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# 1. INTRODUCTION

## 1.1 Purpose and Objectives of the Plan

The 282-acre Hughey property was purchased in 1998, with the intent to provide a buffer to Horsetooth Mountain Park Preserve, protect wildlife habitat and viewsheds and allow for expanded outdoor recreational opportunities.

The purpose of this document and accompanying maps, photographs and other materials is to: 1) provide an accurate and complete description of the property and existing conditions; 2) examine the management objectives for the Hughey property; and 3) outline the specific formal program and policy guidelines that will direct the management and use of the Hughey Property.

The overall objectives of the plan are to:

- Protect, manage and enhance the natural, geologic, cultural and visual resources including maintaining and promoting healthy ecosystems and their essential components and processes;
- Provide and promote safe and enjoyable outdoor recreation opportunities while minimizing detrimental impacts upon natural, geologic, cultural and visual resources;
- Develop implementation policies, programs and responsibilities for the above goals that tie into the *Resource Management Plan for Horsetooth Mountain Park (1998)* when appropriate.

It should be noted that as a component of the Horsetooth Mountain Park Preserve, the general management program and policies for the Park Preserve established in 1998 will apply to the Hughey Property. This management plan is designed to address issues specific to the Hughey Property and to incorporate additional information into the general *Resource Management Plan for Horsetooth Mountain Park (1998)*.

## 1.2 History

The human history of the Hughey property began as early as 10,000 B.C. when American Indians used the area surrounding Horsetooth Rock for hunting and gathering. In the timbered reaches of the lower southwest section of the property, there are short rock walls built post-European settlement, but the purpose of which is unknown. In the early part of the 19<sup>th</sup> century, trappers, traders and other frontier settlers moved into the area. There is evidence of what might have been the original road to Estes Park that bisects the southern part of the Hughey Property

along the north-facing ridge (Culver 1999). This old road is shored up with lichen covered rocks, and leaves a marked reminder of early travelers. Timber harvesting from the nearby slopes of Horsetooth Mountain in the 1880's provided lumber for sandstone quarry operations in Spring Canyon. Logging of the ponderosa pine stands along the top of the Hughey property in the past 50 years, can be evidenced by the piles of weathered timber still present today. In the 1940's, a portable sawmill was used to cut timber slabs for constructing houses on some of the adjacent properties.

A large area of land near Horsetooth Reservoir and Milner Mountain that included the Hughey Property was purchased by Roland and Trean Culver over a period of years from 1918 to the 1930's. The property was used by the Culvers for livestock grazing operations supporting approximately 20 cow/calf pairs per year. The cattle watered at the two springs on the property. One of the springs, "Mine Spring", is so named because at its head there is an old entrance that has fallen in and is now boarded up. Roland would camp out for days at a time with his cattle, although he was never too far from his house. There was a one room shanty on Table Mountain, with a stove and bed, where Roland would stay overnight to fix fence and work to maintain the property (Hughey 1999).

Trean Culver, raised several thousand turkeys for 20-30 years on the Culver property of which the Hughey Property was a part (Hughey 1999). Additionally, over the years, moss rock was removed from the property by the family and others for landscaping decoration.

In 1984, Trean turned the property over to their children (Don, Jack and Audra), who divided the large parcel into three smaller parcels among themselves. In 1998, Audra Hughey, sold her 282-acre parcel to the Larimer County Parks and Open Lands Department. The Hughey Property was in the Culver family for 80 years.

### **1.3 Scope and Organization of the Plan**

The *Resource Management Plan for the Hughey Property* contains three major sections: 1) a review of existing conditions, including natural, visual, cultural and socioeconomic resources; 2) a discussion of opportunities, constraints and planning issues related to the management of the property; and 3) a management plan addressing existing conditions, opportunities, constraints and planning issues.

### **1.4 Public and Agency Involvement**

Public and agency involvement is being utilized to ensure full representation of those parties interested in the management of the Hughey Property.

Adjacent landowners and potential users were invited to a public workshop to hear visions and desires as well as issues and concerns for the Hughey Property as a component of the existing Horsetooth Mountain Park Preserve. At the workshop the management plan process was described and a draft of the management plan was discussed. Public comment was also heard at the Open Lands Advisory Board meeting November 1998, when the property was recommended for acquisition.

In addition to the above public comment, the draft management plan was reviewed by the Larimer County Parks and Open Lands Staff and a technical advisory group that included diverse user group input. Many of these individuals also participated on the Advisory Task Force for the *Resource Management Plan for Horsetooth Mountain Park*.

<b>Name</b>	<b>Affiliation</b>	<b>Expertise</b>
Tom Bender	Farm Bureau	Agricultural land management
Mike Babler	Colorado State Forest Service	Forest management/fire control
Jim Dunlap	Spring Creek Velo Club	Mountain biking representative
Andre Duvall	Colorado Division of Wildlife	Wildlife biology
Dick Fletcher	Lory State Park	Park management
Steve Kettler	Colorado Natural Heritage Program	Ecology/plant communities
Danny Merme	Northern Colorado Volunteer Mounted Patrol	Horseback riding representative
Paul Opler	N.B.S./C.S.U.	Entomology/ecology
Renee Rondeau	Colorado Natural Heritage Program	Ecology/plant and natural communities
Clint Wasser	Retired Professor/CSU	Range management
Daryl Burkhard	Larimer County Parks and Open Lands	Open lands resource specialist/natural resources
K-Lynn Cameron	Larimer County Parks and Open Lands	Open lands manager/outdoor recreation and planning
Mike Fleming	Larimer County Parks and Open Lands	Public health and safety/forest management
Meegan Flenniken	Larimer County Parks and Open Lands	Open lands resource specialist/natural resources
John MacFarlane	Larimer County Parks and Open Lands	Park ranger manager
Bobby Sturgeon	Larimer County Parks and Open Lands	Maintenance supervisor/ trail planner
Ken Woods	Larimer County Parks and Open Lands	Facilities, properties and construction manager

## **2. EXISTING CONDITIONS**

### **2.1 Overview**

The 282-acre Hughey Property is currently undeveloped and vacant without any buildings or structures. The Hughey property comprises the southern slopes of Horsetooth Mountain. It is located in the Horsetooth Quadrangle, NE ¼ sec. 35 except for a small tract at the northeast corner, N ½ of the SE ¼ sec. 35, NE ¼ of the SW ¼ sec. 35, and a small triangle tract along the southeast border of sec. 26; All in Township 7 North, Range 70 West of the 6<sup>th</sup> Prime Meridian, Larimer County, Colorado.

Current access to the site is through Horsetooth Mountain Park Preserve via the Horsetooth Rock Service Road. Access to Horsetooth Mountain Park Preserve is from Larimer County Road 38E, approximately ½ mile southeast of the Hughey property.

### **2.2 Natural Resources**

#### **a. Climate**

The Hughey Property has a highly variable, semi-arid climate. The climate data used to characterize the Hughey Property has been recorded in Ft. Collins which is over 500 feet lower in elevation. However, the climate data is reflective of conditions at the Hughey Property (Colorado Climate Center 1999).

The average maximum daily temperature (F) is approximately 70 degrees or above from May through September, with the daily average maximum reaching approximately 85 degrees in July and August. High temperatures may exceed 100 degrees, but nights are cooler with an average low during the summer of approximately 54 degrees. Winters are generally cold but are characterized by temperature swings. January is the coldest month with an average daily maximum of 41.5 degrees and minimum of 13.6 degrees.

Average annual precipitation is 14.4 inches, with the highest amount of precipitation occurring in May. Average annual snowfall is approximately 50 inches.

#### **b. Topography/Geology/Soils**

The rugged mountainous terrain that characterizes the Hughey property varies from an elevation of approximately 5,600 to 7,000 ft. The site has steep slopes from north to south ranging from 25-40%. Along the open meadows, a 500 ft. wide and 100 ft. deep ravine runs southeast to the northwest and is fed by “Mine Spring” (Map 2.1). A second major drainage runs from the

northeast to the southwest and is fed by “Bathtub Spring”. Both the drainage and ravine eventually empty into Redstone Creek. A topographic feature on the hillside above the south side of the main ravine are cow terraces, or “cow-tours”, from cattle grazing these steep slopes.

The major rock outcrops in the upper reaches of the property consist primarily of granite bedrock. Granite is composed of mica, pink feldspar and rose-white quartz, giving dramatic textures and rugged natural beauty to the rock.

Soil development is relatively thin on slopes and comparatively greater in the valley and near the southern boundary of the site. Based on the USDA-SCS soil survey (1980), the major soil associations include:

Haploborolls-Boyle-Ratake: Shallow to deep, nearly level to very steep, well drained to excessively drained mainly loams, sandy loams, gravelly sandy loams or channery loams formed in materials weathered from granite and schist; on mountainsides.

Kirtley-Purner-Haplustolls association: Shallow to deep, nearly level to steep, well drained mainly loams, fine sandy loams and clay loams that formed in materials weathered from sandstone; on uplands and fans.

All soils on the property can be characterized as having medium to rapid runoff and moderate to severe erosion potential. The steep topography, shallow surface soils, rock outcrops and high erosion hazard greatly reduce the possibility for intensive development.

### **c. Hydrology**

The property has steep terrain and deep ravines which greatly influence the hydrology of the site. Runoff is rapid from these steep slopes and rock outcrops, greatly increasing the potential for erosion. There are three known unadjudicated springs on the property (Map 2.1). “Bathtub Spring” and “Mine Spring” are two of the springs, though only “Mine Spring” has continuous surface flows. The intermittent flows from these springs and water from major drainages that carry rainfall and snowmelt, drain into Redstone Creek. There may be additional springs on the property based on information received from the public, and during site visits, small water seeps have been noted along the south facing hillslope. No standing surface waters or wetlands appear to be present on the property.

Groundwater is likely restricted to faults and fractures within impermeable rocks underground. Perched aquifers may exist as well as discontinuous sedimentary lenses, and are likely responsible for the existence of intermittent springs observed on the site (Mitchell et al. 1997).

### **d. Vegetation**

The property is characterized by ponderosa pine (*Pinus ponderosa*) forest, mountain mahogany (*Cercocarpus montanus*) shrubland and native mixed grassland. Major vegetation types are depicted in Map 2.1.

#### Ponderosa Pine Forest

The forested regions within the Hughey property are largely comprised of 40-50 year old ponderosa pine. However, there are several pockets of small Douglas fir (*Pseudotsuga menziesii*) on the higher elevation north and west facing slopes. On south facing slopes and on the north face of the mesa, Rocky Mountain junipers (*Juniperus scopulorum*) are present as well.

Understory vegetation in the ponderosa pine forest includes mountain mahogany (*Cercocarpus montanus*), penstemon (*Penstemon virens*), Baltic rush (*Juncus balticus*), bitterbrush (*Purshia tridentata*), kinnikinnik (*Arctostaphylos uva-ursi*) and yucca (*Yucca glauca*), among others.

#### Mountain Mahogany Shrubland

These shrublands are present in small pockets between the forested regions of the Hughey property and along the steep, northern faces of drainages. Mountain mahogany is the dominant shrub species, but less common shrub species include rubber rabbitbrush (*Crysothamnus nauseosus*), currant (*Ribes cereum*) and skunkbush (*Rhus trilobata*). Herbaceous species that comprise the shrub understory are side-oats grama (*Bouteloua curtipendula*), fringed sage (*Artemisia frigida*), red threeawn (*Aristida purpurea*), mountain muhley (*Muhlenbergia montanus*), needle-and-thread grass (*Stipa comata*), blue grama (*Bouteloua gracilis*) and other various grass and forb species.

#### Native grassland

The native grassland comprises small pockets between the forest and shrubland, as well as lower elevation portions along the main ravine. Species that comprise this native grassland community include fringed sage, blue grama, yucca, prickly-pear cactus (*Opuntia polyacantha*), needle-and-thread grass, green needle grass (*Stipa viridula*), little bluestem (*Schizachyrium scoparium*) and side-oats grama.

#### Threatened and Endangered Plant Species

The Colorado Natural Heritage Program, has conducted a site evaluation and at this time no threatened or endangered plant species are known to occur on the Hughey Property.

#### Exotic Species

A number of exotic species are present on the property, and the impact has potential to spread, especially up drainages. Several exotic species present include mule-ear mullein (*Verbascum thapsus*), Kentucky bluegrass (*Poa pratensis*), cheatgrass (*Bromus tectorum*) and redtop (*Agrostis gigantea*). Both Canada thistle (*Cirsium arvense*) and musk thistle (*Carduus nutans*) are also present and are listed as Larimer County noxious weeds.

### Forest Health

The stand classifications used in the *Horsetooth Mountain Park Forest Management Plan (1998)* can be applied to the Hughey Property as well. Stand 5 extends into the Hughey Property and is described as follows in the *Horsetooth Mountain Park Forest Management Plan (1998)*:

Ponderosa pine and Douglas fir are the dominant species in this stand. Minor clones of aspen (*Populus tremuloides*) were identified in this stand. Soil type is Wetmore-Boyle-Rock outcrop complex and Rock outcrop. This stand is on top of the ridge and aspects vary greatly, most are east, but vary north to east to south. Dwarf mistletoe is infecting areas of this stand with ratings as high as 6. Mountain pine beetle are active in pockets. The Colorado State Forest Service gave this stand a Wildfire Hazard rating B, with medium hazard trees.

There is a considerable level of dwarf mistletoe (*Arcethobium spp.*) infestation (5 out of 6 rating) in the ponderosa pine stands at the top portion of the Hughey property. Infected trees are often deformed, stunted and broom-shaped. The ponderosa stands along portions of the mesa (south border of the property) appear to be in fairly good condition with little to no infestations. Several trees have been identified as having mountain pine beetle (*Dendroctonus ponderosa*) infestations. Mistletoe and pine beetle infestation sites are indicated in Map 2.1. See Appendix A and/or the *Horsetooth Mountain Park Forest Management Plan (1998)* for additional maps and information regarding Forest Health for the Hughey Property.

According to Dale Culver (1999), the trees in the Bathtub Spring ravine are older trees that were never harvested because the steep canyon walls were inaccessible. The exact age of these trees is unknown.

### **e. Wildlife**

As a buffer to Horsetooth Mountain Park Preserve, the Hughey property provides additional habitat and range for wildlife species in the Park. Deer, mountain lion, black bear, Abert's squirrels and other mammals, as well as numerous bird and butterfly species are present at times on the Hughey property. Golden eagles have been spotted around the rocks below Horsetooth Rock on what is locally called "The Thumb". The site also provides habitat and a buffer for colonies of the imperiled butterfly, the mottled dusky winged butterfly (*Erynnis martialis*), which is globally common but rare to uncommon in Colorado. The larval host plants and nectar sources for the mottled dusky winged butterfly are buckbrush and red root. A portion of the Hughey Property is contained within the B2 (high significance) Conservation Site designated by the Colorado Natural Heritage Program to protect these and other imperiled butterfly species. For additional wildlife information, refer to wildlife species lists in the *Resource Management Plan for Horsetooth Mountain Park (1998)*.

### **2.3 Visual and Scenic Resources**

The Hughey property comprises the southern flanks of Horsetooth Rock and is highly visible from both the south and west. The property is also highly visible from the trail system at Horsetooth Mountain Park Preserve, an area which receives high annual visitation. Horsetooth Rock is an important regional landmark element, comprising the scenic backdrop for many Larimer County residents. Ansel Watrous wrote in *History of Larimer County, CO Volume II (1998)*:

“Horsetooth mountain, seen so plainly from the Plains, shows off to much greater advantage when seen from its western base, which rests in the Redstone Valley.”

Protecting the 282 acres that embody the southwest portions of Horsetooth Rock, will protect the visual integrity of this important viewshed resource for the region.

Scenic views from the property include Milner Mountain and the hogbacks extending south to Carter Lake and beyond. Long’s Peak is visible to the southwest as well as several other smaller peaks. Redstone Canyon can be easily viewed from the Hughey Property as it extends northwest, flanked by the striking red sandstone cliffs for which the Canyon is named.

### **2.4 Cultural Resources**

The Hughey property provides some intriguing cultural values to add to the history of the rest of Horsetooth Mountain Park Preserve. Crossing the property is an old road bed that may have been part of the early stage road to Estes Park. Parallel to the road and in other locations are remains of short rock walls. Lichen patterns on the rocks indicate the walls have been there for a considerable time. It is suspected that the walls are a relict of post-European settlement of the area although their exact purpose is unknown. Similar to the rest of Horsetooth Mountain Park Preserve, the Hughey Property was heavily used for timber harvesting in the past. The sawmill lumber piles that are still present on the site remind the visitor of the more recent history of the site and the once heavy logging that occurred here. The springs where cattle watered still flow through the property as well.

### **2.5 Socioeconomic Resources**

#### **a. Hughey Property Land Status**

The Hughey property was purchased by Larimer County in 1998, from Audra Hughey, to buffer Horsetooth Mountain Park Preserve and expand recreational opportunities. Audra Hughey donated a portion of the total cost of the property and Great Outdoors Colorado (GOCO) contributed a portion of the cost through the Horsetooth Mountain Park Preserve Expansion Project Grant Award. The Hughey Property is primarily natural, undeveloped forest land that has been used for cattle grazing and timber harvesting in the past.

#### Trails

Currently there are no established or designated trails on the property

#### Roadways

There are two roads that enter the Hughey Property: 1) An access road through private property that is not open to Larimer County or the public and 2) a road spur that has been used in the past for emergency vehicle access to Horsetooth Rock from the Horsetooth Rock Service Road. The service road is closed to motorized vehicles except for park personnel and designated uses.

#### Water and Mineral Rights

There are no water rights associated with the property. The existing springs are unadjudicated. Mineral rights associated with the property are owned by Larimer County.

#### Agriculture

Cattle were grazed on the property until 1995, and timber was harvested in the 1940's. No agricultural or grazing leases currently exist on the site.

### **b. Adjacent Land Use**

The neighborhood surrounding the Hughey property is predominately a mixture of three distinct land uses: Small lot development near Horsetooth Reservoir, 35-acre tracts and public open lands. Private properties surrounding the Hughey property are either in residential use or managed for cattle ranching. A large number of 35-acre lots are located in Redstone Canyon, just west of the Hughey property. The northern border and portions of the eastern border of the Hughey property are contiguous with Horsetooth Mountain Park Preserve. This 2100 acre property is owned and managed by Larimer County Parks and Open Lands Department as a regional park preserve. See Map 2.2 for adjacent property ownership.

### **c. Access, Circulation and Traffic**

The Hughey Property is located west of Ft. Collins in the foothills and is a part of Horsetooth Mountain Park Preserve. Horsetooth Mountain Park Preserve has a parking lot adjacent to County Road 38E, containing 59 parking spaces, including one handicapped parking space, 8 spaces to accommodate horse trailers and an authorized ranger parking space. There is a fee station available at the parking lot for purchase of a daily park pass.

**d. Public Facilities, Utilities and Services**

The Larimer County Sheriff's Department is responsible for law enforcement at Horsetooth Mountain Park Preserve. However, Larimer County Park Rangers and Volunteer Program staff are responsible for the education and enforcement of park regulations and assist the Sheriff's Department and other law enforcement agencies in responding to emergencies and preventing criminal activity. The Park Ranger and Volunteer Program staff also provide visitor assistance and emergency and medical needs. The Poudre Valley Hospital ambulance service responds to more serious medical emergencies while rescues and searches are conducted by the Larimer County Search and Rescue team of the Sheriff's Department.

**e. Recreational Use and Demand**

As a result of the close proximity of the Hughey Property to Ft. Collins, and the increased recreation use at the adjacent Horsetooth Mountain Park Preserve, demand for additional recreational opportunities is high. In a 1991 survey, Horsetooth Mountain Park Preserve was the second most frequently used park for hiking and mountain biking in Larimer County. In the *Resource Management Plan for Horsetooth Mountain Park (1998)*, it was recognized that heavy use of the park necessitated additional buffers to the park and expanded recreational opportunities. The Hughey property was one of the areas identified for acquisition to meet the ongoing recreation and wildlife needs of the park preserve.

**f. Operations Budget and Funding**

The Hughey Property operations and capital improvements are funded through Help Preserve Open Space sales tax dollars. As part of Horsetooth Mountain Park Preserve, operations and improvements of the property will also be funded through a user fee for Horsetooth Mountain Park Preserve.

### **3. OPPORTUNITIES, CONSTRAINTS AND PLANNING ISSUES**

#### **3.1 Overview**

During the management plan development process, input was received from Parks and Open Lands staff, a voluntary and informal Advisory Task Group and the general public on opportunities, constraints and planning issues in regards to the current existing conditions and management of the Hughey Property. The two main planning issues were natural resources and outdoor recreation.

#### **3.2 Natural Resource Opportunities, Constraints and Planning Issues**

- *Protect, manage and enhance natural, cultural and visual resources including maintaining and promoting healthy ecosystems and their processes.*

*Natural resource opportunities* include:

- Maintaining and improving the natural resources of the property to help preserve the ecosystems and species present, enhance visitor enjoyment of a natural setting and buffer Horsetooth Mountain Park Preserve.
- Protecting rare butterfly habitat and habitat buffers.
- Protecting the viewsheds from surrounding areas of the south and southwest sections of Horsetooth Mountain.

*Constraints and Planning Issues* associated with the natural resources of the Hughey Property include:

- Protection of the historic stone walls on the property is a concern.
- Preservation of any wildlife travel routes or nesting sites will be important to avoid disturbing species on the property.
- The sensitive butterfly populations may be disturbed or habitat fragmented with additional use in this area.
- Populations of Larimer County listed noxious weed species, musk thistle and Canada thistle, should be controlled.
- A dense forest cover poses a large fuel build-up and a potential fire hazard.
- Cattle from adjacent properties may be intermittently grazing on the property as a result of down fence lines.
- The sawmill piles of slab wood on the Property may pose a fire hazard or other safety concern.

### **3.3 Outdoor Recreation Opportunities, Constraints and Planning Issues**

- *Provide, promote and enhance safe, enjoyable outdoor recreational opportunities while minimizing detrimental natural, cultural and visual resource impacts.*

***Outdoor recreation opportunities*** include:

- Expanding recreational opportunities to Horsetooth Mountain Park Preserve by developing an additional trail to Horsetooth Rock for horses and mountain bikes and closing an inappropriate trail that exists for horses only.
- Providing visitors with views not seen from the rest of Horsetooth Mountain Park Preserve.
- Reducing recreation pressure on the existing Horsetooth Mountain Park Preserve.
- Offering volunteer-led hikes that focus on the natural and cultural history of the property.

***Constraints and planning issues*** regarding outdoor recreation include:

- The Hughey Property has very steep terrain, and the appropriate placement of the trail is critical so as not to increase erosion.
- As a result of the close proximity of the site to Redstone Canyon, there is the potential for trespassing across private property to access the Hughey Property from the Redstone Canyon Road.
- A new trail, if not located properly, may create a scar on the hillslope that would affect the view of the property from the south and southwest.
- If not managed correctly, there may be potential multiple use conflicts associated with the future trail.
- A trail design that addresses user needs and interests must also account for protection of sensitive wildlife habitat.
- Rock climbing and bouldering safety may be an issue.

## 4. MANAGEMENT PLAN

### 4.1 Overview

To meet the purpose and objectives of the *Resource Management Plan for the Hughey Property* and to address the opportunities, constraints and planning issues brought forth by the public, staff and advisory team, the plan is divided into two main components: 1) natural resource management and 2) outdoor recreation management. As a component of Horsetooth Mountain Park Preserve, the management of the Hughey Property will follow principles delineated in the *Resource Management Plan for Horsetooth Mountain Park Preserve (1998)*. Site specific management steps, however, are addressed below.

**Overall Vision.** The Larimer County Parks and Open Lands vision for the Hughey Property will emphasize outdoor recreation while protecting natural resource values such as native vegetation communities and sensitive wildlife habitat, including rare and imperiled butterfly habitat. An approximately 1-mile long trail connection from the Horsetooth Service Road to Horsetooth Rock will be designed to protect sensitive wildlife while enabling visitors to enjoy views of Horsetooth Rock to the north and Long's Peak and the hogbacks to the south and west. Recreation opportunities will include hiking, running, wildlife viewing, mountain biking and horseback riding, as well as enjoying long vistas of the area.

Visitors and the local community near Horsetooth Mountain Park Preserve will benefit from expanded recreational opportunities at the Park with safe, easy access. Horseback riders and mountain bikers will have an alternate access to Horsetooth Rock via the new trail connection. Residents and people passing by can enjoy the beauty of the rock formation and its natural surroundings. Users can enjoy the natural beauty of the area in a quiet, serene setting.

### 4.2 Natural Resource Management

Natural resource management addresses the health and dynamics of plant and animal communities and the protection of water resources and viewsheds. In this management plan, natural resource management is divided into four categories including: a) forest health and management; b) grassland and shrubland health and management; c) noxious weed species management; d) wildlife management and e) hydrology management.

#### a. Forest Health and Fire Management

Forest management for the Hughey Property will be included in the *Horsetooth Mountain Park Forest Management Plan (1998)*. The Hughey Property contains a forest stand equivalent to Stand 5 of the Horsetooth Mountain Park Forest Management Plan (Appendix

A). Stand 5 is characterized by ponderosa pine and Douglas fir as the dominant species, with minor clones of aspen. Soil types are Wetmore-Boyle-Rock outcrop complex and Rock outcrop. This stand is on top of the ridge and aspects vary greatly, most are east, but vary north to east to south. Dwarf mistletoe is infecting areas of this stand with ratings as high as 6. Mountain pine beetles are active in pockets.

*Implementation steps:*

- Expand the *Horsetooth Mountain Park Forest Management Plan (1998)* to ensure the inclusion of the Hughey Property in stand 5.
- Implement the *Horsetooth Mountain Park Forest Management Plan (1998)* with inclusion of the Hughey Property.

**b. Grassland and Shrubland Health Management**

The management of grassland and shrubland health is important for ensuring long-term sustainability of these communities. The Colorado Natural Heritage program has developed a management plan, *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)* for Horsetooth Mountain Park Preserve that includes the Hughey Property. The goal of the Plan is to reduce the impacts of noxious weed species and the fuel load that exists in the grassland and shrubland communities while protecting rare butterfly habitat. Potential management tools may include the use of grazing or controlled burns, among others, to maintain community health.

*Implementation steps:*

- Implement the *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)* as described by the Colorado Natural Heritage Program.

**c. Noxious Weed Species Management**

Noxious weed species identified at the Hughey Property include Canada thistle (*Cirsium arvense*) and musk thistle (*Carduus nutans*). The management of these species will be done in accordance with an Integrated Pest Management (IPM) Plan, currently under development, to control noxious weed species with minimal impact to surrounding native vegetation and water sources.

*Implementation steps:*

- Coordinate the inclusion of the Hughey Property in the development of an Integrated Pest Management Plan (IPM) and monitoring strategy for noxious weed control and restoration.
- Implement the IPM utilizing staff and volunteer groups.

#### **d. Wildlife Management**

A host of wildlife species including deer, mountain lion, black bear, Abert's squirrel and other mammals, as well as numerous bird and butterfly species are present on the Hughey property. While currently there is no active wildlife management practiced at Horsetooth Mountain Park Preserve, wildlife is protected from harassment or injury by park regulations. In the event of future needs for wildlife management, the Hughey Property will fall under any wildlife management plan developed for Horsetooth Mountain Park Preserve.

Of special concern, the Hughey Property supports habitat for several imperiled butterflies, including the state rare mottled dusky wing butterfly (*Erynnis martialis*). The management of these butterfly species falls under the *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)* developed by the Colorado Natural Heritage Program.

##### *Implementation steps:*

- Implementation management steps are identified in the *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)*.

#### **e. Hydrology Management**

There are three known unadjudicated springs on the Hughey Property historically used for cattle watering areas. The possibility exists that there are additional springs based on public input received. While cattle grazing does not currently take place at the Hughey Property, there is the potential for future grazing practices to occur. Therefore, the health of the springs should be maintained not only for this potential future use but also to support wildlife and vegetation that rely on these water sources.

##### *Implementation steps:*

- Utilize volunteers to develop a full inventory of all springs on the property.
- Inspect and monitor all springs regularly to insure that they are still in good condition.

### **4.3 Outdoor Recreation Management**

The Hughey Property provides an opportunity to expand the non-motorized recreation trail system at Horsetooth Mountain Park Preserve by developing a 1-mile mountain bike and equestrian accessible trail to Horsetooth Rock (Map 4.1). The trail alignment will follow principles to minimize the impact on butterfly habitat and erosion potential, as well as visual impact from the west. Additionally, the trail will be built on the upper portion of the property to discourage park visitors from accessing the lower portions of the property where trespassing

onto adjacent private properties may be tempting. Designing the trail on the upper portions of the property will also serve to maintain the habitat in the lower portion of the property as a buffer for wildlife.

The Hughey Property also provides a close-in southern access helicopter landing point. This landing site will potentially help facilitate quicker and easier evacuation of emergencies that may occur in the park.

*Implementation steps:*

- Construct the new 1-mile trail to Horsetooth Rock.
- Remove internal fences between the Hughey Property and Horsetooth Mountain Park using staff or volunteers.
- Repair boundary fences to discourage trespassing onto private property and prevent livestock movement into the park using staff or volunteers.
- Post signs on boundary fences to prevent trespassing onto private property.
- Work with local emergency responders to include the helicopter landing site for rescue and evacuation use.
- Research more information regarding the origin and use of the historic stone walls.

#### **4.4 Summary of Implementation Steps and Phasing**

A tabular summary of important steps and proposed timelines are provided below. These steps will be prioritized and implemented as budget and time allows.

Hughey Property Management Implementation Steps	Cost Estimate	1999	2000	2001 and beyond	Responsible program
<b>Forest Health and Fire Management</b>					
Include the Hughey Property in the <i>Horsetooth Mountain Park Forest Management Plan (1998)</i>	\$20.00	Completed			Open Lands Program
Implement the Forest Management Plan	Unknown			Continual	Facilities and Parks Maintenance
<b>Grassland and shrubland health</b>					
Implement the Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park.	Unknown		Summer	Continual	Facilities and Parks Maintenance
<b>Noxious Weed Species Management</b>					
Include the Hughey Property in the IPM plan for the larger HTMP area.	Unknown		Summer		Facilities and Park Maintenance
Implement the IPM plan	Unknown		Summer	Continual	Facilities and Park Maintenance
<b>Hydrology and erosion management</b>					
Inspect and monitor the condition of springs	Unknown			Continual	Facilities and Park Maintenance
Develop a full inventory of all springs on the property.	Unknown		Summer		Park Ranger and Volunteer Services
<b>Outdoor Recreation Management</b>					
Construct the new trail to Horsetooth Rock	\$5.00/ft.	Completed			Facilities and Park Maintenance
Repair existing boundary fences	\$2400.00		Winter		Facilities and Park Maintenance
Remove internal fences to Horsetooth Mtn. Park	\$4800.00		Winter		Facilities and Park Maintenance
Sign property boundaries	\$40.00 ea.		Winter		Facilities and Park Maintenance
Work with local emergency responders to include the Helicopter landing site	Unknown	Winter			Park Ranger and Volunteer Services
Research more information regarding the origin and use of the historic stone walls.	Unknown		Winter		Park Ranger and Volunteer Services
Trail maintenance	\$400.00/yr.			Biannual	Facilities and Park Maintenance

## 5. LITERATURE CITED

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## 6. APPENDICES

### APPENDIX A: Forest Stand Classification

Excerpted from the *Horsetooth Mountain Park Forest Management Plan (1998)*

#### Stand 5

Ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Psuedotsuga menziesii*) are the dominant species in this stand. Minor clones of aspen (*Populus tremuloides*) were identified in this stand. This stand is on top of the ridge and aspects vary greatly, most are east, but vary north to east to south. Dwarf mistletoe (DMT) is infecting areas of this stand with ratings as high as 5. See appendix 2 of the *Horsetooth Mountain Park Forest Management Plan (1998)* for an explanation of the DMT rating system. Mountain pine beetle are active in pockets. Colorado State Forest Service Wildfire Hazard rating B, medium hazard trees.

## **APPENDIX B: Aerial Photograph**