *Appendix 1* and provide direction for natural resource planning and management, agriculture, wildlife, and recreation.

Part II: EXISTING CONDITIONS

PROPERTY INVENTORY AND DESCRIPTIONS

The twelve properties addressed in this Plan (*Figure 1*) are identified and described below:

AUTREY PROPERTY

Located at the northwest corner of 95th Street and Lookout Road. This 237.32-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat) and an intermittent drainage located in the southern half of the property (which has been planted as a grass waterway). Three water wells are located on the western property boundary.

Acquisition History

The Autrey property was purchased over a ten year period (1994-2004) for \$1,047,308. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from Lookout Road.

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

- The property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- A 45-foot wide easement for electric transmission lines along the southern property boundary granted to Public Service Company of Colorado.
- All oil, coal, and other minerals have been reserved by Union Pacific Railroad Company, including the right to prospect, mine, and remove said minerals. These rights were assumed by Union Pacific Land Resources Corporation and the mineral deed was passed to Champlin Petroleum Company on Dec. 6, 1972.
- An oil and gas lease by Champlin Petroleum Company to Amoco Production Company dated December 27, 1972. A lease extension was recorded March 11, 1993.
- Easement for water transmission pipeline granted to Left Hand Water District dated March 16, 2001.
- An easement granted to Boulder County for utility lines.
- Right-of-way for Lookout Road and North 95th Street.

AXELSON PROPERTY

Located on the south side of Highway 52 in between the Washam and Turunjan properties. This 77.567-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat).

Wastewater produced biosolids (commonly referred to as sludge) were applied to the property once a year from 1988-1994 as part of an experimental study conducted by the City of Boulder and Colorado State University. The study concluded that the applied material can be beneficially used as an alternative to fertilizers and soil conditioners (Enpro 1994a).

Acquisition History

The Axelson property was purchased in January 1995 for \$315,268. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from Highway 52.

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

- The Property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- All oil, coal, and other minerals have been reserved by Union Pacific Railroad Company, including the right to prospect, mine, and remove said minerals. These rights were assumed by Union Pacific Land Resources Corporation and the mineral deed was passed to Champlin Petroleum Company on Dec. 6, 1972.
- An oil and gas lease by Champlin Petroleum Company to Amoco Production Company dated October 23, 1972.
- Right-of-way for Highway 52 (Mineral Road).

CANINO PROPERTY

10024 Lookout Road

Located between Highway 52 and Lookout Road, just east of the Twin Corners property. This 279.35-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat) and an intermittent drainage located in the northern half of the property (which has been planted as a grass waterway). The property contains two oil and gas wells (Tyler #1-4 and Tyler #2-4). No additional wells may be drilled on the property without the County's written consent, which they denied to Patina Oil & Gas Co. in December 2003.

The Canino Family, and their invited guests, have the right to ride horses on the property so long as the family is leasing the property from the County. The property is currently leased to Clyde Canino through Sept. 30, 2005 and has two (2) five-year term renewal options.

Wastewater produced biosolids (commonly referred to as sludge) were applied to the property once a year from 1991-1994 as part of an experimental study conducted by the City of Boulder and Colorado State University. The study concluded that the applied material can be beneficially used as an alternative to fertilizers and soil conditioners (Enpro 1994a).

Acquisition History

The Canino property was purchased in December 2000 for \$3,090,000. A conservation easement on six lots south of Lookout Road was donated to the County as part of the transaction. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from Highway 52 and Lookout Road next to the Boulder & Whiterock Ditch.

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

- The Property is leased for crop production and horse riding. The lease agreement requires the property to be managed consistent with a soil and water conservation plan. Horse riding on the property is limited to the Canino Family and invited guests only.
- A verbal lease between Clyde G. Canino and Keith Bateman for agricultural purposes, according to an Affidavit dated December 21, 2000.
- Reservation of an undivided ½ interest in and to all oil, gas, and other minerals by Tyler Land Livestock Company dated October 21, 1953.
- Reservation of an undivided ¼ interest in and to all oil, gas, and other mineral by Ray G. Dougherty, et al. dated July 11, 1972.
- An oil and gas lease by Ray G. Dougherty, et al. to Robert A. Shaw dated October 23, 1970; with a correction recorded August 17, 1973.
- An oil and gas lease by Tyler Land and Live Stock Company to J.E. Spaulding dated September 4, 1953.
- An oil and gas lease by Dr. Monroe R. Tyler to Martin Oil Service dated May 28, 1980. (Corrected and ratified on December 17, 1986).
- An oil and gas lease by Dr. Monroe R. Tyler to Martin Oil Service recorded May 7, 1996.
- An oil and gas lease by Donald J. Law to Prima Exploration Inc. dated October 1, 1998.
- An unrecorded oil and gas lease by Ray G. Dougherty, et al. to Martin Exploration Management Corp. (Notice recorded October 29, 1981 and corrected July 6, 1982.)
- An unrecorded oil and gas lease by Ray G. Dougherty, et al. to Martin Exploration Management Corp. (Notice recorded October 29, 1981 and corrected July 5, 1982.)
- Easement for electric transmission lines granted to Public Service Company of Colorado dated April 15, 1948.
- Easement for electric transmission lines granted to United States of America dated January 23, 1950.
- Easements for water line purposes to Northern Colorado Water Conservancy District dated January 25, 1995.
- A 20-foot wide easement granted to Left Hand Water Supply Company dated August 29, 1977.
- A 50-foot wide ROW for a pipeline granted to Panhandle Eastern Pipeline Company recorded May 26, 1982.
- A 50-foot wide ROW for a pipeline granted to Panhandle Eastern Pipeline Company recorded June 16, 1987.
- Right-of-way for Lookout Road.

CITO PROPERTY

Located at the southeast corner of Highway 52 and N. 79th Street, to the immediate west of the Cito Co. property. This 101.53-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat) and an intermittent drainage located in the northeastern portion of the property. The property contains two oil and gas wells (Iannacito #6-1 and Iannacito #1-16). The property's total acreage was reduced by 0.042-acres in June 2004 when ROW for N. 79th Street was conveyed to the County Transportation Department.

Acquisition History

The Cito property was purchased in November 1998 for \$321,545. The City of Boulder paid \$160,775 for a conservation easement on the property. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from Highway 52 or (for agricultural use only) from N. 79th Street across the northern 30 feet of Lot C.

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

- The Property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- Oil and gas lease by Anthony and Lucia Iannacito to Martin Exploration Management Corp. dated March 23, 1981 (and extension recorded September 3, 1981).
- Reservations of Patent recorded March 11, 1909.
- Easement from Tony Iannacito granted to Foothills Water Users Association recorded November 7, 1963.
- Notice of underground pipeline facilities by Panhandle Easter Pipeline Company recorded June 25, 1986.
- Right-of-way for County Road.

CITO CO. PROPERTY

8642 Mineral Road

Located on the south side of Highway 52 in between the Cito and Washam properties. This 148.099-acre property consists of two parcels: a 147.202-acre parcel (Parcel 1) that contains dryland agricultural fields and a 0.897-acre parcel (Parcel 2) that contains a historic barn and two sheds. Parcel 1 is jointly owned by the City and County. Parcel 2 is owned solely by the County. The property has been farmed since the late 1800s and consists of dryland agricultural fields (currently planted in winter wheat) and an intermittent drainage located in the western half of the property (which has been planted as a grass waterway). A portion of the property was operated as a landfill in the 1960s and early 1970s. The operation ceased in 1972 and the site was covered and revegetated (A.G. Wassenaar Inc. 2000). A 40-acre strip on the western border of the property was converted to native perennial grass in 2002.

Acquisition History

The Cito Co. property was purchased jointly by the City and County in October 2000 for \$1,777,188. After TDRs were sold off the property, the County's purchase price was \$593,976. The City and County own reciprocal conservation easements over each others interests in Parcel 1. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer. As part of the purchase agreement, the County agreed to acknowledge the Cito Family somewhere on the property.

Access

Access to the property is from Highway 52.

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

- The Property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- Oil and gas lease by the Cito Company to Martin Exploration Management Corp. dated August 3, 1979 (and extension recorded September 3, 1981).
- Reservations of U.S. Patent for extraction of ore or construction of ditches or canals recorded July 2, 1910.

- Notice of underground pipeline facilities by Panhandle Easter Pipeline Company recorded June 25, 1986.
- ROW for pipeline purposes granted to Panhandle Easter Pipeline Company recorded February 11, 1982.
- Right-of-way for ditch through property as shown on survey plat dated October 2, 2000.

DODD/HINDMAN PROPERTY

Located east of 95th Street on the north side of Highway 52, just north of the Canino property. This 154.699-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (recently planted in sunflowers). The property contains two oil and gas wells (Dodd/Gerrity #817828 and #931111).

Acquisition History

The entire Dodd/Hindman property (315 acres) was purchased in May 1995 for \$1,729,887, which included water rights and a building complex. The 155 acres that occupies the SW ¼ of Section 33 is dryland and was valued at \$4000/acre. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from Highway 52.

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

- The Property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- An oil and gas lease by Hugh J. and Alva M. Dodd to Martin Oil Service Inc. recorded April 27, 1979.
- An easement to Foothills Water Users Association recorded April 20, 1962.
- An easement to Mountain States Telephone and Telegraph Company recorded March 2, 1970.
- An easement to Mountain States Telephone and Telegraph Company recorded July 24, 1991.
- A utility easement granted to U.S. West Communications recorded October 13, 1993.
- An easement for water pipeline purposes granted to Northern Colorado Water Conservancy District recorded November 17, 1993.
- An easement for petroleum pipelines granted to KN Front Range Gathering Company recorded October 13, 1994.
- An easement granted to Left Hand Water Supply Co. recorded April 25, 1973.
- An easement granted to Poudre Valley Rural Electric Association recorded December 2, 1974.
- The right of ore extraction as reserved in Patents dated February 4, 1878 and March 23, 1878.
- The Seller was assigned the royalties from all existing wells on the property.
- Right-of-way to Denver Pacific Railway and Telegraph Co. for railway dated May 2, 1879.
- Right-of-way for a water pipeline to serve adjacent lands recorded April 6, 1910.
- Right-of-way for Boulder & Whiterock Ditch.
- Right-of-way for County Roads 34 and 36.

HEATHERWOOD NOTCH PROPERTY

Located east of 75th Street, just south of the Jafay property and north of the Heatherwood Subdivision. This 39.204-acre property is bordered on three sides by residential development and contains mostly introduced grassland and a trail connection. The property was previously used for agriculture. Encroachment and illegal dumping issues are prevalent due to the property's adjacency to single family homes. The property is owned by the Gunbarrel Public Improvement District (GPID) and is managed by BCPOS.

Acquisition History

The Heatherwood Notch property was purchased by the GPID in October 1994 for \$294,030. The purpose of the acquisition was for an open space buffer and passive recreation.

Access

Access to the property is from 75th Street.

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

- An easement for water line purposes granted to the City of Boulder recorded September 2, 1969.
- An easement for communication facilities granted to Mountain States Telephone and Telegraph Company recorded February 24, 1971.
- The effect of being included in the Gunbarrel Estates Water and Sanitation District recorded May 4, 1966.
- Fence lines of adjoining property owners varying from 0-3 feet on either side of property lines.
- Roadside drainage ditch varies from 0-12 feet from edge of asphalt along the west property line.
- Concrete pad for RTD bus stop on west property line.
- Adjacent homeowners have historically used the two-track road that borders the subdivision for maintenance/improvement access to their properties.

JAFAY PROPERTY

Located at the southeast corner of 75th Street and Lookout Road, just north of the Heatherwood Notch property. This 75.76-acre property has been farmed since at least the 1950s and consists of dryland agricultural fields (currently fallowed for winter wheat). An oil and gas well is permitted by the State on the property- the Jafay #1-12 well was drilled in 1983 but was later abandoned (Enpro 1994b). The property is owned by the Gunbarrel Public Improvement District (GPID) and is managed by BCPOS.

Acquisition History

The Heatherwood Notch property was purchased by the GPID in December 1994 for \$568,200. The purpose of the acquisition was for an open space buffer and agricultural preservation.

Access

Access to the property is from 75th Street or Lookout Road.

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

- The Property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- An oil and gas lease by Kurt F.G. Jafay to Martin Exploration Management dated April 10, 1981.
- An easement for telecommunication facilities granted to U.S. west Communications Inc. recorded September 4, 1991.
- Right-of-way for Lookout Road and 75th Street.

TURUNJIAN PROPERTY

9368 Mineral Road

Located on the south side of Highway 52 in between the Axelson and Twin Corners properties. This 58-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat).

The Turunjian Family, and their invited guests, have the right to ride horses on the property so long as the family is leasing the property from the County. The property is currently leased to through September 30, 2006 and has two (2) five-year term renewal options.

Acquisition History

The Turunjian property was purchased jointly by the City and County in April 2001 for \$550,000. The City and County exchanged reciprocal conservation easements over each others ownership interests. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from the existing driveway off of Highway 52 that serves the adjacent house lot.

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

- The Property is leased for crop production and horse riding. The lease agreement requires the property to be managed consistent with a soil and water conservation plan. Horse riding on the property is limited to the Turunjian Family and invited guests only.
- All oil, coal, and other minerals have been reserved by Union Pacific Railroad Company, including the right to prospect, mine, and remove said minerals recorded July 22, 1908.
- Notice of underground facilities for Panhandle Eastern Pipe Line Company recorded June 25, 1986.
- ROW for underground pipelines granted to Left Hand Water Supply Company by Allen J. and Martha B. Kinkel recorded July 10, 1981.
- Right-of-way for Highway 52 (Mineral Road).

TWIN CORNERS PROPERTY

Located at the southwest and southeast corners of the intersection of Highway 52 and 95th Street. This 233.379-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat) and an intermittent drainage located in the southern half of the eastern parcel (which has been planted as a grass waterway). Four oil and

gas wells are located on the eastern parcel, as well as two old cisterns in the northwest corner that are in need of filling.

Acquisition History

The Twin Corners property was purchased in October 1994 for \$700,050. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from 95th Street.

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

- The property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- A 20-foot wide easement along the west side of 95th Street for water pipelines conveyed to Left Hand Water District on January 9, 2001.
- All coal has been reserved by Union Pacific Railway, including the right to prospect, mine, and remove said minerals, recorded July 22, 1908.
- An oil and gas lease by Twin Corners Venture to Martin Oil Service Inc. recorded February 13, 1975 and modified on March 16, 1994.
- Easement for water transmission pipeline granted to Left Hand Water District dated March 16, 2001.
- Easements for pipeline purposes granted to Left Hand Water Supply Company recorded March 11, 1977 and June 28, 1977.
- An easement for pipeline purposes granted to Panhandle Eastern Pipeline Company recorded December 6, 1985.
- Right-of-way for Highway 52 and North 95th Street.

VON REYN PROPERTY

Located at the southeast corner of Lookout Road and 95th Street. This 160.968-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat) and an intermittent drainage that runs diagonally across the entire property (which has been planted as a grass waterway). Four oil and gas wells are located on the property.

Acquisition History

The Twin Corners property was purchased in November 1994 for \$643,872. The purpose of the acquisition was to preserve agricultural lands and as a growth buffer.

Access

Access to the property is from 95th Street or Lookout Road.

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

- The property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- Reservation of all minerals by quitclaim deed from Union Pacific Railroad Company to Union Pacific Land Resources Corporation recorded April 14, 1971.
- An oil and gas lease by Panhandle Eastern pipeline Company to Martin Oil Service Inc. & Martin Exploration Management Corp. dated July 27, 1979. Lease extension recorded September 11, 1981.

- An Easement for pipeline purposes granted to Left Hand Water Supply Company recorded June 28, 1977.
- Notice of area served by Panhandle Eastern Pipeline Company recorded June 25, 1986.
- Right-of-way for North 95th Street and Lookout Road.

WASHAM PROPERTY

Located on the south side of Highway 52 in between the Cito Co. and Axelson properties. This 77.691-acre property has been farmed since the early 1900s and consists of dryland agricultural fields (currently planted in winter wheat). A historic granary structure is present in the northwest portion of the property.

Acquisition History

The Axelson property was purchased in April 2002 for \$1,495,000. Four TDRs were sold off the property and reduced the total purchase price by \$360,000. The City of Boulder paid for half of the purchase price and owns a conservation easement on the property. The County's share of the purchase price was \$567,500. The purpose of the acquisition was to preserve agricultural lands and for viewshed protection.

Access

Access to the property is from Highway 52.

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

- The Property is leased for crop production. The lease agreement requires the property to be managed consistent with a soil and water conservation plan.
- All oil, coal, and other minerals have been reserved by Union Pacific Railroad Company recorded August 24, 1914.
- Notice of area served by Panhandle Eastern Pipeline Company recorded June 25, 1986.
- Right-of-way for County Road No. 36 and Old County Road No. 227B.

NATURAL RESOURCES

The Gunbarrel Hill area contains important natural resources, including significant agricultural lands and a variety of wildlife species. BCPOS staff and consultants have documented resources on the subject properties through rapid resource assessments, Phase I surveys, and literature reviews. The following is a compilation of the existing natural resource conditions, including soils, vegetation, and wildlife resources.

Special Designations

The Boulder County Comprehensive Plan classifies the subject properties as an *Environmental Conservation Area* (White Rocks/Gunbarrel Hill), which further supports the notion of preservation of these lands. All of the properties are categorized as *Agricultural Lands of Statewide or Local Importance*. A portion of the Washam and Axelson properties is classified as a *Minor Geologic Constraint Area*.

Soils

Fifteen soil types from five soil series occur on the subject properties. Soils in the project area have capability classes that range from Class III to Class VI (*Figure 2*). These soils have severe limitations that reduce the choice of plants, require special conservation practices, or require very careful management (USDA 1975). Tree suitability and limitations to recreational use are also discussed below for those soils where these two activities are more likely to occur (i.e., Heatherwood Notch and Jafay).

Ascalon Series- This series is made up of deep, well-drained soils. These soils formed on terraces and uplands in loamy mixed alluvium and wind-laid materials. Slopes are 0-20%. The native vegetation is mainly blue grama. The surface layer is made of grayish-brown sandy loam and is about 8 inches thick. The subsoil reaches to a depth of 26 inches. The substratum, to a depth of 60 inches or more, is strongly calcareous. These soils have moderate permeability and available water capacity is high. Roots can penetrate to a depth of 60 inches or more and is most often used for irrigated and dry cropland.

AoB- Ascalon sandy loam, 1-3% slopes: Runoff is slow to medium on this soil and the erosion hazard is slight to moderate. With a non-irrigated capability classification of IIIe-8, this soil is used mainly as dry cropland with the main crop being wheat (with some small grains). Because of limited precipitation, a system of summer fallow is necessary to maintain yields. It is important to keep plant residues on the surface during fallow periods to minimize soil blowing. If there is sufficient moisture, nitrogen fertilizers can increase the vigor of crops. Natural drainageways should be protected from water erosion by planting grass.

AoB- Ascalon-Otero complex, 0-3% slopes: This complex is comprised of Ascalon sandy loam (60%) and Otero sandy loam (30%) soils. Runoff is slow to medium on this complex and the erosion hazard is moderate. Maintenance of the organic matter content is important, particularly on areas where the surface layer has been removed by leveling. This soil also has a non-irrigated capability unit of IIIe-8.

AoC- Ascalon-Otero complex, 3-5% slopes: This complex is comprised of Ascalon sandy loam (55%) and Otero sandy loam (35%) soils. Runoff is slow to medium on this complex and the erosion hazard is moderate to high. Maintenance of the organic matter content and tilth is important. With a non-irrigated capability unit of IVe-7. These soils are well suited to grasses, but are mainly used as dry cropland, with the main cropping

system being wheat-summer fallow. Stubble mulching and strip cropping are helpful in reducing erosion.

AoD- Ascalon-Otero complex, 5-9% slopes: This complex is comprised of Ascalon sandy loam (50%) and Otero sandy loam (35%) soils. Runoff is rapid on this complex and the erosion hazard is high. Maintenance of the organic matter content and tillage is important. This soil also has a non-irrigated capability unit of IVE-7.

AoE- Ascalon-Otero complex, 9-20% slopes: This complex is comprised of Ascalon sandy loam (45%) and Otero sandy loam (35%) soils. Included in this complex are small gravely knobs near ridgetops. Runoff is rapid on this complex and the erosion hazard is high. With a non-irrigated capability unit of IVE-2, this soil has an effective rooting depth of 20-60 inches. Because of their slope, continued tillage results in excessive erosion. These soils are best used as pasture or range. Big bluestem, little bluestem, switch grass, indiangrass, and side-oats grama are native grasses.

Colby Series- This series is made up of deep, well-drained soils formed on upland slopes in loamy, uniform wind deposited material. Slopes are 1-9%. The native vegetation is mainly short grasses. The surface layer is made of brown silty clay loam about 12 inches thick. The soil is strongly calcareous throughout the profile. Soil reaction is moderately alkaline. These soils have moderate permeability and available water capacity is high. Roots can penetrate to a depth of 60 inches or more. These soils are used for irrigated and dryland crops, and for pasture.

CoB- Colby silty clay loam, 1-3% slopes: Runoff is medium on this soil and the erosion hazard is moderate. With a non-irrigated capability unit of IVE-4, this soil has an effective rooting depth of 20-60 inches. Because of the erosion hazard and the slow rate of water intake, these soils are suitable only for limited cropping. Wheat is the main crop, but other small grains are also grown. During the fallow periods, weeds can be destroyed by using chisels and sweeps that leave part of the stubble on the surface. Leaving stubble on the soil through winter and spring helps to trap snow and control soil blowing. These soils are well suited to pasture. Where they are native grasses, they should remain so and not be plowed and reseeded.

Ct- Colby-Gaynor Association, 5-9% slopes: This complex is comprised of Colby silty clay loam (55%) and Gaynor silty clay loam (30%) soils. Runoff is rapid on this association and the erosion hazard is high. With a non-irrigated capability unit of VIe-1, this soil has an effective rooting depth of 20-60 inches. Because of their slope, these soils are difficult to work. They are best used as pasture. Where these soils are now farmed, they should be seeded back to grass. Blue grama and needlegrass are native. This association has a tree suitability group of 3, which lends itself to Rocky Mountain juniper, green ash, hackberry, chokecherry, American plum, and skunkbush sumac. In most areas, supplemental moisture is needed for establishment. This soil has moderate limitations for trails due to its silty clay loam surface layer.

Heldt Series- This series is made up of deep, moderately well drained soils. These soils formed on terraces and uplands in loamy alluvium. Slopes are 0-5%. The native vegetation is mainly short grasses. The surface layer is made of grayish-brown clay and is about 8 inches thick. The subsoil is a strongly calcareous clay-clay loam down to 36 inches. Soil reaction is moderately alkaline. These soils have slow permeability and available water capacity is high. Roots can penetrate to a depth of 60 inches or more. These soils are used for irrigated and dry cropland, and for pasture.

HeB- Heldt clay, 0-3% slopes: Runoff is medium to rapid on this soil and the erosion hazard is moderate. This soil takes in water slowly and is difficult to work. With a non-irrigated capability unit of IVe-4, this soil has an effective rooting depth of 20-60 inches. Because of the erosion hazard and the slow rate of water intake, these soils are suitable only for limited cropping. Wheat is the main crop, but other small grains are also grown. During the fallow periods, weeds can be destroyed by using chisels and sweeps that leave part of the stubble on the surface. Leaving stubble on the soil through winter and spring helps to trap snow and control soil blowing. These soils are well suited to pasture. Where they are native grasses, they should remain so and not be plowed and reseeded. This soil is not suitable for tree planting and has severe limitations for trails due to its clay surface layer.

HeC- Heldt clay, 3-5 % slopes: The soil surface layer contains about 6 inches of clay. The subsoil is calcareous clay about 20 inches thick. Runoff is rapid on this soil and the erosion hazard is high. This soil takes in water slowly and is difficult to work. With a non-irrigated capability unit of VIe-1, this soil has an effective rooting depth of 20-60 inches. Because of their slope, these soils are difficult to work. They are best used as pasture. Where these soils are now farmed, they should be seeded back to grass. Blue grama and needlegrass are native. This soil is not suitable for tree planting and has severe limitations for trails due to its clay surface layer.

Nunn Series- This series is made up of deep, well-drained soils. These soils formed on terraces and valley side slopes in loamy alluvium. Slopes are 0-9%. The native vegetation is mainly short and mid grasses. The surface layer is made of clay loam and is about 10 inches thick. The subsoil, about 20 inches thick, is a brown clay that grades to clay loam. It is noncalcareous in the upper part, but contains soft lime segregations in the lower part. The substratum is a strongly calcareous clay loam extending to a depth of 60 inches or more. In the surface layer, soil reaction is neutral. The subsoil ranges from mild to moderately alkaline. Permeability is slow and available water capacity is high. Roots can penetrate down to a depth of 60 inches. These soils are used for irrigated and dryland crops and for pasture.

NuB- Nunn clay loam, 1-3% slopes- Runoff is medium on this soil and permeability is slow. The erosion hazard is moderate. With a non-irrigated capability unit of IIIs-1, these soils are used mainly as dry cropland and pasture. Wheat is the main crop, but other small grains are also grown. Leaving stubble on the soil through winter and spring helps to trap snow and control soil blowing. Terracing and strip cropping also help control erosion. This association has a tree suitability group of 3, which lends itself to Rocky Mountain juniper, green ash, hackberry, chokecherry, American plum, and skunkbush sumac. In most areas, supplemental moisture is needed for establishment. This soil has moderate limitations when used for trails due to the presence of a clay loam surface layer.

NuC- Nunn clay loam, 3-5% slopes- Runoff is medium and permeability is slow. The erosion hazard is moderate. Most of this soil is used for irrigated and dryland crops and for pasture. With a non-irrigated capability unit of IIIe-7, these soils are used mainly as dry cropland (wheat-summer fallow). Leaving stubble on the soil through winter and spring helps to trap snow and control soil blowing. Strip cropping at right angles to the direction of the prevailing wind reduces soil blowing. This soils has a tree suitability group of 3, which lends itself to Rocky Mountain juniper, green ash, hackberry, chokecherry, American plum, and skunkbush sumac. In most areas, supplemental

moisture is needed for establishment. This soil has moderate limitations when used for trails due to the presence of a clay loam surface layer.

Weld Series- This series is made up of deep, well-drained soils formed on smooth uplands, mainly in loamy wind-laid parent material. Slopes are 0-5%. The native vegetation is mainly short grasses. The surface layer is made of brown loam and is about 6 inches thick. The subsoil, about 6 inches thick, graduates from clay to clay loam. The substratum, to a depth of 60 inches or more, is strongly calcareous. These soils have slow permeability and available water capacity is high. Roots can penetrate to a depth of 60 inches or more and is most often used for irrigated and dry cropland.

WeB- Weld fine sandy loam, 1-3% slopes: Runoff is medium on this soil and the erosion hazard is moderate. Soil blowing is the greatest hazard. With a non-irrigated capability classification of IIIe-8, this soil is used mainly as dry cropland with the main crop being wheat (with some small grains). Because of limited precipitation, a system of summer fallow is necessary to maintain yields. It is important to keep plant residues on the surface during fallow periods to minimize soil blowing. If there is sufficient moisture, nitrogen fertilizers can increase the vigor of crops. Natural drainageways should be protected from water erosion by planting grass.

WIB- Weld loam, 1-3% slopes: Runoff is medium on this soil and the erosion hazard is moderate. With a non-irrigated capability classification of IIIc-1, this soil is used mainly as dry cropland with the main crop being wheat (with some small grains). Because of limited precipitation, a system of summer fallow is necessary to maintain yields. During the fallow periods, weeds can be destroyed by using chisels and sweeps that leave part of the stubble on the surface. It is important to keep plant residues on the surface during fallow periods to minimize soil blowing. Terraces and contour strip-cropping also help control erosion.

WoB- Weld-Colby Complex, 0-3% slopes: This complex is comprised of Weld soils (55%) and Colby silty clay loam (30%). Runoff is medium on this complex and the erosion hazard is moderate. This complex has a non-irrigated capability unit of IIIc-1, and is used mainly as dry cropland with the main crop being wheat (with some small grains). Because of limited precipitation, a system of summer fallow is necessary to maintain yields. During the fallow periods, weeds can be destroyed by using chisels and sweeps that leave part of the stubble on the surface. It is important to keep plant residues on the surface during fallow periods to minimize soil blowing. Terraces and contour strip-cropping also help control erosion.

WoC- Weld-Colby Complex, 3-5% slopes: This complex is comprised of Weld fine sandy loam (50%) and Colby silty clay loam (35%). Runoff is rapid on this complex and the erosion hazard is moderate to high. This complex has a non-irrigated capability unit of IIIe-7, and is used mainly as dry cropland with the main crop being wheat (with some small grains). Because of limited precipitation, a system of summer fallow is necessary to maintain yields. Leaving stubble on the soil through winter and spring helps to trap snow and control soil blowing. Strip cropping at right angles to the direction of the prevailing wind reduces soil blowing. This complex is also suited to grass for pasture.

Significant Agricultural Land

Eastern Boulder County contains agricultural lands of local, state, and national significance. The subject properties are dryland farms and are categorized as Agricultural Lands of Statewide and Local Importance (*Figure 4*). A narrow strip on the eastern side of the Canino property is

classified as Agricultural Land of National Importance; however, it is highly likely that the actual boundary of nationally significant farmland corresponds to the ditch that borders the property and irrigates lands to the east.

Vegetation

Four vegetation types occur on the subject properties: dryland crop, areas that are out of production, reclaimed grassland, and upland grassland. A few wetland plant communities exist as well. Dryland cropland is addressed in more detail in the *Agricultural Resources* section of the Plan. Vegetation communities are mapped in *Figure 3*.

Dryland Crop – An area planted with agricultural species that do not require supplemental irrigation, such as winter wheat, millet, corn, or sunflower.

On the Autrey, Canino, Cito, Cito Co., Twin Corners, and Von Reyn properties, grass waterways exist within what is classified as dryland crop areas. Seed mixes for the grass waterways have included varying amounts of the following species: western wheatgrass (*Pascopyrum smithii*), blue grama (*Bouteloua gracilis*), side oats grama (*Bouteloua curtipendula*), sand bluestem (*Andropogon hallii*), green needlegrass (*Stipa viridula*), prairie sandreed (*Calamovilfa longifolia*), 4-wing salt bush (*Atriplex canescens*), thickspike wheatgrass (*Elymus lanceotatus*), Indian grass (*Sorghastrum nutans*), little bluestem (*Andropogon scoparius*), purple prairie clover (*Petalostemon purpureus*), and fringed sage (*Artemisia frigida*). Depending on the property and its soil characteristics, the seed mix is often tailored to either loamy or sandy conditions.

Out of Production – An area within an agricultural field that is not used for active production. These areas usually contain improvements/facilities or have topography that limits equipment access. They often contain weedy species such as cheatgrass (*Bromus tectorum*), Canada thistle (*Cirsium arvense*), Scotch thistle (*Onopordum sp.*), or musk thistle (*Carduus nutans*), diffuse knapweed (*Centaurea diffusa*), field bindweed (*Convolvulus arvensis*), curly dock (*Rumex crispus*), or kochia (*Kochia scoparia*).

Reclaimed Grassland – A zone that was taken out of production and reclaimed with native mid-grass prairie species such as side oats grama, blue grama, buffalograss (*Buchloe dactyloides*), western wheatgrass, fringed sage, and rabbitbrush (*Chrysothamnus nauseosus*). This 40-acre area on the west side of the Cito Co. property was planted in 2002.

Upland Grassland – An area that contains both native and introduced upland plant species, including western wheatgrass, gayfeather (*Liatris punctata*), crested wheatgrass (*Agropyron cristatum*), smooth brome (*Bromus inermis*), field bindweed (*Convolvulus arvensis*), prickly lettuce (*Lactuca serriola*), and downy brome (cheatgrass).

Wetlands- Several of the subject properties have drainages that host intermittent water flows and may contain wetland communities. The Cito property contains a drainage swale that has been mapped by the National Wetlands Inventory (NWI) as a Palustrine Emergent Wetland (UFSWS 1976). The Autrey, Canino, Twin Corners, and Von Reyn properties also contain drainages that could host wetlands. The Boulder & Whiterock Ditch located on the eastern boundary of the Canino and Dodd/Hindman properties also contains wetlands mapped by NWI.

Noxious Weeds

Noxious weeds threaten native plant communities by displacing desirable native species. Alien plants that are highly invasive usually do not have natural pathogens and predators to keep their populations under control. Some non-natives, like diffuse knapweed, contain allelopathic chemicals, which can suppress the growth of other species and allow the plant to grow in single-species stands.

According to the Colorado Noxious Weed Act (as amended 2003), landowners are required to manage noxious weeds on their lands. State listed noxious weeds are organized into three management categories:

- **List A** species- targeted for eradication and require specific management actions as well as coordination with the State Weed Coordinator within one year of detection. No List A species are known to be present on the subject properties.
- **List B** species- benefit from management to stop their spread. List B species present on the subject properties include common teasel (*Dipsacus fullonum*), diffuse knapweed (*Centaurea diffusa*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), Scotch thistle (*Onopordum sp.*) and Russian-olive (*Elaeagnus angustifolia*).
- **List C** species- widespread and are targeted for improved management and public education. List C species present on the subject properties include field bindweed (*Convolvulus arvensis*) and downy brome (cheatgrass) (*Bromus tectorum*).

The Boulder County Weed Management Plan (as amended 2004) also lists diffuse knapweed, Canada thistle, musk thistle, Scotch thistle, and teasel as noxious weeds that are subject to County-required management objectives and plans. These species are present on the subject properties, but are infrequent.

CSU is currently using 40 acres that were reclaimed on the Cito Co. property to study the tolerance of native grasses to herbicide applications for the control of weeds such as field bindweed, prickly lettuce, and kochia. The site contains research and monitoring plots. The results of this study will be very beneficial in determining how to best manage weeds during the restoration of native grasslands.

Common Wildlife Species

The project area provides habitat for a broad range of wildlife species. Potential wildlife species are listed in *Appendix 4*. The most common mammal species include the coyote (*Canis latrans*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), eastern cottontail (*Sylvilagus floridanus*), and deer mouse (*Peromyscus maniculatus*).

Common birds include the black-billed magpie (*Pica pica*), European starling (*Sturnus vulgaris*), brown-headed cowbird (*Molothrus ater*), common grackle (*Quiscalus quiscula*), American robin (*Turdus migratorius*), western meadowlark (*Sturnella neglecta*), mourning dove (*Zenaidura macroura*), and killdeer (*Charadrius vociferous*). Where trees and brush are present, the following species can be found: American goldfinch (*Carduelis tristis*), house finch (*Carpodacus mexicanus*), black-capped chickadee (*Poecile atricapillus*), and northern flicker (*Colaptes auratus*). Some of these species are observed only during migration or in the winter.

Sensitive Wildlife Species

The project area provides habitat for several sensitive wildlife species, including the black-tailed prairie dog and several bird species.

Black-tailed Prairie Dog – On August 12, 2004, the USFWS removed the black-tailed prairie dog (*Cynomys ludovicianus*) from the candidate species list (USFWS 2004a). The species

had been a candidate species for listing as threatened under the ESA since February 4, 2000. Candidate species receive no statutory protection under the ESA (USFWS 2003).

Conservation of the species is still important because they are an important component of the grassland ecosystem and because agriculture and development pressures along the Front Range continue to displace them. Consequently, open space preserves containing appropriate habitat have become increasingly important for conserving viable colonies. Species such as burrowing owl (*Speotyto cunicularia*), prairie rattlesnake (*Crotalus viridis*) and mountain plover (*Charadrius montanus*) use prairie dog colonies for food, cover, or both. Prairie dogs also provide an important prey resource for predators including badger (*Taxidea taxus*), coyote, bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), and other raptors.

Prairie dogs are not present on the subject properties, but can be found on nearby properties. Colonies exist to the adjacent north (on the County's Hillside property) and south of the Cito property (on the City's Jenik and Lynch properties).

Birds – Burrowing owls are known to be present in the project area, but not on the subject properties. Activity at a colony located on City open space was recorded in 2004. The burrowing owl is State-listed as a threatened species by the Colorado Division of Wildlife. *Appendix 4* lists additional avian species that are watchlisted by the Boulder County Nature Association (BCNA) and could be found in the area, though it is not likely given current land use.

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 project area. This database contains information on documented federal or state studies or findings regarding any cultural resources. According to their search, OAHP identified 22 sites, eight of which occur on open space property. Several road intersections within the project area have been surveyed for cultural resources, including intersections on the Autrey, Von Reyn, and Twin Corners properties. The results of these surveys completed for the Colorado Dept. of Highways were negative. The eight sites that occur on County-owned open space are described below with the property name identified in **bold** within the description.

- **Site 5BL.859.21**: The site contains a segment of the Boulder & Whiterock Ditch located adjacent to the northeast corner of the **Dodd/Hindman** open space property. This segment of irrigation ditch was recorded in January 1983 as being in excellent condition and is not considered field eligible for the National Register of Historic Places (NRHP).
- **Site 5BL.4861**: The site contains archaeological artifacts from the late Archaic-early Ceramic periods. This isolated find is located on the **Canino** open space property. The site was recorded in January 1994 and is not considered field eligible for the NRHP.
- **Site 5BL.5683**: The site contains Euro-American artifacts and is located on the **Dodd/Hindman** open space property. The site was recorded in July 1995 and is not considered field eligible for the NRHP.
- **Site 5BL.5684**: The site contains archaeological artifacts of unknown aboriginal descent. This isolated find is located on the **Canino** open space property. The site was recorded in July 1995 and is not considered field eligible for the NRHP.
- **Site 5BL.6693**: The site contains concrete remnants of agricultural outbuildings (not presently in use) and is located on the **Twin Corners** open space property. The site was recorded in October 1996 and is not considered field eligible for the NRHP.

- **Site 5BL.6694:** The site contains a concrete foundation from a single dwelling previously in place on the **Jafay** open space property. The site was recorded in October 1996 and is not considered field eligible for the NRHP.
- **Site 5BL.7411:** The Cito Farm site contains a house, barn, chicken house, silo, and two outbuildings. The site was documented in March 1999 and is eligible for local landmark designation. The house, silo, and outbuildings are located on private property. The barn and chicken house are located on the **Cito Co.** open space property. The barn was built c.1924 and is the site's most historically significant building. It is among the county's better examples of a gambrel-roofed single-wing barn and is eligible for local landmarking and inclusion in the National Register of Historic Places (NRHP). The barn and chicken house located on County property are in need of substantial repairs. The flag painted on the barn was touched up in 2002 with special permission granted to the Arnold Air Society.
- **Site 5BL.9580:** The site contains the c. 1904 Dodd-Washam Granary and is located on the **Washam** open space property. The site was recorded in November 2004 and is not considered field eligible for local landmark listing or the NRHP.

The Dodd/Hindman property contains a historic building complex (Site 5BL.7415) that is eligible for local landmark designation and listing on the NRHP. This site is located on a portion of the property that is not included in this Plan.

Figure 4 depicts the location of significant cultural resources on the subject properties.

The Gunbarrel Hill area could be considered a rural historic landscape due to the fact that it has been in traditional agriculture for more than 100 years and has remained largely unchanged.

AGRICULTURAL RESOURCES

The Niwot and Gunbarrel communities have long been defined by their agricultural heritage. The area was settled in the early 1860s and was characterized by homesteaded farmlands. The Gunbarrel Hill area, in particular, has remained largely in continuous farm production since the late 1800s. Most of the subject properties have been in winter wheat production for more than 70 years.

In the early 1900s, a farm with 160 irrigated acres could support a family. A non-irrigated farm required from 160-320 acres to support a family (Beam 1999). Around 1920, tractors started replacing horses on farms, and over time many farms became larger and more specialized. The amount of land needed to maintain an economically viable farm operation has certainly increased over the last half of a decade. Now the area's productive soils and long-standing agricultural history have been permanently preserved as open space- the lands remain in farming and continue to contribute to the local farm economy.

Agricultural infrastructure on the properties consists of fences, gates, access roads, and several barns and storage sheds (*Figure 7*). Oil and gas facilities are also found on several of the properties.

Most of the land is currently planted in winter wheat, although other crops such as corn and millet have been grown in the past. Stripcropping is used in order to provide for a fallow season to recover soil moisture and minimize soil erosion. The wheat is usually planted in September and then harvested the following July or August. A crop of millet is rotated in to alleviate problems

with annual rye. The *Soils* section provides more detail on winter wheat cropping systems and best management practices.

The Dodd/Hindman property currently implements a rotation of sunflowers, although winter wheat and corn have been produced in the past. Cultural practices are important in retaining soil tilth and nutrients and avoiding weed infestations.

Grass waterways have been planted on the Autrey, Canino, Cito Company, Twin Corners, and Von Reyn properties. These waterways have a full stand of grass, but are lacking the structural diversity that forbs and shrubs provide. They serve to limit soil erosion by capturing and slowing runoff.

A soil and water conservation plan for the Autrey, Axelson, and Canino properties is in place with the Natural Resource Conservation Service (NRCS). BCPOS staff also work with agricultural lessees to develop plans that guide crop production, weed management, and property improvements.

RECREATION FACILITIES

The focus of open space in the area is agricultural production. Therefore, developed recreational facilities are minimal to non-existent. Only the Heatherwood Notch property contains recreational features in the form of trails. A crusher fine trail that runs across the northern portion of the property connects trails along 75th Street to the Heatherwood/East Boulder Trail maintained by the City (*Figure 6*). The portion of the trail within the Heatherwood Notch property is maintained by the County. An extensive social trail system also exists on this property and is used frequently by the residents of the adjacent subdivisions. Area residents have reported that the amount of dog feces on the property is of concern.

A social trail also exists immediately east of the eastern property boundary of Jafay. This social trail runs N-S on the City's Jenek property. People utilize this route to get to Lookout Road and then continue west to tie into the Cottontail Trail.

Part III: MANAGEMENT DIRECTION

MANAGEMENT AREAS

Management areas define specific zones that are suitable for visitor use, appropriate conservation, and resource preservation. Management area designations for the subject properties are described below and depicted on *Figure 5*.

Agricultural Area

These areas include properties where soil and water resources are best utilized, conserved, and managed through sustainable agriculture. Crop production and livestock grazing are common uses. In general, public use is not compatible with ongoing agricultural operations. Agricultural areas are leased to private producers and, according to existing County policy, are closed to public access. There are circumstances where visitor use can be accommodated with little or no injury to the agricultural operation, but dispersed recreational use is not appropriate.

All of the subject properties (with the exception of Heatherwood Notch addressed below) currently contain such resources and should be managed long-term for agricultural production.

The Jafay property should be converted to native grassland only in the event that the County is unable to lease it for agriculture use, or in the event that the County experiences sustained net financial losses and chooses to convert it for economic reasons.

Natural Area

These areas contain resources that are not especially sensitive but contribute to the natural heritage of an area and/or provide valuable wildlife habitat. Conditions of these areas are variable, but they generally contain significant natural values or have potential for restoration of natural ecosystems. Natural areas have the dual goal of conserving resources while allowing for compatible recreation, which may include activities such as trail use and interpretation. In order to prevent visitor use impacts to non-target areas, trail corridors and interpretive features should be well planned, delineated, and managed. Policies such as on-trail travel, dogs on leash, and nighttime closures are appropriate tools to maintain the conservation values of these areas. Natural areas may also be utilized for agricultural uses, but agricultural production is not the focus.

The 40-acre strip on the western boundary of the Cito Co. property that was converted to native grassland should be closed to public access due to the fact that it is surrounded by leased agricultural lands with no recreational amenities.

The Heatherwood Notch property currently contains a formal trail and a network of social trails. This property should be managed to allow for the co-existence of wildlife and passive recreation and should remain open to public access.

Adjacent homeowners should have the opportunity, with written permission from BCPOS, to use the two-track road within the Heatherwood Notch property that borders the subdivision for as-needed, occasional maintenance/improvement access to their properties. Permission shall be granted with the condition that the homeowner insure that no damage occurs to the property, and that the homeowner will restore the property to its previous condition if necessary.

Given the historic use of the Heatherwood Notch property and its limited value for wildlife conservation, dogs shall be permitted off-leash on the property. This policy shall remain in place so long as there is no evidence that significant issues or problems are occurring. Should significant issues occur, the policy shall be reviewed and additional recommendations be made to POSAC and the BOCC, in cooperation with the GPID.

NATURAL RESOURCES

Vegetation

Management recommendations for the main vegetation types are outlined below. Restoration opportunities on the properties are also discussed. Weed management is a common need in both the agricultural production and natural areas of the properties.

Recommendations for dryland crop management can be found in the *Agricultural Resources* section.

Upland Grassland – Weed management should be the focus for vegetation management on the Heatherwood Notch property. Refer to the *Noxious Weeds* section for specific recommendations.

Reclaimed Grassland – BCPOS should continue to partner with CSU on their herbicide screening study. Once the study is terminated, this area should be managed as a grassland with appropriate weed management. While this small parcel of grassland does little to contribute to landscape-level grassland conservation, it should still be managed with grazing and fire in order to maintain the health of the plant community. Grazing and fire were components of the historic disturbance regime that was once part of the prairie ecosystem.

If other portions of the subject properties were ever reclaimed, resulting in a relatively large block of native grassland, then the use of domestic grazing animals (cattle, sheep) should be considered for both ecosystem and economic benefits.

Restoration Opportunities- Areas that cannot be sustainably farmed, are substantially degraded, or are compromised for long-term agricultural production should be reclaimed to native vegetation. Once restored, these areas will provide wildlife habitat and contribute to the natural values of the area. The following areas have been identified as candidates for restoration (*Figure 8*):

- A 4.0-acre area in the northwest portion of the Cito property should be converted to native grassland.
- A 5.7-acre area that occupies the drainage/draw in the northeastern part of the Cito property.
- A 4.6-acre area in the northeast corner of the Cito property.
- A 0.24-acre area immediately surrounding the Dodd-Washam Granary site.
- The eastern 20 feet of the Twin Corners and Autrey properties (west of 95th St.) should be converted to native perennial grass.

An 11.4-acre area located in between the two swales on the Cito property should be converted to native grassland in the event that it proves too difficult to farm or has undesirable yields.

Should the 76-acre Jafay property ever be taken out of agricultural production and converted to native grassland, BCPOS should investigate use of the Conservation Reserve Program (CRP) for this project.

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.

Integrated weed management, employing mechanical, cultural, biological, and chemical control techniques, should be used. The most important part of any weed management program is prevention. Weed infestations should be monitored and vigorously addressed to prevent dispersal and the need for future control actions. Certified weed-free materials should be used in recreational developments and reclamation projects. Restoring and maintaining healthy plant communities, in particular grasslands, and reducing human impacts and use patterns can prevent weed invasion. The use of prescriptive grazing can be very beneficial for weed management by allowing animals to graze weeds and reduce competition with native plants.

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. In many areas, retaining non-native perennial grass species such as smooth brome and crested wheatgrass provides desirable competition to noxious weeds. Weed management should be performed in conjunction with the goal of establishing a healthy stand of native perennial grass.

The Boulder County Noxious Weed Management Plan (as amended 2004) provides additional direction and identifies noxious weeds of local concern. Thirteen species are listed as County noxious weeds. Only four of these species have been noted on the subject properties: diffuse knapweed, Canada thistle, musk thistle, and Scotch thistle.

The weed management priorities for the subject properties are:

- Autrey- Managing weeds in the field margins and areas that are out of production.
- Axelson- Managing weeds in the field margins and areas that are out of production.
- Canino- Managing weeds in the field margins and areas that are out of production, including along the ditch.
- Cito- Managing weeds in the field margins and areas that are out of production. The drainage swale on the property needs special attention, as does the northwesterly corner.
- Cito Co.- Managing weeds in the field margins and areas that are out of production. BCPOS should also continue to partner with CSU on herbicide screening trials on the property. Herbicide applications are expected to continue for another couple of years followed by a few years of monitoring. The information gleaned from this study will be very helpful in determining how to best manage weeds while restoring native grasslands. Once the study is terminated, this area should be managed as a grassland with appropriate weed management.
- Dodd/Hindman- Managing weeds in the field margins and areas that are out of production.

- Heatherwood Notch- Weed management along the ditch in the northeast portion of the property. To the extent possible, BCPOS should collaborate with adjacent homeowners and area residents on volunteer weed management projects on the property.
- Jafay- Managing weeds in the field margins and areas that are out of production.
- Turunjian- Managing weeds in the field margins and areas that are out of production.
- Twin Corners- Managing weeds in the field margins and areas that are out of production.
- Von Reyn- Managing weeds in the field margins and areas that are out of production.
- Washam- Managing weeds in the field margins and areas that are out of production.

BCPOS should continue to map and monitor noxious weeds. Weed monitoring should occur annually while more intensive mapping should be performed about every five years.

Wildlife

The Gunbarrel Hill area provides habitat for a range of wildlife. Species that require special management attention include the black-tailed prairie dog and several birds.

Black-tailed prairie dog- Prairie dogs on the subject properties will be managed according to the County's adopted *Grassland Management Plan, Prairie Dog Habitat Element*. This plan attempts to balance wildlife, ecological, and agricultural resource concerns. Due to the active cropland use of the properties and the surrounding land uses, all of the subject properties (with exceptions for Heatherwood Notch and Jafay properties described below) are categorized as No Prairie Dog (NPD) areas.

The Heatherwood Notch property is categorized as a Multiple Objective Area (MOA). Since this property is not in agricultural production and is being managed as a natural/recreation area, it could be managed to accommodate prairie dogs. However, management would be intense and expensive due to the property's small size and the conflict with the residential area that surrounds it. No prairie dogs currently occupy the site, but it is possible that the species could migrate onto the property from colonies located on City open space about ½ mile to the northeast.

As long as the Jafay property is in active agricultural production, it should be categorized as NPD. However, if the property is converted to native grassland, its prairie dog designation should be changed to MOA after the property is restored and has a stand of grass that is capable of withstanding prairie dog activity.

Birds of Special Interest- Future reclamation of agricultural lands into native grasslands could provide additional habitat for the lark bunting (*Calamospiza melanocorys*), grasshopper sparrow (*Ammodramus savannarum*), and savannah sparrow (*Passerculus sandwichensis*). Weed management and enhancement of existing habitat areas, such as the drainage swale on the Cito Co. property and planting of forbs and shrubs in the grass waterways, will benefit these bird species as well as other more common grassland birds such as the horned lark (*Eremophila alpestris*), Western meadowlark (*Sturnella neglecta*), and vesper sparrow (*Poocetes gramineus*).

Habitat Enhancement- Wildlife habitat can be improved while maintaining the existing agricultural focus. The following projects would all enhance wildlife habitat and likely increase wildlife diversity:

- seeding forbs (fringed sage, winter fat, prairie coneflower) into existing grasslands and/or grass waterways,
- planting trees (Rocky Mountain juniper, hackberry) and shrubs (chokecherry, native plum, serviceberry) in areas that are out of agricultural production,
- planting native grass (western wheatgrass, blue grama, side oats grama, green needle grass) buffer strips in field margins and edges,
- and windrow plantings of trees and shrubs on the edges of cultivated fields.

CULTURAL RESOURCES

Cultural resource preservation begins with resource identification, mostly through surveys of the built environment and identification of any prehistoric sites. An analysis is then conducted to determine its significance and potential eligibility for local landmarking or for the National or State Registers of Historic Places. Once this is achieved, needs and strategies can then be developed, ranging from demolition to preservation, rehabilitation, restoration, or reconstruction.

Although many of the cultural resources outlined in the *Existing Conditions* section are not considered significant, avoidance is recommended. Any ground disturbing activities beyond what is currently occurring should be subject to further investigation.

Two significant historic structures that occur on the subject properties, the Dodd-Washam Granary and the Cito Barn, require special attention and are the subject of management recommendations described below.

Protection- The Dodd-Washam Granary is not a high priority, but should be maintained and repaired on an as-needed basis.

Restoration- Preservation of the Cito Barn is a high priority because of its historical importance and state of deterioration. The County's current Capital Improvements Plan calls for a historical and engineering assessment to be completed in 2007. Restoration is scheduled for 2008. Once restored, the barn could be leased for agricultural equipment storage or used by BCPOS for artifact storage.

Other- In order to meet the terms of the purchase agreement for the Cito Co. property, the County should acknowledge the Cito Family somewhere on the property. The County should contact Alan Cito (the designated family historian) and Clyde Canino (who has an abstract of the property) to develop a memorial and install it at an appropriate location on the property.

Because of the significance that the Gunbarrel Hill area brings to preserving rural historic landscapes in the county, further means of protecting the area should be pursued. The area should be evaluated for NRHP eligibility and the creation of a local land use overlay district should be considered.

AGRICULTURAL RESOURCES

BCPOS agricultural lands are leased to private operators and are managed for agricultural production. Consistent with current BCPOS rules and regulations, these properties are closed to public access. In some cases, agricultural lands may be able to accommodate limited recreational use; but all efforts should be made to minimize the loss of productive land and the impact on agricultural operations, including fencing and irrigation management.

Crop Management – The long-term focus of the subject properties (other than the Heatherwood Notch property) is dryland agriculture. Retaining flexibility in agriculture is very important because of the influential role that agricultural commodity markets, weather, labor, and timing have on production success. Potential crops include winter wheat, millet, corn, sunflowers, and other small grains. Particular attention should be paid to implementing Best Management Practices (BMPs) and limiting soil erosion. BCPOS should work with the agricultural lessees to determine preferential cropping systems.

The piece of high ground in between the two swales on the Cito property should be farmed to verify its production potential and for weed management purposes. If after two years of being in production it proves too difficult to farm or has meager yields, then it should be converted to native grassland.

Grass Waterways- Forbs and shrubs should be planted in the waterways on the Autrey, Canino, Cito Co., Twin Corners, and Von Reyn properties in order to improve wildlife habitat and further reduce soil erosion. Due to the fact that large farm equipment must traverse across the grass waterways, it is often impractical to plant shrubs and successfully foster their establishment. However, there may be suitable locations. These planting projects should be implemented outside of the window of April 1 to July 31 in order to not disturb ground nesting birds.

Grazing of Reclaimed Areas- If additional portions of the subject properties were reclaimed, resulting in a relatively large block of native grassland, then the use of domestic grazing animals (cattle, sheep) should be considered for both ecosystem and economic benefits. Grazing should be limited so that no more than half of the current year's growth is grazed. Newly seeded grasses should not be grazed during the first growing season. Once a full and vigorous stand is established, grazing should be limited so that at least 3 inches of stubble is left. Substantial fencing improvements and providing water would be necessary to make this work.

Property Cleanup- Two old cisterns in the northwest corner of the Twin Corners property need to be backfilled as they present safety hazards (Enpro 1994a). In the west-central portion of the Jafay property, an old concrete foundation needs to be removed and a cistern needs to be backfilled. Trash and old farm equipment needs to be removed from the Canino, Cito, and Cito Co. properties.

Other- Due to its centralized location among the county's farmland and its easy access, the Axelson property should be further evaluated as a potential location for regional grain storage. Because of the interface between the homesite and agricultural fields on the Turunjian property, the need and benefits of a fence in this location should be further evaluated.

RECREATION AND VISITOR SERVICES

Trails

Formal trails on the Heatherwood Notch property should be maintained according to BCPOS standards. Because the adjacent residential subdivisions use the property for cross-through access and because the habitat that exists on the property is of low quality, social trails on the property

should be left as is. The property should be monitored occasionally for safety hazards. Because of reports of excessive dog feces on the property, the County should investigate the need for additional signage and bag stations.

The social trail adjacent to the Jafay property is used to facilitate a connection between the City's Cottontail Trail and East Boulder Trail systems. A less direct, but functional, connection already exists by continuing west across 75th Street and then going north along the sidewalk up to Lookout Road. This route is problematic for equestrians and also presents a lower quality trail experience for other users. The Boulder Area Trails Coalition (BATCO) and the Boulder County Horse Association (BCHA) have suggested that the social trail be formalized, resulting in a soft surface, off-road route that effectively connects the two trail systems. The northern portion of the Jafay property, just south of Lookout Road, could be used to take the trail west over to the intersection of Lookout and 75th. The City and County should work together to investigate the need and utility of formalizing this route.

In the event that the Jafay property is ever taken out of agricultural production and converted to native grassland, and the social trail east of Jafay is not formalized, then the County should collaborate with the City and the GPID to determine if a trail connection across the property is desirable. The property could be used for a more direct connection between the City's Cottontail Trail and East Boulder Trail systems. A formal trail is preferred over many social trails across the property. However, a trail bisecting the Jafay property or adjacent City open space land would reduce the habitat effectiveness of the area. In particular, the area is used routinely by golden eagles and other raptors for hunting, and any new trails in the area should be planned with care.

Outreach

Outreach efforts should focus on encroachment and illegal dumping issues. Owners of adjacent residential properties should be contacted and informed of violations for encroachment and the dumping of yard refuse. Residents should also be given information regarding the point of contact for the subject properties.

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.

Law Enforcement - Primary law enforcement responsibility for the subject properties rests with the Boulder County Sheriff's Department, as the properties are 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 BCPOS rules and regulations only.

Most of the properties are under agricultural lease and are closed to the public. Visitation to these properties by law enforcement staff is minimal and patrol is primarily limited to "drive-by" inspections. Law enforcement staff rely heavily on contact and communication from the lessees to be informed of any problems or potential violations.

The Heatherwood Notch property is open to the public. Emergency response to this property is most likely to be handled through mutual aid agreements with the City of Boulder.

Fire Protection - Fire potential on the subject properties is generally limited to wildland fire, probably in the form of a grass fire; although a couple of the properties have structures or outbuildings. Primary fire protection responsibility rests with the Mountain View Fire Protection District, as the subject properties (with the exception of Heatherwood Notch and Jafay) fall within its initial attack jurisdiction. The Heatherwood Notch and Jafay properties are under the jurisdiction of the Boulder Rural Fire Protection District. BCPOS has staff trained in wildland fire response and can assist with coordination and firefighting resources.

RULES AND REGULATIONS

The general rules and regulations that apply to all BCPOS properties, according to Resolution 2005-50, shall be applicable to the Gunbarrel Hill Agricultural Open Space.

In addition to the general rules and regulations, the following specific rules and regulations shall apply to the Heatherwood Notch property:

- Dogs are permitted off-leash.
- Bicyclists shall be permitted to ride in all areas of the property, not just limited to officially designated trails.

Signage posted at the Heatherwood Notch property shall be changed accordingly.

RESOURCE MONITORING

Resource monitoring is conducted to determine if management objectives are being achieved. Monitoring provides information about changes that are occurring on the subject properties 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 subject properties:

Cropland-----	Ongoing-----	BCPOS/Lessee
Weed monitoring-----	Annual-----	BCPOS/Lessee
Weed inventory-----	Every 5 yrs.-----	BCPOS
Wildlife survey-----	Every 3-5 yrs.----	Volunteer
Restoration plantings-----	Ongoing-----	BCPOS
Trail maintenance-----	Ongoing-----	BCPOS

SUMMARY OF MAJOR MANAGEMENT RECOMMENDATIONS

Property	Action Item
Autrey	<ul style="list-style-type: none"> -Weed management -Plant forbs and shrubs in grass waterway -Convert eastern property border to native grass
Axelson	<ul style="list-style-type: none"> -Weed management -Explore opportunities for grain storage on the property
Canino	<ul style="list-style-type: none"> -Weed management -Plant forbs and shrubs in grass waterway -Remove trash from ditch road -Conduct wetland inventory
Cito	<ul style="list-style-type: none"> -Trash and old equipment removal -Weed management and restoration of drainage swale -Weed control and restoration of piece of land on W side that touches 79th Street -Possible conversion of the high ground in between the two drainage swales -Plant trees and shrubs for wildlife habitat enhancement -Conduct wetland inventory
Cito Co.	<ul style="list-style-type: none"> -Weed management -Conduct engineering study of historic structures -Implement restoration recommendations for barn and chicken house -Trash removal -Plant forbs and shrubs in grass waterway -Conduct wetland inventory -Install appropriate memorial to the Cito Family
Dodd/Hindman	<ul style="list-style-type: none"> -Weed management
Jafay	<ul style="list-style-type: none"> -Weed management -Removal of concrete foundations -Fill in old cistern
Heatherwood Notch	<ul style="list-style-type: none"> -Weed management -Trail maintenance -Revise property signage to reflect special rules and regulations -Consider installing dog poop bag stations -Contact adjacent homeowners and address encroachment and dumping issues
Turunjian	<ul style="list-style-type: none"> -Weed management -Evaluate the need for a fence around adjacent house lot
Twin Corners	<ul style="list-style-type: none"> -Weed management -Plant forbs and shrubs in grass waterway -Convert eastern property border (west of 95th St.) to native grass -Fill in old cisterns
Von Reyn	<ul style="list-style-type: none"> -Weed management -Plant forbs and shrubs in grass waterway -Plant 20' LHWD easement to native grass
Washam	<ul style="list-style-type: none"> -Weed management -Plant native grass around granary site
General	<ul style="list-style-type: none"> -Update Grassland Management Plan with recommended prairie dog classifications -Review management plan every five years and update if necessary

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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 Gunbarrel Hill Agricultural Open Space include:

- **Environmental Management**

B.1 Unique or distinctive natural features and ecosystems, and cultural features and sites should be conserved and preserved in recognition of the irreplaceable character of such resources and their importance to the quality of life in Boulder County. Natural resources should be managed in a manner which is consistent with sound conservation practices and ecological principles.

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

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

- **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.

- **Cultural Resources**

K.1 Every effort shall be made to identify and protect historic sites which meet national, state, or local criteria for historic designation from destruction or harmful alteration.

- **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 Gunbarrel Hill Agricultural Open Space include:

- **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.

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

OS3.03 To the extent possible, the county shall protect scenic corridors along highways and mountain road systems. The county may preserve these scenic corridor areas by means of appropriate dedication during the development process, reasonable conditions imposed through the development process or, by acquisition.

OS4.03 Recreational use of county open space land may be permitted where such use is consistent with the management plan for the property and does not adversely impact natural and cultural resources or other management objectives of the property.

OS4.03.01 Recreational use shall be passive, including but not limited to hiking, photography or nature studies, and, if specifically designated, bicycling, horseback riding, or fishing. Only limited development and maintenance of facilities will be provided.

OS4.07 In neighborhoods where residents desire more open space and park and recreation facilities than the county provides, the county shall cooperate in the formation of special taxing districts for open space and park and recreation facilities.

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.

OS6.01 Trails and trailheads shall be planned, designed, and constructed to avoid or minimize the degradation of natural and cultural resources, especially riparian areas and associated wildlife habitats.

OS6.02 Adverse effects on private lands shall be minimized insofar as possible by trail and trailhead placement, posting of rules and signs against trespassing, installation of containing fences where critical, and any other appropriate measures.

OS6.08 Trails constructed by the county Parks and Open Space Department shall be soft-surface except where necessary to prevent erosion and/or other resource damage.

OS7.02 The county may promote and participate in partnership projects with the communities in the county for open space acquisition and trails development outside of community service areas.

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.

- **Cultural Resources**

CR1.02 Significant archaeological and historic sites and structures acquired by the county both in unincorporated and incorporated areas, shall be documented, protected, preserved, and where appropriate, restored.

CR1.02.01 After acquisition, an inventory of cultural resources on the property shall be undertaken and the historic significance of each resource shall be determined.

CR1.02.02 Resources that meet the criteria for local landmark, or State or National Register status should be nominated for such status by the county.

- **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.

AG1.10 The county shall encourage the development of soil and water conservation plans to help assure sound resource stewardship and, where appropriate, may require such plans in land use applications subject to the county's discretionary review processes as defined in the county *Land Use Code*.

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.

AG2.01 The county shall discourage the placement of new utility infrastructure upon agricultural lands. The county supports using existing easements or other public rights-of-way to minimize the impacts to agriculturally productive land.

AG2.01.01 If a thorough analysis of alternatives concludes that routing/siting of facilities is necessary on or across agricultural lands, all construction activities will be located and performed so as to minimize disturbance to agricultural resources.

AG2.01.02 If the infrastructure location is determined necessary, infrastructure construction activities across agricultural lands should not occur during the growing season.

AG2.01.03 Any agricultural lands and water resource systems disturbed by infrastructure construction shall be restored to their former productivity.

AG2.02 Oil and gas exploration, development, and production activities which affect agricultural operations shall be designed to minimize impacts to agricultural lands and water resource systems.

AG2.03 Reclamation and restoration plans shall be required upon permitting and be implemented upon plugging and/or removal of all oil and gas well and production facilities, or upon abandonment, and shall include all appropriate measures to return the land to productive agriculture.

AG2.04 The county shall use its regulatory authority to minimize the impacts of oil and gas operations on agricultural lands and ensure complete restoration of the area through the use of financial bonds, other forms of financial security or other appropriate regulatory measures to the extent authorized by law.

AG3.01 The county shall support state and federal legislation which encourages management of noxious weeds.

AG3.02 The county shall actively participate in state, federal, and local programs directed toward Integrated Pest Management programs for noxious weeds, and vertebrate and insect pests.

AG3.03 The county shall use, and encourage all land owners to use, Best Management Practices, which may include chemical, fire, mechanical, biological, cultural control for weeds; chemical, physical, and cultural control for vertebrate pests; and chemical, biological and cultural control for insects.

AG3.04 The county shall use and encourage the use of certified weed free products such as hay, mulch, gravel, bedding material, and general construction material.

Those purposes identified in the **City of Boulder's City Charter** that are of particular relevance to the Gunbarrel Hill Agricultural Open Space include:

Sec. 176. Open space purposes—Open space land.

Open space land shall be acquired, maintained, preserved, retained, and used only for the following purposes:

- (a) Preservation or restoration of natural areas characterized by or including terrain, geologic formations, flora, or fauna that are unusual, spectacular, historically important, scientifically valuable, or unique, or that represent outstanding or rare examples of native species;
- (b) Preservation of water resources in their natural or traditional state, scenic areas or vistas, wildlife habitats, or fragile ecosystems;
- (c) Preservation of land for passive recreational use, such as hiking, photography or nature studies, and, if specifically designated, bicycling, horseback riding, or fishing;
- (d) Preservation of agricultural uses and land suitable for agricultural production;
- (e) Utilization of land for shaping the development of the city, limiting urban sprawl, and disciplining growth;
- (f) Utilization of non-urban land for spatial definition of urban areas;
- (g) Utilization of land to prevent encroachment on floodplains; and
- (h) Preservation of land for its aesthetic or passive recreational value and its contribution to the quality of life of the community.

Those policies identified in the **Boulder Valley Comprehensive Plan** that are of particular relevance to the Gunbarrel Hill Agricultural Open Space include:

1.06 Leadership in Sustainability. The city will apply the principles of sustainability to its actions and decisions. The city will act as a community leader and steward of our resources, serving as a role model for others and striving to create a sustainable community that lives conscientiously as part of the planet and ecosystems we inhabit and that are influenced by our actions. Through its master plans, regulations, policies and programs, the city will strive to create a healthy, vibrant and sustainable community for future generations.

1.11 Regional Cooperation.

Many of the most significant problems and opportunities faced by Boulder and other jurisdictions, particularly affordable housing, the jobs-housing balance, the economy, regional transportation, and growth management can only be dealt with effectively through regional cooperation and solutions. Therefore, the city and county shall aggressively pursue joint planning and close cooperation with each other and among other cities, unincorporated communities, the University of Colorado, the school districts, regional organizations, and other policymaking bodies (e.g., other counties, the Regional Transportation District (RTD), the Colorado Department of Transportation (CDOT), the county Board of Health, utility and fire service entities). These entities should address issues of mutual concern in order to avoid conflicts, provide a means by which each entity may more fully benefit from a multi-jurisdictional perspective, and achieve mutually beneficial solutions.

1.13 Intergovernmental Agreements.

The city and county may enter into intergovernmental agreements with other municipalities and agencies when appropriate to foster intergovernmental planning and cooperation.

1.30 Citizen Involvement in Planning.

The city and county shall recognize the rights of citizens to play a role in governmental decisions, especially those which affect their lives or property, through continual efforts to maintain and improve open and public communication and conduct of business. In addition, the city and county shall continue to support adequate programs and provide opportunities for citizen participation and neighborhood involvement.

2.08 Preservation of Rural Areas and Amenities.

The city and county shall attempt to preserve existing rural land use and character in and adjacent to the Boulder Valley where environmentally sensitive areas, hazard areas, agriculturally significant lands, vistas, significant historic resources, and established rural residential areas exist. A clear boundary between urban and rural areas at the periphery of the city will be maintained, where possible. Existing tools and programs for rural preservation will be strengthened and new tools and programs will be put in place.

2.09 Delineation of Rural Lands.

Area III consists of the rural lands in the Boulder Valley, outside the Boulder Service Area. The Boulder Service Area includes urban lands in the city and lands planned for future annexation and urban service provision. Within Area III, land is placed within one of two classifications: the Area III-Rural Preservation Area (RPA) or the Area III-Planning Reserve Area (PRA). The boundaries of these two areas are shown on the Area III-Rural Preservation Area and Area I, II, III Map. The more specific Area III land use designations on the Comprehensive Plan Map indicate the type of non-urban land use that is desired as well as recognize those county developments that have or can still develop at other than rural densities and uses. The Area III-Rural Preservation Area is intended to show the desired long-term rural land use; the Area III-Planning Reserve Area is an interim classification until it is decided whether or not this land should be placed in the

Area III-Rural Preservation Area or in the Service Area. (a) Area III-Rural Preservation Area The Area III-Rural Preservation Area is that portion of Area III where rural land uses and character will be preserved through existing and new rural land use preservation techniques and no new urban development will be allowed during the planning period. Rural land uses to be preserved to the greatest possible extent include: rural town sites (Eldorado Springs, Marshall and Valmont); existing county rural residential subdivisions (primarily along Eldorado Springs Drive, on Davidson Mesa west of Louisville, adjacent to Gunbarrel, and in proximity to Boulder Reservoir); city and county acquired open space and parkland; sensitive environmental areas and hazard areas that are unsuitable for urban development; significant agricultural lands; and lands that are unsuitable for urban development because of a high cost of extending urban services or scattered locations, which are not conducive to maintaining a compact community. (b) Area III-Planning Reserve Area The Area III-Planning Reserve Area (PRA) is that portion of Area III with rural land uses where the city intends to maintain the option of limited Service Area expansion. The Area III-Planning Reserve Area classification maintains both rural preservation and urban development options until the city and county decide the ultimate desired land use. The location and characteristics of this land make it potentially suitable for new urban development, based on the apparent lack of sensitive environmental areas, hazard areas, and significant agricultural lands, the feasibility of efficient urban service extension, and contiguity to the existing Service Area which maintains a compact community. In the long term, city expansion into the PRA may or may not be desirable depending on how well the community meets its long term goals and whether the benefits to the community outweigh the costs and negative impacts from new urban development.

3.13 Trail Functions and Locations.

Trails serve a variety of functions such as recreation, transportation, education and/or environmental protection. Trails should be designed and managed to minimize conflicts among trail users. Trailheads should be located so they are convenient and safe for those arriving by alternate modes of transportation as well as automobiles. In order to provide environmental protection, informal trails and user widening of trails should be discouraged by ensuring that formal trails are well designed, monitored and adequately maintained. Trail and trailhead locations and alignments should avoid environmentally sensitive areas.

3.14 Trails Network.

The city and county will coordinate with other trail providers and private landowners in trail system planning, construction, management and maintenance. Where compatible with environmental preservation goals and conservation easement agreements, trail connections will be developed to enhance the overall functioning of the trails network.

4.01 Incorporating Ecological Systems Into Planning.

Planning and policy decisions in the Boulder Valley shall be approached through an ecosystem framework, in which natural regions like air sheds and watersheds are incorporated into planning and an appropriate relationship between the built environment and air, water and land quality is considered.

4.02 Regional Outreach.

The city and county shall take a regional approach to environmental planning and resource management, support consideration of environmental impacts in local and regional decisions, and work with governmental entities outside the Boulder Valley on issues of common concern.

4.03 Environmental Education.

The city and county shall promote public education about issues of local and regional environmental concern, meet required elements of state and federal regulations, and seek to engage all citizens in the goal of protecting the quality of the natural and build environment. The city and county shall increase community awareness of programs and practices that prevent pollution, reduce waste and increase efficiency through community education and outreach.

4.04 Assessment of Environmental Impacts.

The community and environmental effects of public and private projects shall be considered in the public decision making process. Local, state, and federal environmental review processes shall be followed when appropriate.

4.05 Monitoring and Tracking.

The city and county shall continue to improve monitoring and evaluation of land, air and water quality, and shall track progress made in maintaining and enhancing environmental quality in the Boulder Valley.

4.06 Natural Ecosystems.

The city and county shall protect and restore significant ecosystems and habitats for native plant and animal species on public and private lands through acquisition, land use planning, development review, conservation easements, and public land management practices. Promotion of biological diversity and protection of federal endangered and threatened species and state, county, and local species of concern and their associated habitat will be emphasized. Degraded habitat may be restored, and selected extirpated species may be reintroduced as a means of enhancing native flora and fauna in the Boulder Valley. Natural areas (as designated in the Boulder County Comprehensive Plan and by the Colorado State Natural Areas Program) that are within the Boulder Valley shall be managed in a manner that is consistent with the Natural Areas Goals and Policies of the Boulder County Comprehensive Plan. (See policy 2.05 Open Space Preservation)

4.07 Ecosystem Connections and Buffers.

The city and county recognize the biological importance of preserving large areas of unfragmented habitat. The city and county will work together to preserve, enhance, restore and maintain undeveloped lands critical for providing ecosystem connections and buffers for joining significant ecosystems. These areas are important for sustaining biological diversity and viable habitats for native species and for minimizing impacts from developed lands.

4.08 Maintain and Restore Ecological Processes.

Recognizing that ecological change is an integral part of the functioning of natural systems, the city and county shall work to ensure that, when appropriate precautions have

been taken for human safety and welfare, natural processes will be utilized or mimicked to sustain, protect and enhance ecosystems.

4.10 Public Access to Public Lands.

Certain city- and county-owned or managed lands provide a means for educating citizens on the importance of the natural environment. Public lands may include areas for recreation, preservation of agricultural use, unique natural features, and wildlife and plant habitat. Public access to public lands shall be provided for, except where necessary, to protect such areas from unacceptable degradation, from unacceptable impact to habitat and wildlife, or for public safety.

4.11 Management of Wildlife-Human Conflicts.

When a wildlife species is determined to be a nuisance or a public health hazard, a full range of alternative wildlife management techniques may be considered by the city and county in order to mitigate the problem in a manner that is humane, effective, economical and ecologically responsible.

4.12 Agricultural Land.

The city and county shall encourage the preservation and sustainable use of agricultural lands as a current and renewable source of both food and fuel and for their contribution to cultural, environmental and economic diversity. Agricultural lands with national, state and local significance have been identified. The city and county will encourage the protection of significant agricultural areas and related water supplies and facilities, including the historic and existing ditch systems, through a variety of means, which may include public acquisition, land use planning, and sale or lease of water for agricultural use. (See Policy 2.08 Preservation of Rural Area and Amenities)

4.25 Pollution Control.

The city and county shall seek to control both point and non-point sources of water through pollution prevention, improved land use configurations, wetland detention areas, standards to control degradation of streams and lakes caused by storm runoff in urban and rural areas, and control and monitoring of direct sources of discharge, including those of gravel extraction and wastewater treatment facilities.

4.45 Integrated Pest Management.

The city and county shall encourage efforts, both public and private, to reduce the use of chemical herbicides, pesticides, and fungicides. In its own practices, the city commits to use of integrated pest management, which emphasizes the selection of the most environmentally-sound approach to pest management, with the overall goal of reducing and, where possible, eliminating the dependence on chemical pest-control strategies.

**BOULDER COUNTY AND CITY OF BOULDER JOINTLY OWNED OPEN SPACE
MANAGEMENT INTERGOVERNMENTAL AGREEMENT**

THIS INTERGOVERNMENTAL AGREEMENT ("Agreement") by and between the City of Boulder, a Colorado home-rule municipal corporation (the "City") and the County of Boulder, a body corporate and politic of the State of Colorado (the "County") (collectively the "Parties") is made and entered into on this 18 day of October, 2005.

WITNESSETH

WHEREAS, pursuant to Sections 29-1-203 and 30-11-410, C.R.S. as amended, local governments may cooperate or contract with one another to provide any function or service lawfully authorized to each of the cooperating or contracting units when such agreements are authorized by each Party to the agreement with the approval of the governing body and are encouraged to cooperate to promulgate regulations regarding the use and provision of regulatory enforcement for land within their respective ownerships and jurisdictions; and

WHEREAS, the Parties jointly own certain open space properties identified in Exhibit A attached hereto and incorporated herein by reference ("the Properties") and as legally described in Exhibit B attached hereto and incorporated herein by reference, and agree that it is in the best interest of the Parties and the citizens of the City and the County to further clarify their responsibilities with respect to management of the Properties; and

WHEREAS, the Parties intend to improve management of jointly owned open space by identifying a lead agency ("Lead Agency") for each of the Properties and to provide that the Lead Agency's rules, regulations, policies and plans shall control for those Properties to which it has been entrusted with management authority. The Lead Agency shall be either the City of Boulder's Open Space and Mountain Parks Department ("OSMP") or Boulder County's Parks and Open Space Department ("BCPOS"); and

WHEREAS, the Parties wish to affirm their existing and successful management relationship on jointly owned properties; and

WHEREAS, to the extent of any conflict, this Agreement shall replace the conditions of all previous agreements between the Parties relating to the identification of a lead land management entity and the handling of property management and management expenses or revenues, as well as regulatory or policy jurisdiction, such as purchase agreements, management plans and/or conservation easements for the following properties:

Beech
Beech Aircraft (aka Beech)
Foothill Business Park (aka Beech)
Superior Associates (aka Telleen)
Arsenault (aka Mayhoffer/Singletree)
Cito Company
Imel
Suitts (aka Suitts North)
Turunjian

IBM (aka IBM-Monarch); and

WHEREAS, the Parties have previously agreed to convert their separate interests in the Beech and Suitts properties into undivided fee ownership with mutual conservation easements.

NOW THEREFORE, in consideration of the above recitals and the mutual covenants and commitments herein, the Parties agree as follows:

I. PROPERTIES

The Properties shown on Exhibit A shall be managed in accordance with the terms and conditions of this Agreement. The Lead Agency for each of the Properties shall be as indicated on Exhibit A and set forth below:

City of Boulder Open Space and Mountain Parks Management..... Approximate Acreage

Beech.....	1,267
Superior Associates (Tellean).....	955

Total Approximate Acreage (City Lead)2,222

Boulder County Parks and Open Space Management..... Approximate Acreage

Arsenault (Mayhoffer/Singletree).....	169
Cito Company	148
Imel	576
Suitts	142
Turunjian.....	58
IBM - Monarch.....	186

Total Approximate Acreage (County Lead).....1,279

Total Approximate Acreage Joint Fee Ownership Properties3,501

II. PROPERTY USE

Use of the Properties shall be consistent with the purpose of existing acquisition agreements and in accordance with an approved management plan for each of the Properties.

III. PROPERTY MANAGEMENT

A. Rules, Regulations, Policies, and Plans

The rules, regulations, policies, and plans of the Lead Agency, as the Lead Agency is identified in Exhibit A, shall apply to each open space property jointly owned by the Parties. Notwithstanding the designation of a Lead Agency, the Parties shall retain their respective rights and responsibilities of land use review as otherwise provided by law. To the greatest extent possible, the Lead Agency management plan shall be consistent with existing conservation easements. In addition, neither Party shall accept any

grant or other approval that encumbers or obligates the property unless it first obtains the written consent of the other Party.

B. Property Management Plan

A plan describing the ecological, agricultural and recreational management of the Properties shall be created and approved by appropriate staff for each of the Properties by the respective Lead Agency no later than January 1, 2008. The Party that is not the Lead Agency for any individual Property shall be provided with notice as to any draft management plan and the opportunity to comment upon the draft before such plan is finalized. A Lead Agency Party may amend a management plan, provided that it shall first allow an opportunity for comment and consultation to the other party.

C. Management Costs

Property management expenses, including but not limited to maintenance and capital improvement costs, if any, shall be the responsibility of the Lead Agency. The Lead Agency will be entitled to the fees and revenues generated from all activities on Properties under its management, including but not limited to agricultural leases.

Meetings between the Parties may be held from time to time to discuss property improvements and funding needs. The cost of major property improvements shall be shared to the degree and in the amount agreed to in separate written agreements between the Parties.

In the event of any flood, fire or wind damage, or other catastrophic event on any Property, expenses or costs of restoration of the Property will be evaluated on a situation by situation basis and the Parties will meet to explore efficiencies and determine the appropriate, timely and mutually acceptable resolution.

D. Enforcement

Patrol and enforcement of rules, regulations, policies and plans shall be the responsibility of the Lead Agency or its assigns.

IV. NOTICE

Any notice sent from one Party to another pursuant to this Agreement shall be in writing and addressed as follows:

To the County: Director of Parks and Open Space Department
Boulder County
P.O. Box 471
Boulder, CO 80306-0471

With a Copy to: Boulder County Attorney
P.O. Box 471
Boulder, CO 80306-0471

To the City: Boulder City Manager
P.O. Box 791
Boulder, CO 80306-0791

With a copy to: Boulder City Attorney
P.O. Box 791
Boulder, CO 80306-0791

V. LIABILITY

Subject to the provisions of the Colorado Governmental Immunity Act, each Party assumes liability for injury to persons and damage to property arising out of its occupancy and maintenance of the sites. Nothing contained in this Agreement shall constitute any waiver by the City or the County of the provisions of the Colorado Governmental Immunity Act or any other immunity or defense provided by statute or common law.

The City and the County certify that they are self-insured for property and general liability coverage, including errors and omissions to the limits set forth in the Colorado Governmental Immunity Act.

Each Party agrees to notify the other of any defects or potential defects, dangerous conditions or potential dangerous conditions, claims or potential claims from damage or injury that come to its attention in connection with its usage. Within fifteen (15) days after any litigation commenced against either Party that contains allegations against the other, the Parties will meet to explore efficiencies and determine the course of action in providing a defense, including, but not limited to, the potential for a joint defense.

The Lead Agency shall be solely responsible for any costs or liabilities arising out of environmental conditions (such as hazardous waste contamination) that have been created or exacerbated by the conduct of the Lead Agency.

VI. AMENDMENTS

This Agreement contains the entire agreement of the Parties and any amendment may take place only upon the approval adopted by the governing body of each of the Parties after notice and hearing as required by law, other than those management plan amendments delegated to staff in Section III. B.

VII. SEVERABILITY

If any portion of this Agreement is held by a court of competent jurisdiction to be unenforceable as to any Party, the entire Agreement shall be terminated, it being the understanding and intent of the Parties that every portion of the Agreement is essential to and not severable from the remainder.

VIII. BENEFICIARIES

The Parties, in their corporate and representative governmental capacities, are the only entities intended to be the beneficiaries of the Agreement and no other person or entity is so intended or may bring any action, including a derivative action, to enforce the Agreement.

IX. GOVERNING LAW AND VENUE

This Agreement shall be governed by the laws of the State of Colorado, and venue shall lie in the County of Boulder. To the extent that any local law or ordinance of either Party conflicts with the provisions of a Lead Agency management plan, the local law or ordinance shall not be applied and an exemption in such local law or ordinance shall be in effect. To the extent of any conflict, Lead Agency management plans authorized by this Agreement shall supersede the terms of any conservation agreement applicable to the Properties that are the subject of this Agreement, provided however that there shall be no waiver or estoppel of either Party's ability to enforce any conservation agreement upon termination of this Agreement, and any period of limitations shall be tolled during the term of this Agreement.

X. WAIVER OF BREACH

A waiver by any Party or the breach of any term or provision of this Agreement shall not operate to be construed as a waiver of any subsequent breach by either Party.

XI. AGREEMENTS

Nothing in this Agreement shall affect any other agreements between the City and the County now in effect but shall replace, void, and supersede any and all existing or former joint maintenance language, management delegation, management expenses, and lease revenues contained in the specific purchase agreements and conservation easements listed in Paragraph I of this Agreement.

XII. TERM AND EFFECTIVE DATE.

This Agreement shall become effective upon the date set forth above after signature of an authorized representative of the governing bodies of each of the Parties. The term of this Agreement shall be ten years from its effective date. The Agreement may be renewed or terminated only upon the mutual written agreement of the Parties.

WHEREFORE, the Parties have entered into the foregoing Agreement to be effective on the date first above written.

(remainder of this page intentionally left blank)

CITY OF BOULDER

By: M. R. Rupp
Mayor 10-19-2005

ATTEST:

[Signature]
City Clerk on behalf of
the Director of Finance and Record

Approved as to Form:

✓
[Signature]
Ariel Pierre Calonne
City Attorney

Date: 10/18/05

COUNTY OF BOULDER
Board of County Commissioners

By: Ben Pearlman 10/18/05
Chair

ATTEST:

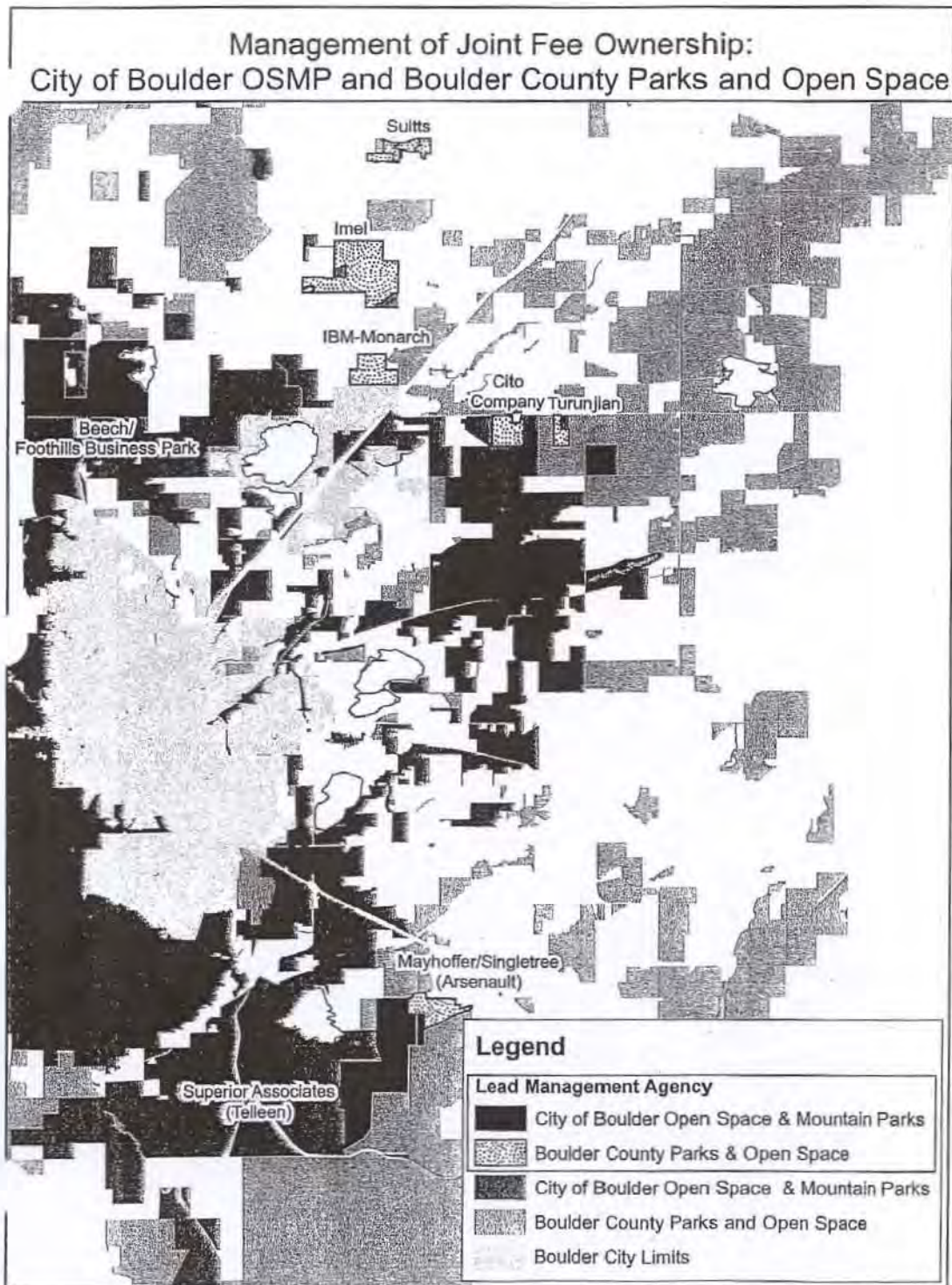
[Signature]
Clerk to the Board

Approved as to Form:
[Signature]
H. Lawrence Hoyt
County Attorney



Date: 10/18/05

EXHIBIT A



Appendix 3: Summary of *Grassland Management Plan, Prairie Dog Habitat Element*

Adopted by the Board of County Commissioners on May 28, 2002, the plan 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 4: Potential Wildlife

Potential Bird Species:

<u>Species</u> (n=78)	<u>Agland*</u>	<u>Grassland</u>	<u>Shrubland</u>	<u>Season</u>	<u>Gunbarrel Hill</u>
Turkey Vulture	X	X	X	Summer	Uncommon
Canada Goose	X	X		Year-round	Uncommon
Snow Goose	X	X			Uncommon
Mallard	X	X		Year-round	Uncommon
Bald Eagle	X	X	X	Year-round	Rare
Northern Harrier	X	X	X	Year-round	Rare
Swainson's Hawk	<u>X</u>	<u>X</u>	<u>X</u>	Summer	Rare
<u>Red-tailed Hawk</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Fairly Common</u>
Rough-legged Hawk	X	X	X	Winter	Rare
Ferruginous Hawk	X	X	X	Winter	Rare
Golden Eagle	<u>X</u>	<u>X</u>	<u>X</u>	Year-round	Rare
<u>American Kestrel</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Common</u>
Peregrine Falcon	X	X	X	Year-round	Rare
Prairie Falcon	<u>X</u>	<u>X</u>	<u>X</u>	Year-round	Rare
Ring-necked Pheasant	X		X	Year-round	Fairly Common
Sharp-tailed Grouse		X	X	N/A	Extirpated
Northern Bobwhite	X	X	X	Year-round	Rare
Sandhill Crane	X			Migrant	Rare
<u>Killdeer</u>	<u>X</u>	<u>X</u>	-	<u>Year-round</u>	<u>Common</u>
Mountain Plover	X	X		N/A	Extirpated
Willet	X	X		Migrant	Uncommon
Long-billed Curlew	X	X		N/A	Extirpated
Franklin's gull	X			Migrant	Fairly Common
Ring-billed Gull	X			Year-round	Fairly Common
California Gull	X			Summer	Fairly Common
Herring Gull	X			Winter	Fairly Common
Rock Dove (Pigeon)	<u>X</u>	-	-	<u>Year-round</u>	<u>Common</u>
<u>Mourning Dove</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Common</u>
Barn Owl	X	X	X	Year-round	Rare
Great Horned Owl	X	X	X	Year-round	Fairly Common
Burrowing Owl	X	X	X	Summer	Rare
Short-eared Owl	X	X		Winter	Rare
<u>Common Nighthawk</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Fairly Common</u>
<u>Northern Flicker</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Fairly Common</u>
<u>Say's Phoebe</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Fairly Common</u>
<u>Western Kingbird</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Fairly Common</u>
Eastern Kingbird	X	X		Summer	Fairly Common
Loggerhead Shrike	X	X	X	Summer	Uncommon
Northern Shrike	X	X	X	Winter	Uncommon
<u>Black-billed Magpie</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Common</u>

Potential Bird Species (continued):

Species (n=78)	Agland*	Grassland	Shrubland	Season	Gunbarrel Hill
American Crow	X	X	X	Year-round	Fairly Common
Common Raven	X	X	X	Year-round	Uncommon
Horned Lark	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Common</u>
N. Rough-winged Swallow	X	X	X	Summer	Uncommon
Bank swallow	X	X	X	Summer	Rare
Cliff Swallow	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Common</u>
Barn Swallow	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Common</u>
Black-capped Chickadee			X	Year-round	Fairly Common
House Wren	-	-	<u>X</u>	<u>Summer</u>	<u>Fairly Common</u>
Eastern Bluebird	X	X		Summer	Uncommon
Western Bluebird			X	Migrant	Rare
Mountain Bluebird	X	X	X	Migrant	Fairly Common
American Robin	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Common</u>
Gray Catbird			X	Summer	Rare
Northern Mockingbird	X	X	X	Summer	Rare
Sage Thrasher		X	X	Summer	Rare
Brown Thrasher		X	X	Summer	Rare
European Starling	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Common</u>
Spotted Towhee	-	-	<u>X</u>	<u>Year-round</u>	<u>Fairly Common</u>
Vesper Sparrow	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Fairly Common</u>
Lark Sparrow	X	X	X	Summer	Fairly Common
Lark Bunting	<u>X</u>	<u>X</u>	<u>X</u>	Summer	Rare
Savannah Sparrow	<u>X</u>	<u>X</u>	<u>X</u>	Summer	Rare
Grasshopper Sparrow	<u>X</u>	<u>X</u>	<u>X</u>	Summer	Rare
Song Sparrow	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Fairly Common</u>
Blue Grosbeak	-	X	<u>X</u>	<u>Summer</u>	<u>Uncommon</u>
Bobolink	X	X		Summer	Rare
Red-winged Blackbird	<u>X</u>	<u>X</u>	-	<u>Year-round</u>	<u>Fairly Common</u>
Western Meadowlark	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Common</u>
Yellow-headed Blackbird	X			Summer	Rare
Brewer's Blackbird	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Fairly Common</u>
Common Grackle	<u>X</u>	<u>X</u>	-	<u>Summer</u>	<u>Common</u>
Great-tailed Grackle	X			Summer	Uncommon
Brown-headed Cowbird	<u>X</u>	<u>X</u>	<u>X</u>	<u>Summer</u>	<u>Common</u>
Orchard Oriole	X	X		Summer	Uncommon
Bullock's Oriole	X	X	X	Summer	Fairly Common
House Finch	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Fairly Common</u>
American Goldfinch	<u>X</u>	<u>X</u>	<u>X</u>	<u>Year-round</u>	<u>Fairly Common</u>
House Sparrow	X			Year-round	Fairly Common

*Agland includes dryland crop, peripheral irrigation ditches, buildings/structures, and assoc. vegetation.

Bolded species are Boulder County Avian Species of Special Concern.

Birds recorded on BCPOS breeding bird surveys in Grassland Habitats on other properties are underlined.

Note: This list is not all-inclusive; there is always the possibility that other species not listed here could be found on these properties.

Potential Mammal Species:

Species (n=42)	Agland*	Grassland	Shrubland	Parturition	Gunbarrel Hill
Virginia Opossum	X	X	X	Spring-Summer	Uncommon
Merriam's Shrew		X	X	Spring-Summer	Rare
Least shrew	X	X	X	Spring-Summer	Uncommon
Western Small-footed Myotis	X	X	X	Jun-Aug	Uncommon
Little Brown Myotis	X			May-Jun	Fairly Common
Hoary Bat	X			Jun-Aug	Uncommon
Silver-haired Bat	X			Jun-Jul	Uncommon
Big Brown Bat	X			Jun-Sept	Fairly Common
Desert Cottontail	X	X	X	Spring-Summer	Fairly Common
Eastern Cottontail	X			Spring-Summer	Common
Black-tailed Jackrabbit	X	X	X	Mar-Jul	Uncommon
White-tailed Jackrabbit		X	X	Mar-Aug	Rare
Spotted Ground Squirrel		X	X	May-Jul	Rare
Thirteen-lined Ground Squirrel	X	X	X	May-Jun	Rare
Rock Squirrel	X			Mar-Jun	Rare
Black-tailed Prairie Dog	X	X	X	Mar-Apr	Fairly Common
Fox Squirrel	X			Mar-Aug	Fairly Common
Northern Pocket Gopher	X	X	X	Apr-Jun	Rare
Plains Pocket Gopher	X	X		Apr-May	Uncommon
Olive-backed Pocket Mouse		X	X	Apr-Jul	Rare
Plains Pocket Mouse	X	X	X	May-Jul	Uncommon
Silky Pocket Mouse		X	X	May-Oct	Rare
Hispid Pocket Mouse	X	X	X	Spring-Summer	Uncommon
Ord's Kangaroo Rat		X	X	Feb-Aug	Rare
Western Harvest Mouse		X	X	Mar-Oct	Fairly Common
Plains Harvest Mouse	X	X		Mar-Oct	Uncommon
Deer Mouse	X	X	X	Mar-Sept	Common
Northern Grasshopper Mouse		X	X	Mar-Sept	Uncommon
House Mouse	X			Apr-Sept	Uncommon
Norway Rat	X			Apr-Sept	Uncommon
Prairie Vole		X	X	Mar-Oct	Uncommon
Muskrat	Ditches			Apr-Jul	Rare
Coyote	X	X	X	Mar-May	Common
Swift Fox		X		Mar-May	Rare
Red Fox	X			Mar-Apr	Fairly Common
Raccoon	X			Apr-May	Fairly Common

Potential Mammal Species (continued):

Species (n=42)	Agland*	Grassland	Shrubland	Parturition	Gunbarrel Hill
Long-tailed Weasel	X	X	X	Apr-May	Uncommon
American Badger	X	X	X	Mar-Apr	Uncommon
Striped Skunk	X	X	X	May-Jun	Common
Bobcat			X	Spring-Fall	Rare
Mule Deer	X	X	X	May-Jun	Uncommon
White-tailed Deer	X			May-Jun	Uncommon

<u>Extirpated Species</u>
Gray Wolf
Grizzly Bear
Black-footed Ferret
Pronghorn
Bison

*Agland includes dryland crop, peripheral irrigation ditches, buildings/structures, and assoc. vegetation.

Bolded species are listed as Boulder County Mammals of Special Concern.

Note: Most of the species on this list will only be found on certain properties under specific conditions, depending on status of property (native grassland vs. cultivated crops), agricultural operations, proximity to water, etc. Other species not listed may be found on any of these properties at various times, depending on conditions.

Potential Herpetile Species:

Amphibians (n=7)

Common Name	Agland*	Grassland	Shrubland	Lay-Hatch	Gunbarrel Hill
Tiger Salamander	X	X		Spr-Fall	Uncommon
Great Plains Toad	X	X	X	Spr-Sum	Uncommon
Woodhouse's Toad	X			Apr-Jun	Uncommon
Western Chorus Frog	X			Apr-Jun	Uncommon
Bullfrog	X			Spr-Sum	Uncommon
Northern Leopard Frog	X			Mar-Jul	Rare
Plains Spadefoot	X	X	X	Spr-Sum	Fairly Common

Potential Herpetile Species (continued):

Lizards (n=5)

<u>Common Name</u>	<u>Agland*</u>	<u>Grassland</u>	<u>Shrubland</u>	<u>Lay-Hatch</u>	<u>Gunbarrel Hill</u>
Six-lined Racerunner	X	X		Jun-Sep	Fairly Common
Many-lined Skink	X	X	X	May-Jul	Uncommon
Lesser Earless Lizard	X	X	X	May-Sep	Uncommon
Short-horned Lizard		X	X	Born Jul-Aug	Rare
Prairie/Plateau Lizard		X	X	May-Aug	Uncommon

Snakes (n=10)

<u>Common Name</u>	<u>Agland*</u>	<u>Grassland</u>	<u>Shrubland</u>	<u>Lay-Hatch</u>	<u>Gunbarrel Hill</u>
Racer	X	X	X	Jun-Sep	Common
Western Rattlesnake	X	X	X	Born Aug-Oct	Fairly Common
Western Hognose Snake	X	X	X	Jun-Sep	Fairly Common
Milk Snake		X	X	Jun-Sep	Rare
Bull Snake/Gopher Snake	X	X	X	Jun-Sep	Common
Plains Blackhead Snake	X	X		Jun-Sep	Uncommon
W.Terrestrial Garter Snake	X	X		Born Jul-Aug	Common
Plains Garter Snake	X	X	X	Born Jul-Sep	Uncommon
Common Garter Snake	X			Born Jul-Aug	Rare
Lined Snake	X	X		Born Aug-Sep	Uncommon

*Agland includes dryland crop, peripheral irrigation ditches, buildings/structures, and assoc. vegetation.

Bolded species are listed as Boulder County Herpetiles of Special Concern.

Note: As with the bird and mammal list, the species listed above will only be found on certain properties, under specific conditions, and probably only during certain times of the year. Effective conditions will include agricultural activity, the presence of and proximity to water, occurrence of rodents and rodent burrows, etc. Other species listed here may be found on any of these properties under certain conditions.

Appendix 5: Plan Advisory Team

Boulder County Parks & Open Space

Patrick Malone, Natural Resource Planner and Principal Author

Ron Stewart, Director

Rich Koopmann, Manager, Resource Planning Division

Kristi VanDenBosch, GIS/GPS Technician

Luke Stromquist, Manager, Agricultural Resources Division

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Mark Brennan, Wildlife Specialist

City of Boulder Open Space & Mountain Parks

Mark Gershman, Environmental Planner

Andy Pelster, Agricultural Resource Specialist

Gunbarrel Public Improvement District Advisory Committee

Charles Simmons, Chair

Beth Klucher

Gregory Wilkerson

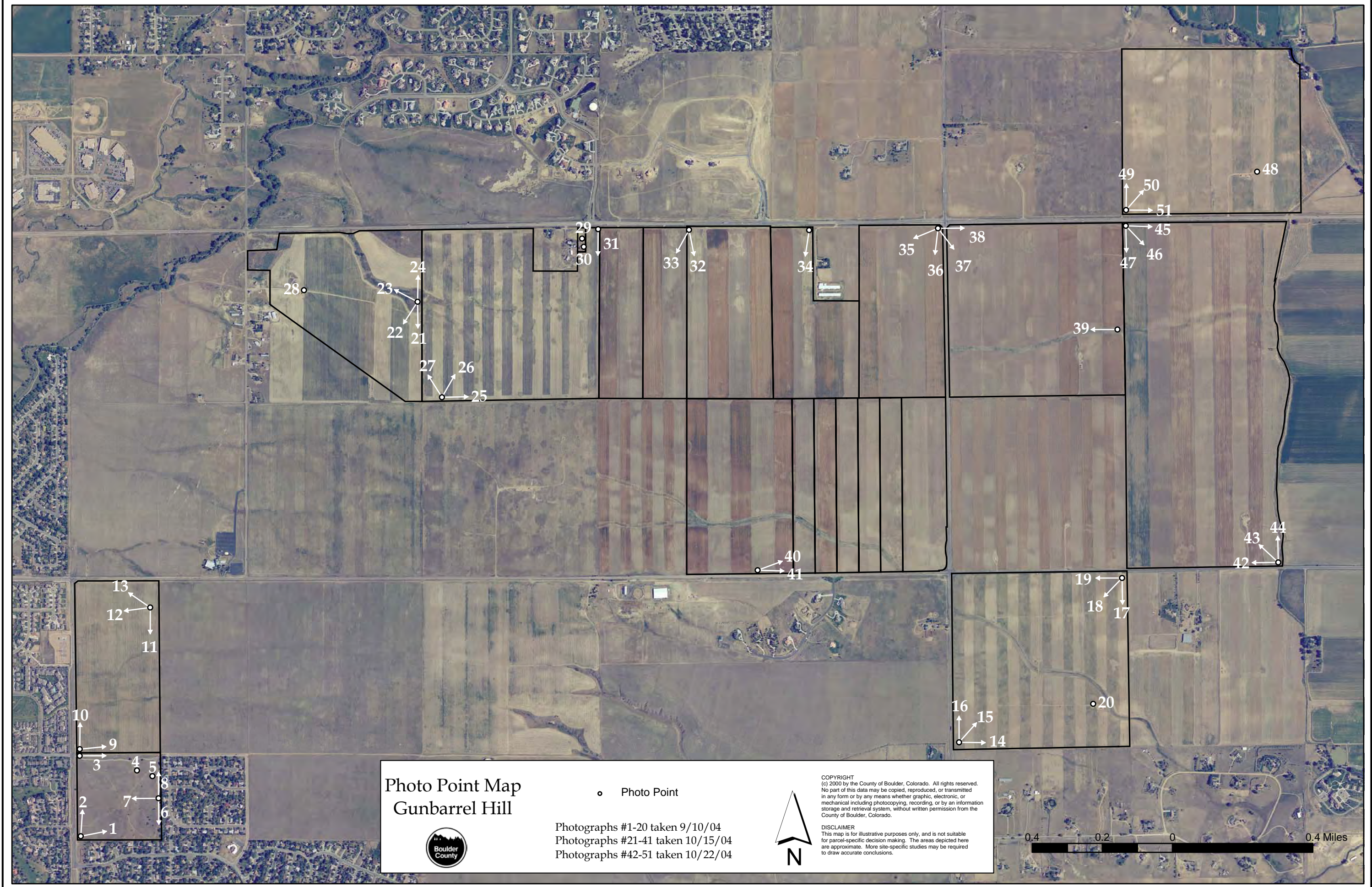
Robert A. Dudley

Brenda Bender

Kathryn A. Ramirez-Aguilar

Scott Dixon

Dr. Richard Cross, Ex-Officio Member



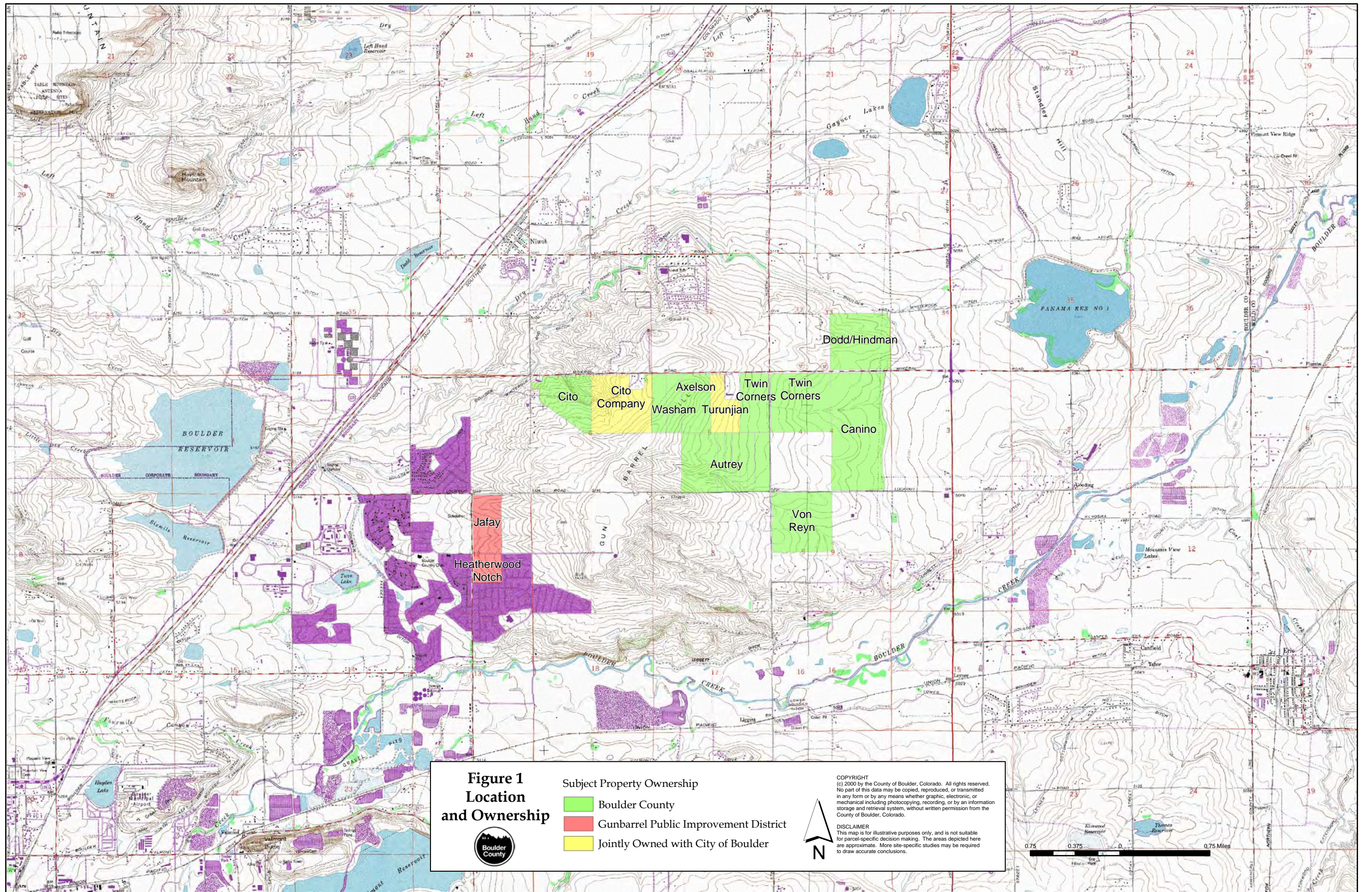


Figure 1 Location & Ownership

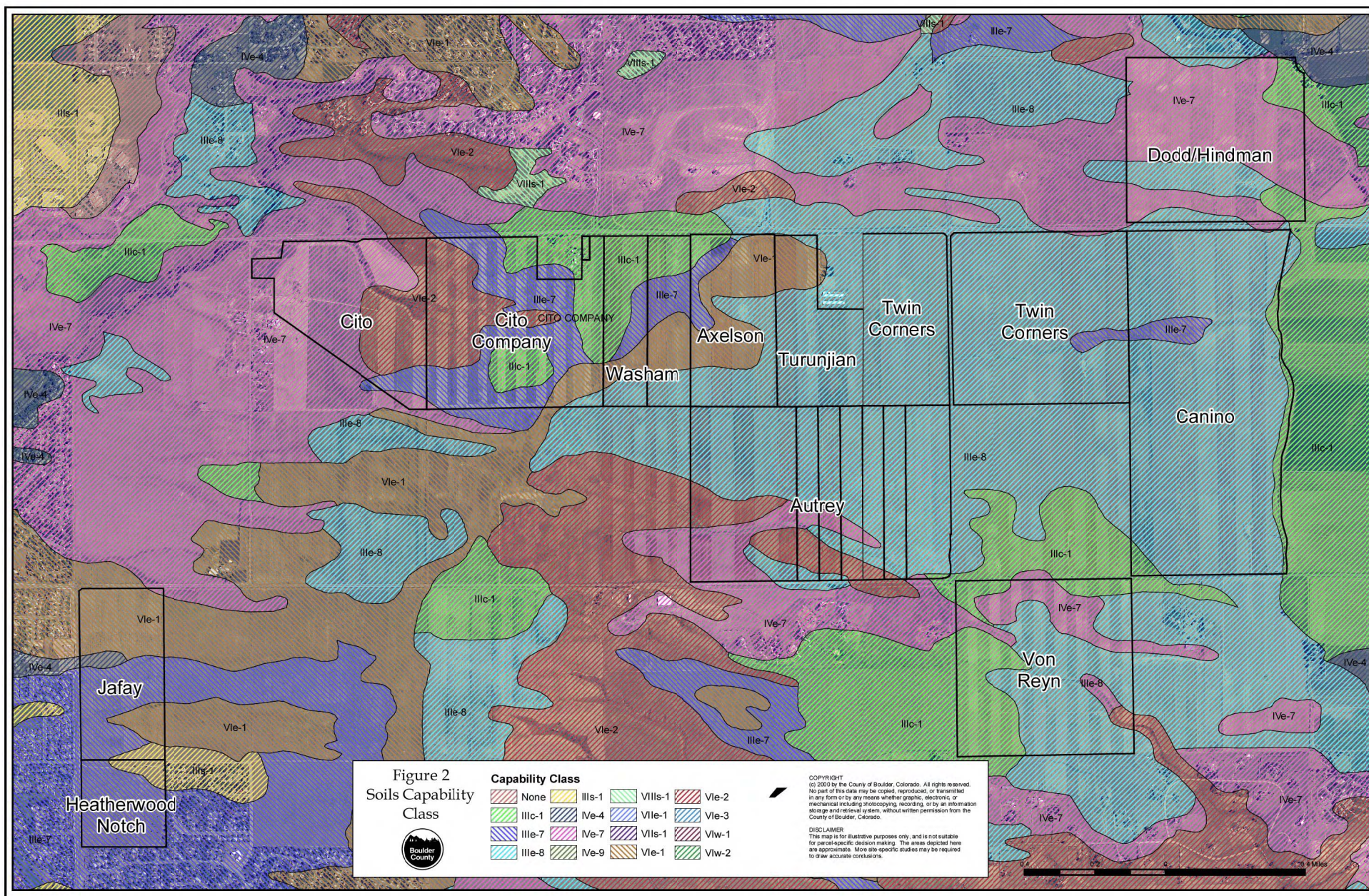


Figure 2 Soils Capability Class

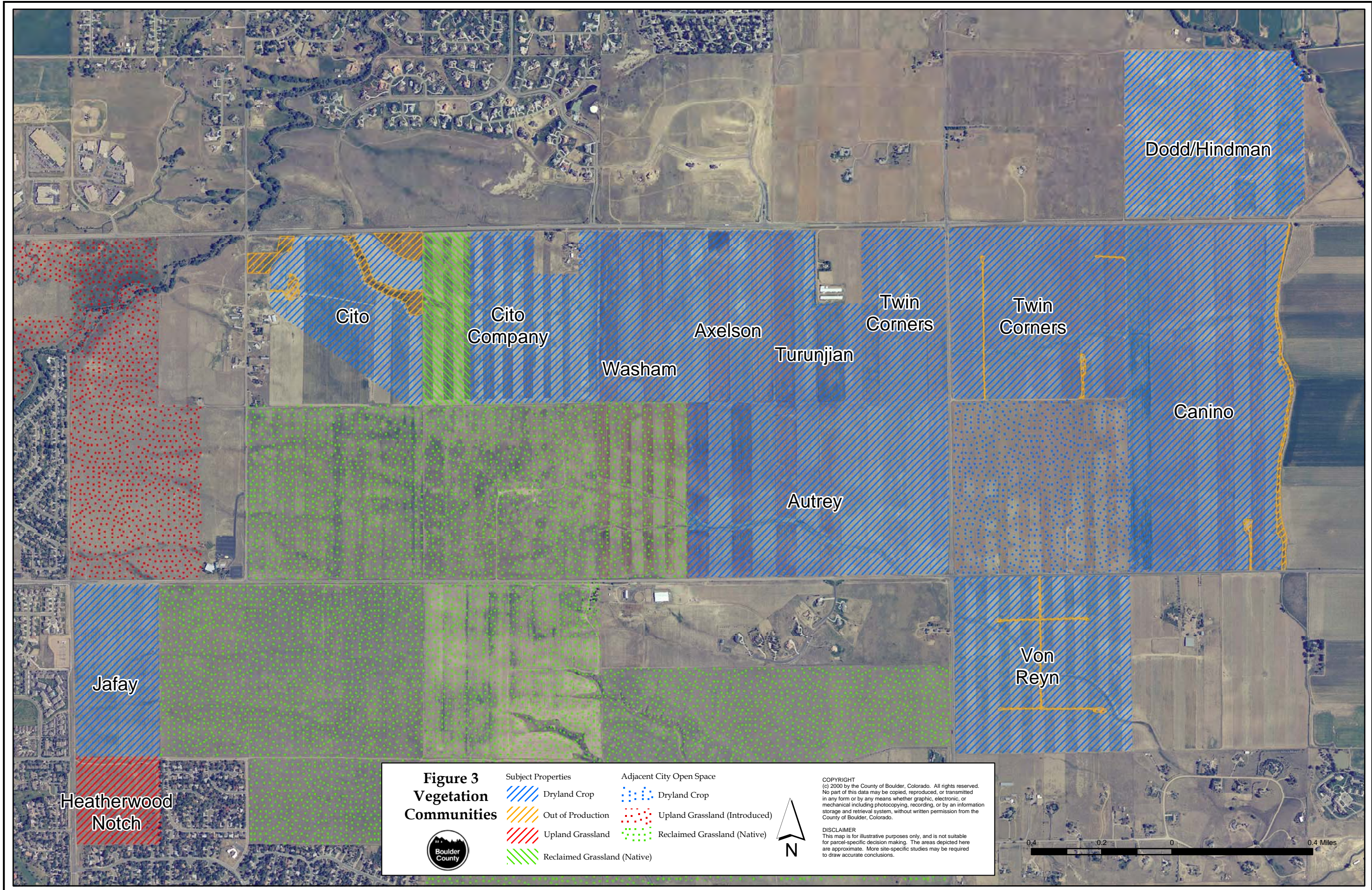


Figure 3 Vegetation Communities

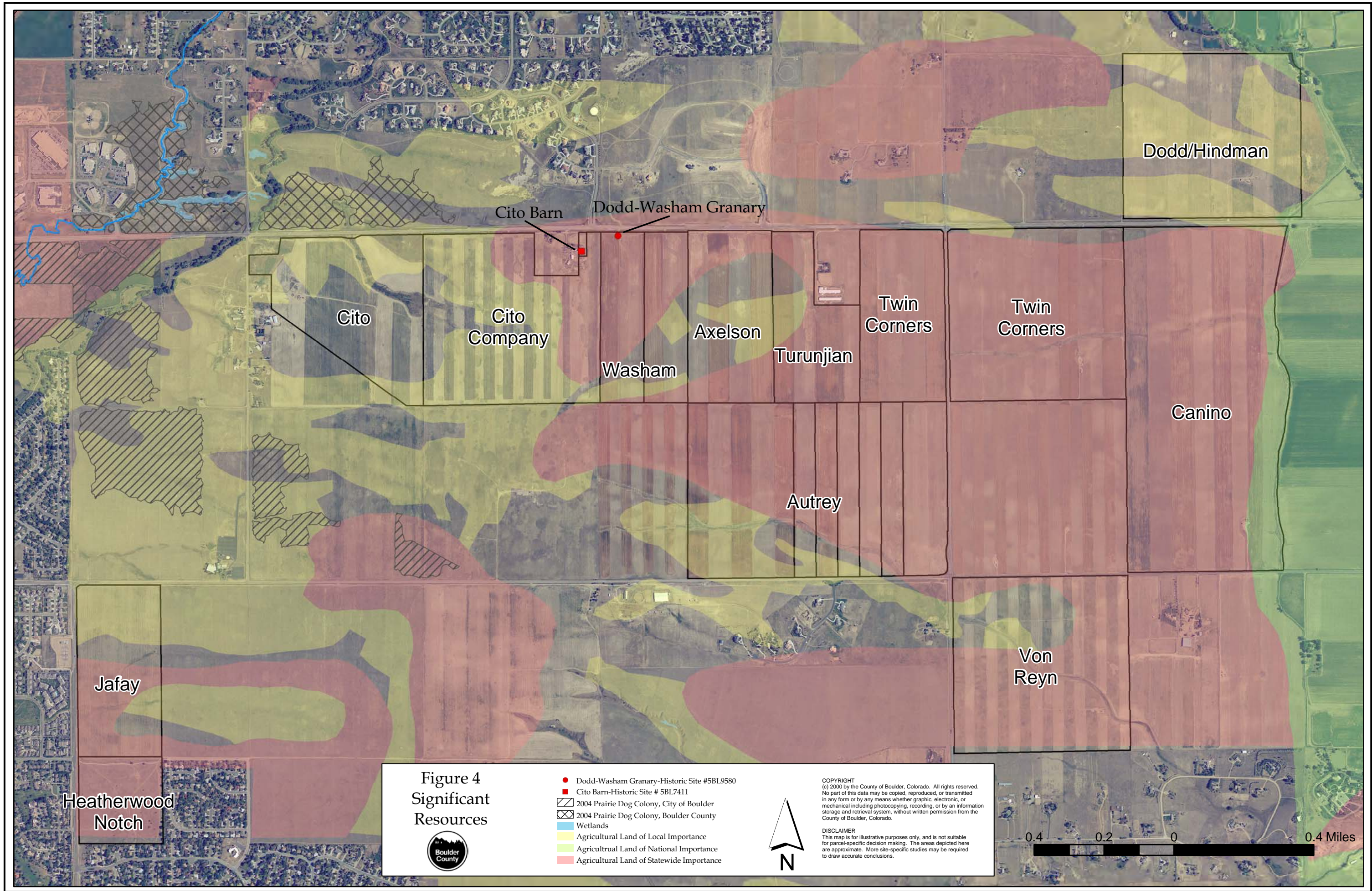


Figure 4 Significant Resources

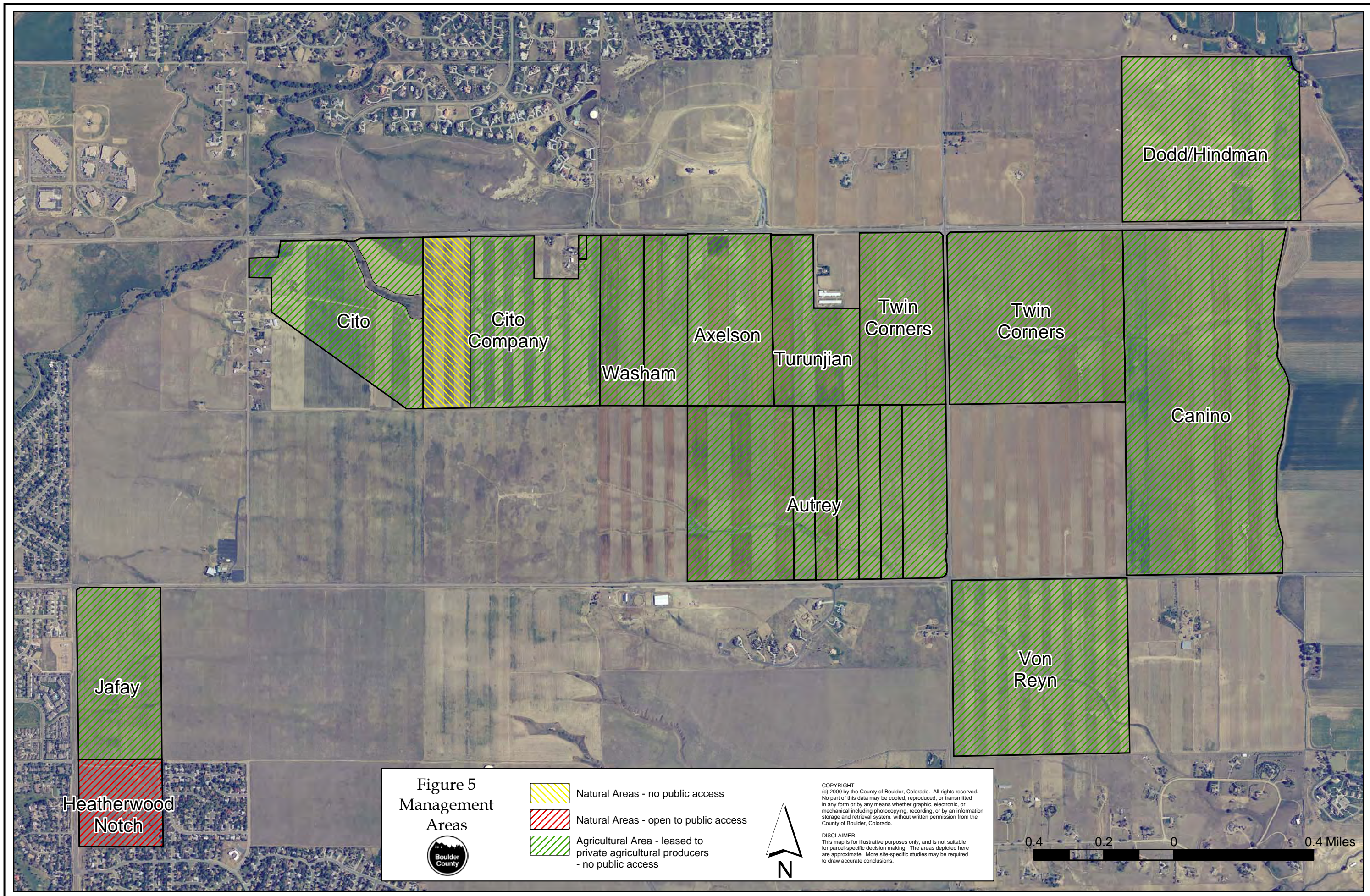


Figure 5 Management Areas

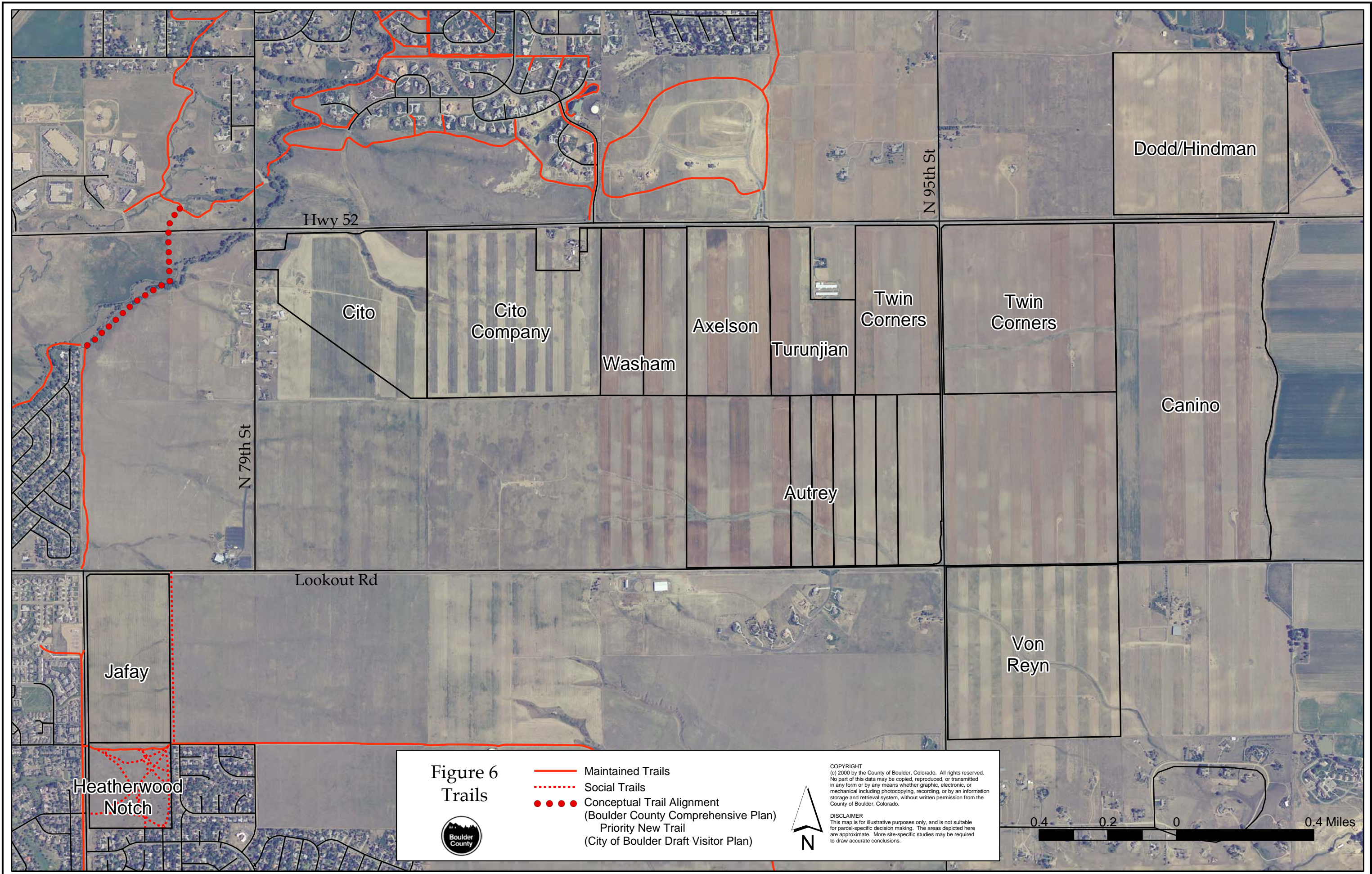


Figure 6 Trails

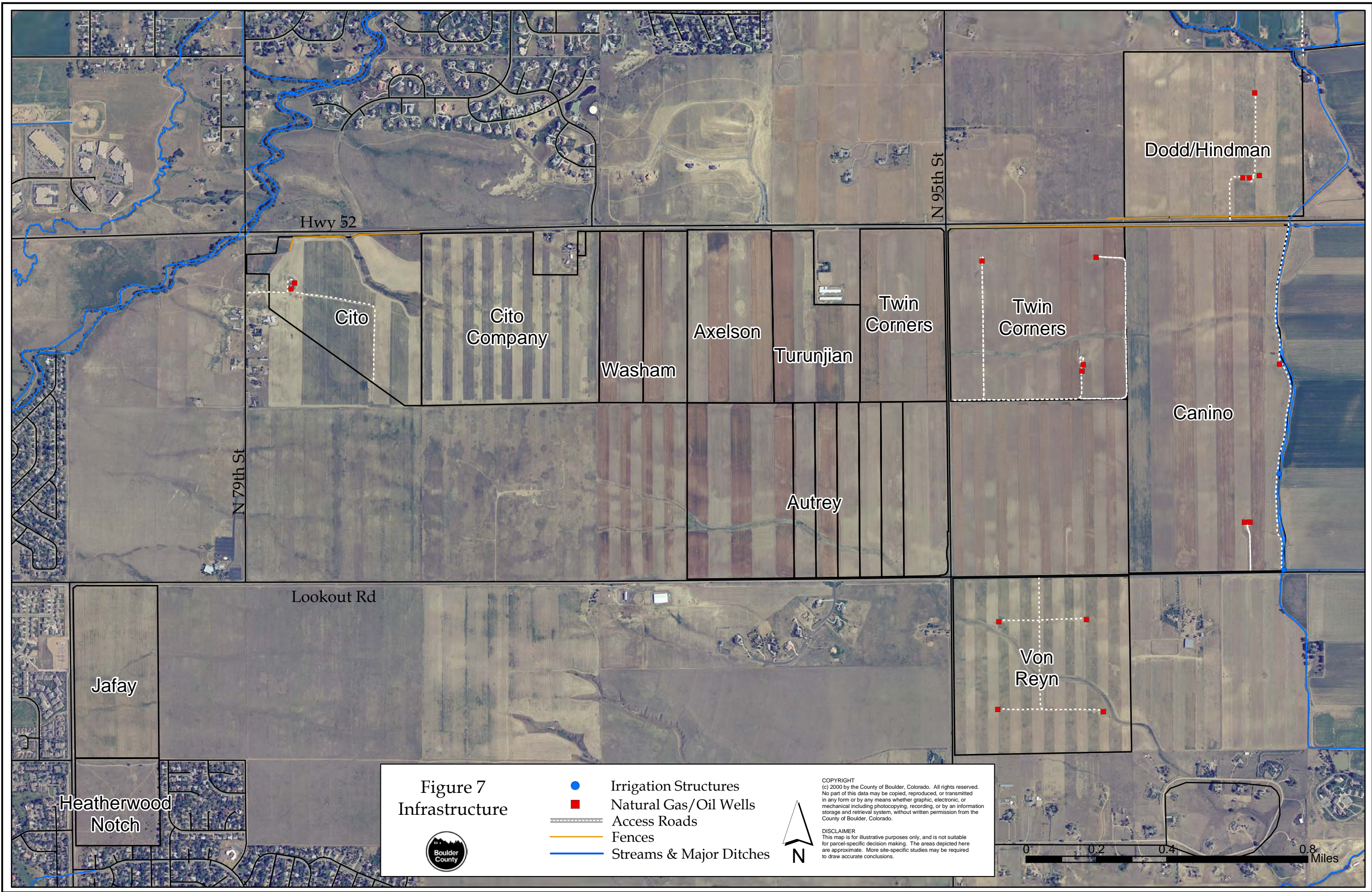


Figure 7 Infrastructure

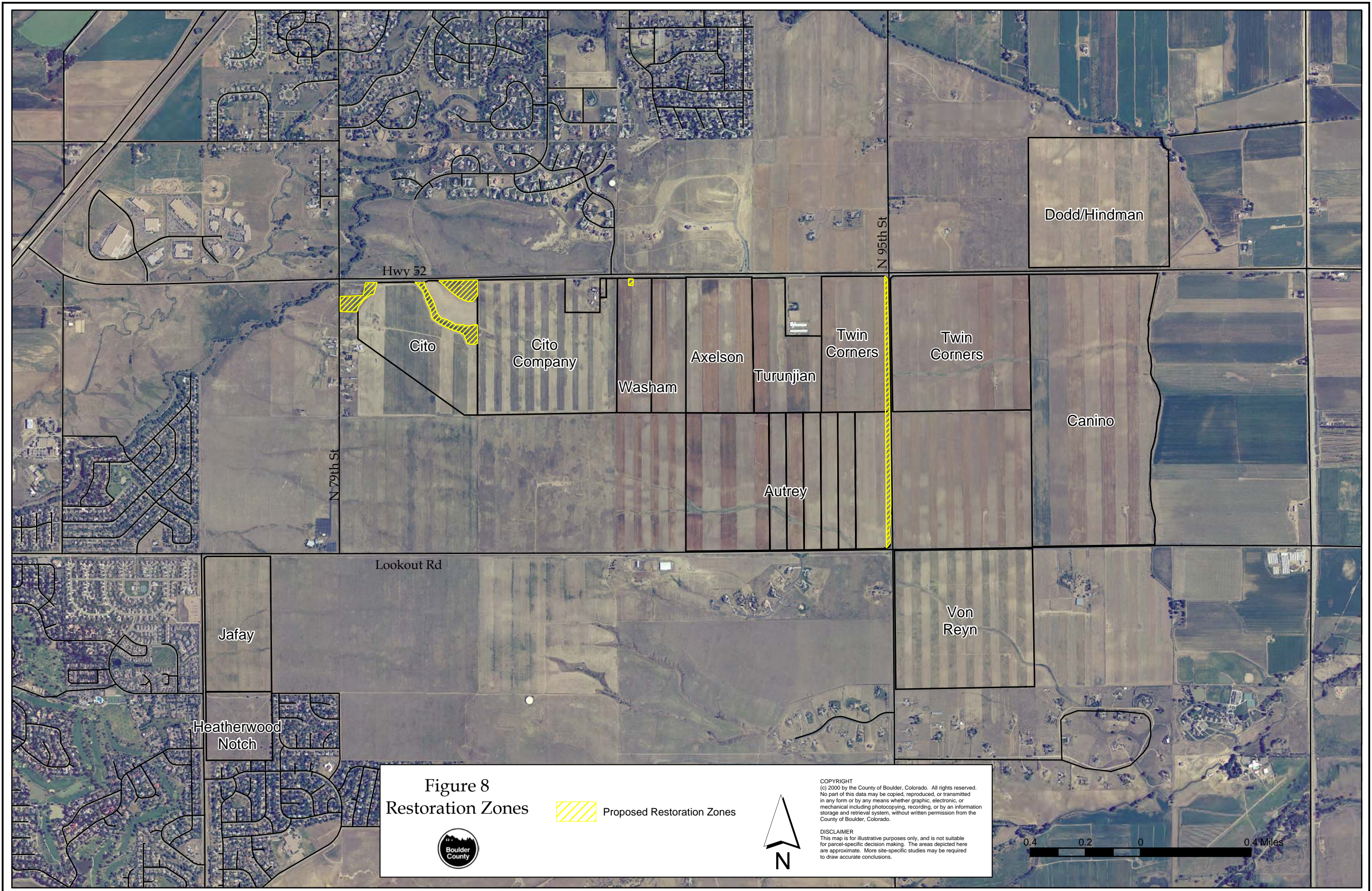


Figure 8 Restoration Zones