



# Cucumber Gulch Preserve Management Plan February 2012





# Cucumber Gulch Preserve

## Management Plan

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# INTRODUCTION

## A. Executive Summary

The Town of Breckenridge, as the steward of the 117-acre Cucumber Gulch Preserve (the Preserve), is crafting a management plan to guide use of this precious resource. The Town seeks to establish a plan to preserve the natural resources of the Gulch while allowing for limited public access.

This management plan is designed to:

- Protect sensitive natural areas of the Preserve that may need additional conservation.
- Provide for limited, managed public access to the Gulch.
- Monitor the resource values of the Preserve to determine if the management objectives are being achieved.

The management plan is designed to guide use and achieve the management objectives of the Gulch. The Town of Breckenridge Open Space and Trails Division, with oversight from the Breckenridge Open Space Advisory Committee, will administer and maintain the Preserve in accordance of this management plan. In order to be a perpetually effective management document, a review of the plan should take place annually following the monitoring report release.

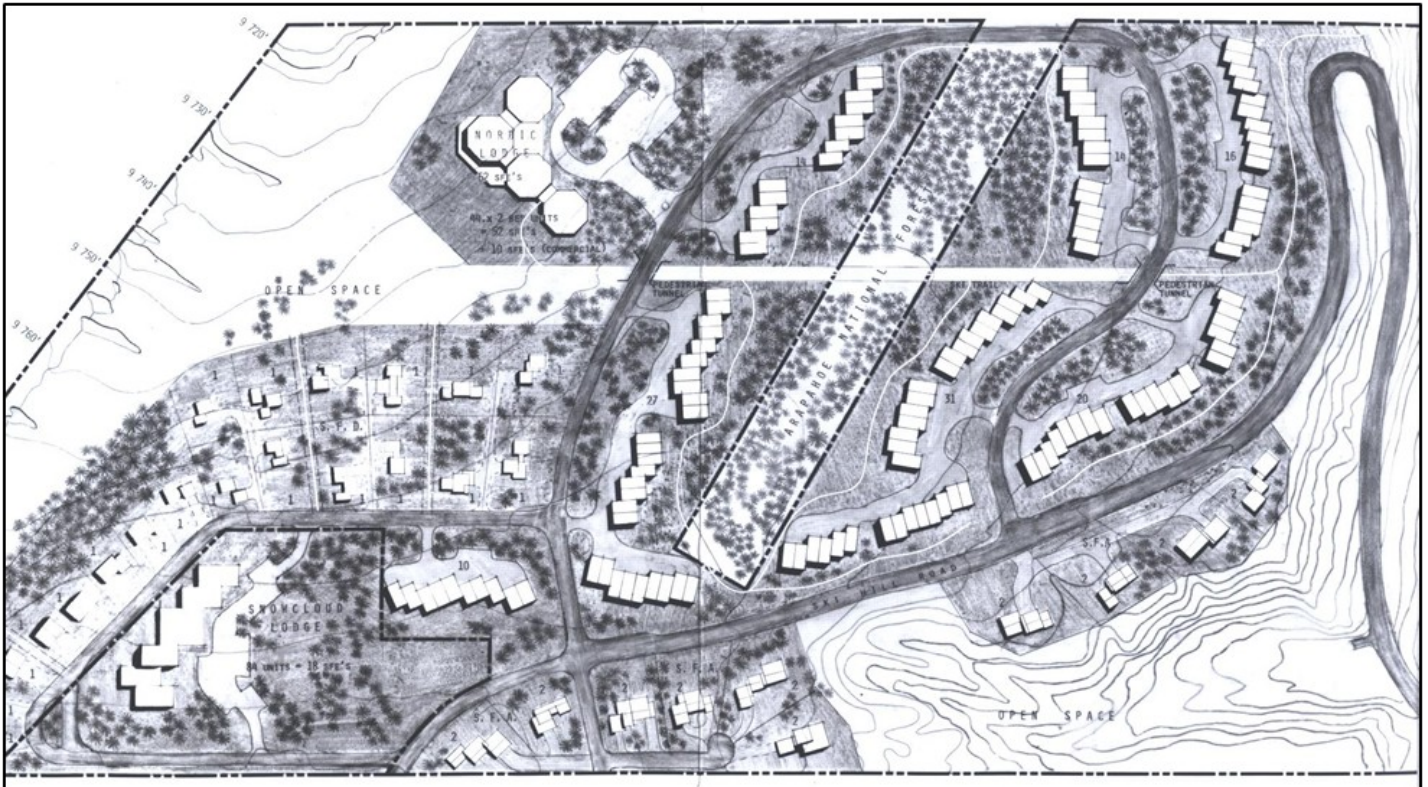
## B. History of Cucumber Gulch

For much of its existence, Cucumber Gulch developed untrammled, allowing its unique ecology of rare plants, fens and peat wetlands to develop over thousands of years. The Gulch's first exposure to humans occurred during the mining boom of the 1880's. Mining activity was limited to a small area located near the base of Shock Hill and scattered sites on the MBJ parcel. During this period, the trails were established in the Gulch by miners traveling to nearby claims.

Except for a limited number of miners utilizing the trails, Cucumber Gulch continued to be minimally impacted by human activity until the establishment of the Breckenridge Ski Resort in 1961. Initially, the area was not impacted by significant development; however the operation of the ski resort altered some of the area's drainage patterns and wildlife corridors. Later, in the 1970's and 80's, significant development occurred near the base of the ski resort and adjacent to Cucumber Gulch. During this period, there was very little concern or knowledge about the impacts that development could inflict on the Gulch's fragile ecosystem. Some examples of projects that were developed adjacent to the Gulch during this period include Peak 8 Village, Gold Camp, Ski Watch, the Breckenridge Nordic Center and the Christie Heights subdivision. In addition to these completed projects, several other much larger projects were proposed. These proposed developments included building footprints, parking, tennis courts and an amphitheater



Cucumber Gulch from 1965 Breckenridge Ski Area Trail map, prior to the development of the 1970's & 80's



Proposed 1979 Nordic Life Fitness Complex. This proposal anticipated adding hundreds of SFEs in areas now protected by the Town.

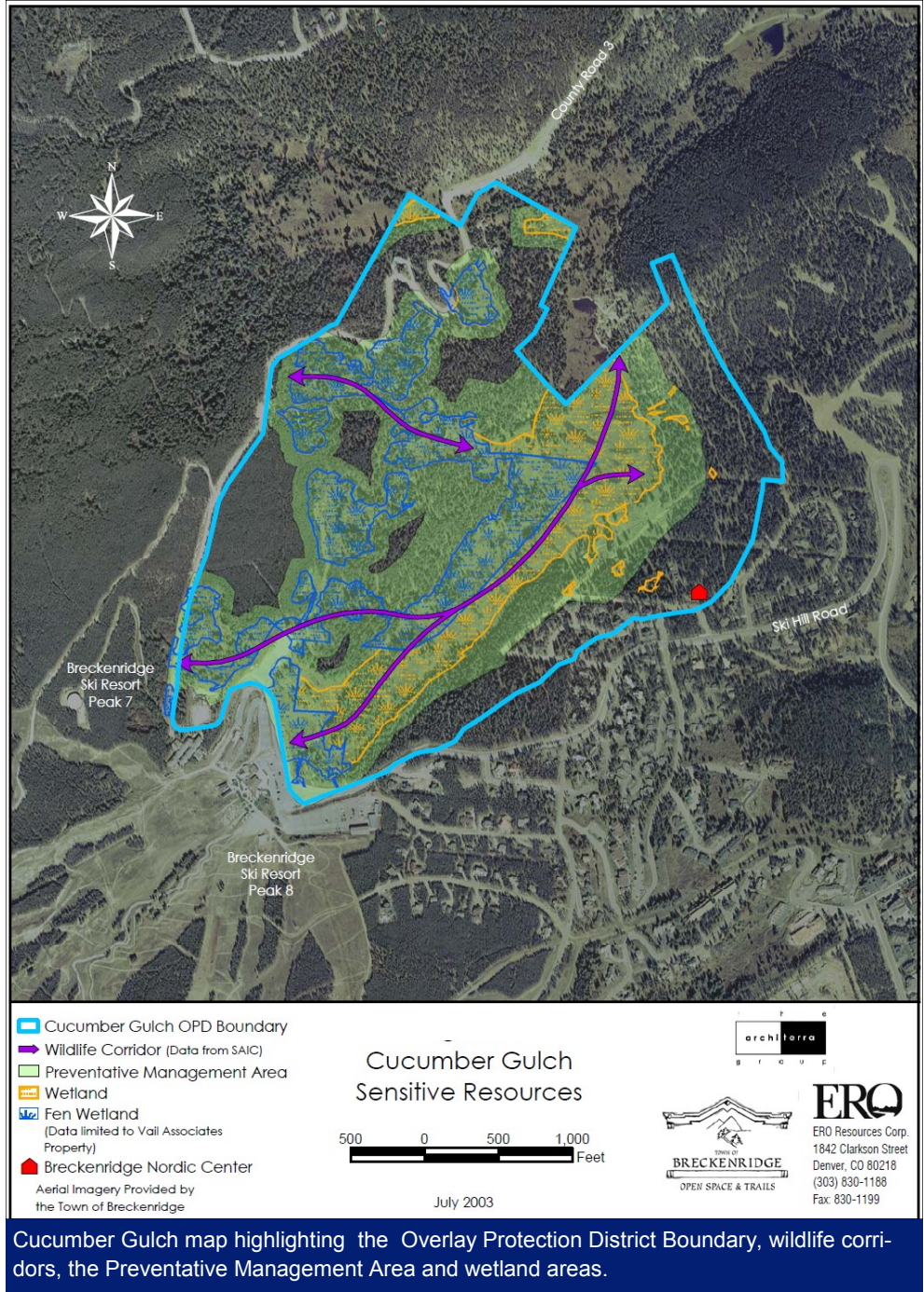
within the area now protected as the Preserve. Due to cyclical economic patterns, none of these more dramatic proposed developments was completed.

1982 Breckenridge Ski Area Master plan. This plan shows a townhome development, parking facility, tennis courts, Nordic lodge and "5 O'clock Ski Run " all within the center of the Preserve.

Until the mid 1990's, protection of the Cucumber Gulch continued to be mostly an afterthought for area residents. The Gulch received minimal visitation other than Nordic skiers during the winter months and a small number of hikers in the summer season. This pattern changed when Colorado State University (CSU) launched a large-scale research project to study biodiversity on private property. The newly formed Summit County Open Space Advisory Committee saw the CSU research project as an opportunity to investigate local private properties and establish an acquisition priorities list. Through the study, several privately owned properties in Summit County, including areas of the Gulch, were analyzed for their conservation values. Information released in the CSU report indicated the Gulch to be an extraordinary natural resource worthy of the greatest conservation efforts. Between the findings from the CSU study and the many decades of development pressure surrounding the Gulch, many local citizens started to demand its protection. Protection of Cucumber Gulch was a main impetus behind the Breckenridge Open Space program. 'Citizens for Open Space' was founded in 1996 and its members viewed the impending development around the Gulch, the potential loss of wildlife habitat, and a reduction in recreational access as problematic. This movement led to a voter initiative dedicating an additional .5% Town sales tax to open space acquisition and management.

Since the inception of the Open Space Program, the Town has been involved in many endeavors to protect the resources of the Preserve. The significance of Cucumber Gulch's natural resources is illustrated by the area's classification as a:

- Special Aquatic Site under the Guidelines for Specification of Disposal Sites for Dredged or Fill Material of the Clean Water Act;
- Aquatic Resource of National Importance (ARNI) by the EPA;
- Resource Category 1 under USFWS Region 6 Policy on Protection of Fens;



Cucumber Gulch map highlighting the Overlay Protection District Boundary, wildlife corridors, the Preventative Management Area and wetland areas.



- Endangered Species Habitat by Colorado Division of Wildlife; and
- Protection Urgency Rank P1 and Management Urgency Rank M1 by the Colorado Natural Heritage Program.

In 1998, the Town hired Science Applications International Corporation (SAIC), an environmental consulting firm, to study the ecology of the area. Based on the recommendations of this study, the Town began embarking on a protection program for the area. In 2000, the Cucumber Gulch Overlay Protection District was adopted by the Breckenridge Town Council. This ordinance prevents any human disturbance within the most ecologically sensitive areas of the Gulch and encourages the use of Best Management Practices in the surrounding buffer areas. Subsequent large scale development approvals on Peak 7 & 8 in 2006 and 2007, and the Shock Hill Lodge in 2008 have included additional conditions requiring best management practices and continued monitoring as part of their approvals<sup>1</sup>. Through both of these development approvals, the Town received sizable land parcel dedications within the Gulch. Since 2001 the Town has acquired 117 acres of land through dedications and purchase to form the Preserve as it is currently known.

### C. Management Objectives

The Town of Breckenridge has two primary objectives for managing the precious habitat of the Preserve: those are to preserve the conservation values of the Preserve while striking the appropriate balance with public access and adjacent development.

**1. Preserve the wetland ecosystems and natural resources.** The primary management objective is to preserve existing habitat in the Preserve. The Preserve is a groundwater-fed, fen wetland complex that purifies water in Cucumber Creek while providing exceptional habitat for moose, beaver, muskrat, migratory birds and other animals. Due to the Gulch’s unique characteristics and sensitive ecosystem, it is in greater need of protection and regulation than other Town-owned open space parcels.

**2. Public access.** Historically, the Preserve has been utilized as a recreational resource by the Town’s residents and visitors. During winter months, the Breckenridge Nordic



Nordic skiing in the Preserve

Center hosts thousands of skiers and snowshoers in the Preserve. In the summer months, the Preserve has an extensive trail network for hiking, mountain biking and wildlife viewing.



One of the Preserve’s resident moose

The challenge for managing the Preserve is balancing public access with natural resource protection goals. Although resource protection is the primary reason for the Town’s investment, public recreational access in the Preserve has a long history. Continued recreational access will serve to educate the public and engender support for the Town’s resource preservation goals.

## II. PROPERTY DESCRIPTION

### A. Location and Character of Cucumber Gulch Preserve

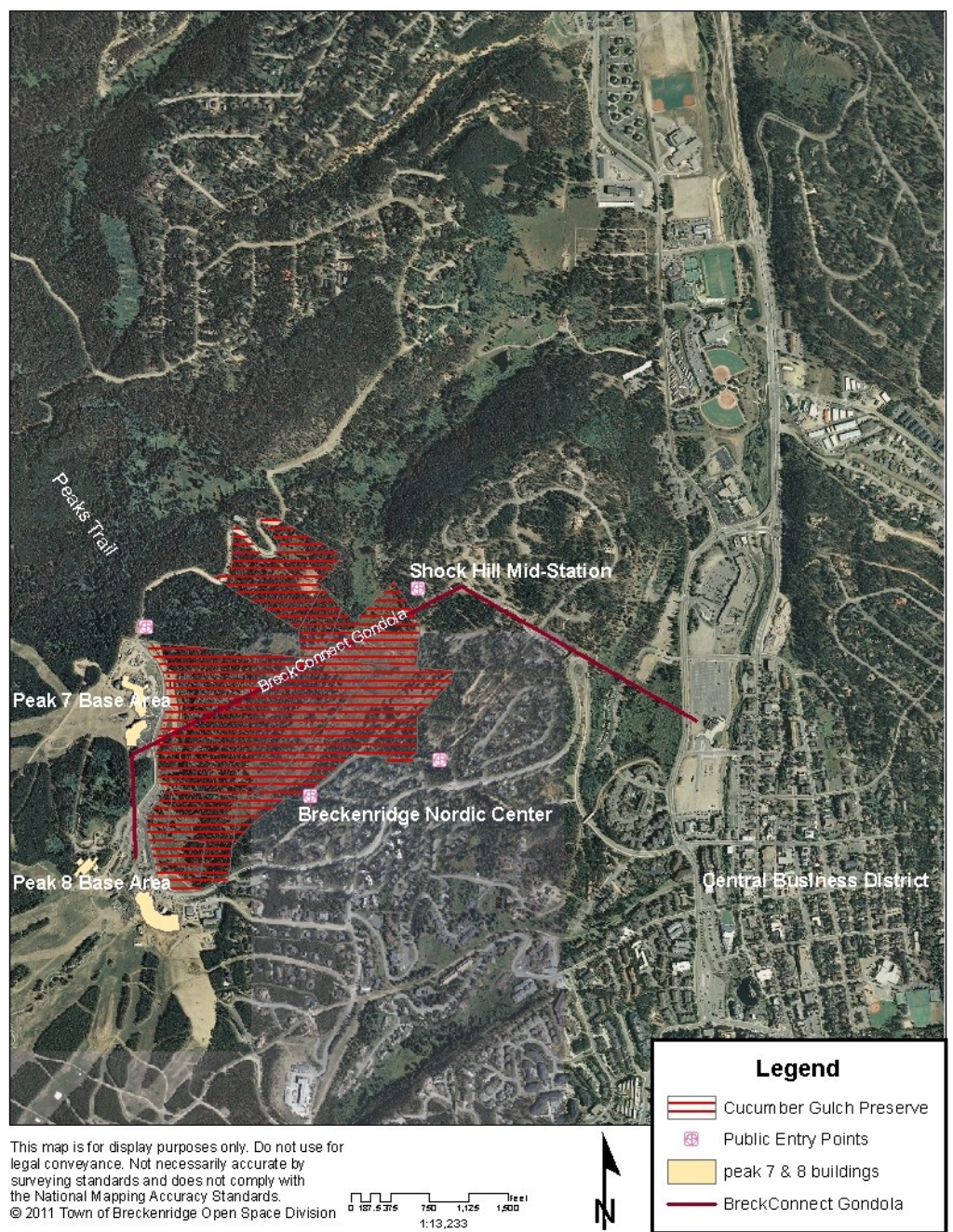
The Preserve is a north- to northeast-facing drainage and associated wetlands complex located northwest of the Town of Breckenridge Central Business District. The wetland complex lies just below Breckenridge Ski Resort's Peaks 7 and 8 and is bordered to the south, west, and much of the north by adjacent existing or planned residential development. To the northeast, the Preserve joins with Cucumber Creek, which stretches 3/4- mile to the Blue River confluence just north of Town.

The Preserve is valued for its summer and winter recreation opportunities and as an ecologically significant habitat area for sensitive wildlife and vegetation. Being located within walking distance from Town, the Preserve provides local residents and visitors an opportunity to enjoy the scenic beauty of alpine forests and wetlands.

Popular summer opportunities in the Preserve include hiking or mountain biking along one of the many summer trails. In the

winter, visitors enjoy Nordic skiing and snowshoeing. The Breckenridge Nordic Center, in operation since 1981, provides about 5.7 miles of groomed Nordic ski trails and 1.5 miles of snowshoe trails, most of which are located within the Cucumber Gulch OPD. Bird and wildlife viewing also are popular activities throughout the year.

While winter recreation is the single largest draw for visitors to the Preserve, the area has attracted a significant amount of attention since the 1995 and 1997 discoveries of breeding populations of the state-level



Cucumber Gulch Preserve Vicinity Map

endangered boreal toad (*Bufo boreas boreas*). The boreal toad historically resided throughout much of the Rocky Mountain Region between 7,000 and 12,000 feet in elevation, and has experienced dramatic declines in the last 20 to 25 years (CDOW 2002).

The Preserve also is known for the presence of about 77-acres of wetlands ranging from isolated wet meadows and seeps to large stream-side (riparian) complexes occurring along the bottom of the Preserve. Some of these wetlands also are categorized as fens, which provide a unique environment for rare plants.

Fens accumulate organic material at an extremely slow rate and are driven by nutrient-rich ground water. Because of this, fens in the Preserve are an irreplaceable resource.

### **B. Property Boundaries and Adjacent land Uses**

The Preserve consists of seven individual properties, all owned by the Town, ranging in size from 2.22 acres to 55.79 acres.

Significant development pressure surrounds the Preserve on three sides. Adjacent land uses consist of the Peak 7 & 8 base areas of the Breckenridge Ski Resort, residential development off of Ski Hill

Road, residential development in the Shock Hill subdivision, and a large private holding located outside of the Town's limits in unincorporated Summit County.

West of the Preserve is the Peak 7 & 8 base area of the Breckenridge Ski Resort. The Peak 7 & 8 base areas are two primary portals where the majority of the 1.65 million annual skiers enter the ski resort. Additionally, there is significant existing and expected real estate development at Peak 7 & 8. When fully built out, Peak 7 & 8 will have 450.5 single-family equivalents (SFEs) of residential density and 20 SFEs of commercial density.

To the south of the Preserve a variety of existing and planned residential development is located in the Idlewild, Boulder Ridge III, GlenWild, White Wolf, Settlement and Cucumber Creek Estates subdivisions. Within these subdivisions, 12 single-family homes and 27 townhome lots are immediately adjacent to the Preserve.

On the eastern border of the Preserve lies the Shock Hill subdivision. Shock Hill is a residential subdivision that has three single-family lots, a lodge site with vested development rights for up to 129 SFEs and a gondola station adjacent to the Preserve.



A section of the Preserve's wetlands

North of the Preserve is a 40 acre property under a single ownership. The parcel has not been developed and functions as private open space. Within a large area of this parcel are high quality wetlands that are critical to area wildlife.

### **C. Existing Public Use Features**

The Preserve's present use consists of a wildlife preserve and recreational open space. Despite its current role as a preserve, there has been a tradition of public recreational use of the property by various user groups prior to the Town's ownership. Therefore, recreational access to the Preserve is viewed as an important component of its management along with wildlife habitat preservation.

The most common uses of the property currently include:

- Nordic skiing
- Snowshoeing
- Hiking
- Mountain biking
- Running
- Environmental research
- Gondola usage
- Nature appreciation & education

These existing uses of the property are the baseline for considering which types of uses are compatible with the Town's mission to protect habitat and to enhance environmental systems of the Gulch. Some of the uses are suitable year round, while others are appropriate on a more seasonal or limited basis.

## **III. Conservation Values**

Within the Preserve's boundaries are some of the most biologically diverse and sensitive wetlands within the State of Colorado. The Preserve's wetlands have a diversity of vegetation that provides important habitat to numerous bird species, aquatic insects, mammals and amphibians. As mentioned above, some of these wetlands also are categorized as fens, which provide a unique environment for rare plants. Fens accumulate organic material at an extremely slow rate and are driven by nutrient-rich ground water. While the first objective of the management plan is protecting sensitive habitat and wetlands, securing public access to the Preserve is also an important management component. The introduction of hundreds of visitors per month to the area impacts the Preserve, but the intent is to balance public recreational access with resource protection efforts. Identifying acceptable recreational uses in the Preserve will ensure that the recreating public recreates in a manner that will also preserve the natural resource values of the area

## **IV. STEWARDSHIP ISSUES**

### **A. Protecting Sensitive Habitat**

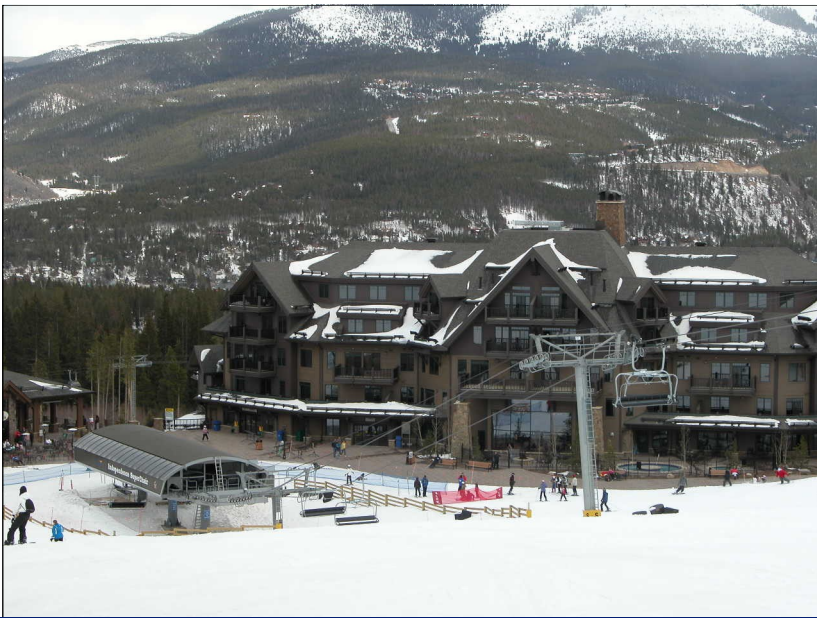
Construction adjacent to Cucumber Gulch presents particular challenges to the Preserve's management. At full build-out, 15 single-family homes, 27 townhomes and 579.5 multi-family SFEs are planned directly adjacent to Cucumber Gulch Preserve, with hundreds more residences nearby. One goal of this plan is to consider the impact Cucumber Gulch Preserve management will have on adjoining properties, and vice versa.

Development to the west (Peak 7 & 8) of Cucumber Gulch Preserve is ongoing and presents water quality, wildlife, and site buffering issues. The development adjacent to the eastern edge of the Preserve (Shock Hill)

is less defined but has the potential to match the developmental scale on the western edge. The proposed development in Shock Hill could affect the Preserve's wildlife, water quality and vegetative buffering. Development bordering the southern property boundaries of Cucumber Gulch is generally much less dense and largely built-out. However, the properties along the southern border present a host of issues including the lack of a geographic barrier to the gulch, greater site disturbance areas, and an abundance of household pets and individual ownership of properties (i.e. no central management). Specific conditions were placed into the Peak 7 & 8 and Shock Hill development permits to ensure minimal disturbance to Cucumber Gulch<sup>1</sup>.

In addition to the threat from adjacent development, unrestricted recreational access also has the potential to impact the Preserve. Recreational visitors can damage the wetland complex by not staying on designated trails or by bringing an unleashed pet to the preserve, among others.

To address the conflicts with adjacent development and unregulated recreational access the Cucumber Gulch Overlay Protection District (OPD) ordinance Cucumber OPD was adopted in 2000 based on recommendations included in the 1998 Cucumber Gulch Resource Protection and Recreation Plan. The Cucumber Gulch OPD provides protection for the important and unique natural and recreation resources of Cucumber Gulch by prohibiting activities within a "Preventative Management Area" (PMA), requiring development standards, and establishing best management practices. The purpose of the PMA is to create a buffer area that maintains native vegetation, and minimizes disturbance from human activities. Section 13 of the Cucumber Gulch OPD ordinance requires that the Town develop a recreation plan identifying approved recreation activities and locations. In 2003, to further address problems arising from unregulated recreational access, a recreation plan was developed for the Preserve. In subsequent years, additional plans and analytical documents pertaining to the Town's Open Space program and the Preserve have been developed. Due to the abundance of planning recommendations and analytical information contained in a variety of documents, it is the intent of this plan to consolidate the findings descriptions and policies into a single resource document and establish clear policy direction for managing the Preserve. Below is a brief synopsis of existing scientific studies, formal policy documents and policy responses related to the Preserve.



Peak 7 Base Area Development

### B.1. Scientific Studies

**Colorado State University Natural Heritage Assessment of Wetlands and Riparian Areas in Summit County, Colorado (1997)** The CSU study analyzed many privately owned properties in Summit County for their conservation importance. The study indicated Cucumber Gulch to be the most biologically diverse property included in the study. This study piqued local interest for protecting Cucumber Gulch's natural resources.

**Annual Conservation Monitoring Reports for Cucumber Gulch (2001-2010)** For the last ten years, the Town has produced annual reports detailing information and findings obtained from monitoring conducted in the Gulch. The monitoring preceded development of the Peak 7 & 8 master plan by 6 years, and therefore provides a base line condition to compare the pre-development and post-development health of the resources

within the Preserve. Information contained in these reports enables the Town Council and Town staff to make informed management adjustments on a year to year basis. More information about elements of the monitoring program is contained in the Management Policy section of this plan.

**Forest Health and Mountain Pine Beetle Analysis in the Cucumber Gulch Preserve (2007)** This report assessed forest health in Cucumber Gulch by looking at current conditions and forecasting those conditions into projections for the near and long-term. This document also provides direction on treatment to optimize forest health within the Gulch, without compromising other sensitive ecological aspects.

## **B.2. Formal Policy Documents**

**SAIC, Cucumber Gulch Resource Protection & Recreation Plan (1998)** The SAIC plan was developed with the objective of providing a strategic framework for preserving the natural resources of Cucumber Gulch and planning for appropriate recreational uses. This represented the first comprehensive assessment of the basin's natural resources and their vulnerability or compatibility with adjacent land uses. Within the plan several key actions were identified that were subsequently carried out by the Town.

- Researching the hydrology of the wetlands
- Targeting land protection through acquisition efforts
- Establishing a Preventative Management Area
- Establishing Wildlife Movement Corridors
- Promoting Best Management Practices
- Establishing a Lead Entity (BOSAC currently fulfills this role)
- Establishing a recreation plan

**Cucumber Overly Protection District (OPD) (2000)** The OPD was established by a Town ordinance for the protection of the sensitive natural resources within Cucumber Gulch based on the recommendation from the SAIC plan. The ordinance required the Town to do the following:

- Establish a Preventive Management Area (PMA) around the important resources of the area, including wetlands, endangered wildlife habitat, and wildlife corridors.
- Conduct scientific studies in the PMA that identifies resources of concern in the area.
- Prohibit certain potentially harmful activities within the PMA until the ordinance can be revised based on the studies.
- Require that development meets certain standards.
- Provide that Best Management Practices be applied through restrictive covenants to new development within or adjacent to the district.
- Require new roads have wildlife passageways if constructed within the district but outside the PMA.
- Provide that a recreation plan for the area be adopted by the Town in conjunction with other agencies, based on the result of scientific studies.
- Allow for relief from the ordinance under certain circumstances.

**Cucumber Gulch Recreation Master Plan (2003)** The *Cucumber Gulch Recreation Master Plan* (Plan), called for in the SAIC plan referenced above, established a conceptual framework for setting management priorities and provided specific management direction for recreational resources within the OPD. The Plan was the culmination of a six-month comprehensive planning process that focused on balancing summer and winter recreational use with preservation of the sensitive natural resources found in the area. Its development was a collaborative effort that included input from Town Open Space and Trails staff, Breckenridge Open Space Advisory Commission, key stakeholders (which included private landowners, representatives of

adjacent homeowner associations, as well as Vail Associates and Breckenridge Ski Resort) and local citizens. At its foundation, the Plan emphasizes the protection of natural resources within Cucumber Gulch.

**Town Open Space Plan (2007 Update)** The Open Space Plan provides a strategic framework for the Town's Open Space Program, and reflects the needs and desires of the community. Specifically, the Open Space Plan has two actions for the Cucumber Gulch Preserve:

1. *"Devise measures to protect environmental quality and recreation".*
2. *"Strive to acquire additional parcels in the Cucumber Gulch area to further protect the sensitive wetland area".*

**Town Trails Plan (2009 Update)** The Town Council and the Breckenridge Open Space Advisory Commission (BOSAC) recognize that preserving and expanding trail access throughout the Town and the Upper Blue Basin is critical to maintaining and enhancing the quality of life in and around Breckenridge. The Trails Plan, along with the Trails Plan Maps, have been created to provide guidance to Town staff and BOSAC for future trail related priorities and decisions. It is recognized that a balance must be achieved between growth/development and the maintenance of a healthy quality of life, and that development should provide a means for preserving and improving an interconnected recreational trail network.

Sustainability is the main guiding philosophy of the Town with respect to its Trails Plan. It is important first and foremost to maintain the existing trails already within the Town's system. There also needs to be a monitoring and evaluation aspect to the Trails program to ensure that trails are not being created where they could have negative environmental or social impacts and that poorly aligned existing trails are correctly rerouted or decommissioned. Recommendations pertaining Cucumber Gulch include:

1. *"Continue to implement the tasks outlined in the Cucumber Gulch Recreation Master Plan. Monitor trail conditions and use within the Cucumber Gulch Preserve and adjust trail alignment and management accordingly".*
2. *"Work cooperatively with Nordic area concessionaires to ensure appropriate winter management of Cucumber Gulch Preserve".*
3. *"Designate specific access points to the Cucumber Gulch Preserve and work to secure other potential, undesirable, social accesses to ensure strong protection of the Preserve's natural values".*

### **B.3. Policy Responses to Stewardship Issues**

**Prohibition of Dogs (2007)** Pets are prohibited within the PMA. Despite this fact, many visitors to the Gulch bring their dogs to the area, the majority of which are off-leash. Such actions disturb local wildlife and in some instances, other trail users. One of the greatest threats posed to the wildlife in the Preserve is an off-leash dog. By swimming in the ponds, disturbing the beavers, and pursuing vulnerable wildlife and ground-nesting birds, dogs have exacted a heavy toll on the area's wildlife. Other problems associated with dogs include their excrement and associated odors, as well as



Dog prohibition signage in the Preserve

potentially harmful increases in surface water nutrient levels. As a result, dogs are not permitted in the Preserve.

**Nordic Center License Agreement (2008 renewed periodically)** In order to assure harmony with the Town's stewardship goals, the Breckenridge Nordic Center's operator must enter into a license agreement that is limited in scope to use of designated areas of the Town's property within Cucumber Gulch for Nordic skiing, snowshoeing and other related winter operations. Through a license agreement, the operator agrees to specified "standards of operation" and does not have the right to alter or change the operator's use of the Property without the Town Manager's prior written consent.

**Group Size Limit (2009)** To minimize the noise and disturbance associated with groups, a group size limit was instituted within the Preserve capping the maximum group size at 8 persons.

**Prohibition of Non-Winter Special Events (2010)** Historically, the Preserve hosted special events in a limited capacity. Events such as the Breckenridge Crest Marathon, the Summit Mountain Challenge Mountain Bike Series and the Summit Trail Running Series have all previously included sections the Preserve's trail network in their course routes. Despite the popularity of special events utilizing the Preserve, it was directed by the Town Council to discontinue allowing special events in the Preserve outside of the Nordic ski season. The prohibition of special events is based the intensity and concentrated special event activity levels compared with typical recreational use. The decision to prohibit special events is also supported by the fact that alternative routes that do not enter the Preserve are available.



Group size is limited to eight individuals in the Preserve

**Summer Trails Use and Closure Protocol (2010)** Summer trails use in Cucumber has been limited until after July 1<sup>st</sup> annually. This date was established to keep visitors out the Gulch during the incubation period and the beginning of the chick-rearing stage for many of the migratory birds that utilize Cucumber Gulch Preserve habitat. This start date also avoids moose calving season which begins in late May and extends through early June. After July 1<sup>st</sup>, trail access is subject to conditions being determined suitable for the travel of hikers, bikers and runners. Cucumber Gulch's trails and linking trails may be periodically closed at times after July 1<sup>st</sup> if staff determines them to be too wet, muddy, degraded and at risk of being damaged.

**Summer Gondola Operations (2010)** The gondola impacts study conducted in 2010 revealed localized impacts to avian species in Cucumber Gulch during the week after the gondola began operating. An evaluation of the other data from the conservation monitoring program in 2010 did not show significant changes in avian populations in the Gulch over the span of the field season. At the same time, the timing of the start of the gondola is critical. A July 1st start date falls during the end of the incubation period and the beginning of the chick-rearing stage for many of the migratory birds in Cucumber. If the gondola is started earlier in the season, birds may be more likely to abandon their nests. They will not have had the investment in their nests or eggs that they do later in the year. Thus, starting the gondola earlier may have significant ecologic impacts, particularly to bird populations, which are an indicator species.



Cucumber Gulch is a year-round habitat for moose. The ample availability of willows, a major staple in a moose's diet, makes the Preserve an ideal location for moose in all seasons. Cucumber Gulch provides ample cover for young, access to fresh water and abundant high quality food. Moose calving in Colorado begins in late May and extends through early June. All measures should be taken to minimize any disturbance to nursing cows during this period. Motion sensor cameras and direct observation have shown that moose cows use Cucumber Gulch during this time as a nursery. Due to the potential conflicts with moose calving, it has been recommended to not operate the gondola between May 15th and the end of June so as not to disturb moose cows and their offspring during the sensitive calving and early rearing stages.

Because of these known wildlife conflicts affecting Cucumber Gulch the Town has recently established the following regulations for summer gondola operations:

- Summer season operating hours are from 9:30 am until 6:00 pm daily beginning July 1st through September 5<sup>th</sup>. In addition to regular hours the Ski Resort has the option to extend operations until 8:00 pm on Fridays and Saturdays from July 1st through August 14th.
- Bicycles may be carried on the Gondola only by those persons that have a ticket to use the Ski Resort lifts and trails.
- Persons transporting bicycles in the Gondola will only be permitted to ride up the Gondola once during the day to avoid "yo-yoing" (taking the Gondola up and riding bicycles down through Cucumber Gulch). However, persons will be allowed to take their bicycles down the Gondola at any time, free of charge, to help provide a way of getting people back to Town without going through Cucumber Gulch.
- The Ski Resort must provide signage at the base of the Gondola advising guests of the sensitive nature of Cucumber Gulch and requesting that riders avoid engaging in conduct that could cause any harm to the Gulch.
- The Toad Alley trail must be excluded from the Ski Resort's summer trail map.

**Use of Josie's Cabin (2011)** Use of Josie's Cabin is limited to use as a warming hut for patrons of the Nordic Center. Hours of use are the same as the hours of operation for the Nordic Center, with an exception for nighttime guided snowshoe tours conducted by the operators of the Nordic Center. At all other times, the cabin is to remain locked to prevent vandalism and to discourage individuals from using it as living quarters.

**Best Management Practices (BMPs) for Adjacent Development (Ongoing)** In addition to the requirements for adjacent development outlined in the OPD, additional BMPs and monitoring have been instituted through the findings and conditions for the Peak 7 & 8 Master Plan area, the Shock Hill Lodge and the Breck Connect Gondola<sup>1</sup>.



## V. Action Plan

The Action Plan provides the framework to work towards enhanced protection of the Preserve by providing specific Goals and Action Steps for the Preserve under four core categories; Land Management, Recreational Access, Educational Efforts and Development Restrictions. The proposed Action Steps include a variety of recommendations to facilitate achievement of the broader goals of each category. Below are more in-depth descriptions of how the Goals and Actions work within the framework of the Action Plan.

**Goals:** Within each category are specific Goals which comprise the overall vision for the Preserve and represent what we must achieve to better protect the Preserve. The stated Goals of each category summarize the higher priority items that were identified for long-term protection of the Preserve.

**Actions:** As a strategy to achieve desired Goals, specific actions are featured under each category. These actions offer a strategy to accomplish goals over the near, mid and long-term.

## **A. Land Management**

### **Town Council Directives**

- Prioritize resource protection in the Preserve
- Demonstrate a visible management presence
- Strictly enforce regulations, particularly regarding pets
- Better utilize fencing to secure sensitive areas and define a perimeter boundary to adjacent residential properties
- Implement limited forest health intervention

### **Goals**

1. Preserve the critical habitat and functional wetlands of the Preserve as the primary management goal. (The high degree of biodiversity present in the Preserve is dependent on the integrity of the wetlands complex. Plant and wildlife biodiversity is the primary conservation value of the Preserve.)
2. Convey a strong management presence in the Preserve to send an important resource protection message to visitors and citizens.
3. Inform residents and visitors that the Preserve as a precious and vulnerable ecological open space area, visibly and strictly managed by the Town.

### **Actions**

1. **Investigate any negative trends in water quality and water quantity reported through annual monitoring.**

The water resources of the Preserve are the foundation of the Preserve's system health.

2. **Remediate sources of water degradation as soon as possible upon confirming causation of a trend.**

Water research should prompt additional evaluation and management steps to address identified water resource threats. A significant portion of the Preserve's water resources are fen wetlands, which take thousands of years to develop and are virtually irreplaceable. Due to the uniqueness, importance and vulnerability of fens in our region, the U.S. Fish & Wildlife Service has set a goal that every "reasonable effort" should be made to avoid impacting fen habitat. Due to the sensitivity of the Preserve's fens and the importance to area wildlife, timely remediation is critical in cases of confirmed water quality degradation.

3. **Establish and maintain controlled points of entry for the Preserve**

Construct a clearly defined perimeter for the Preserve adjacent to developed land. In constructing the perimeter, utilize wildlife-friendly native materials, such as buck-and rail fencing that will clearly define



**Buck and rail fencing in the Preserve**

boundaries for human visitors. Note: as an added measure of protection, entry points may be equipped with motion detection cameras to clearly catalogue all Preserve visitors.

**4. Post clearly defined regulations for visitors entering the Preserve.**

Regulations should be clearly posted at all established entry points to inform visitors of the importance of their actions in protecting the Preserve’s natural resources.

**5. Initiate regular or periodic patrols of the Preserve by uniformed community service officers.**

Regular uniformed patrols of the Preserve will reinforce the Town’s management presence and increase the likelihood that visitors will comply with the defined rules of conduct for the Preserve.

**6. Institute a strict policy on regulations infractions within the Preserve, with a particular emphasis on pet infractions.**

Substantial fines should be given to visitors that do not comply with the established rules and repeat offenders should be banned from future entry to the Preserve. Consider the use of motion cameras as an additional monitoring tool to use for identification of violators.

**7. Conduct monitoring studies to gather information to better evaluate and track natural resource trends and the overall health of the Preserve. Refine Preserve regulations and management as needed.**

Scientifically-based monitoring studies provide the information needed to evaluate the Town’s stewardship goals in the Preserve. Routine monitoring allows natural resource trends to be tracked over time and helps inform an adaptive management approach when results fall below acceptable conditions. Of particular importance is water quality and water quantity monitoring, which will benefit wetland distribution and health and wildlife protection goals.

**8. Initiate additional impact studies if expanded gondola hours of operation are requested.**

The gondola serves as a useful transportation amenity, delivering passengers from the center of Town to the Peak 7 and 8 base areas of the Breckenridge Ski Resort. The gondola passes directly through the Preserve’s boundaries, potentially affecting on the area’s native species. Due to the unknown affects on area species, additional impact studies should be required prior to the consideration of additional operating hours for the Gondola.



Gondola Alignment through the Preserve

**9. Use signage to inform direct and educate visitors.**

Preserve signage should clearly inform visitors of area regulations, direct visitors along designated trails, and educate visitors about the Preserve’s unique natural resource values worthy of extensive conservation efforts. Signage should be designed to be visible but also compatible with the surrounding character. All signs should fit a coherent professionally-developed pattern.

**10. Selectively acquire land to protect and enhance the Preserve’s wildlife habitat value and wetland ecosystem.**

Land in the direct vicinity of the Preserve that connects to the Preserve’s wetland system or functions as a wildlife movement corridor should be considered for acquisition to the Town’s Open Space portfolio, when available.

**11. Initiate minimal forest health management activities within the Preserves boundaries.**

The 2007 Forest Health and Mountain Pine Beetle Analysis of Cucumber Gulch Preserve recommended no forest health intervention (e.g., tree cutting, tree spraying) for areas within the Preserve due to vulnerable wetland soils and a limited percentage of lodgepole pine trees in the area. Any new acquisitions (including the MBJ and Wedge parcels) should be evaluated for forest management needs. Tree removal may also be acceptable in limited areas for defensible space and forest health purposes.

**B. Recreational Access**

**Town Council Directives**

- Allow existing Nordic trail system to continue
- Prevent the proliferation of additional snowshoe trails
- Lower the intensity of non-winter recreation

**Goals**

1. Facilitate safe, low intensity public recreational access and enjoyment of the Preserve, while meeting the primary goal to protect natural resources and wildlife habitat.
2. Maintain existing levels of winter recreational opportunities. Allow summer recreational access, provided that it does not compromise conservation objectives. Control access with fencing of sensitive areas, targeted trail closures and signage.
3. Implement greater restrictions on summer recreation as needed.

**Actions**

**1. Allow the Breckenridge Nordic Center to continue operating on existing trails.**

Threats to the Preserve’s natural resources fluctuate seasonally. The winter’s ample snow provides the Preserve’s sensitive ecosystems a barrier of protection from human disturbance and allows Nordic skiers and snowshoers to navigate areas that are unsustainable for recreational use at other times. Despite the protection it provides, snow also allows the proliferation of additional undesignated trails that impact local wildlife. Due to this concern (and acknowledging the importance of Nordic skiing to the Town’s winter sports economy), it is recommended to allow the continued operation of the Breckenridge Nordic center on existing trails, without the possibility of future network expansion within the Preserve.



Nordic trail through the Preserve

**2. Establish Nordic center hours of operation as one hour after sunrise until one hour before sunset.**

Wildlife activity in the Preserve is most prevalent during dusk and dawn. To minimize wildlife disturbance concerns associated with the operation of the Nordic center, nighttime operations shall be limited to

approved, guided snowshoe tours limited to a maximum of three days per week with a maximum group size of eight. BOSAC and Town Council will oversee and limit the amount of nighttime use in the Preserve.

**3. Establish non-winter use standards for Nordic center building and grounds.**

It is likely that the Town will receive future requests from groups such as weddings and family retreats to use the Nordic Center building during the summer season. Due to the Nordic center's proximity to the Preserve and the intensity of these uses (particularly nighttime uses), non-winter use standards for the Nordic center facility should be established by Town Council.

**4. Restrict access and seasonally close trails within the Preserve during sensitive periods**

Seasonal closures are intended to keep visitors out of the Preserve during the most important and sensitive periods. These critical periods include the incubation period and the beginning of the chick-rearing stage for many of the migratory birds, moose calving season, and other periods when staff



determines the Preserve's trails to be too wet, muddy, and at risk of being damaged. When seasonal closures are deemed necessary, trails leading into the closure area should be closed or appropriately signed so that users are well informed and are not surprised when they encounter a closure sign.

Moose Calving is a particularly sensitive period for the Preserve

Restricting access can be applied in multiple

ways. Below is a sample list of options to consider. Options a, b and c may be implemented by Town staff as needed, but must be communicated to BOSAC. Options d and e require additional Town Council direction before being implemented.

- a. Seasonally close some or all trails
- b. Institute directional travel on select trails
- c. Close select trails to specific user types
- d. Permanently close some specific trails (e.g., Toad Alley/Peaks Connect) deemed most impactful to wildlife and the wetlands and seasonally close other trails
- e. Permanently close all trails in Preserve

**5. Restrict large groups and special events from the Preserve outside of the winter season.**

Due to the Preserve's heightened sensitivity during the summer season, no special events of any kind or groups larger than eight individuals are permitted. Standards for approval of all formal group activities of eight individuals or less shall be established by the Town Council.

## C. Educational Efforts

### Town Council Directives

- Educate adjacent residents about the Preserve's valuable natural resources and vulnerability to human impacts.
- Work with front-line lodging staff of neighboring properties to educate guests about the Preserve's valuable natural resources and vulnerability to human impacts.
- Educate the public in a way that does not attract additional recreational visitors to the Preserve.

### Goals

1. The educational mission of the Preserve is to inform both visitors to, and neighbors of, the Preserve about its resource values and sensitivity to impacts and disturbances. This approach is in direct contrast to educational efforts conducted in environmental education centers where higher visitation is encouraged and the conservation areas are marketed to promote education-based visitation.
2. Educate visitors and guests to the natural importance of the Preserve without attracting more visitors to the area.
3. Focus on educating residents and visitors which reside immediately adjacent to the Preserve about the Preserve's uniqueness and ecological vulnerability.

### Actions

1. **Signage should be used to inform, direct and educate visitors.**

Preserve signage should clearly inform visitors of area regulations, direct visitors along designated trails, and educate visitors about the Preserve's unique natural resource values worthy of extensive conservation efforts. Signage should be designed to be visible but also compatible with the surrounding character. All signs should fit a coherent professionally-developed pattern.



Signage in the Preserve

2. **Create an educational pamphlet to distribute to the Preserve's neighboring residents and visitors.**

Publish an easy to understand pamphlet that covers important information pertaining to the Preserve. Important highlights should include: information on the Preserve's sensitivity, the regulations for visitors, a small section highlighting the prohibition of pets and a map clearly defining the boundaries of the Preserve, area trails and notable landmarks. Pamphlets should be distributed to residents and guests of properties adjacent to the Preserve.

3. **Provide educational presentations by Open Space and Trails staff at local HOA meetings of properties adjacent to the Preserve.**

Staff should reach out to the HOA's adjacent to the Gulch and offer presentations on the Preserve at their meetings. The presentation should be designed to cover the most pressing information, instill a sense of stewardship and provide homeowners an opportunity to ask questions pertaining to the Preserve.

4. **Work with property managers and concierges of adjacent properties to inform their guests about the Preserve's ecological sensitivity and the strict management regulations.**

Staff should work with front line employees such as concierges and check-in staff to ensure these staff members are responsibly informing visitors about the fragile resources, the stringent regulations, and strict enforcement for the neighboring Preserve. Encourage concierges and check-in staff to direct visitors to trail opportunities outside of the Preserve.

**5. Utilize media to spread the message of the Preserve’s ecological value and newly instituted regulations.**

The Town should strategically use media resources to spread a two-part message when covering the Preserve. One message will be intended to generate public support for conservation of the Preserve’s natural resources. The second message should draw attention to the heightened management presence in the Preserve. Media opportunities and content will range from more general press releases to shorter, more targeted messages delivered through the Town’s social media accounts.

**D. Development Restrictions**

**Town Council Directives**

- Minimize disturbance to the Preserve from adjacent development.

**Goals**

1. Protect the Preserve’s natural resources and habitat while respecting neighboring property owners’ rights.
2. Update development regulations as needed for properties adjacent to the Preserve to ensure the protection of the Preserve’s natural resources.

**Actions**

1. **Continue to conduct best management practices compliance inspections on all projects adjacent to the Preserve and pursue non-compliance aggressively.**

Routine compliance inspections of development activity should be conducted by Town staff and development permit holders to ensure adjacent development is not impacting the ecological integrity of the Preserve.

2. **Periodically review Cucumber Gulch Overlay Protection District regulations to ensure continued effectiveness.**

The Overlay Protection District regulations are valuable protection measures that benefit the continued health of the Preserve. Periodic reviews of these regulations to ensure that they incorporate the latest scientific recommendations/best management practices regarding environmental protection will help ensure continued protection of Preserve’s valuable natural resources. Preventative Management Area boundaries should be extended into areas of acquired open space that previously were not included.

## VI. Notes

### 1. Grand Lodge on Peak 7 and Crystal Peak Lodge Best Management Practices Development Conditions From Permits #2006014 and #2006015

- Applicant shall comply with all applicable aspects of the “Stormwater Management Plan, Peak 7 Breckenridge Ski Area”, Revised April 11, 2006.
- Applicant shall comply with all applicable aspects of the “Final Drainage Master Plan, Peak 7 Breckenridge Ski Area”, Revised March, 2006.
- Applicant shall submit and obtain approval from the Town Staff of a final hydrogeological report and drawings identifying all impacts to the Cucumber Gulch PMA as a result of this development. Final details of the Stormwater Management Plan/Best Management Practices (BMPs) plan shall be submitted to and approved by the Town.
- Applicant shall install construction fencing and erosion control measures at the 25 foot no-disturbance setback to streams and wetlands in a manner acceptable to the Town Engineer. An on site inspection shall be conducted.

### One Ski Hill Place Best Management Practices Development Conditions From Permit #2007001

- Applicant shall submit and obtain approval from the Town Engineer of final drainage, grading, utility, and erosion control plans. These plans shall include the approved review of the revised “Ground-water Monitoring Program, Peaks 7 & 8 Base Area Development Town of Breckenridge, Summit County, Colorado” as prepared by Kenneth E. Koln, PhD of Hydrologic Systems Analysis, LLC.

### Shock Hill Lodge Best Management Practices Development Conditions From Permits #2007108 and #2007109

- The properties are located on Tracts C & E, Shock Hill Subdivision. As such, the property is also within the Cucumber Gulch Overlay Protection District (but not the Cucumber Gulch Preventative Management Area), which set forth certain design criteria intended to protect the unique biological and environmental character of the Cucumber Gulch Preserve. When this project was first reviewed and approved (on January 22, 2008), the property was not subject to the Cucumber Gulch Overlay Protection District Ordinance, per a Development Agreement with Shock Hill Development, LLC, (reception #617308), approved February 15, 2000, since the Shock Hill Master Plan was vested until December 31, 2008.
- No exterior speakers or other devices for the amplification of sound are permitted on the outside of the building or on the grounds, with the exception of such devices required for emergency use.
- Applicant shall implement all appropriate provisions (as determined by the Town) of the Town’s “Cucumber Gulch Overlay Protection District Ordinance” (Ordinance 9, Series 2000).
- The spas/hot tubs shall be designed so that when these spas/hot tubs are drained, water flows into the sanitary sewer system. At no time will water from these sources be allowed to drain into the stormwater system, nor toward Cucumber Gulch.
- Applicant shall execute and record with the Summit County Clerk and Recorder a covenant and agreement running with the land, in a form acceptable to the Town Attorney, requiring all pets to be leashed or contained within enclosures when on the property, and at all times for pets to avoid disturbance of and interference with wildlife within the Cucumber Gulch area.
- Applicant shall execute and record with the Summit County Clerk and Recorder a covenant and agreement running with the land, in a form acceptable to the Town Attorney, requiring maintenance of the on-site water quality features for the property (including, but not limited to detention and retention ponds, bioswales, storm water pipes, water quality vaults, etc.) in perpetuity. The covenant shall authorize the Town of Breckenridge to inspect and perform maintenance on these water quality features, and to bill the owner or homeowners association if the Town needs to perform maintenance.



- Applicant shall revise the Tract C & E Stormwater Management Plans (Revision date November 26, 2007) to indicate that chain link fencing will be to the outside of the silt fence and hay bales. Applicant shall install construction fencing and erosion control measures according to the Tract C & E Stormwater Management Plans (Revision date November 26, 2007) and Stormwater Management Details (Revision date November 26, 2007), except as herein revised, along with the Preliminary Construction Activities Stormwater Management Plan for Shock Hill, Tracts C & E, (Revision date December 17, 2007) in a manner acceptable to the Town Engineer. An on site inspection shall be conducted and installation of erosion control measures shall be approved by the Town Engineer prior to start of construction, including tree removal.
- Applicant shall implement the final water quality monitoring plan, addressing surface and ground water. The plan shall indicate the final number and location of testing sites, testing method and frequency, and constituents to be tested. The plan shall be substantially similar to the "Shock Hill Tract C and E, Water Quality Baseline Testing Plan", submitted by Peggy Bailey of Tetra Tech, dated January 9, 2008. The final plan shall be reviewed and approved by the Town of Breckenridge's environmental consultant. The applicant and/or applicant's consultants shall meet with the Town and its consultants on site, prior to start of construction, to determine the appropriate water quality testing locations. Prior to issuance of a building permit, a minimum of six surface samples shall be collected from each collection site (a minimum of 7 days apart for each site) for both surface and ground water, in order to establish a baseline for water quality. The results of all water quality tests shall be provided to the Town of Breckenridge within three (3) business days from receipt of the results from the testing laboratory. All water quality testing shall be performed in an EPA approved facility. If the water quality testing results indicate that the project is having a negative impact on water quality, the applicant shall meet with the Town as soon as practicable to determine a proper mitigation approach. Water quality testing shall continue for one year after certificate of occupancy is issued.
- Per the approved Development Agreement dated March 13, 2007 and recorded with the Summit County Clerk and Recorder at Reception #851343, prior to issuance of a Certificate of Occupancy, applicant shall consult with the Town of Breckenridge Open Space and Trails staff, to determine if a split rail fence is needed on the downhill side of the development. If required by the Town, applicant shall install a buck and rail fence, in the locations required by the Town, to guide people toward the proper access points to existing trails and to Cucumber Gulch. Applicant shall be required to install and pay all expenses for the design, installation and maintenance of said fence(s).
- Per the approved Development Agreement dated March 13, 2007 and recorded with the Summit County Clerk and Recorder at Reception #851343, prior to issuance of a Certificate of Occupancy, applicant shall consult with the Town of Breckenridge Open Space and Trails staff on the design and content of signage, which shall be placed in locations most likely to be seen by people approaching the Town's Cucumber Gulch property from Tract C and Tract E-1. The signs shall contain information on the ecological function of the Gulch, the presence of the Boreal Toad, the prohibition of dogs in or near the Gulch, and the importance of staying on established trails. Similar signage and information shall be placed within the lobby or main entrance of the building, and within each residential unit. Applicant shall be required to install and pay all expenses for the design, installation and maintenance of said sign(s).
- Applicant shall construct all proposed trails according to the Town of Breckenridge Trail Standards and Guidelines (dated June 12, 2007). All trails disturbed during construction of this project shall be repaired by the Applicant according to the Town of Breckenridge Trail Standards and Guidelines. Prior to any trail work, Applicant shall consult with the Town of Breckenridge Open Space and Trails staff.

**Breck Connect Gondola Best Management Practices Development Conditions From Permit #2004110**

- This project remains subject to the findings and conditions of the Decision adopted by the Town of Breckenridge Planning Commission on April 15, 2002, and affirmed by the Town Council of the Town of Breckenridge on April 23, 2002, in connection with the Planning Commission matter PC#2000155 (Breckenridge Ski Resorts Peaks 7 and 8 Master Plan Amendment—A Variance from the Cucumber Gulch Overlay Protection District Ordinance for the Gondola) ("Decision"). The terms of the Decision, as well as all associated documents specified in it, are hereby incorporated into this permit by reference.

- *Applicant shall protect all existing trees that are specified on the site plan to be retained by erecting temporary fence barriers around the trees to prevent unnecessary root compaction during construction. Construction disturbance shall not occur within the fence barriers, and dirt and construction materials or debris shall not be placed within the fencing. The temporary fence barriers are to remain in place until issuance of the Certificate of Compliance.*
- *Applicant shall submit and obtain approval from the Town of a construction staging plan indicating the location of all construction material storage, fill and excavation material storage areas, portolet and dumpster locations, and employee vehicle parking areas. This plan shall also include, but is not limited to, methods, access, timing, erosion control and Best Management Practices. No staging is permitted within public right of way without Town permission. Any dirt tracked upon the public road shall be the applicant's responsibility to remove. Contractor parking within the public right of way is not permitted without the express permission of the Town, and cars must be moved for snow removal. A project contact person is to be selected and the name provided to the Public Works Department prior to issuance of the building permit.*

## VII. Bibliography

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## **VIII. Visual Credits**

Photo credit references listed in order of appearance. All photos not listed courtesy of the Town of Breckenridge.

Cover—Nordic Skier In Preserve. Personal photograph by Carri Willbanks. 12 April 2011.

Page 1—1965 Breckenridge Ski Area Trail Map. Coloradoskihistory.com and Breckenridge Ski Area. C. 1965.

Page 2—Nordic Life Fitness Complex. Breckenridge Nordic Village Corp. C. 1979

Page 2—1982 Breckenridge Ski Area Master plan. BRW and Aspen Skiing Company. C. 1982.

Page 3—Cucumber Gulch Map. ERO Resources et. Al. July 2003.

Page 16— Moose Calving. The Outdoor Classroom Blogspot.com, 30 October 2010.





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