



Girdwood Valley Trails Management Plan

May 2017 DRAFT (for GTC review)

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Executive Summary



To be written after the document has been reviewed.

Ideas are:

- ◆ Sustainable standards
- ◆ Variety of trail difficulty and development
- ◆ Non-motorized access
- ◆ Trails connect community
- ◆ Good neighbor policy
- ◆ Not all trails have parking adjacent to trailhead

Discussion of trails that meet ADA standards?

Add core values to exec summary (See Trail Users' Experience).

Living document that will require updates and changes as the town and trail uses evolve.

CHAPTER 1

Introduction to Girdwood and Its Trails



History of the Community and Its Trails

Girdwood, originally named Glacier City, was founded as a gold mining town at the turn of the century when several claims were staked on the Crow Creek, Virgin Creek, and California Creek drainages. As the number of miners increased, Glacier City also became a supply camp on the route between Seward and Ship Creek, which is now Anchorage. James Girdwood, an Irish immigrant and linen merchant, had four gold claims on Crow Creek. He later became the namesake for our mountain community.

At approximately the same time, miners and other workers developed a supply trail that went from the ice-free ports of Seward and Whittier to the gold mining districts of Western Alaska that included a route through Girdwood and over Crow Pass. This supply track was known as the Iditarod Trail. The Iditarod Trail was designated a National Historic Trail when the National Recreation Trails Act was amended in 1978 to include historic trails of national significance. The Iditarod Trail was one of four trails included with the passage of the act; there are now 19 National Historic trails. The well known Iditarod sled dog race from Anchorage to Nome uses portions of the Iditarod National Historic Trail.

The development of Girdwood was further spurred with railroad construction by the federal government in 1915. The little town boomed with new businesses. Mining in the upper Crow Creek area continued until 1942, when mine closures by a presidential order made Girdwood a near ghost town. However, in 1949 Girdwood again flourished as construction began on the Seward Highway, connecting Seward to Anchorage. Girdwood citizens were now connected by road to Anchorage and the Kenai Peninsula.

Outdoor recreational activities were boosted in 1954, when the Alyeska Ski Corporation was formed. In 1959, a poma lift and the day lodge were in use on Mt. Alyeska, and the first chair lift was built in 1960. Skiers started to flock to Girdwood to enjoy the town's abundant snowfall and winter recreational opportunities.

A pivotal moment in the development of Girdwood occurred on March 27, 1964, when a 9.2 magnitude earthquake shook Southcentral Alaska. The damage to many of Alaska's coastal communities was enormous. Along the Turnagain Arm of Cook Inlet, the land dropped 8 to 10 feet, putting much of Girdwood below the new tide line. The town site was moved up the valley to the present location.

Skiing and tourism grew throughout the 1960's and 1970's. The next major development of the ski area occurred in the 1980's when Seibu Corporation purchased Alyeska Resort and invested heavily in its development. Seibu Corporation installed new chair lifts and built the aerial tramway, mountaintop restaurants, and the 307-room Alyeska Prince Hotel, which opened in 1994.

In 2006, John Byrne III purchased Alyeska Resort and has invested heavily in new lifts, downhill mountain biking trails, and a hiking trail up the North Face of Mt. Alyeska.

The Girdwood Hand Tram has become an important valley trail asset. Financed through grants and built by volunteers during 1999 to 2001, it is now an integral part of the valley's recreational opportunities. The tram crosses Glacier Creek in the Four Corners area, where miners had originally built a bridge to access the upper valley. After a major grant was awarded, volunteers spent the first summer preparing the site, digging holes in bedrock, and pouring concrete. The second summer was spent finishing the foundation, building the timber frame, lining the cable, and installing the tramcar. Girdwood volunteers finished and dedicated the project during the third summer.

The grant covered approximately a fifth of the total cost of the installation. Local volunteers, including Cub Scouts, donated the rest of the cost by working during the summers, giving helicopter time, and establishing a staging area on private property. More than 60 helicopter trips were required to finish the project. The Hand Tram at Four Corners is one of the biggest trail draws in the valley for visitors and locals and has become the icon for Girdwood trails.

Present-day Girdwood consists of a diverse population of outdoor enthusiasts, local business owners, and Anchorage commuters. Other outdoor enthusiasts throughout Southcentral Alaska come to use the town's trails for nordic skiing, hiking, rafting, and biking. The town's historic roots as a mining community and as an access route for the original Iditarod Trail provide many unique routes and trails.

Girdwood's skiing and snow sports offerings continue to receive national accolades and summer visitor numbers increase every year; it is time to plan systematically for the trail system to fully realize the community's year-round adventure sports resources.

Physical Features

(Section adapted from *Girdwood Area Plan, 1995*)

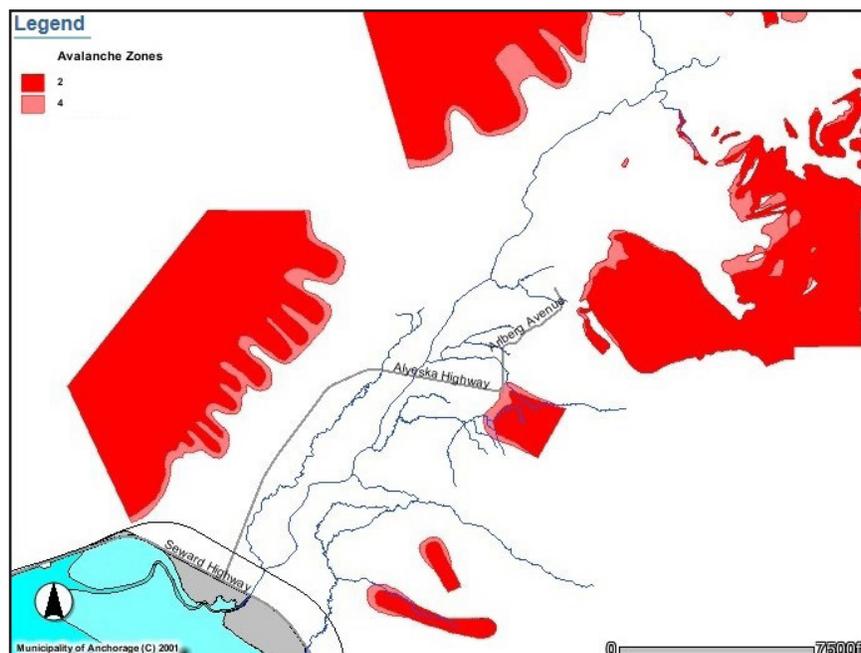
Geology and Climate

The geology and climate in the Girdwood Valley conspire to make the area a very challenging environment to build and maintain trails. The alignment of our trails and their condition are directly influenced by the geology and climate of the valley. Girdwood Valley developed initially along a major structural trend in the bedrock that was later deepened and widened by glaciation. The valley generally runs along a northeast/southwest line and is relatively short in length—only six miles long. It is nearly two miles wide at tidewater and gradually narrows as it progresses inland to the headwall. The lower portions of the valley are broad and flat with abruptly ascending slopes along the mountainsides that rise to 3,500 feet. The upper valley narrows, with rolling terrain being wedged between 6,000-foot peaks that make up the headwall.

Topography

The topography of Girdwood Valley is typical of the Chugach Range where glacial action has been the predominant force in shaping the landscape. This is largely evidenced by the steep mountain peaks interspersed with glacial bowls and valleys that surround the valley. Topographic features throughout the valley consist of open meadows, cliff bands, prominent knolls, gullies, ridges, and glacial bowls. On the valley floor, unconsolidated sediments overlie the bedrock; the distribution of which is complex because of repeated and inter-related effects of glacial actions, marine influences from Turnagain Arm, and melt-water streams.

Our topography and climate result in some severe avalanche hazard zones—places where winter trails should not be encouraged.



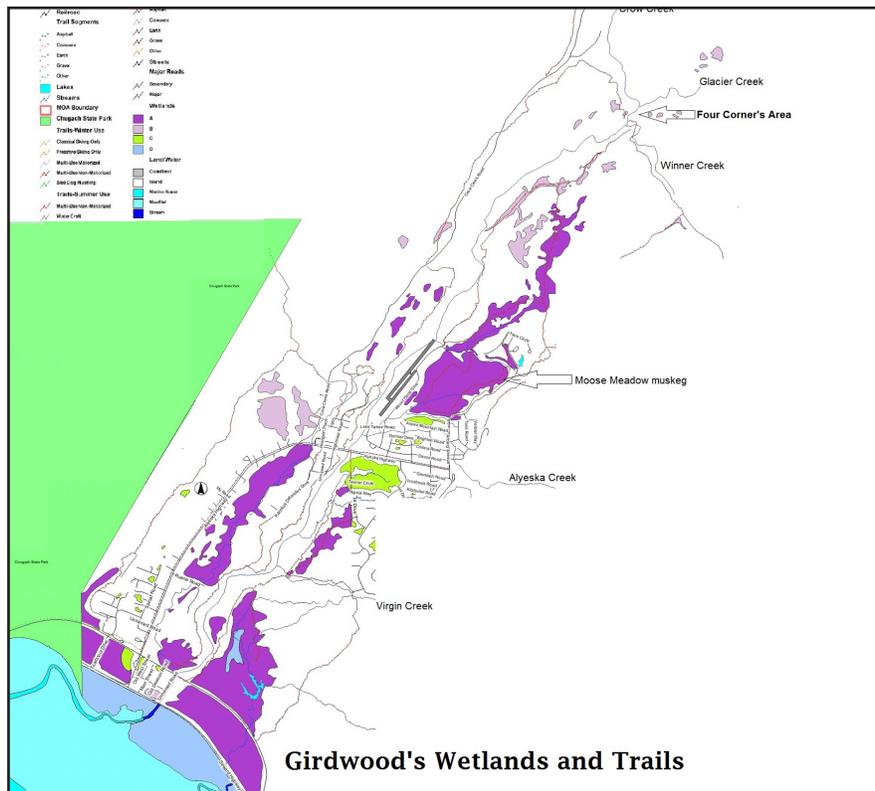
Avalanche slide paths surrounding Girdwood (adapted from the Girdwood Area Plan, 1995)

Hydrology

The current major melt-water stream is Glacier Creek, which begins at the termini of several glaciers on Goat Mountain. From its head, the stream flows southwest to tidewater. In the upper valley, two other major melt-water streams flow into Glacier Creek in close proximity. Crow Creek flows in from the northwest, and just downstream, Winner Creek joins from the southeast. In this area of confluence, the streams flow through narrow, deeply cut bedrock. This important environmental feature is referred to as the “Four Corners” area.

A large system of muskegs (bog-like wetlands) are located near the Hotel Alyeska, stretching northeast towards the Four Corners area. The Moose Meadow stream drains from this “sponge” into Glacier Creek.

Further downstream, a couple of other significant melt-water creeks flow into Glacier Creek. Alyeska Creek flows from the ski resort to the east and joins Glacier Creek just north of the airport, and California Creek originates on the western side of the valley and flows generally southwest parallel to Glacier Creek through the area east of the Alyeska Highway bridge over Glacier Creek, down to where it joins Glacier Creek near the Alaska Railroad right-of-way. These two creeks form an extensive flood plain with beaver dams and other wetlands along California Creek. One other significant melt-water creek in the valley is Virgin Creek. It flows out of the lower eastern side of the valley, runs generally south, and empties into tidewater just south of Glacier Creek. Wetlands surround the lower portion of this creek.



Major Streams and Wetlands in Girdwood (Girdwood Area Plan, 1995)

Soils

According to the U.S. Geological Survey, Girdwood sits mostly on a thick Mesozoic marine deposit that extends through the Chugach-Kenai mountain system. This layer was heavily glaciated during the Pleistocene period, particularly along the weakness that eventually became the Girdwood Valley. At one time ice was nearly 3,500 feet thick in the valley. As the ice melted, it deposited unconsolidated materials on the valley floor. The commonly found deposits of unconsolidated material that form the basic soil units are alluvial, colluvial, glaciomarine, and estuarine deposits. These deposits of unconsolidated material lie over bedrock composed of argillite, slate and greywacke. Deposits range in thickness from 98 feet near Glacier Creek to two feet or less up the slope from the base area of the resort. Local deposits may be 160 feet deep or more.

Alluvial deposits are chiefly composed of sand and gravel with some layering of silt. They are found primarily on the lower terraces and floodplains of Glacier Creek and the outwash fans of Alyeska Creek, California Creek and Virgin Creek. Alluvial soils are well drained.

Colluvial deposits are accumulations of mixed materials that are thickest along the bottom portions of the mountain slopes along the sides of the valley. Colluvial materials are mixed with a wide range of grain sizes. Drainage is fair to poor. Some colluvial areas along the base of Penguin Ridge contain numerous seeps.

Glaciomarine and Estuarine deposits are poorly drained; fine grain silt and clay materials are found on some of the upland ridges, in natural depressions, and in the lower flat portion of the valley that is close to tidewater. Many are overlain with a mat of peat or muskeg and closely correspond to wetland areas. Materials that make up these soil units have a high water holding capacity and are poor areas to align trails as integrated water management is very challenging because of the flat topography. Trail alignments need to avoid these areas whenever possible.

The soils in the Girdwood Valley are different from those in the Anchorage area in one notable way. They are much wetter and contain extensive organics that hold moisture. This distinction has to do with the climatic differences between the two areas.

Climate

Girdwood Valley has a maritime climate characterized by cool summers, relatively mild winters and year-round precipitation. This is typical of southern coastal areas of Alaska where the ocean exerts a moderating influence. Compared with Anchorage, Girdwood experiences warmer winters, slightly cooler summers, and a great deal more precipitation year-round.

Winter weather in Girdwood is typified by periods of cold, stable weather followed by long periods of warmth. January and February are normally the coldest months. Average winter temperatures in the lower valley from Turnagain Arm up to Alyeska Resort will typically range from 15 to 25 degrees Fahrenheit.

The radically variable weather patterns that affect Girdwood during the winter are replaced by a more stable climate regime during the spring and summer months. Typical summer temperatures are in the 60's, with July being the warmest month.

Average annual precipitation ranges from 171 inches at Whittier, to 27 inches at Anchorage, with Girdwood averaging approximately 67 inches. Stormy periods produce either rain or snow at sea level, but consistently generate snow above the 1,000-foot level in the winter. This high freezing level occasionally results in a shortage of snow at lower elevations. Average November to April snowfall at Alyeska Resort reflects this difference: 197 inches at the base area with an elevation of 250 feet, 507 inches at the midway elevation of 1,700 feet, and 635 inches at the top of the lift-serviced area at 2,750 feet. By comparison, the average November to April snowfall for Anchorage is 52 inches. Elevation and temperature, more so than aspect, play a dominant role in the valley for both snowfall and snow retention.

Historically, precipitation in Girdwood has occurred on average 15 days each month for May, June and July. However, total accumulations per month through this period are relatively modest, averaging two to four inches. The average number of precipitation days and total monthly accumulations gradually increase beginning in August, reaching an average of 21 precipitation days and total water accumulation of eight inches for the month of October.

Vegetation

Girdwood Valley is located at the northern edge of the Pacific coastal rainforest zone. This is in contrast to the drier boreal or interior forest zone of most of Alaska. The forest growth in the valley consists of western hemlock, Sitka spruce, and black cottonwood. These trees are typical for parts of coastal forests at this latitude and topographical conditions. The forest extends up the mountainsides to about 1500 feet. Shrub and scrub growth continues to a slightly higher elevation but is soon replaced by alpine tundra ground cover. The dominant shrubs and scrubs are alder, willow and devil's club. There are no known threatened or endangered plant species in the Girdwood Valley.

Fish

All five species of salmon, steelhead, and Dolly Varden have been observed in Girdwood Valley streams. Anadromous salmon species have been observed as far up Glacier Creek as the Four Corners area. Significant fish milling areas are the confluences of California Creek and Moose Meadows Creek with Glacier Creek. The most significant fish spawning areas are located on California Creek, between Alyeska Highway and Crow Creek Road and on the lower portion of Moose Meadows Creek. All of the small tributary/wetland complexes associated with Glacier Creek, California Creek, and Moose Meadows Creek are important fish rearing areas.

Wildlife

Because of its location between coastal and boreal ecosystems, Girdwood Valley and its surrounding environs support a high diversity of wildlife species. There are no threatened or endangered animal species known to inhabit the valley. Species commonly seen in the Girdwood Valley are beaver, moose, black and brown bear, red squirrel, and mountain goat. Birds include eagles, hawks, owls, waterfowl, shorebirds, arctic terns, ravens, magpies, ptarmigan, spruce grouse and warblers as well as a wide variety of resident and seasonal passerines.

Land and Trail Managers

Girdwood Valley's land and trail managers are numerous and varied. The Girdwood Trails Committee is concerned with all trails in the valley, regardless of land management. However, the authority to improve or dedicate trails resides with the land owner/manager.

The primary private land manager in the Girdwood Valley is Alyeska Resort. The Girdwood Nordic Ski Club, a local non-profit organization, developed and manages the Nordic 5K Loop. This club, along with the Resort and Trails Committee, groom the nordic ski trails in the valley, although some trails are purposefully left un-groomed.

Public land managers hold most of the valley's land. The Municipality of Anchorage's Heritage Land Bank (MOA/HLB) is a major land manager as is the USDA Forest Service. In general, state lands are located in the upper valley, with Chugach State Park on the far west side of the valley.

For trails on HLB lands, the Girdwood Board of Supervisors, Parks and Recreation, and Trails Committee all provide recommendations to the Anchorage Assembly for approval of major trail decisions, such as trail dedication, easement establishment, or new trail construction. Less major decisions require approval of the Girdwood Board of Supervisors.

Girdwood Valley trails on Chugach State Park and Department of Natural Resources (DNR) lands are managed by the State of Alaska. A district ranger approves, with Trails Committee input, all Park trail decisions. The Girdwood Trails Committee will maintain a Memorandum of Understanding (MOU) with DNR and Chugach State Park.

For trails managed by the Chugach National Forest, the District Ranger approves, with input from the Girdwood Trails Committee, all Girdwood Valley trail decisions. An MOU is maintained with the U.S. Forest Service Glacier Ranger District and the Municipality of Anchorage. It is renewed every five years. Current copies are available at the Girdwood Municipality of Anchorage office and in Appendix 8.

Federal and state programs and organizations assist Alaskan communities with pedestrian paths and trails. Grants and assistance for Girdwood are available through Safe Routes to Schools, Walk-Friendly Communities, The Alliance for Biking and Walking, American Hiking Society, Alaska Trails, the Iditarod National Historic Trail Association, and the Kenai Mountains-Turnagain Arm National Heritage Area.

The Girdwood Trails Committee plans to collaborate with the Alaska Railroad and the State of Alaska Division of Statewide Aviation to work out access to trails that are within their rights of way.

CHAPTER 2

The Importance of Girdwood Trails and This Plan's Goal



Why Trails Are Important to Girdwood

Trails are a critical component of everyday life in Girdwood. Our trails range from pedestrian facilities like sidewalks and paved bike paths, to developed forest trails, to primitive routes marked only by cairns or scuffed earth. The trails provide many benefits to residents and visitors, among them a healthy lifestyle and safe, convenient access to stores, library, school, playgrounds, disc golf courses, and the valley's special places. These trails are significant pieces of public infrastructure that provide recreational opportunities and alternative transportation corridors; they link neighborhoods and bind the community together. Trail-based recreation has a positive and measurable economic impact on the entire community of Girdwood. Many communities in Alaska have formally recognized the importance of trails. Documented social and economic benefits of trails are:

- ◆ Connectivity among neighborhoods
- ◆ Non-motorized access to other community resources
- ◆ Access to affordable exercise to all within the community
- ◆ Numerous mental and physical health benefits of outdoor exercise
- ◆ Appreciation of natural assets
- ◆ Creation of buffer zones and emergency routes which provide resiliency to natural hazards
- ◆ Stimulation of the local economy
 - Job creation
 - Tourism (bed tax as well as consumer spending)
 - Increased property values

Health and Fitness

The health benefits of exercise derived from trail-based recreational activities contribute to improved user health and reduced health care needs. Regular, moderate exercise has been proven to reduce the risks of many health problems, such as coronary heart disease, diabetes, certain kinds of cancers, and obesity. Regular exercise can also protect against injury and disability because it builds muscular strength and flexibility.

Walk-Friendly Community

Neighborhood connectors, the path along Alyeska Highway, and sidewalks near businesses and the school promote a safe walking environment for the community. Residents always cite these paths as a critical part of living in Girdwood. The paths create a space where people can see each other and visit, can exercise, and be in the fresh air. They demonstrate the value that Girdwood residents place on outdoor access, mobility, and safety.

Trails as Transportation

Trails and greenbelt connecting trails offer adults and children alternative transportation networks that provide an opportunity to integrate moderate, individualized exercise with daily trips to work and school. When the valley trails are used as transportation corridors, there are less vehicular trips in our community, reducing emissions, dust and traffic in our neighborhoods.

Trails and Their Economic Impact

Over the last 50 years, Girdwood has become a wonderful resort community for its residents and visitors from Alaska and the world beyond. The town has helicopter powder skiing and sightseeing companies, hiking and rafting companies, scores of bed and breakfast inns, a world-class hotel, a ski resort, a medical clinic, and all the attendant restaurants and services required by a resort community. A good, safe trail system directly impacts these businesses by helping to draw and keep residents and second-home owners and by contributing positively to the visitor experience.

Consistent use of trails, whether paved or not, improves health, which in turn, saves money for an individual and the health care system. The 2015 study, *Economic Benefits of Trails, Parks, and Open Space in the Mat-Su Borough*, found that “the estimated average value in medical savings for adults who exercise in public outdoor spaces is \$288 per year. This value is consistent with the estimated cost related to obesity in Alaska divided by the population. For the senior population, the healthcare cost was doubled compared to adults (\$576), but no loss of productivity was taken into account since they are less likely to work. For children, the estimated average value in medical savings is \$127 per year” (p. 8).

Goal of This Plan

The Girdwood Valley Trails Management Plan (GVTMP) will provide direction on how the community shall develop, manage, maintain, and assess our trails. It is designed to provide a framework to guide sustainable trail development and management practices.

The goal of this plan is to create a highly functional, interconnected, multiuse trail system that meets current and future needs of the community. To accomplish this, the following best practices from Alaska Trail's Sustainable Trail Framework, will be implemented:

- ◆ Adopt accepted sustainable trail construction and maintenance techniques.
- ◆ Organize the process to assess, prescribe, and prioritize Girdwood trail system needs;
- ◆ Use a consistent set of principles and policies for trail management and trail managers;
- ◆ Promote wise management of the valley's trail resources through proper planning, design, and training;
- ◆ Achieve long-term reductions in maintenance costs; and
- ◆ Provide a basis for identifying and protecting existing trails in collaboration with future planned land development.



CHAPTER 3

Girdwood Valley Trails' Management Areas



Girdwood Valley has over 30 recognized trails that cover more than 100 miles from the valley floor to the high alpine terrain. Of these, there are 5.7 miles on three trails that are ski trails only and another 21 miles on seven trails that are used year-round. The other trails are predominately used during summer months.

These trails are significant pieces of public infrastructure that provide recreational opportunities and alternative transportation corridors; they link neighborhoods and bind the community together. Trail-based recreation has a positive and measurable economic impact on the entire community.

The current trail alignments in Girdwood have their origins in the transportation corridors used to move men and materials to gold producing sites in the valley and throughout the state. Through use, these early corridors have evolved into the recreational trails that we now travel and maintain.

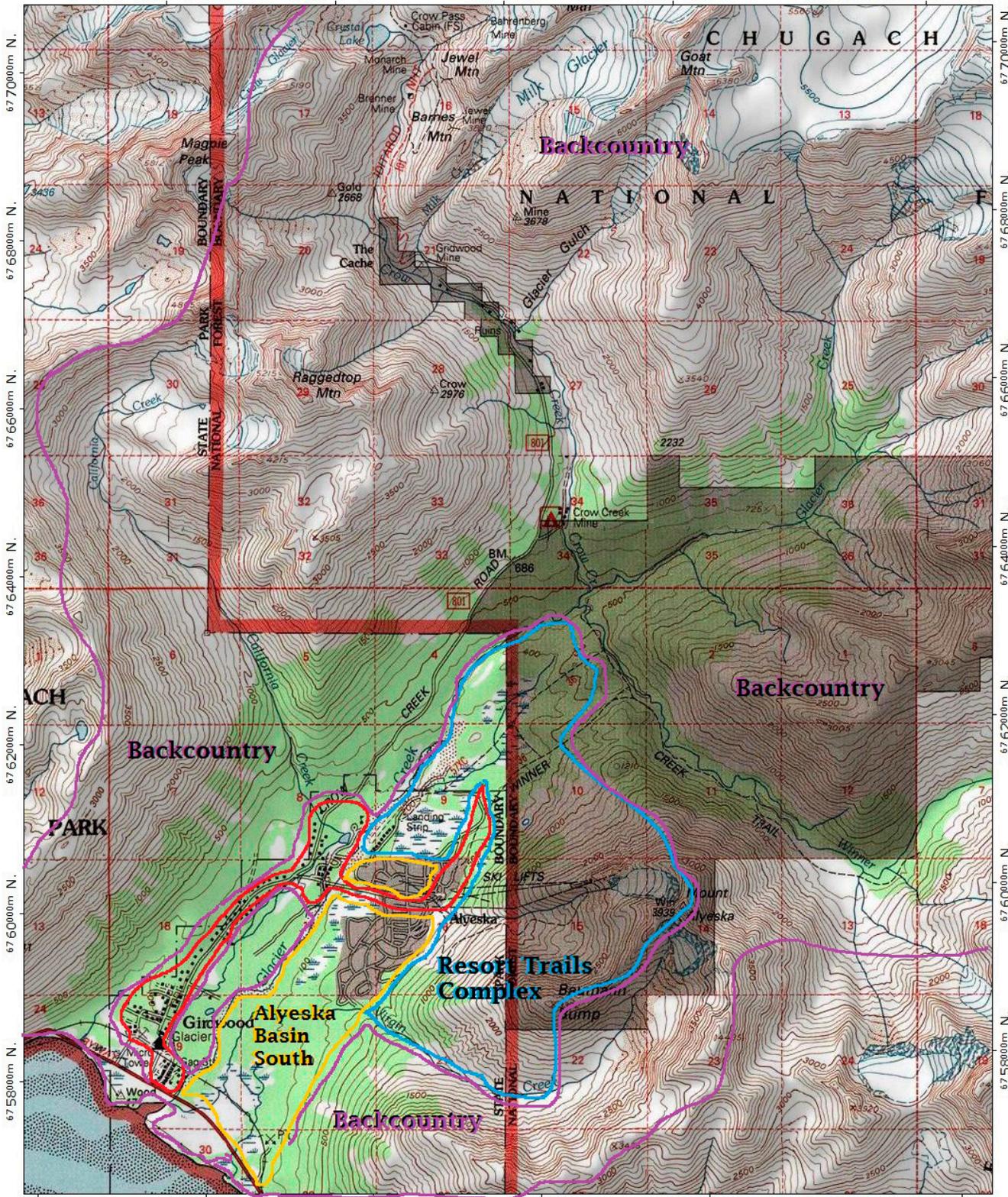
Most of the trails run along the valley floors and the lower slopes of the mountains that confine the valley. Direction of travel on most trails is loosely along a north/south line. The alignments of the trails within Girdwood Valley are dictated by natural and manmade features. Their collective condition is impacted by environmental factors and the standards to which they were built and are maintained.

The valley is divided into four areas for management purposes. Trails are grouped by the area in which they traverse, and they share similar management issues.

- ◆ **Alyeska Highway Corridor (AHC):** This area contains all of the paved multi-use trails in the valley, from the Hotel Alyeska to the intersection of the Alyeska Highway and the Seward Highway, as well as the trails found in Girdwood's Town Center and in the park where the Forest Fair is held. The core trail is the Alyeska Highway Bike Path. There are three other paved bike path trails that radiate from it: the Hightower Bike Path to the school, the Moose Meadows Bike Path to Hotel Alyeska and the Bird-to-Gird Bike Path. The Tiny Creek trail is also located in this corridor.

- ◆ **Resort Trails Complex (RTC):** The trails in this area are the most influenced by resort activity. These trails lie east of Glacier Creek and north of the Alyeska Highway. They have the most concentrated use of any trails in the valley with the highest diversity of user groups. Hikers, downhill bikers, mountain bikers, nordic ski racers, recreational cross-country skiers, skijorers, tourists, and residents alike use these trails that emanate from the resort. Some of the winter trails are on wet ground unsuitable for summer use. The first 1/3 mile of Lower Winner Creek Trail anchors this trails complex. The popular Girdwood Hand Tram connects the two portions of the Winner Creek Trail. Also all of the groomed nordic trails are in this management area. The area has the only privately constructed and managed trails in the valley. These trails are all open to the public.
- ◆ **Alyeska Basin & South Valley Trails (ABS):** These are the locals' trails; "my back door is my trail-head." These trails lie east of Glacier Creek and south of the soccer field. The majority of these trails are routes that have evolved through use into class 1 and 2 trails. There are numerous social trails that are important community links. These are high value trails with high maintenance requirements, especially regarding snow storage issues each winter. Their alignments are generally across flat ground with numerous streams, wetlands, and flood plains.
- ◆ **Backcountry (BC):** This area surrounds all the other areas and contains the more remote and consequently more rustic trails. This area stretches from Turnagain Arm to the top of the ridges surrounding our valley. It encompasses all lands west of Glacier Creek (excluding the Highway corridor), and extends east to Berry Pass. These trails are mostly along historic transportation routes.

Trails in this corridor face significant pressure from potential development of the new south town site and the proposed Crow Creek neighborhood developments, including the Holtan Hills subdivision. All INHT segments are within this area. (Girdwood Iditarod, Crow Pass, and both upper & most of lower Winner Creek Trails). The Athabaskan Environmental Physics (AEP) Trail, Beaver Pond Trail, California Creek Trail, Abe's Trail, and the Ragged Top route are all found in this area. Several trailheads are found along Crow Creek Road, and the hand tram at Four Corners is within this area.



0.0 0.5 1.0 1.5 2.0 miles
 0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 km
 Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

CHAPTER 4

Trail Management Principles and Policies



A tremendous amount of work is needed to transform the Girdwood Valley trails into a sustainable and functional trail system that meets the needs of user groups while simultaneously providing for the protection of natural resources. Through the use of a “green infrastructure” approach—a relatively new trail classification system—sustainable trails will be maintained or improved over time to create a functional, high quality trail system. The managed trails in the valley will become protected through the process of establishing their alignment and then dedicating an easement assigned to the appropriate trail management entity. The following general trail management policies and management principles shall apply to trails in the Girdwood Valley in conjunction with the trail-specific recommendations provided later in this plan. These policies and principles are drawn from current federal, state, and local land managers.

Green Infrastructure Approach

This plan promotes a green infrastructure approach to trail planning to better accommodate development, reduce infrastructure costs, and maintain the valley’s character. Green infrastructure is defined as an interconnected network of green spaces (hubs + corridors) that conserves the natural ecosystem’s values and functions and provides benefits to human populations. It refers to an integration and interaction of different functions or activities on the same piece of land.

In using a green infrastructure approach, recreation areas and important environmental features and processes are identified and considered in the planning of Girdwood Valley trails and future land management actions. This approach is important in the valley because of its intrinsic natural features and proximity to Alaska’s densest population center, a primary transportation corridor, and a year-round resort facility. This approach will link neighborhoods and community centers to landscapes with the goal to maximize the benefits to both. Green infrastructure is a key to the sustainable use of land for the benefit of the community.

Sustainable Trails Framework

(Adapted from *Alaska State Parks Trail Management Handbook*, 2015)

The Girdwood Trails Committee will establish a sustainable design framework to manage the Girdwood Valley's trail system. This will ensure our trails have a minimal impact on the ecosystem and keep low maintenance costs. A sustainable trail is defined as a trail that conforms to the terrain and environment, is capable of handling its intended use without serious resource degradation, and requires minimal maintenance.

Sustainable trails focus on initial trail layout and design to minimize resource degradation and maximize the user experience. This involves the use of integrated water control, gentle contours of up slopes, grade control, and full bench construction. While initial construction costs can be more expensive due to longer lengths of tread, more materials moved out for full bench, and more investment in water control, the payoff in reduced routine maintenance costs and greater user enjoyment will compensate for those initial investments. The ultimate result of sustainable trail management will be transportation alternatives, recreational opportunities, environmental aesthetics, open space preservation, and increased adjacent property values from trails—without straining the taxpayer's wallet.

Five Trail Fundamentals

These best practices can be carried out and communicated by applying Five Trail Fundamentals, defined below. These Five Trail Fundamentals from the US Forest Service and widely adopted by other local, state and federal land management agencies provide an integrated means to consistently record and communicate the intended design and management guidelines for trail design, construction, maintenance and use.

1. **Trail Types:** Standard/Terra Trail, Snow Trail, and Water Trails. Some trails are both standard and snow trails.
2. **Trail Class:** There are five Trail Classes, ranging from the least developed (Trail Class 1) to the most developed (Trail Class 5).
3. **Managed Use:** Modes of travel that are actively managed and appropriate on a trail, based on its design and management. Additional kinds of use may also be allowed, but the trail would not be specifically designed to accommodate them.
4. **Designed Use:** Only one Managed Use is identified as the design driver or Designed Use for a trail—that use which has the most limiting design requirements. The five designed uses found on Girdwood trails are:
 - a. Hiker / Pedestrian
 - b. Bicycles (Summer & Winter)
 - c. XC Ski (Classic / Diagonal)
 - d. XC Ski (Skate)
 - e. Non-motorized Watercraft

These five designed uses are consistent with current recreational activities in the Girdwood Valley.

We currently have no designated “water trails” or “non-motorized watercraft” as a designed use in the valley. However, Glacier Creek has become a popular pack-raft float and could be soon recognized as a water trail with a non-motorized watercraft for the designed use. Stand-up paddleboards (SUPs) are another type of watercraft that is becoming more popular locally. The valley has several floatable stretches of creeks where this designed use would be appropriate, and they may be written into the plan when we have the ability to manage these routes.

Other designed trail uses not found in the valley are all motorized uses (ATV, dirt bikes, snow machines) and livestock (horse, mule, camelids). Currently, our trails are not suitable for these types of uses.

5. **Design Parameters:** Technical guidelines for the survey, design, construction, maintenance, and assessment of a trail based on its Designed Use and Trail Class. These parameters help trail developers by setting the design criteria to meet the trail’s intended use.

Trail Management Objectives

The Five Trail Fundamentals are used to complete a Trail Management Objective (TMO) for each trail. TMO’s are the method used by the US Forest Service to describe the planned status and maintenance of each trail. Components of a TMO are: Trail Type, Trail Class Matrix, Designed Use Objectives, Managed Uses, and Prohibited Uses. The TMOs synthesize and document, in one form, the management intent for the trail while providing basic reference information for any subsequent trail planning, management, condition surveys and reporting. A TMO is required for each trail or trail segment as a prerequisite for completing trail condition assessment surveys and subsequent prescriptions for work needed to meet standards. Each TMO is approved by Girdwood Trails Committee to ensure that the objectives for the trail are consistent with this plan and future land management actions. After approval, the TMOs direct the trail maintenance staff and volunteers how to perform maintenance work or bring a particular trail up to standards as needed.

Appendix 1 is a comprehensive list of existing Girdwood trails and includes guidelines for future TMOs and standards for each trail. Appendix 2 addresses trails that have been identified for future development. TMOs will need to be created for these new trails, based on the type of trail determined to be needed in the process of trail conceptual development.

The residents of Girdwood and our trail partners will continue to have years of work to manage our trails to the standards outlined in this plan. It will be up to the community to support trail-based recreation and rally in support of trails projects.

Six Essential Elements

Most segments of existing Girdwood Valley trails do not yet meet sustainable standards, resulting in a higher level of maintenance to keep the trail corridor and tread in reasonably good condition. Local, state and federal land managers have identified Six Essential Elements of Sustainable Trails to be considered and integrated when building or improving trails within the valley.

1. **The 10% Average Guideline (10AG):** The average trail grade should not exceed 10% along the alignment of the trail. In many cases, keeping trail grades at about 10% will assure longer-term sustainability and reduce long-term maintenance.
2. **The Half Rule:** Trail grade should not exceed $\frac{1}{2}$ the side slope that it traverses; if so, it becomes a fall-line Trail. This rule helps when putting trails on gentle side slopes.

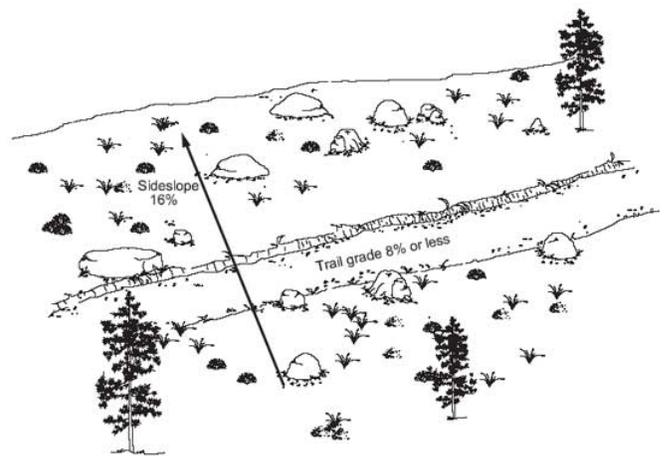
Fall-line trails let water funnel down, causing erosion and ruts. As side slopes get steeper, trails designed using the half rule can be too steep.

3. **Maximum Sustainable Grade (MSG):** The maximum tread grade that can be constructed along the alignment of the trail is typically restricted to runs of less than 50 feet and no more than 5% of the total length of the trail. Determining the MSG involves many variables that are specific to a trail. For example, soils that have a high organic content will be less stable and therefore will have a lower MSG than soils that have higher rock content. Variables influencing MSG include:

- | | |
|---|--------------------------------|
| a. Soil type | e. Types of users |
| b. Presence of surface rock or bedrock | f. Numbers of users |
| c. Annual rainfall | g. Desired level of difficulty |
| d. Type and spacing of water control features | |

4. **Grade Reversals (GR):** The grade of the trail is reversed for 10 to 15 feet, then “rolled” back over to resume the descent. Grade reversals should be placed frequently—about every 20 to 50 feet—depending on trail grade. A trail that lies lightly on the land will take advantage of natural dips and draws for grade reversals. The trail user’s experience is enhanced by providing an up-and-down motion as the trail curves up and around large trees or winds around boulders.

- ◆ Grade can be expressed as a percent or an angle. Percent is easier to understand.
- ◆ Percent grade equals the rise (elevation change) divided by the run (horizontal distance) multiplied by 100.
- ◆ Example: Rise of 10 feet/run of 100 feet x 100 = 10 percent.
- ◆ Elevation change, up or down, is always a positive number.



5. **Outslope:** As the trail contours across a hillside, the downhill or outer edge of the tread should be lower than the inside or bankside edge. Outsloping lets water sheet across the trail naturally. The tread should be outsloped at least five percent (5%). Loss of outslope is the first maintenance problem that develops on all trails. If trail builders can do nothing else when budgets are tight, reestablish the outslope. Doing so pays big dividends.
6. **Durable Tread Surface (DTS):** Surfacing should take into consideration special characteristics of the soils, such as the presence of permafrost, organic/muskeg soils, volcanic ash, saturated soils, or some other environmental challenge. Many trails in the Girdwood Valley are not sustainable due to the flat terrain or soil characteristics noted above. In these cases, tread hardening procedures are needed to achieve sustainability and a DTS. Trail hardening procedures includes techniques, such as gravel capping and installing boardwalk and planking, geogrids, and other means to provide a DTS.

Thirteen Common Trail Practices or Structures to Avoid When Possible

In contrast to the six essential elements for sustainable trails, the following 13 practices and structures contribute to poor trail sustainability, high maintenance costs, and poor user experience.

1. Grades too steep for sustainability (exceeding 10% average grade)
2. Fall-line trails (exceeding the half rule)
3. Waterbars for drainage (difficult to construct, high maintenance, low user satisfaction)
4. Culverts that are an incorrect diameter (difficult to maintain, fish passage issues)
5. Improper bridge placement
6. Lack of grade control along alignment (highly variable grades)
7. Improper trail location (or non-curvilinear layout)
8. Improper outslope (entrenched tread, poorly maintained)
9. Failure to identify critical control points during layout (poor planning)
10. Improper or failure to acquire permits or authorization (poor planning)
11. Construction in a flood zone (poor planning)
12. Construction in a sensitive habitat (poor planning)
13. Construction on flat terrain (poor layout)

Special Implications for Girdwood Valley

A premise of trail sustainability is built around integrated water management. Flat terrain (<3% surface slope) represents a great challenge in Girdwood Valley. Many historic trails and routes were originally intended as winter transportation corridors and are now being used as summer recreational trails. These trails are located on wetlands, deltas, glacial plains, and along the valley floor. Trails on flat terrain with no provisions for drainage end up with their tread as the low point, collecting and transporting water along the trail alignment.

Trail User's Experience

Many elements contribute to a Trail User's Experience (TUE) while traveling on a trail. Every effort shall be made throughout the trail planning, construction, and maintenance process to consider the TUE. It is important to keep trails interesting, appreciated, and respected to engender stewardship among users. Understanding core values is the key to being able to provide a positive TUE.

Human values are important to recognize, understand and consider when designing and managing trails for TUE. The core values listed in the Executive Summary are associated with safety and convenience, and the recreational values are associated with fitness and various transportation modes. These values include how trails and their surroundings are perceived and how their condition affects people. For example, an individual's perception of how safe and appropriate the trail is to use must be balanced with the reality that a certain amount of risk is also a trail attractor in the context of the trail's designed and managed uses. People also value efficiency that translates to making sure a trail is more desirable to use than to bypass, shortcut, or avoid.

The notion that Nature's randomness has a playful quality also should be represented in the trail experience while considering the concept of harmony that is felt when all core values work together to support a desired trail experience. Additionally, to provide more users with the TUE that they desire, it is necessary to have a variety of trail surfaces, difficulties, and challenges that suit the needs of a broad spectrum of user groups.

Girdwood Valley Trail Design and Development Guidelines

There are a number of different philosophies and thought processes that need to be considered during the design and development phase for any functional trail as part of an overall trail system. This plan advocates for new guidelines for the way Girdwood Valley trails will be designed and managed.

Trail Design Process

(Chugach State Park Management Plan, 2016)

Achieving a sustainable trail begins with establishing an integrated design process. This relies on a multidisciplinary team (trail advocates, designers, major stakeholders, and land managers) working collaboratively from the pre-design phase through construction. The process ensures that a trail is developed in keeping with the spirit of the trail design and future maintenance obligations. A typical design process entails finding the most interesting features that exist along a proposed trail alignment. These features become positive control points that are incorporated into the trail design, effectively connecting all the interesting features in a curvilinear fashion.

- ◆ **Loop Trail Layout:** While destination trails will always be the dominant long-distance trail type in Girdwood Valley, users have indicated a desire for more loop trails incorporated within the trail system. Loop trails provide a more diverse experience for trail users and can be an important trail management tool when different elevations and terrain configurations are incorporated to take advantage of superior Valley features. Additionally, higher use can be accommodated using loops in the valley's development zones without placing greater impact in backcountry areas or wilderness zones. Where appropriate, construction of connecting links with existing trails or connecting other loops should be incorporated in future trail design to create more loop options within the existing trail infrastructure.
- ◆ **Revegetation:** Local and native plant materials must be used for any revegetation of disturbed areas. Any intrusion of non-native plants will not be allowed and must be fully mitigated. Revegetation will be used to provide screening and help stabilize slopes. Construction techniques to preserve vegetation and trail routing should be employed to minimize visual intrusion. When possible, plant material removed from the trail corridor for clearance should be transplanted only to other eligible locations where revegetation is necessary.
- ◆ **Clearing:** Clearing widths and heights should conform to the trail class and design parameter specifications assigned to a particular trail or trail segment. Deviations to the design parameters may occur only when the deviation is documented in the Trail Management Objectives form for a particular trail or trail segment. Additional clearing may be prescribed to remove falling hazard trees adjacent to developed areas or to improve views as guided by community zoning rules.
- ◆ **Natural Considerations:** Where significant wildlife or other natural features exist, special trail routing, construction methods, and trail management should be considered. Trails should have a natural flow and rhythm that avoid long, straight alignments. Where hazards are present, special trail construction techniques or alignment should be used to mitigate the hazard. Hazardous areas such as steep slopes, avalanche zones and rockslide areas should be either avoided or be closed seasonally when hazardous conditions present a problem.
- ◆ **Historic and Cultural Resource Considerations:** Like natural resources, cultural resources must be considered when planning and constructing trails. Cultural resource identification should occur early in any trail project and possible impacts assessed. As needed and in consultation with the State Historic Preservation Office (SHPO), special trail routing and construction techniques should be used to reduce adverse impacts to cultural resources.

- ◆ **Environmentally Sensitive Sites:** Special alignment or construction methods may be necessary to reduce impacts and minimize disturbance in environmentally sensitive areas. Examples of environmentally sensitive sites include wetlands, highly visible hillsides, significant vegetation areas, threatened and endangered species habitat, highly erodible soils, unstable slopes, and ridgelines. Techniques such as site-specific trail routing, erosion control measures, site-specific adjustment of construction standards, and site specific construction practices should be implemented to minimize environmental, visual or construction impacts. Construction methods that should reduce impacts include installing retaining walls to reduce cut-and-fill slopes on a visually prominent hillside, hand construction of a trail, or stabilizing a hazard that is located within or adjacent the trail corridor. Special care should be taken in areas close to rivers, streams, or wetlands. Trails that cross or are located adjacent to wetlands should be designed for minimal impact. Boardwalks or other techniques may be necessary to impose minimal construction impacts. Wildlife needs should also be considered when setting trails near wetlands. For example, locate trails well up and away from potential beaver ponds. Managers should consider decommissioning underutilized trails in sensitive areas to minimize erosion of sediment into streams. Connectivity between drainage ditches and streams should be minimized to reduce sediment delivery potential.
- ◆ **Climatic Trail Use Opportunities:** Designers should locate trails for both summer and winter activities, where possible. Trail alignments should take advantage of terrain exposure and utilize elements that contribute to optimal seasonal influences. For example, a winter trail should exploit openings in the canopy for better snow coverage of the ground.
- ◆ **Signage:** Trails should be named, and names should be posted at the trailheads. Signage is important because it provides descriptive information about the trail to users and enables them to identify ground locations from maps. Names for trails should be descriptive of the terrain/area the trail traverses or of the trailhead/destination. Sign standards will vary by trail classification and managed use. Trail signage should generally be kept to a minimum and include only what is needed to convey necessary information. Highly developed trails will typically include more directional signage and interpretative information. Locations of signs need to be evaluated on a case-by-case basis, and signs should only be posted when they contribute to the trail user's experience. Trailheads and major intersections are appropriate sign locations. Yield hierarchy signs (see example at right) can be placed at trailheads or major access points of multi-use trails when they are clearly visible and where it does not impede trail use or present a hazard to trail users. Appendix 9 provides some examples of area trail signs.



Pedestrian Facilities

Pedestrian facilities should be included initially during any subdivision or roadway improvement project and designed in such a way so that pedestrians' needs are considered and prioritized above vehicular needs.

Several ideas identified by the Girdwood Trails Committee to improve the safety for pedestrians crossing roads include:

- ◆ Installing flags with instructions at crosswalks so people can help motorists see they are attempting to cross the road.
- ◆ Constructing underpasses or overpasses at busy roads.
- ◆ Directing people to an underpass already existing at the highway bridge over Glacier Creek.
- ◆ Locating cross walks away from intersections where vehicles are turning.
- ◆ Using roundabouts to slow traffic.
- ◆ Installing four-way stop signs at busy intersections.
- ◆ Installing push-button stop or warning lights.

Trail Closures and Warnings

Closing trails and posting warnings are important management tools that will be utilized as needed in the valley. Trails may be temporarily closed throughout the year due to construction, trail restoration or for trail user safety at the discretion of the land manager responsible for the trail. Trail closures and warnings will be a public notice placed at the trailhead.

National Trails

Girdwood Valley has two national trails: the Iditarod National Historic Trail (INHT) and the Indian to Girdwood Multi-use National Recreation Trail (aka Bird-to-Gird NRT).

The INHT continues south to Seward and north to Nome, although not all segments are currently hikeable. In Girdwood, both the Municipality of Anchorage and the US Forest Service manage parts of the INHT. As our community continues to grow, the need to establish a protected alignment of this trail has become more apparent. The INHT in Girdwood was the object of a trail route study undertaken by the National Park Service in conjunction with the Trails Committee. Trail locations, widths, and surfacing were laid out in the Girdwood-Iditarod Trail Route Study and the plan was adopted by the Anchorage Assembly on May 20, 1997, and it serves as the guiding vision for this trail in Girdwood. As our community continues to grow, the need to establish a protected alignment of this trail has become more apparent.

The Bird-to-Gird NRT is managed by Chugach State Park. It is a paved, multi-use pathway using several sections of old highway alignment, connecting the small communities of Indian, Bird and Girdwood. The Alyeska Highway bike path and the INHT eventually will connect to the Bird-to-Gird NRT.

Trail Access

Every managed trail in Girdwood Valley should have an identifiable trailhead that can be easily located on a map and by the user. The trailhead should be the connection from the community to the trail. Each trailhead should have an adjacent area for sufficient parking.

Parking to access to Girdwood Valley's trails is becoming more challenging every year, and some trails do not have parking adjacent to the trailhead. Access during winter is further complicated by snow storage needs.

Principal access to all of the trails is a collection of "wide spots in the road" and informal trailheads. Chugach State Park has developed a management policy for trail access and trailheads. Access to and the creation of trailheads for users is a priority.

Americans with Disabilities Act

In 1990, Congress passed the Americans with Disabilities Act. This act attempts to remove the physical and social barriers facing over 43 million Americans with disabilities. Current and future trail management policies will make every effort to maximize the accessibility of the Girdwood Valley trails. While it is clearly not practical for all types of trails in a mountainous environment to be fully accessible, where appropriate, the trail system should comply with the standards set forth in this law. Information on trail grade, cross slope, width, and surface will allow individuals with disabilities to decide if they have the ability and interest to use that segment of trail.

Trail Easements

All managed trails in Girdwood Valley should be within an easement that is managed by the appropriate land management entity. A trail that lies within an easement is protected from encroachment by adjacent land development. In specific circumstances a trail might require realignment to accommodate community projects or development; this realignment should be accommodated when the realignment results in a trail built to the same or higher standards and the Trail User Experience (TUE) remains consistent with the original TUE. Easements should be no less than 20 feet wide.

Dedicated Trails

All dedicated trails have easements. The centerline alignment of these trails will be recorded as accurately as possible using GPS devices capable of measurement to within 1 meter (3 feet), and the data will be processed and archived in GIS format.

CHAPTER 5

Current Girdwood Trails and Trail Class Matrix



This chapter provides a matrix that differentiates trail classes by various elements of a trail and design parameters based on trail class and designed use. These trail planning tools have been adopted from the U.S. Forest Service trail management program.

Following the U. S. Forest Service's matrix, a chart of Girdwood's trails shows each trail's class, designed use, and easement status. Also included is a Trail Assessment & Condition Survey (TRACS) Matrix.

Trail Class Matrix

Trail Classes are general categories reflecting trail development scale, arranged along a continuum. The Trail Class identified for a trail prescribes its development scale, representing its intended design and management standards.¹ Local deviations from any Trail Class descriptor may be established based on trail-specific conditions, topography, or other factors, provided that the deviations are consistent with the intent of the applicable Trail Class.

Apply the Trail Class that most closely reflects the management intent for the trail which may or may not reflect the current condition of the trail.

| Trail Attributes | Trail Class 1 Minimally Developed | Trail Class 2 Moderately Developed | Trail Class 3 Developed | Trail Class 4 Highly Developed | Trail Class 5 Fully Developed |
|---------------------------------|---|--|---|---|---|
| Tread & Traffic Flow | <ul style="list-style-type: none"> Tread intermittent and often indistinct. May require route finding. Single lane, with no allowances constructed for passing. Predominantly native materials. | <ul style="list-style-type: none"> Tread continuous and discernible, but narrow and rough. Single lane, with minor allowances constructed for passing. Typically native materials. | <ul style="list-style-type: none"> Tread continuous and obvious. Single lane, with allowances constructed for passing where required by traffic volume in places where there is no reasonable opportunity to pass. Native or imported materials. | <ul style="list-style-type: none"> Tread wide and relatively smooth, with few irregularities. Single lane, with allowances constructed for passing where required by traffic volume in places where there is no reasonable opportunity to pass. Double lane where traffic volume is high and passing is frequent. Native or imported materials. May be hardened. | <ul style="list-style-type: none"> Tread wide, firm, stable, and generally uniform. Single lane, with frequent turnouts where traffic volume is low to moderate. Double lane where traffic volume is moderate to high. Commonly hardened with asphalt or other imported material. |
| Obstacles | <ul style="list-style-type: none"> Obstacles common, naturally occurring, often substantial, and intended to provide increased challenge. Narrow passages; brush, steep grades, rocks and logs present. | <ul style="list-style-type: none"> Obstacles may be common, substantial, and intended to provide increased challenge. Blockages cleared to define route and protect resources. Vegetation may encroach into trailway. | <ul style="list-style-type: none"> Obstacles may be common, but not substantial or intended to provide challenge. Vegetation cleared outside of trailway. | <ul style="list-style-type: none"> Obstacles infrequent and insubstantial. Vegetation cleared outside of trailway. | <ul style="list-style-type: none"> Obstacles not present. Grades typically < 8%. |

TRAIL CLASS MATRIX COURTESY OF THE USDA.

| Trail Attributes | Trail Class 1 Minimally Developed | Trail Class 2 Moderately Developed | Trail Class 3 Developed | Trail Class 4 Highly Developed | Trail Class 5 Fully Developed |
|---|--|--|---|---|---|
| Constructed Features & Trail Elements | <ul style="list-style-type: none"> Structures minimal to non-existent. Drainage typically provided without structures. Natural fords. Typically no bridges. | <ul style="list-style-type: none"> Structures of limited size, scale, and quantity; typically constructed of native materials. Structures adequate to protect trail infrastructure and resources. Natural fords. Bridges as needed for resource protection and appropriate access. | <ul style="list-style-type: none"> Structures may be common and substantial; constructed of imported or native materials. Natural or constructed fords. Bridges as needed for resource protection and appropriate access. | <ul style="list-style-type: none"> Structures frequent and substantial; typically constructed of imported materials. Constructed or natural fords. Bridges as needed for resource protection and user convenience. Trailside amenities may be present. | <ul style="list-style-type: none"> Structures frequent or continuous; typically constructed of imported materials. May include bridges, boardwalks, curbs, handrails, trailside amenities, and similar features. |
| Signs^r | <ul style="list-style-type: none"> Route identification signing limited to junctions. Route markers present when trail location is not evident. Regulatory and resource protection signing infrequent. Destination signing, unless required, generally not present. Information and interpretive signing generally not present. | <ul style="list-style-type: none"> Route identification signing limited to junctions. Route markers present when trail location is not evident. Regulatory and resource protection signing infrequent. Destination signing typically infrequent outside wilderness areas; generally not present in wilderness areas. Information and interpretive signing uncommon. | <ul style="list-style-type: none"> Route identification signing at junctions and as needed for user reassurance. Route markers as needed for user reassurance. Regulatory and resource protection signing may be common. Destination signing likely outside wilderness areas; generally not present in wilderness areas. Information and interpretive signs may be present outside wilderness areas. | <ul style="list-style-type: none"> Route identification signing at junctions and as needed for user reassurance. Route markers as needed for user reassurance. Regulatory and resource protection signing common. Destination signing common outside wilderness areas; generally not present in wilderness areas. Information and interpretive signs may be common outside wilderness areas. Accessibility information likely displayed at trailhead. | <ul style="list-style-type: none"> Route identification signing at junctions and for user reassurance. Route markers as needed for user reassurance. Regulatory and resource protection signing common. Destination signing common. Information and interpretive signs common. Accessibility information likely displayed at trailhead. |
| Typical Recreation Environments & Experience | <ul style="list-style-type: none"> Natural and unmodified. ROS: Typically Primitive to Roaded Natural. WROS: Typically Primitive to Semi-Primitive. | <ul style="list-style-type: none"> Natural and essentially unmodified. ROS: Typically Primitive to Roaded Natural. WROS: Typically Primitive to Semi-Primitive. | <ul style="list-style-type: none"> Natural and primarily unmodified. ROS: Typically Primitive to Roaded Natural. WROS: Typically Semi-Primitive to Transition. | <ul style="list-style-type: none"> May be modified. ROS: Typically Semi-Primitive to Rural WROS: Typically Portal or Transition. | <ul style="list-style-type: none"> May be highly modified. Commonly associated with visitor centers or high-use recreation sites. ROS: Typically Roaded Natural to Urban. Generally not present in Wilderness areas. |

TRAIL CLASS MATRIX COURTESY OF THE USDA.

Girdwood's Trails: Listed by Trail Class, Designed Use, and Easement Status

| Class 1 Trails | Designed Use | Easement | Page # |
|-------------------------|--------------|----------|--------|
| Max's Mountain Trail | Hike | N | TBA |
| Ragged Top Trail | Hike | N | |
| Snow Cat Trail (summer) | Hike | N | |
| Eagle Glacier Access | Hike | N | |
| Stumpy's Summer Trail | Hike | N | |

| Class 2 Trails | Designed Use | Easement | Page # |
|---------------------------------------|--------------|----------|--------|
| Abe's Trail | Hike | Y | TBA |
| California Creek Trail* | Hike | P | |
| Joe Danich Trail Upper*/Lower* | Hike | N | |
| North Face Trail | Hike | — | |
| Virgin Creek Falls Trail Upper/Lower* | Hike | N | |
| Winner Creek Trail Upper | Hike | Y | |
| Winner Creek Trail Lower (winter) | Ski | Y | |
| Crow Pass Trail | Hike | Y | |

(continued)

| Class 3 Trails | Designed Use | Easement | Page # |
|---|---------------------|-----------------|---------------|
| Alyeska Mountain Biking Trails | Bike | — | TBA |
| Beaver Pond Trail | Bike | Y | |
| Deb's Way | Hike | N | |
| Iditarod Trail from Girdwood School to Crow Pass | Hike | Y | |
| Shortcut from Bike Path to Davos Road | Hike | N | |
| Winner Creek Trail Lower Zug's Slide to Crow Creek Rd | Hike | Y | |
| Athabaskan Environmental Physics Trail | Hike | N | |
| Wagon Trail* | Hike | N | |

| Class 4 Trails | Designed Use | Easement | Page # |
|---|---------------------|-----------------|---------------|
| Iditarod Trail from School to Forest Service | Hike | P | TBA |
| Moose Meadow Multi-use Trails | | N | |
| Nordic 5K Loop | Ski | Y | |
| Snow Cat Trail (Winter) | Ski | N | |
| Winner Creek Trail lower (Hotel to Zug's Slide) | Hike | Y | |
| Tiny Creek Trail* | Hike | N | |
| Stumpy's Winter Trail* | Ski | N | |

(continued)

| Class 5 Trails | Designed Use | Easement | Page # |
|--|--------------|----------|--------|
| Alyeska Highway Pedestrian Safety Corridor | Bike | Y | TBA |
| Hightower/Egloff Multi-use Trail | Bike | Y | |
| Arlberg Bike Path | Bike | Y | |
| Bird-to-Gird Bike Path | Bike | Y | |

Easement listings are:

N = No

Y = Yes

P = Portion(s)

— = Private Land (Alyeska)

All multi-use trails in Girdwood are designated for snowshoeing.

*Indicates that these trails do not currently meet their assigned trail class.

Joe Danich Trail upper and Lower are currently Class 1

Virgin creek Trail is currently Class 1

Iditarod Trail between the school and forest service building is Class 2-3

Stumpy's Winter Trail is currently Class 1

California Creek Trail is currently Class 1

Tiny Creek Trail is currently Class 3

Wagon Trail is currently Class 1

Design Parameters

Design Parameters are technical guidelines for the survey, design, construction, maintenance, and assessment of trails, based on their Designed Use and Trail Class. Deviations from any Design Parameter may be established based on trail-specific conditions, topography, or other factors, provided that the deviations are consistent with the general intent of the applicable Trail Class.

| Designed Use HIKER/PEDESTRIAN | | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|----------------------------------|------------------------------|---|--|---|--|--|
| Design Tread Width | Wilderness (Single Lane) | 0" – 12" | 6" – 18" | 12" – 24" Exception: may be 36" – 48" at steep side slopes | 18" – 24" Exception: may be 36" – 48" at steep side slopes | Not applicable |
| | Non-Wilderness (Single Lane) | 0" – 12" | 6" – 18" | 18" – 36" | 24" – 60" | 36" – 72" |
| | Non-Wilderness (Double Lane) | 36" | 36" | 36" – 60" | 48" – 72" | 72" – 120" |
| | Structures (Minimum Width) | 18" | 18" | 18" | 36" | 36" |
| Design Surface | Type | Native, ungraded May be continuously rough | Native, limited grading May be continuously rough | Native, with some on-site borrow or imported material where needed for stabilization and occasional grading Intermittently rough | Native with improved sections of borrow or imported material, and routine grading Minor roughness | Likely imported material, and routine grading Uniform, firm, and stable |
| | Protrusions | ≤ 24" Likely common and continuous | ≤ 6" May be common and continuous | ≤ 3" May be common, not continuous | ≤ 3" Uncommon, not continuous | No protrusions |
| | Obstacles (Maximum Height) | 24" | 14" | 10" | 8" | No obstacles |
| Design Grade | Target Grade | 5% – 25% | 5% – 18% | 3% – 12% | 2% – 10% | 2% – 5% |
| | Short Pitch Maximum | 40% | 35% | 25% | 15% | 5% FSTAG: 5% – 12% ² |
| | Maximum Pitch Density | 20% – 40% of trail | 20% – 30% of trail | 10% – 20% of trail | 5% – 20% of trail | 0% – 5% of trail |

DESIGN PARAMETERS COURTESY OF THE USDA.

| Designed Use HIKER/PEDESTRIAN | | Trail Class 1 | Trail Class 2 | Trail Class 3 ² | Trail Class 4 ² | Trail Class 5 ² |
|----------------------------------|---------------------|--|--|----------------------------|----------------------------|----------------------------|
| Design Cross Slope | Target Cross Slope | Natural side slope | 5% – 20% | 5% – 10% | 3% – 7% | 2% – 3% (or crowned) |
| | Maximum Cross Slope | Natural side slope | 25% | 15% | 10% | 3% |
| Design Clearing | Height | 6' | 6' – 7' | 7' – 8' | 8' – 10' | 8' – 10' |
| | Width | ≥ 24" Some vegetation may encroach into clearing area | 24" – 48" Some light vegetation may encroach into clearing area | 36" – 60" | 48" – 72" | 60" – 72" |
| | Shoulder Clearance | 3" – 6" | 6" – 12" | 12" – 18" | 12" – 18" | 12" – 24" |
| Design Turn | Radius | No minimum | 2' – 3' | 3' – 6' | 4' – 8' | 6' – 8' |

DESIGN PARAMETERS COURTESY OF THE USDA.

| Designed Use BICYCLE | | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|--------------------------------|-------------------------------|---|--|---|--|---|
| Design Tread Width | Single Lane | 6" – 12" | 12" – 24" | 18" – 36" | 24" – 48" | 36" – 60" |
| | Double Lane | 36" – 48" | 36" – 48" | 36" – 48" | 48" – 84" | 72" – 120" |
| | Structures (Minimum Width) | 18" | 18" | 36" | 48" | 60" |
| Design Surface ² | Type | Native, ungraded May be continuously rough Sections of soft or unstable tread on grades < 5% may be common and continuous | Native, with limited grading May be continuously rough Sections of soft or unstable tread on grades < 5% may be common | Native, with some on-site borrow or imported material where needed for stabilization and occasional grading Intermittently rough Sections of soft or unstable tread on grades < 5% may be present, but not common | Native, with improved sections of borrow or imported materials and routine grading Stable, with minor roughness | Likely imported material and routine grading Uniform, firm, and stable |
| | Protrusions | ≤ 24" Likely common and continuous | ≤ 6" May be common and continuous | ≤ 3" May be common, but not continuous | ≤ 3" Uncommon and not continuous | No protrusions |
| | Obstacles (Maximum Height) | 24" | 12" | 10" | 8" | No obstacles |
| Design Grade ² | Target Grade | 5% – 20% | 5% – 12% | 3% – 10% | 2% – 8% | 2% – 5% |
| | Short Pitch Maximum | 30% 50% on downhill segments only | 25% 35% on downhill segments only | 15% | 10% | 8% |
| | Maximum Pitch Density | 20% – 30% of trail | 10% – 30% of trail | 10% – 20% of trail | 5% – 10% of trail | 0% – 5% of trail |

DESIGN PARAMETERS COURTESY OF THE USDA.

| Designed Use BICYCLE | | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|--------------------------|---------------------|--|--|---------------|---------------|---------------|
| Design Cross Slope | Target Cross Slope | 5% – 10% | 5% – 8% | 3% – 8% | 3% – 5% | 2% – 3% |
| | Maximum Cross Slope | 10% | 10% | 8% | 5% | 5% |
| Design Clearing | Height | 6' | 6' – 8' | 8' | 8' - 9' | 8' - 9' |
| | Width | 24" – 36" Some vegetation may encroach into clearing area | 36" – 48" Some light vegetation may encroach into clearing area | 60" – 72" | 72" – 96" | 72" – 96" |
| | Shoulder Clearance | 0' – 12" | 6" – 12" | 6" – 12" | 6" – 18" | 12" – 18" |
| Design Turn | Radius | 2' – 3' | 3' – 6' | 4' – 8' | 8' – 10' | 8' - 12' |

DESIGN PARAMETERS COURTESY OF THE USDA.

| Designed Use CROSS-COUNTRY SKI | | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|--|--|---|-------------------------------|---|--|---|
| Design Groomed Width | Single Lane | Typically not designed or actively managed for cross-country skiing, allow use may be allowed | 2' – 4' | 6' – 8' | 8' – 10' | Typically not designed or actively managed for cross-country skiing, allow use may be allowed |
| | Double Lane | | Typically not groomed | Or width of grooming equipment | Or width of grooming equipment) | |
| | Structures (Minimum Width) | | 6' – 8' | 8' – 12' | 12' – 16' | |
| Design Grooming and Surface ² | Type | | Generally no machine grooming | May receive occasional machine grooming for snow compaction and track setting | Regular machine grooming for snow compaction and track setting | |
| | Protrusions | | No protrusions | No protrusions | No protrusions | |
| | Obstacles (Maximum Height) | | 12" Uncommon | 8" Uncommon (no obstacles if machine groomed) | No obstacles | |
| Design Grade ² | Target Grade | | 5% – 15% | 2% – 10% | 0% – 8% | |
| | Short Pitch Maximum | | 25% | 20% | 12% | |
| | Maximum Pitch Density | | 10% – 20% of trail | 5% – 15% of trail | 0% – 10% of trail | |
| Design Cross Slope | Target Cross Slope | | 0% – 10% | 0% – 5% | 0% – 5% | |
| | Maximum Cross Slope (For up to 50') | 20% | 15% | 10% | | |

DESIGN PARAMETERS COURTESY OF THE USDA.

| Designed Use CROSS-COUNTRY SKI | | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|-----------------------------------|---|---------------|--|--|---|---------------|
| Design Clearing | Height (Above normal maximum snow level) | | 6' – 8' | 8' | 8' – 10' | |
| | Width | | 24" – 60" | 72" – 120" | 96" – 168" | |
| | Shoulder Clearance | | Light vegetation may encroach into clearing area | Light vegetation may encroach into clearing area | Widen clearing at turns or if increased sight distance needed | |
| 0" – 6" | | | 0" – 12" | 0" – 24" | | |
| Design Turn | Radius | 8' – 10' | 15' – 20' | ≥ 25' | | |
| | | | Or to accommodate grooming equipment | | | |

DESIGN PARAMETERS COURTESY OF THE USDA.

| Designed Use SNOWSHOE | | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|--------------------------------|-------------------------------|--|-------------------------------|---|---|--|
| Design Tread Width | Single Lane | Typically not designed or actively managed for snowshoe, although use may be allowed | 36" | 36" – 48" | 36' – 60' | Typically not designed or actively managed for snowshoe, although use may be allowed |
| | Double Lane | | 60" | 72" | 72" – 96" | |
| | Structures (Minimum Width) | | 36" | 48" | 48" | |
| Design Surface ² | Type | | Generally no machine grooming | May receive occasional machine grooming for snow compaction | Likely to receive occasional machine grooming for snow compaction | |
| | Protrusions | | No protrusions | No protrusions | No protrusions | |
| | Obstacles (Maximum Height) | | 12" Uncommon | 8" Uncommon (no obstacles if machine groomed) | No obstacles | |
| Design Grade ² | Target Grade | | 10% – 20% | 5% – 15% | 0% – 10% | |
| | Short Pitch Maximum | | 30% | 20% | 15% | |
| | Maximum Pitch Density | | 5% – 20% of trail | 5% – 25% of trail | 0% – 10% of trail | |
| Design Cross Slope | Target Cross Slope | 0% – 10% | 0% – 5% | 0% – 5% | | |
| | Maximum Cross Slope | 20% | 15% | 10% | | |

DESIGN PARAMETERS COURTESY OF THE USDA.

| Designed Use SNOWSHOE | | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|--------------------------|---|---------------|--|---|---|---------------|
| Design Clearing | Height (Above normal maximum snow level) | | 6' – 8' | 8' | 8' – 10' | |
| | Width | | 48" Some light vegetation may encroach into clearing area | 72" Light vegetation may encroach into clearing area | 72" – 96" | |
| | Shoulder Clearance | | 0" | 12" | 12" – 24" | |
| Design Turn | Radius | | 3' – 4' | 3' – 6' | 4' – 8' Or to accommodate grooming equipment | |

DESIGN PARAMETERS COURTESY OF THE USDA.

CASM

Trail Condition Assessment Survey Matrix A Guide to Recommended Survey Methods & Accuracies

4/27/2005

CASM is the Forest Service's guide for conducting efficient and appropriate trail inventory and condition surveys, based on the on the level of trail development or Trail Class, investment in trail structures, and visitor expectations. CASM values are recommended minimums for data accuracy and specificity. Local managers may select more rigorous frequencies, methods, or accuracies as determined necessary.

| Assessment Factors | Trail Class 1 | Trail Class 2 | Trail Class 3 | Trail Class 4 | Trail Class 5 |
|--|--|---------------------------------------|--|--|---|
| Survey Method ¹ | Walk-through & Make Notes on Map or GPS ² | Cyclometer or GPS ² | Cyclometer or GPS ² | Cyclometer | Tape or Cyclometer & Hand Level with Digital Readout |
| Recommended Survey Accuracy & Specificity | | | | | |
| Measurement Interval ³ | Major Physiographic Changes | Minor Physiographic Changes or ½ Mile | Typical Grade Changes of 10% or 500 Feet | Typical Grade Changes of 10% or 500 Feet | Inter-visible Alignment Changes, 2% Grade Changes, or 25 Feet |
| Typical Grade ⁴ | +/- 10% | +/- 10% | +/- 5% | +/- 5% | +/- 1% |
| Typical Width ⁵ | Not Measured | Optional +/- 8" | +/- 8" | +/- 8" | +/- 3" |
| Obstacles ⁶ | Not Measured | Not Measured | Optional | Formidable Obstacles (e.g. narrow width with steep drop off) | All those defined as Obstacles |
| Typical Cross Slope ⁷ | Not Measured | Not Measured | +/- 1% | +/- 1% | +/- 0.1% |
| Features & Tasks ⁸ | Maximum Grouping of Features & Tasks | Grouping of Features & Tasks | Grouping of Features & Tasks Optional | Each Feature & Task Inventoried & Assessed Individually | Each Feature & Task Inventoried & Assessed Individually |

¹ Survey Method: Most efficient method that accomplishes identified CASM accuracies.

² GPS: TRACS data collected via GPS must meet agency GIS spatial standards. This usually includes differential correction and editing for multi-pathing, spiking, and degraded satellite coverage.

³ Measurement Interval: Maximum interval between collecting a full set of survey points for Typical Grade, Typical Width, Obstacles, Typical Cross Slope, and applicable Features and Tasks. If an element (i.e. Typical Grade) changes more frequently than the maximum interval, record those changes based on the CASM accuracy identified for that element.

⁴ Typical Grade: Initiate new survey segment when Typical Grade changes by this amount.

⁵ Typical Width: Initiate new survey segment when Typical Width changes by this amount.

⁶ Obstacles: For those defined (see FSM/FSH, Infra Business Rules, Universal Access guidelines, etc.)

⁷ Typical Cross Slope: Accuracy of Rise-over-Run measurement across Typical Tread Width.

⁸ Grouping Features & Tasks: Features and Tasks can be grouped within survey segment

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CONDITION ASSESSMENT SURVEY MATRIX COURTESY OF THE USDA.

CHAPTER 6

Girdwood Valley Trail Management Recommendations



The Girdwood Valley Trails Management Plan will serve as a starting point for all future land use decisions affecting trails in the Girdwood Valley. The plan's recommendations will help ensure a continuing legacy of sustainable trails for Girdwood.

Recommendations

1. Health and fitness will be encouraged throughout the valley. This will be accomplished by looking for opportunities to connect users with trail options that may offer alternatives to vehicular transportation for day-to-day activities and through the consideration of trail design and trail-related facilities that enhance health and fitness.
2. All managed trails in the Girdwood Valley should be within an easement that is managed by the appropriate land management entity. A trail that lies within an easement is protected from encroachment by adjacent land development. In specific circumstances, a trail might require realignment to accommodate community projects or development. This realignment should be accommodated when the realignment results in a trail built to the same or higher standards and the Trail User Experience (TUE) remains consistent with the original TUE. Easements should be no less than 20 feet wide.
3. Before trail maintenance and repair strategies can be fully developed, an assessment of trails and their condition will be made based on the TMOs developed for each trail. While TMOs provide a vision for future trail conditions, trail assessments will offer a snapshot of existing conditions and what is needed to meet the sustainable standards described in the TMO. Corrective measures and rehabilitation efforts to address identified shortfalls shall use the sustainable trail concepts and best management practices described in Chapters 3 and 4. Information derived from assessments will also aid in the determination how a trail may be best managed given its current condition.

4. Collected information will meet standards set forth by the USDA Forest Service's TRACS program, as described in Appendix 10. All data collected shall be exchangeable and functional for other agencies and public use.
5. All Girdwood Valley managed trails will have TMOs approved and signed by the managing entity.
6. Existing trail corridors will be maintained. If a trail must be relocated to accommodate an incompatible land use, the relocated trail should be of equal or better trail standard as the old alignment with no impairment to the Trail Users Experience (TUE).
7. Some routes and trails will not be managed. These may be trails where managed use may be inconsistent with land ownership, the ability to adhere to sustainable management practices is not possible, or their alignment needs to be ignored. Conversely, they may be trails that are left alone to preserve a level of challenge or trail user experience. These trails might become managed trails at a later date. A map of these unmanaged routes is included in this plan as Appendix 11. The map shows their approximate locations.
8. Efforts will be made in the design phase of trail construction and maintenance to accommodate planned development without detracting from the TUE. Conversely, when development is planned, efforts need to be made to protect trail alignments and TUE.
9. Incompatible/unauthorized uses on trails will be regulated by the managing entity. Girdwood Trails Committee will help bring these issues to the attention of the appropriate land manager.
 - ◆ All pack & saddle activities are excluded from all managed trails in the Girdwood Valley Trail System (GVTS). It is not possible at this juncture to provide a durable tread surface capable of handling horse traffic.
 - ◆ All motorized vehicle traffic on any managed trail in the GVTS continues to be excluded, as it is throughout the Municipality of Anchorage.
10. The Girdwood Trails Committee will manage all valley trails that are not currently managed by any other entity.
11. Every effort will be made to obtain grants and to enlist cooperative efforts with other land management entities to keep the cost of trail management as low as possible to the residents of Girdwood and the Municipality of Anchorage. The implementation of user fees for special events may be explored but not necessarily endorsed or enacted.
12. Girdwood Trails Committee will continue to provide recommendations to Girdwood's Land Use Committee (LUC) and Board of Supervisors regarding trails-related issues. The process established for project review where proponents bring their proposals before the Trails Committee prior to seeking LUC approval will continue.

APPENDIX 1

List and Descriptions of Girdwood Trails



ABE'S TRAIL

Abe's Trail is accessed about ¼ of a mile along the Beaver Pond Trail from the Crow Creek Road Bridge trail-head. A sign on the west side of the Beaver Pond Trail directs hikers to Abe's Trail. The trail climbs in the heavily wooded hemlock forest, crossing a couple of creek drainages. The overall pitch of the trail is not too steep although there are some steeper sections before tree line. Girdwood Trails Committee's trail work ends before tree line. Once out of tree line, the trail becomes less distinct and has more drainage crossings. The trail can be followed farther up the valley traversing above California Creek. It is possible to connect with California Creek Trail to create a loop.

| | |
|---------------------------------|---|
| Manager: | MOA /Chugach State Park |
| Easement Status: | Yes, easement in place |
| Trail start: | Off of Beaver Pond Trail |
| Trail End: | Tree line or beyond |
| Trail Length: | 1 mile to end of MOA managed land. Additional .5 miles to tree line on well defined trail |
| Designed Use Objectives: | Trail type: Terra Trail Class: 2 Designed Use: Summer hike only |
| Design parameters: | Tread width: 6"-18" Clearing width: 24"-48" Target grade: 5%-18% Short pitch max: 35% Cross slope: 5%-20% |
| Maintenance Frequency: | As needed |
| Travel Management: | Managed Use: Hiking Prohibited Use: All motorized use Other Use: |



Special Considerations/remarks:

- ◆ After one mile, no longer MOA land.
- ◆ Seeking Interagency Land Management Agreement to improve upper part of the trail.
- ◆ This trail also accesses a route to Penguin Ridge via state land.

ABOVE: Example of individual trail picture to come for each trail.

ALYESKA HIGHWAY PEDESTRIAN SAFETY CORRIDOR

The Alyeska Highway Bike Path trail is lighted and paved and is the primary connector for pedestrians and cyclists for North/South travel extending from the Girdwood Station Mall at the mouth of the valley to the “T” intersection with Arlberg Avenue. Other bike paths connect at Bird/Gird trail, Hightower/Egloff intersection, and at Arlberg intersection.

| | |
|---------------------------------|---|
| Manager: | HLB |
| Easement Status: | Yes, easement in place |
| Trail start: | Girdwood Station Mall |
| Trail End: | T intersection with Arlberg Avenue and Arlberg bike path |
| Trail Length: | 3 miles |
| Designed Use Objectives: | Trail type: terra Trail Class: 5 Designed Use: bike |
| Design parameters: | Tread width 72”-120” Clearing width: 72”-96” Target grade: 2%-5% Short pitch max: 8% Cross slope: 2%-3% |
| Maintenance Frequency: | As needed |
| Travel Management: | Managed Use: bike, pedestrian Prohibited Use: motorized, pack & saddle Other Use |

Special Considerations/remarks:

- ◆ This route is the first pedestrian safety corridor in the state. It was created in response to several fatal pedestrians/vehicle accidents and became the model for many other communities.
- ◆ The path was expanded and repaired in 2016 after many years of effort by the community to have this vital safe transportation corridor safe for all users.

ARLBERG BIKE PATH

Arlberg Road Bike Path trail is lighted and paved access from the “T” intersection of Alyeska Highway and Arlberg Avenue to the Hotel Alyeska. Construction of an extension of Arlberg Avenue in 2016 included continuation of this path to the end of the new road construction at the 5K Nordic Loop.

The trail runs along the west side of Arlberg to the Moose Meadows multi-use trails. The wooded edge of Moose Meadows serves as a scenic border. The trail through the greenbelt provides bicycling, walking and cross-country skiing opportunities. This trail gives trail users a panoramic view of the north and west sides of Girdwood Valley.

This trail also connects with the Winner Creek Trail, Winner Creek Extension Trail off Verbier Way, and provides access to numerous trails in Moose Meadows in winter.

| | |
|--|---|
| Manager: | HLB |
| Easement Status: | Yes, easement in place |
| Trail start: | Intersection of Alyeska Highway and Arlberg Avenue |
| Trail End: | Currently at the end of the Arlberg road at the tram loop |
| Trail Length: | 1 mile. Proposed construction will add approximately.5 mile |
| Designed Use Objectives: | Trail type: Trail Class: 5 Designed Use: Designed Use: bike |
| Design parameters: | Tread width 72”-120” Clearing width: 72”-96” Target grade: 2%-5% Short pitch max: 8% Cross slope: 2%-3% |
| Maintenance Frequency: | As needed |
| Travel Management: | Managed Use: bike, pedestrian Prohibited Use: motorized, pack & saddle Other Use |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ Parking area at the end of the new construction provides limited trailhead parking for Nordic 5K Loop and other trail access at this end of the valley. |

ATHABASCAN ENVIRONMENTAL PHYSICS (AEP) TRAIL

The Athabaskan Environmental Physics Trail accesses the forest behind the Girdwood K-8 School from the NW corner of the bus loop. A 90' boardwalk bridge spans the beaver pond. From the bridge crossing, the trail winds through the forest behind the school, crossing small bridges and accessing interpretive signs describing features of the forest and trail. After crossing the creek, the trail continues to the transition interpretive sign. The trail was bisected by a water line and planned subdivision in 2013.

Bridges and boardwalks currently need significant work to bring the trail to usable condition. Interpretive signs are also in need of restoration.

| | |
|---------------------------------|--|
| Manager: | Anchorage School District |
| Easement Status: | No easement in place |
| Trail start: | NW Corner of Bus loop at bridge crossing beaver pond |
| Trail End: | NE Corner of school yard |
| Trail Length: | ¼ mile |
| Designed Use Objectives: | Trail type: terra Trail Class: 3 Designed Use: hiking |
| Design parameters: | Tread width: 12"-24" Clearing width: 36"-60" Target grade: 3%-12% Short pitch max: 25% Cross slope: 5%-10% |
| Maintenance Frequency: | As needed Condition Survey: Annual |
| Travel Management: | Managed Use: hiking Prohibited Use: motorized vehicles; pack & saddle Other Use: interpretive/education |

Special Considerations/remarks:

- ◆ This land belongs to the Anchorage School District.
- ◆ Original work on trail and signs was completed by volunteers and students with assistance from a Toyota grant and local fundraising.
- ◆ For Girdwood Trails Committee to work on the trail, a Memorandum of Agreement or Memorandum of Understanding between Girdwood Trails (MOA) and the Anchorage School District is needed.

(continued)

Notes:

125' to boardwalk bridge behind new electric transformer.

228' to simple 20' bridge.

54' to Deadfall interpretive sign.

150' to 20' boardwalk.

127ft to 30' boardwalk

177' to Tiny Creek Interpretive sign.

17' to Tiny Creek (missing bridge) (30+' span)

150' to Athabaskan Trail on Left

285' to Transition interpretive sign

898' to Tiny Creek (missing bridge)

BEAVER POND TRAIL

This trail begins at the California Creek Bridge on Crow Creek Road and runs along the base of the mountains on the west side of Girdwood Valley, ending at a south trailhead. This south trailhead comes out on the Bird-to-Gird Bike Path and is located behind a small power station, one mile from the Girdwood Railroad Depot.

Two miles from the north trailhead, the trail splits into two routes. The summer route, which heads uphill, avoids marsh and wetlands. The winter route, which leads downhill, avoids avalanche-prone areas and is preferred once the marsh has frozen.

Several connector trails join the route intermittently as it winds behind the homes in neighborhoods off Alyeska Highway. The Beaver Pond Trail is part of a trail loop that includes Abe's Trail and California Creek Trail that connect to make a circle around the Girdwood Valley.

| | |
|--|--|
| Manager: | Chugach State Park, MOA |
| Easement Status: | Yes, easement in place |
| Trail start: | Crow Creek Rd at California Creek |
| Trail End: | Mile 1 on Gird-to-Bird bike path |
| Trail Length: | 2 ¾ miles |
| Designed Use Objectives: | Trail type: terra, snow |
| Trail Class: | 3 Designed Use: Mountain Bike |
| Design parameters: | Tread width: 18"-36" Clearing width: 60"-72" Target grade: 3%-10% Short pitch max: 15% Cross slope: 3%-8% |
| Maintenance Frequency: | As needed Brushing: 2 x per year |
| Travel Management: | Managed Use: Multi-Use Prohibited Use: Motorized vehicles, pack & saddle Other Use: athletic events, races, team practice |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ Memorandum of Understanding/Agreement needed with Alaska State Parks for trail work on south ¼ mile of trail.◆ 3.3 acres set aside for north trailhead, straddling California Creek.◆ Girdwood Trails Committee has a 50' easement for Beaver Pond Trail |

BIRD-TO-GIRD BIKE PATH

The Bird-to-Gird Bike Path is a paved route that connects Girdwood to the community of Indian to the west along Turnagain Arm. The trail begins near the Forest Service building and ends at the baseball fields in Indian. There are many scenic stops, interpretive kiosks, and picnic areas along the way including Bird Point, a developed rest area. The trail was developed after the Seward Highway was relocated in the 1990s. As the Seward Highway is further developed between Anchorage and Girdwood, additional trail segments will be added to further connect the trail system. This trail is not managed by Girdwood Trails Committee, but the beginning of the trail provides access to the south end of the Beaver Pond Trail.

| | |
|---------------------------------|---|
| Manager: | Chugach State Park |
| Easement Status: | Yes, easement in place |
| Trail start: | Top of the hill near the US Forest Service Glacier Ranger District Office |
| Trail End: | Indian Ball Fields Trail Length: 10 miles |
| Designed Use Objectives: | Trail type: terra Trail Class: 5 Designed Use: bike |
| Design parameters: | Tread width 72"-120" Clearing width: 72"-96" Target grade: 2%-5% Short pitch max: 8% Cross slope: 2%-3% |
| Maintenance Frequency: | As needed Tread repair Brushing Tree Removal Condition Survey |
| Travel Management: | Managed Use: bike, pedestrian Prohibited Use: motorized, pack & saddle Other Use |

Special Considerations/remarks:

- ◆ This trail is closed in winter due to avalanche danger.

CALIFORNIA CREEK TRAIL

Trailhead is shared with the Beaver Pond Trail, 120' from the three car pullout area on Crow Creek Road at the California Creek Bridge. The 1470' trail is a well-maintained 8' gravel tread to Beaver Pond Trail sign. Once the trail splits from the Beaver Pond Trail, the route becomes less distinct and is currently at Class 1 primitive trail.

California Creek Trail climbs the ridge directly above California Creek into Chugach State Park. The trail maintains a consistently steep grade with some drainage crossings and steep grades. It is possible to connect California Creek Trail and Abe's Trail to create a loop.

Manager: HLB/Girdwood Trails Committee from trailhead to state park land.

Easement Status: HLB portion has easement

Trail start: California Creek Bridge

Trail End: State park land

Trail Length:

Designed Use Objectives: Trail type: Terra
Trail Class: 2 (Currently 1)
Designed Use: Hiking

Design parameters: Tread width: 6"-18"
Clearing width: 24"-48"
Target grade: 5%-18%
Short pitch max: 35%
Cross slope: 5%-20%

Maintenance Frequency: As needed
Condition Survey: Annual

Travel Management: Prohibited Use: Motorized vehicles; pack & saddle
Other Use

Special Considerations/remarks:

- ◆ Historic gabion wall for power generation during mining operations just below the trail.
- ◆ Girdwood Trails Committee has 50' easement for California Creek Trail from where it diverts from Abe's Trail to the Chugach State Park land boundary

Notes: 120' From car park to California Creek trail sign
1470' From trail sign to Beaver Pond sign

CROW PASS TRAIL

Crow Pass Trail starts at the end of Crow Creek Road (MP 6, elevation 1,000). The trail climbs a steady uphill grade and exits tree line after zig-zagging up in the first ½ mile. At MP 1.4 a spur trail to the left leads to mining equipment remains and the Staser memorial. The right fork continues uphill to Crow Pass, crossing shale rock fall areas. A public use cabin is located ¾ mile before the pass, on Crystal Lake. The pass is at 3,500' elevation. The trail continues down into the Eagle Glacier drainage, crossing Eagle River, and ending at the Eagle River Nature Center. This trail is a section of the Iditarod National Historic Trail (INHT)

| | |
|--|--|
| Manager: | USFS (Chugach National Forest, Glacier Ranger District) |
| Easement Status: | Yes, easement in place |
| Trail start: | MP 6 Crow Creek Road |
| Trail End: | FS Boundary with Chugach State Park at MP 3.73; trail continues to Eagle River Nature Center (23 miles total distance) |
| Trail Length: | 3.73 miles |
| Designed Use Objectives: | Trail type: Terra Trail Class: 2 Designed Use: Hiker |
| Design Parameters: | Tread width: 24" Clearing width: 6' (20' in alders) Target grade: 12% Short pitch max: 25% Cross slope: 5-20% |
| Maintenance Frequency: | Tread repair: once every 5 yrs Brushing: annual (only first mile needs brushing, rest is above brush) Tree Removal: as soon as possible Condition Survey: once every 5 yrs |
| Travel Management: | Managed Use: Hiker Prohibited Use: motorized, horse, bike, all winter use Other Use: Crow Pass Crossing trail race, last weekend in July |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ Winter use is discouraged due to avalanche hazards.◆ Public Use Cabin at MP 3 on Crystal Lake, by reservation, not rented in winter due to avalanche hazards on trail◆ Switchbacks above mine ruins need restoration◆ Shale “official” trail has areas of difficult footing◆ Arsenic in old mine ruins area. |

DEB'S WAY

Deb's Way is a neighborhood connector route that runs from Mount Hood Drive behind the houses on Tahoe Road up to the cul de sac at the bottom of Aspen Mountain Road.

Manager: MOA. Most of trail is AWWU Easement. Mt. Hood end is DOT/Airport

Easement Status: No easement in place

Trail start: Mt Hood Drive

Trail End: Aspen Mountain Rd

Trail Length: ½ mile

Designed Use Objectives: Trail type: Utility easement

Trail Class: 3

Designed Use:

Design parameters: None

Tread width

Clearing width

Target grade

Short pitch max

Cross slope

Maintenance Frequency: None

Tread repair

Brushing

Tree Removal

Condition Survey

Travel Management: Managed Use

Prohibited Use

Other Use

Special Considerations/remarks:

- ◆ Girdwood Trails Committee has no authority to work on this trail. There are no design parameters, and none can be established without agreement.
- ◆ Recommend pursuing easement with DOT Airports.

EAGLE GLACIER ACCESS

This route begins at a small pullout at MP 5.1 Crow Creek Road. Starting in subalpine grasses and alders this route climbs quickly to a ridge off Goat Mountain's south flank, then follows the ridge line onto Eagle Glacier to the Nordic Training Center. Trail brushing is very sporadic, generally accomplished by trail users. Trail gains approx 4,000' in elevation. Cairns mark the route by the cliff.

- Manager:** USFS (Chugach National Forest, Glacier Ranger District)
- Easement Status:** No easement in place
- Trail start:** MP 5.1 Crow Creek Road
- Trail End:** Eagle Glacier/Nordic Training Center.
- Trail Length:** 3.85 miles
- Designed Use Objectives:** Trail type: terra
Trail Class: 1
Designed Use: Hike
- Design parameters:** N/A
- Maintenance Frequency:** N/A
- Travel Management:** Managed Use: Hiker
Prohibited Use: motorized, horse, bike, all winter use
Other Use: provides alternate access for athletes using Nordic Training Center if helicopter is on weather hold.
- Special Considerations/remarks:**
- ◆ Winter use is discouraged due to extreme avalanche hazards.
 - ◆ No trailhead signage is recommended for this route so that unprepared hikers do not venture out onto this route.

GIRDWOOD IDITAROD NATIONAL HISTORIC TRAIL (INHT)

Beginning near the Alaska Railroad, the Girdwood Iditarod National Historic Trail generally follows Glacier Creek up valley, skirting the Industrial Park, and passing under the Alyeska Highway at the Glacier Creek Bridge. It uses the paved bike path on Hightower, then leaves the bike path on the AWWU road, and finally returns to a forest trail in several hundred feet. An interpretive trail, created by the students at Girdwood School, connects the trail to ASD property near the AWWU and trail junction. The trail stays on the east side of Crow Creek Road and then crosses at MP 1.6 (small parking area located here) traveling back and forth over the road a couple of times, connecting with the Winner Creek Trail at the Winner Creek Gorge Trailhead. The trail continues along the west side of the road to MP 4, and then is located on Crow Creek Road through the residential area up to Crow Pass Trailhead. The trail passes through cottonwood/spruce forests, avalanche slide areas, and poorly drained areas.

| | |
|--|---|
| Manager: | MOA-MP 0-MP 5; FS MP 5-MP 9 (estimated) |
| Easement Status: | Portions of trail have easement |
| Trail start: | Across the railroad tracks from the end of West Street |
| Trail End: | Crow Pass Trailhead |
| Trail Length: | 9 miles |
| Designed Use Objectives: | Trail types: Terra & Snow Trail Class: Class 4 MP 0-MP 3 (Alyeska Hwy underpass); Class 3 MP 3-MP 9 Designed Use: Hiker |
| Design Parameters: | Tread width: 8' (class 4-5), 3' remainder Clearing width: 6' (20' in alders) Target grade: 10% Short pitch max: 15% Cross slope: 3-7% |
| Maintenance Frequency: | Tread repair: annual Brushing: 2x/year on class 4; 1/3 years on class 3 Tree Removal: within a year Condition Survey: once every 5 yrs |
| Travel Management: | Managed Use: Hike, cross-country ski Prohibited Use: motorized, pack & saddle Other Use: Biking, snowshoeing, mushing, skijoring, running, mushroom foraging |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ A trail along the Alaska Railroad tracks is needed to provide safe access to trail from Bird-to-Gird Path and the Alyeska Highway Bike Path.◆ Trail is on Anchorage School District land for a short distance near the school. |

HIGHTOWER/EGLOFF MULTI-USE TRAIL

This bike path is lighted and paved. The path runs from the Community Center and parks and playground to the Girdwood K-8 School.

| | |
|--|--|
| Manager: | HLB |
| Easement Status: | Yes, easement in place |
| Trail start: | Girdwood Community Center/Library |
| Trail End: | Girdwood K-8 School |
| Trail Length: | .5 mile |
| Designed Use Objectives: | Trail type: terra Trail Class: 5 Designed Use: Bike |
| Design parameters: | Tread width 72"-120" Clearing width: 72"-96" Target grade: 2%-5% Short pitch max: 8% Cross slope: 2%-3% |
| Maintenance Frequency: | Tread repair as needed Brushing Tree Removal Condition Survey |
| Travel Management: | Managed Use: pedestrian and bike Prohibited Use: motorized use, pack & saddle Other Use: |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ Volume of pedestrian traffic and lack of an enforced crosswalk are major concerns of the Girdwood Trails Committee and the Girdwood community. A pedestrian activated crosswalk signal is to be added to the intersection in the summer of 2017.◆ Alternative safe, summer trail to cross highways is on west side of Glacier Creek bridge. Trail goes under the bridge from either side. |

JOE DANICH TRAIL, UPPER AND LOWER*

The Joe Danich Trails run from Glacier Creek Bridge on Alyeska Highway to the railroad trestle at the south end of the valley. The first ¼ mile is used by residents as a shortcut to the Girdwood Townsite from nearby neighborhoods. Although at times the trail comes close to Glacier Creek, for the most part it stays on the ridge above, running near the meadows behind the neighborhoods off of Timberline Drive. The trail intersects with the Lower Virgin Creek Trail, the point of demarcation of the “upper” and “lower” trails. The lower Joe Danich Trail runs along the east bank of Glacier Creek, through tall cottonwood trees and grassy bogs. The trail ends just south of the railroad trestle. There is no legal trailhead on this end of the trail.

The Joe Danich Upper and Lower Trails are both currently Class 1; however, their usefulness as connectors throughout the Townsite and to access the mouth of the valley encourages the Trails Committee to work toward development of these trails to Class 2 status.

| | |
|---------------------------------|---|
| Manager: | DOT, HLB, Alaska Railroad |
| Easement Status: | No easement in place |
| Trail start: | No designated trailhead on North end. Currently, trail starts by going under the Alyeska Highway Glacier Creek bridge |
| Trail End: | No designated trailhead on South end; current access includes AK RR trestle trespass or wading the creek. |
| Trail Length: | 2.5 miles |
| Designed Use Objectives: | Trail type: Terra Trail Class: Currently 1, goal is for class 2 Designed Use: Hike |
| Design parameters: | Tread width: 6”-18” Clearing width: 24”-48” Target grade: 5%-18% Short pitch max: 35% Cross slope: 5%-20% |
| Maintenance Frequency: | Trail lacks easement, work is infrequent |
| Travel Management: | Managed Use: Hike (future for bike/ski) Prohibited Use: Motorized, pack & saddle Other Use: |

(continued)

Special Considerations/remarks:

- ◆ This trail has great potential for Timberline area neighborhoods. Future goal for Trails Committee is to get legal easement to the land and improve trail from Joe Danich to Lower Virgin Creek to create connector route.
- ◆ Suggested improvement to trailhead access is to reroute north access along utility/DOT easement along south side of Alyeska Highway, creating high and dry access from Timberline Drive/Alyeska Highway. With improvements, this trail could be appropriate for biking and for skiing.

MAX'S MOUNTAIN TRAIL

Max's Trail is the primary route for ascent of Max's Mountain. The route is popular with backcountry skiers and snowboarders who descend the south-facing slope. It is also a popular summer hike for those comfortable with steady, steep uphill on a less defined trail. Getting off-trail can result in bushwhacking in alders and devil's club and tricky maneuvering over cliff bands both above and below tree line. Trail begins at the Virgin Creek Falls Trailhead, at the end of Timberline Road. At the Y to the Virgin Creek Falls, Max's route diverts to the left, heading uphill sharply. Several benches are gained, eventually getting out of tree line. Above tree line, the trail crosses high alpine meadow terrain, climbing over the cliff bands and topping out at the weather station at Max's peak.

| | |
|---------------------------------|---|
| Manager: | HLB/DNR |
| Easement Status: | No easement |
| Trail start: | End of Timberline Road |
| Trail End: | Weather station at Max's Peak |
| Trail Length: | 2 miles |
| Designed Use Objectives: | Trail type: Terra, Snow Trail Class: 1 Designed Use: Hiker |
| Design parameters: | Tread width: 0-12" Clearing width: ≥24" Target grade: 5%-25% Short pitch max: 40% Cross slope: Natural Side slope |
| Maintenance Frequency: | Tread repair: n/a Brushing: n/a Tree Removal: n/a Condition Survey: n/a |
| Travel Management: | Managed Use: Hiking only Prohibited Use: All motorized use Other Use: Berry picking, paragliding, back-country ski access |

Special Considerations/remarks:

- ◆ This trail is not currently listed on Girdwood Trails Map, and it is not recommended to add it to the trail map.
- ◆ Overall goal is to have this trail remain primitive.
- ◆ If trail gets higher volume of use, design parameters will have to be re-evaluated.
- ◆ This trail accesses rim hike to Center Ridge and Alyeska in-bounds

MOOSE MEADOW MULTI-USE TRAILS

Moose Meadow Multi-use Trails are winter access only because the area is too marshy to be accessible in the summer months. Moose Meadow falls within the boundary created by the Girdwood airport to the west, Arlberg Avenue to east, by Alyeska Resort property to the north, and Aspen Road to the south. Once enough snow has fallen and the marsh is frozen, classic and skate trails for nordic skiing are groomed in the flat meadows. Connector trails connect Stumpy's Trails to the Moose Meadow Trails. A special loop in Moose Meadows is groomed by dog sled tour operators for commercial dog sled tour operations under a permit with the HLB.

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|--|--|
| Manager: | HLB |
| Easement Status: | No easement in place |
| Trail start: | Arlberg Road/Moose Meadows & Alyeska Playing Field Parking Area |
| Trail End: | Arlberg Road/Moose Meadows & Alyeska Playing Field Parking Area |
| Trail Length: | 1 mile |
| Designed Use Objectives: | Trail type: Snow Trail Class: 4 (depends upon snow pack) Designed Use: Winter Multi-use: Classic and skate skiing, snowshoeing, winter biking, hiking, skijoring, dog mushing |
| Design parameters: | Tread width: 18' Clearing width: 18' Target grade: flat Short pitch max: flat Cross slope: n/a |
| Maintenance Frequency: | Tread repair: Grooming twice per week Brushing: n/a Tree Removal: n/a Condition Survey: throughout winter |
| Travel Management: | Managed Use: Winter multi-use: Cross country classic and skate skiing, snow shoeing, winter biking, hiking, skijoring, dog mushing Prohibited Use: Horses, unauthorized motorized use. Other Use: Commercial dog sled tours, winter athletic competitions, community events. |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ Parking area is too small for current demand for parking. Redesign of the Moose Meadows and Alyeska Playing field parking area is planned for the near future. Expect realignment of trail access and possible change in parking location. |

MT. ALYESKA BIKE TRAILS

Alyeska Resort built lift-served downhill bike trails for summer use on the ski terrain. Tickets may be purchased at the ticket office, and bike rentals are available at the Day Lodge.

| | |
|--|--|
| Manager: | Alyeska Resort |
| Easement Status: | No easement necessary. |
| Trail start: | Lift Access from the Bear Cub Quad and Ted's Express. |
| Trail End: | Daylodge parking lot |
| Trail Length: | Various |
| Designed Use Objectives: | Trail type: downhill mountain bike trails Trail Class: 2-3 Designed Use: lift-accessed downhill mountain bike |
| Design parameters: | Tread width: 2' Clearing width: 6' Target grade: 8-15% Short pitch max: 20% Cross slope: 20% |
| Maintenance Frequency: | Tread repair: throughout summer Brushing: throughout summer Tree Removal: throughout summer Condition Survey: throughout summer |
| Travel Management: | Managed Use: Lift-accessed, downhill mountain biking Prohibited Use: Any use other than lift accessed downhill mountain biking when lifts are operating. Other Use: Athletic Events |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ These trails are within Alyeska Resort's permit area and are managed by Alyeska Resort.◆ All trails are available to ticketed riders. |

NORDIC 5K LOOP

The Nordic 5K Loop was developed in order to meet the need for a nordic-specific venue. The Nordic 5K Loop is groomed for classic and skate skiing in the winter months. The terrain is hilly and drainage is excellent, allowing the ski grooming to hold up well to considerable use. Trails are marked as one-way in winter.

In the summer, the trail is popular with hikers, bikers, and runners; the trail is open to all for multi-use. This trail is the summer bike access to the Winner Creek Trail, as it avoids the first 7/10 mile of the Winner Creek Trail, which is not open to bike riding.

| | |
|---------------------------------|---|
| Manager: | HLB |
| Easement Status: | Yes, easement in place |
| Trail start: | End of Arlberg Road |
| Trail End: | End of Arlberg Road |
| Trail Length: | 2.1 miles |
| Designed Use Objectives: | Trail type: snow/terra Trail Class: 4 Designed Use: Winter nordic specific trail |
| Design parameters: | Tread width: 16' Clearing width: 28' Target grade: variable Short pitch max: 10% Cross slope: 2-3% |
| Maintenance Frequency: | Tread repair: Annual Brushing: Annual Tree Removal: As needed Condition Survey: As needed |
| Travel Management: | Managed Use: Nordic classic and skate skiing in winter; multi-use in summer Prohibited Use: Winter: Any non-nordic ski use. No bikes, dogs, snowshoes, unauthorized motorized use. Summer: unauthorized motorized use, horses. Other Use: Athletic events summer and winter. |

(continued)

Special Considerations/remarks:

- ◆ Extension of Arlberg Road was completed in fall 2016. Layout includes a small parking lot and a potential trailhead. This parking lot and trailhead could also become an access point for Winner Creek Trail.
- ◆ This trail provides summer bike access to Winner Creek Trail, as first 7/10 mile is not open to bike traffic.

Add info about possible mtn bike flow trails for summer use within the Nordic 5K?

NORTH FACE TRAIL

The North Face Trail is a summer route for hikers to access the upper aerial tramway terminal from Hotel Alyeska at the base. Although the route is designed to ease the pitch of the trail, the route is consistently steep overall. Trail access is just past the Winner Creek Trailhead at the base of Alyeska Resort's Chair 7. The access is well marked, and the trail begins as a gentle, cleared mountain road. The route becomes steeper and becomes a single-track trail after the first major incline. The trail climbs rapidly to achieve 2,000' elevation gain.

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|--|---|
| Manager: | Alyeska Ski Resort |
| Easement status: | No easement necessary |
| Trail start: | Adjacent to Winner Creek Trailhead at the base of the Alyeska Aerial Tramway |
| Trail End: | Upper Mountain Terminal, Alyeska Aerial Tramway |
| Trail Length: | 2.25 miles |
| Designed Use Objectives: | Trail type: Terra Trail Class: 2 Designed Use: Hiking only |
| Design parameters: | Tread width: 24" Clearing width: 6' Target grade: Average grade is 12% Short pitch max: 17% Cross slope: 45/50% |
| Maintenance Frequency: | Tread repair: throughout the summer Brushing: twice per summer Tree Removal: n/a Condition Survey: summer-long |
| Travel Management: | Managed Use: Summer hiking Prohibited Use: Any other use Other Use: Athletic events |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ This trail is typically closed to hiking from November 1-May 30. Snow pack dictates specific opening and closing dates of the trail.◆ Trail is on Alyeska leased property permit area under agreement with the US Forest Service. Agreement allows Alyeska Resort to open and close trail based on their operational discretion. |

RAGGED TOP TRAIL

Beginning at the Beaver Pond Trail and crossing California Creek (no bridge in place currently), this primitive trail climbs steeply up Ragged Top. There is a flat area on the bank above the creek crossing. This social, primitive trail climbs the ridge until reaching alpine meadows. At that point, hikers usually choose their own paths to reach the summit.

| | |
|--|---|
| Manager: | Girdwood Trails Committee |
| Easement Status: | No easement in place |
| Trail start: | Crow Creek Road along north side of California Creek |
| Trail End: | Ridge or top of Ragged Top |
| Trail Length: | 2 miles/4 miles |
| Designed Use Objectives: | Trail type: Terra Trail Class: 1 Designed Use: hiking |
| Design parameters: | None, this is a social, primitive trail with no plans for additional development at this time. Tread width: Clearing width: Target grade: Short pitch max: Cross slope: |
| Maintenance Frequency: | rarely, infrequent Tread repair Brushing Tree Removal Condition Survey |
| Travel Management: | Managed Use: Hiking Prohibited Use: Motorized, pack & saddle Other Use |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ The planned Girdwood cemetery is at start of this trail, with trail access through cemetery land.◆ If funding is found for this trail, first issue will be creating a bridge crossing of California Creek. Cooperation is intended with cemetery planning/development efforts. |

SHORTCUT FROM BIKE PATH TO DAVOS ROAD

This neighborhood connector is a shortcut to connect the neighborhoods by the airport to the Girdwood Townsite.

Manager: MOA; Trail is easement for AWWU.

Easement Status: No easement in place

Trail Start: Bike path by Glacier Creek bridge

Trail End: Davos Rd by Glacier Creek

Trail Length: 1/8 mile

Designed Use Objectives: Trail type: terra, snow
Trail Class: 3
Designed Use: Hiking/Pedestrian

Design parameters: Tread width: 12-24"
Clearing width: 7'-8'
Target grade: 3%-12%
Short pitch max: 25%
Cross slope: 5%-10%

Maintenance Frequency: Tread repair:
Brushing:
Tree Removal:
Condition Survey:

Travel Management: Managed Use
Prohibited Use: Motorized vehicles
Other Use

Special Considerations/remarks:

- ◆ High volume of pedestrian traffic
- ◆ Well used trail of high value to community
- ◆ School and park connector for children causes heightened concern for safety

SNOW CAT TRAIL

The Snow Cat Trail begins near the lower building of the Alyeska Aerial Tramway and winds through relatively gentle rolling hills until it crosses the snow cat bridge over Winner Creek. After the bridge, the Snow Cat Trail becomes steeper and climbs to the lower Winner Creek drainage. In winter, the trail is consistently maintained by snow cat operations and the trail tops out at the public use cabin. Winter trail users should be aware of snow cat operations in the area and stand clear of the trail for the snow cat and snow machines. In summer, the trail bed provides tricky footing between fallen trees and drainages. Hikers can follow an indistinct trail to the cabin, which overlooks Girdwood and the Turnagain Arm.

Manager: Chugach Powder Guides by permit with HLB and DNR

Easement Status: No easement

Trail start: By lower tram station

Trail End: Public use cabin (CPG Powder Cabin)

Trail Length: 4 miles

Designed Use Objectives: Trail type: Terra, Snow
Trail Class: 1 in summer, 4 in winter
Designed Use: Winter access to snow cat terrain

Design parameters: Tread width: 16'
Clearing width: 28'
Target grade: variable
Short pitch max: 10%
Cross slope: 2-3%

Maintenance Frequency: Tread repair: Annual
Brushing: Annual
Tree Removal: As needed
Condition Survey: As needed

Travel Management: Managed Use: Hiking, skiing, biking
Prohibited Use: All motorized use
Other Use

Special Considerations/remarks:

- ◆ This trail has been identified for upgrading to provide additional skiing and other winter use. Cat road has high potential for winter use if trail surface is improved.
- ◆ Trail is not included on summer trail map and is not recommended to be included until trail surface has been improved.

STUMPY'S WINTER TRAIL*

Stumpy's Winter Trail begins at the Moose Meadow parking area, crosses the meadow and descends a steep hill (Horror Hill) to the bridges behind Our Lady of the Snows Church. The trail ends at the Winner Creek Gorge Bridge. The route travels through a series of eight distinct meadows and short sections of woods as it gently climbs up to the ridge above Glacier Creek. The trail leaves the meadows and enters the forest ¼ mile from the Winner Creek Gorge Bridge and follows the top of the ridge above Glacier Creek the rest of the way.

The first four meadows are part of the groomed multiuse trail system and link with the snow cat trail and the Girdwood Nordic Ski Club trail. The last four meadows and the woods are un-groomed, classic-only ski trail. The trail is too wet for use other than in winter. When this route is linked with the Winner Creek Trail or the Snow Cat Trail for a trip to the Winner Creek Gorge and back, it provides a five-mile round trip toward the head of the valley.

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| Manager: | MOA |
| Easement Status: | No easement in place |
| Trail start: | Moose Meadows Parking Lot |
| Trail End: | Winner Creek Gorge |
| Trail Length: | 2.5 miles |
| Designed Use Objectives: | Trail type: snow Trail Class: 2 Designed Use: cross-country skiing |
| Design parameters: | Tread width: 12" Clearing width: 10' Target grade: 15% Short pitch max: 20% Cross slope: 10% |
| Maintenance Frequency: | Tread repair: N/A Brushing: every 5 years Tree Removal: As needed Condition Survey: every 5 years |
| Travel Management: | Managed Use: Cross-country ski Prohibited Use: bikes, Motorized vehicles Other Use: Snowshoe, skijoring |
| Special Considerations/Remarks: | <ul style="list-style-type: none">◆ Bikes not recommended due to soft trail tread. |

TINY CREEK TRAIL*

Tiny Creek Trail runs from the New Girdwood Townsite along California Creek to the Girdwood K-8 school and then joins Crow Creek Road at approximately MP 1. The trail splits just behind the telephone building in the New Girdwood Townsite. At the split, one trail crosses a bridge over California Creek and climbs a steep hill to Crow Creek Road at approximately MP 0.5. The other trail stays along the banks of California Creek Trail, through alders behind the Creekside apartments, and enters the school grounds near the parking lot. The trail continues along the west side of the school grounds at the Bus Turnaround area, crossing a bridge and following the power line easement up to Crow Creek Road at approximately MP 1.

*Tiny Creek Trail is currently a Class 3 Trail, as it is a key connector to the school from the Townsite, Girdwood Trails Committee has plans to upgrade it to Class 4. This highly used connector provides a short cut to businesses, post office, homes, and the school for non-motorized trail users.

| | |
|---------------------------------|--|
| Manager: | Anchorage School District/Chugach Electric Association |
| Easement Status: | No easement in place |
| Trail start: | New Girdwood Townsite at Hightower and Lindblad corner. Building on the Northwest corner across from Chair 5 restaurant is the telephone utility building. |
| Trail End: | Crow Creek Road MP.5 or Crow Creek Road MP 1 |
| Trail Length: | .25 mile to first exit to Crow Creek Road; .75 mile to second exit to Crow Creek Road. |
| Designed Use Objectives: | Trail type: terra Trail Class: 4 Designed Use: Bike |
| Design parameters: | Tread width: 48-84" Clearing width: 72"-96" Target grade: 2-8% Short pitch max: 10% Cross slope:3-5% |
| Maintenance Frequency: | As needed |
| Travel Management: | Managed Use: bike, hike Prohibited Use: motorized, pack and saddle Other Use: |

Special Considerations/remarks:

- ◆ Trail up to Crow Creek Road at MP .5 is very steep. Switchback has been added to encourage users to a less steep route. Original route is not sustainable as it is eroding. Work is necessary to establish switchback route as primary access.

WINNER CREEK TRAIL UPPER

This trail provides access to the Upper Winner Creek area. Starting at MP 1.5 Winner Creek Trail, this trail heads east, upstream, to summit at Berry Pass (el ~2000) and then continues down to the Rosehip Creek Bridge, a tributary of the Twenty-Mile River. The trail fords several drainages and traverses rock fall areas. This route is popular with pack-rafters who float out on the Twenty-Mile River. Although planned, there is currently no trail constructed beyond the Rosehip Creek Bridge out to MP 82 of the Seward Highway, a distance of at least 12 miles. This trail is a section of the Iditarod National Historic Trail (INHT).

Manager: FS (Chugach National Forest, Glacier Ranger District)

Easement Status: Yes, easement in place

Trail start: MP 1.5 Winner Creek Trail

Trail End: Rosehip Creek Bridge

Trail Length: 9.12 miles

Designed Use Objectives: Trail type: Terra
Trail Class: 2
Designed Use: Hiker

Design Parameters: Tread width: 24"
Clearing width: 6' (20' in alders)
Target grade: 18%
Short pitch max: 35%
Cross slope: 5-20%

Maintenance Frequency: Tread repair: once every 5 yrs
Brushing: once every 5 yrs
Tree Removal: within a year
Condition Survey: once every 5 yrs

Travel Management: Managed Use: Hiker
Prohibited Use: motorized
Other Use: Bike

Special Considerations/remarks:

- ◆ Winter use is discouraged due to avalanche hazards and avalanche control by Alyeska Resort.
- ◆ This trail is on an easement across state land for several miles before it climbs out of the valley and onto US National Forest lands.

VIRGIN CREEK FALLS UPPER TRAIL

The Virgin Creek Falls Trail begins at the cul de sac at the end of Timberline Road. A trailhead marker establishes the start of the trail from the roadside. The short ¼ mile trail to Virgin Creek Falls climbs along the north side of Virgin Creek, gaining a small bluff. Hikers going to the Virgin Creek Falls will descend to a small beach at the Virgin Creek Falls. For information on extension of this trail up Max’s Mtn, see separate listing for Max’s Mountain.

- Manager:** Land Conservation Trust
- Easement Status:** No easement in place
- Trail start:** End of Timberline Road
- Trail End:** Virgin Creek Falls
- Trail Length:** .25 mile to Virgin Creek Falls
- Designed Use Objectives:** Trail type: terra
Trail Class: 2
Designed Use: hiking
- Design parameters:** Tread width: 18”
Clearing width: 24”-48”
Target grade: 5%-18%
Short pitch max: 35%
Cross slope: 5%-20%
- Maintenance Frequency:** As needed
Tread repair:
Brushing:
Tree Removal:
Condition Survey:
- Travel Management:** Managed Use: Hiking, Backcountry skiing access
Prohibited Use: biking, motorized, pack & saddle
Other Use:
- Special Considerations/remarks:**

- ◆ Land has been donated to the Land Conservation Trust for the purpose of establishing a trailhead for these trails. Privately owned land borders the established trail easement.



VIRGIN CREEK TRAIL LOWER*

The Virgin Creek Trail Lower begins at the cul de sac at the end of Virgin Creek Drive and follows a low ridge and drainage of Virgin Creek toward the Glacier Creek drainage through dense coastal rain forest. It then turns south to intersect with the Joe Danich Trail Lower.

The Virgin Creek Trail Lower is currently a Class 1 Trail, but it is an excellent potential route for connecting to other trails and to the old and new town sites. The Trails Committee has selected it for eventual upgrade to Class 2.

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|--|--|
| Manager: | HLB |
| Easement Status: | No easement in place |
| Trail start: | Virgin Creek Drive |
| Trail End: | Intersection with Joe Danich Trail |
| Trail Length: | 0.6 mile |
| Designed Use Objectives: | Trail type: Terra Trail Class: 2 Designed Use: hike |
| Design parameters: | Tread width: 6"-18" Clearing width: 24"-48" Target grade: 5%-18% Short pitch max: 35% Cross slope: 5%-20% |
| Maintenance Frequency: | as needed Tread repair: Brushing: Tree Removal: Condition Survey: |
| Travel Management: | Managed Use: hiking, biking, skiing Prohibited Use: motorized; pack & saddle Other Use |
| Special Considerations/remarks: | <ul style="list-style-type: none">◆ Trails Committee goal is to link with Danich Trails to create a neighborhood loop. |

WAGON TRAIL*

The Wagon Trail runs from approximately MP 89 of the Seward Highway, extending from the southeast corner of Girdwood Valley to the cul de sac on Virgin Creek Drive. The southern trailhead is adjacent to the gravel pit next to the railroad tracks. The trail winds from the southeastern corner of Girdwood Valley along the eastern edge of the valley next to the base of the mountains, cutting through dense hemlock/spruce coastal rain forest. This area was used by the railroad to log for railroad ties, and a railroad construction camp was located on the first hill above the tracks. This trail connects with the Lower Virgin Creek Trail and the Joe Danich Trails.

| | |
|---------------------------------|--|
| Manager: | HLB/DNR/Alaska Railroad |
| Easement Status: | No easement in place |
| Trail start: | No trailhead designed as there is no legal public access at the Seward Highway. |
| Trail End: | No trailhead designed as there is no legal public access at Virgin Creek Road. |
| Trail Length: | 1.5 miles |
| Designed Use Objectives: | Trail type: terra Trail Class: 2 or 3 in future, currently 1 Designed Use: hiking |
| Design parameters: | TBD once access is resolved. Tread width: Clearing width: Target grade: Short pitch max: Cross slope: |
| Maintenance Frequency: | Rarely, infrequent. TBD once trail access is resolved. Tread repair: Brushing: Tree Removal: Condition Survey: |
| Travel Management: | Managed Use: Hiking Prohibited Use: Motorized, pack & saddle Other Use: |

(continued)

Special Considerations/remarks:

- ◆ Permission has been received in the past for the Girdwood Trails Committee to place a bridge on HLB land below Virgin Creek Road. On the south end, there is no access as the trail currently ends at the Alaska Railroad (RR) tracks.
- ◆ Recreational use of area near RR tracks is increasing. This use will need legal access across RR tracks and coordination of efforts to gain access across RR.
- ◆ Trails Committee goal is to create a loop with a bridge across Virgin Creek and connection to Lower Joe Danich Trail.

WINNER CREEK TRAIL

The valley’s most popular trail, Winner Creek Trail can be accessed from two separate trailheads—one at MP 2.9 Crow Creek Road, the other just beyond the base terminal of the Alyeska Resort’s tramway. This trail traverses through spruce-hemlock forests, and is part of the Iditarod National Historic Trail (INHT).

Winner Creek Trail is a Class 4 trail between the Alyeska side trailhead and Zug’s Slide, approximately 2/3 mile. This portion has boardwalks alternating with gravel-filled trail. Beyond Zug’s Slide to the Crow Creek Road Trailhead, the trail is Trail Class 3 with gravel and dirt trail tread and narrow boardwalks. Approximately 1.5 miles from the trailhead at Alyeska Resort, Upper Winner Creek Trail intersects the main trail and forks off to the right. Winner Creek Trail forks left, following Winner Creek downstream past the snowcat bridge, over the Winner Creek Gorge bridge, and over the hill to the hand tram across Glacier Creek.

From the north side the hand tram crossing, the trail ascends one mile to the Winner Creek Gorge Trailhead on Crow Creek Road. There are a couple of options and alternate destinations on this side of the Glacier Creek. About .5 miles from the hand tram crossing, there is a small social trail to an area known as Chutes and Ladders. Another option is to take the spur trail at the top of the switchbacks about 3/4 mile from the hand tram crossing. This trail leads to Crow Creek Mine.

Manager: FS (Chugach National Forest, Glacier Ranger District);
Hand tram managed by Girdwood Trails Committee.

Easement Status: Yes, easement in place

Trail Start: Just past Alyeska Resort’s aerial tram terminal

Trail End: Winner Creek Gorge Trailhead

Trail Length: 3.5 miles

Designed Use Objectives: Trail type: Terra & Snow
Trail Class: 4 & 3
Designed Use: Hiker

| Design parameters: | Class 4 | Class 3 |
|---------------------------|--------------------|--------------------|
| Tread width: | 6’ | 3’ |
| Clearing width: | 8’ (20’ in alders) | 6’ (20’ in alders) |
| Target grade: | <10% | <12% |
| Short pitch max: | 15% | 25% |
| Cross slope: | 3% | 10% |

Maintenance Frequency: Tread repair: annual
Brushing: annual
Tree Removal: as soon as possible
Condition Survey: Once every 5 yrs

(continued)

Travel Management:

Managed Use: Hiker

Prohibited Use: Motorized

Other Use: Bike, ski, snowshoe, trail running

Special Considerations/remarks:

- ◆ No designated trailhead near Alyeska Resort's land; a trailhead is needed at the end of the Arlberg extension project for the Nordic Club's race trails, the snowcat trail and Winner Creek Trail. This trail is entirely on an easement across HLB and State lands. The FS has trail maintenance responsibilities for trail tread, but not for the hand tram.
- ◆ The FS does not issue permits for commercial use of this trail due to easement stipulations, however MOA does issue permits for use.
- ◆ Hand tram is closed November – April due to freezing weather.
- ◆ Hand Tram has a maintenance schedule held by Girdwood Parks and Recreation.

APPENDIX 2

Wish List for Trails

The Girdwood Trails Committee has a wish list for the valley's trails. Those wishes are listed here in no particular order.

- ◆ **Easements for all trails**—Many of Girdwood's trails are not on dedicated easements. A primary goal of the Girdwood Trails Committee has been to survey trails and establish legal easements for them. This is an expensive and time-consuming process, but it is essential in order to best protect these assets the community.
- ◆ **Hand Tram**—at Four Corners will need to be augmented with trail and bridge over the creek at some point.
- ◆ **Trail circumnavigation**—Trail work on existing trails to create a trail-only, multi-use circumnavigation of Girdwood valley that is accessible year round for hiking and biking. Proposed route: Beaver Pond Trail – Athabaskan Trail – Winner Creek Trail – Winner Creek Extension Trail – Alyeska Bike Path – Iditarod NHT.
- ◆ **Mountain biking trails**—In response to a desire for mountain biking flow trails, the Girdwood Mountain Bike Alliance was recently formed. This grassroots organization is planning to build bike trails in the Girdwood Valley. At this time, they plan to add flow trails within the Nordic 5K trail loop and are working with HLB and the Girdwood Nordic Ski Club on conceptual plans to determine trail design.
- ◆ **Connector trail to Winner Creek Trail**—Multi-use trail to connect Arlberg Extension's north end to Zug's Slide on Winner Creek Trail. This trail is to assist in creating a loop for pedestrians to avoid walking on Nordic 5K Loop and achieve loop to connect north end of Arlberg Extension road to Winner Creek Trail.
- ◆ **Dog mushing trails**—Dog mushing trails have been an issue brought forward by mushing groups and commercial operators in the past. Currently, Moose Meadow is available for this use via permit although lack of snow at the base of the valley has prohibited use of the meadow in recent years. Finding a suitable location for staging, loading, and unloading is a concern.
- ◆ **Additional cross country ski trails**—The Girdwood Nordic Ski Club is pursuing development of additional trails in the upper valley. These trails are to be winter multi-use trails, wide enough to be groomed by snow machine.
- ◆ Connector trail from Joe Danich Trail to Timberline Road.
- ◆ **E-bikes and other forms of trail access**—There will be progress in the development of e-bikes and other forms trail access that are not currently in use. Girdwood Trails Committee plans to follow the MOA Parks and Recreation model regarding approval of these uses on land in the Girdwood valley.

- ◆ **Hiking-only trails**—While not categorized as hiking-only trails, there are trails within the valley that the Girdwood Trails Committee plans to maintain at a level that does not encourage other activities, such as bike riding.
- ◆ **Water trails**—The Trails Committee is interested in developing water trails on the valley floor for kayaking. However, year-to-year flow, large or long rainstorms, and deadfall sweepers are concerns.

APPENDIX 3

Girdwood Trails with Easements

Abe's Trail

Alyeska Highway Pedestrian Safety Corridor

Arlberg Bike Path

Beaver Pond Trail

Bird-to-Gird Bike Path

Crow Pass Trail

California Creek Trail (HLB Portion)

Girdwood Iditarod NHT (portions)

Hightower/Egloff Bike Path

Nordic 5K Loop

Upper Winner Creek Trail

Winner Creek Trail

APPENDIX 4:

List of Trail Term Definitions

The following is a list of trail term definitions that are used throughout this plan. In part, they parallel terminology used by the U.S. Forest Service, Alaska State Parks, the U.S. Fish and Wildlife Service, the National Park Service, and the Bureau of Land Management. An additional glossary of trail terms is available at:

<http://www.americantrails.org/glossary.html>

Americans with Disabilities Act (ADA): A federal law prohibiting discrimination against people with disabilities. The law requires public entities and public accommodations to provide accessible accommodations for people with disabilities.

All-Terrain Vehicle (ATV): See Off-Highway Vehicle (OHV).

Accessible: A term used to describe a site, building, facility, or trail that complies with the Americans with Disabilities Act (ADA) Accessibility Guidelines and can be approached, entered, and used by people with disabilities.

Anchor: An object, usually vertical, such as a tree or stone that defines the sides of a trail and helps to keep users in the center of the tread. Also an object used to hold another in place.

Armoring: Reinforcing a tread surface with a resilient material such as rock, stone, or concrete.

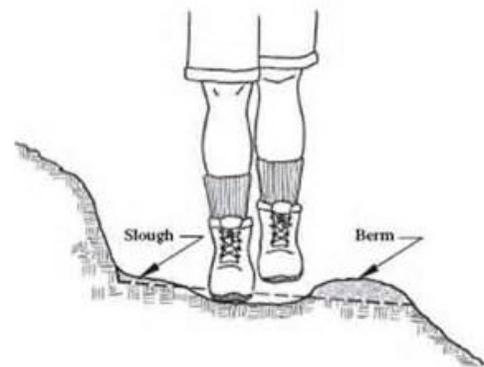
Backslope: The angle of a cut just upslope of the tread, ideally approximating the natural angle of repose of the excavated material.

Bench (Full, Partial) Cut: The excavation cut into a slope to provide support for the trail tread surface. “Full” refers to the bench being constructed entirely on an excavated surface. “Partial” refers to the bench being constructed in part on compacted fill.

Berm: A small ridge of material accumulated along the outer (critical) edge of the tread from a combination of compaction, erosion, and displacement occurring along the centerline of the tread surface. The berm is undesirable in that it channels water along the tread surface. It is often slated for removal during maintenance.

Best Trail Management Practices (BTMPs): A series of management components developed to reflect the current “state-of-the-art” practices for effective and efficient trails management.

Braided Trail: Problem areas along a trail where multiple parallel paths develop, usually around steep, wet, or otherwise degraded areas.



Boat (or Vessel): A device that is used or designed to be used for movement of people or goods in or on the water, whether manually or mechanically propelled, but does not include personal flotation devices, or other floats such as inner tubes, air mattresses, or surf boards. (11 AAC 20.990)

Check (or Check Dam): A device similar to a waterbar, except that it serves as a small in-tread crib or gravel retainer on steep slopes that exceed most sustainability grades. Set perpendicular to the tread.

Climbing Turn: A wide, ascending curve that gradually reverses the direction of the trail while gaining elevation. Used in place of Switchbacks on side slopes of less than 22% when possible.

Clinometer: A small, hand-held device used to measure grade (or slope) in terms of degrees or percent. In trails and roads, grade or slope is referred to in percent (%).

Compaction: The compression of aggregate, soil, or fill material by tamping or trail traffic.

Contour Trail (see also Curvilinear Trail): A concept whereby the trail is designed to rise and/or descend gradually along natural contours. The alignment crosses the contours at a shallow angle so that the natural drainage patterns are easily maintained during the construction process.

Control Point: A specific point, area, or feature that is important in trail layout. Positive Control Points are places you want the trail to go to or near (such as trailheads, scenic points, good water crossings, other trails, etc.). Negative Control Points are places you want to stay away from (such as hazards, sensitive habitat, private property, etc.).

Crib (or Crib Wall): A retaining device used to support the trail tread or backslope, typically composed of wood or rock.

Critical Edge: The outside (downslope) edge of the tread, most pronounced on a bench cut.

Culvert: A pipe or box-like structure of wood, metal, plastic, concrete, or rock that conveys a water course under a tread.

Curvilinear (Trail) Layout (see Contour Trail)

Cyclometer: See Milewheel

Design Parameters: Technical guidelines for trail survey, design, construction, maintenance, and assessment that are based on Designed Use and Trail Class.

Designed Use: The Managed Use of a trail requires the most demanding design, construction, and maintenance parameters and that determines which design, construction, and maintenance parameters will apply to a trail. While there may be many Managed Uses on a trail, there is only **one** Designed Use per trail or trail

segment. For example, if a trail has a Managed Use of both Hiker and Mountain Bike (MTB), then MTB would be the Designed Use since it requires more stringent trail design, construction, and maintenance parameters.

Difficulty Level: The degree of challenge that a trail presents to an average user's physical ability and skill, based on trail condition and route location factors such as alignment, steepness of grades, gain and loss of elevation, and amount and kind of natural barriers that must be crossed.

DTS: Durable Tread Surface

Easement: An interest in land of specified dimensions owned by another that entitles its holder to a specific limited use.

Fall-line: The path water flows down a slope under most circumstances. Trails that approximate the fall-line are prone to erosion and this alignment should be avoided.

Full Bench (Construction) Cut: A trail structure used to create a tread along a Contour Trail, whereby the tread is built entirely on an excavated surface (no fill), which is less subject to compaction, erosion, and surface slumping. It is the preferred method of bench construction on trails construction on side slopes $>30\%$. See also Partial Bench Cut.

Gateway: Where a trail is clearly constrained on two or three sides. The tighter the "squeeze", the stronger the gateway—a sense of entrance, such as between large rocks, trees at the edge of a meadow, etc.

GeoBlock: A trademarked name of structural geogrid material (see Porous Pavement Panel).

Geogrid: See Porous Pavement Panel.

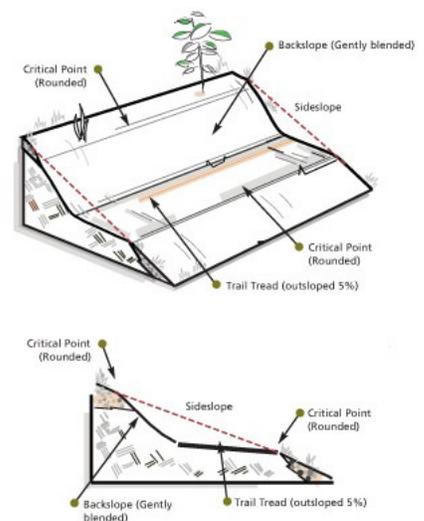
Geotextile (Geofabric, Filter Fabric): A pervious, woven or non-woven, petrochemical fabric that provides a stable base and separation layer used in a variety of applications including aggregate capping.

Grade: Relative steepness (rise and fall) of the trail as compared to a flat horizontal plane. Trail steepness is measured in grade as a percentage.

Grade Control: Fundamental part of Sustainable Trail construction whereby strict trail grade restrictions are placed in the design parameters, primarily to minimize erosion due to natural forces and trail users.

Grade Reversals (or Grade Dip): A short change from positive (climbing) grade to negative (descending) grade for approximately 6 to 12 feet designed into the trail alignment to shed water. Grade reversals are an important component in Contour Trail construction. See also Rolling Grade Dip.

Full Bench Trail



Green Infrastructure: An interconnected network of green space (hubs + corridors) that conserves natural ecosystem values and functions. It provides associated benefits to human populations.

Half Rule: A trail's grade should not exceed half the grade of the sideslope. If the grade is steeper than half the grade of the sideslope, it is considered a Fall-line trail.

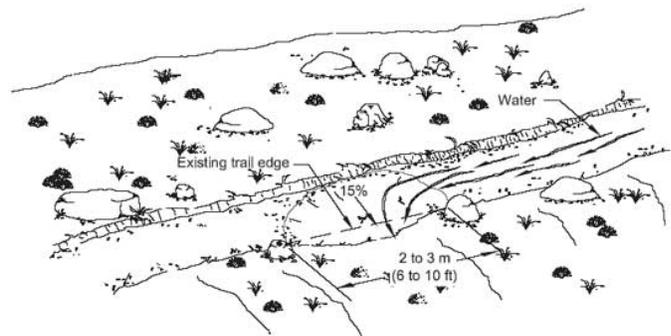
Hardening: Any number of methods of strengthening a tread surface in response to degradation or to better accommodate a particular type of use. Examples include: aggregate capping, boardwalk or puncheon construction, turnpiking, or the use of porous pavement panels.

HLB: Heritage Land Bank, the real estate management arm of the MOA

IGA: Integrated Water Control: Instituting water management into basic trail design, usually during construction. Primary components include Grade Reversals and Outslope.

Inslope: The inward cant of the tread surface, where the outside (critical) edge of the trail is higher than the inside edge. Most commonly used on the upper leg of a switchback or to direct water into an inside ditch. Common in wetter climates. Also the subject of a maintenance action when reshaping tread to a designed specified outslope.

Knicks: A semi-circular, shaved down section of trail, 6-10 feet in length, and canted to the outside with exaggerated outslope. Most commonly employed as a maintenance action on existing low gradient trail sections. A knick is smooth and subtle, often an unnoticeable feature to users.



Logging Out: Clearing a trail of fallen trees.

Managed Trail: A trail that has some type or level of actively managed use. To qualify as a managed trail, one or more of the following must apply: 1) The trail is depicted on a map distributed for public use; 2) The trail is maintained on a regular schedule (up to several years interval) for public use purposes; 3) The trail is, or was, constructed for public use; 4) The trail is abandoned or closed to public use but is used for administrative purposes; or 5) The trail is signed or marked for public use.

Managed Use: The type of use that is actively managed and appropriate on a trail considering its design and management intent. There may be more than one managed use per trail or trail segment. For example, a shared-use trail's managed uses could include hiker, bicycle, wheelchair, cross-country ski, pack and saddle.

Maximum Trail Grade: A defined value for the steepest allowed section of trail grade that is longer than approximately 10 feet, but less than 50 feet in length. Maximum trail grade is determined by evaluating local environmental conditions such as soil, hydrology, and trail use characteristics.

Milewheel: Typically a hand-held or pushed wheel that measures linear distance along the ground. Also known as a Cyclometer.

Mineral Soil: A combination of sand, silt, clay, and gravel that is typically found as the undisturbed layer of soil below the surface layer of organic material and debris. Local mineral soil is the most common medium for tread construction.

MOA: Municipality of Anchorage

MTB: Mountain Bike

Multi-Use Trail: A trail that is designed to accommodate multiple user groups.

Obstacles (Natural): Objects that add challenge by impeding travel. They include: rocks, roots, logs, holes, ledges, drop-offs, etc.

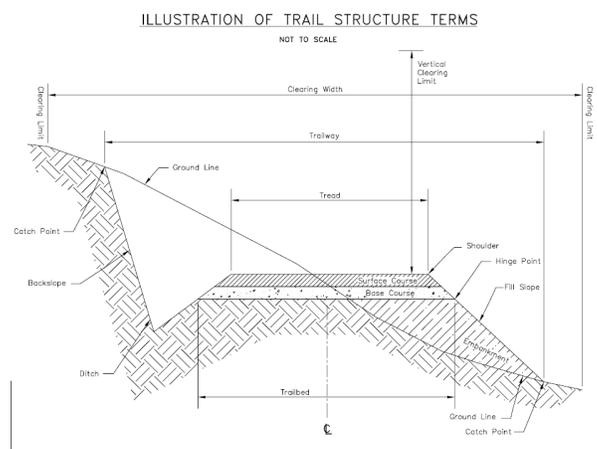
Off-Highway Vehicle (OHV): A motorized mechanical device used for carrying persons or objects over land or water, including automobiles, motorcycles, snowmachines, all-terrain vehicles, and motorized boats. May also be referred to as All Terrain Vehicle (ATV) or Off Road Vehicle (ORV).

Organic Soils: A soil that is made up of decomposed leaves, wood, needles, roots, bark, and other organic material in various stages of decay. A “true” organic soil has an organic surface layer at least 20” thick. The term is also used to refer to the upper most layer of dark surface soil that has a high organic material content. Organic soils have a propensity of readily absorbing and holding water and are poorly suited as a trail-tread material.

Outslope: The outward cant of the tread surface, where the outside (critical) edge of the trail is lower than the inside edge. Outslope promotes sheet flow drainage across the trail preventing flow along the tread and is one of the primary components of integrated water control. An outslope of 5% +/-2% is the typical design specification.

Paddle Boat: A manually propelled, non-motorized device that is used or designed to be used for movement of people or goods in or on the water such as kayaks, canoes, and rowboats, but does not include personal flotation devices, or other floats such as inner tubes, air mattresses, or surfboards.

Partial Bench Cut: A trail structure used to support the tread along a contour trail, whereby the tread is partially supported by an excavated bench cut into a side slope and partially supported by a fill section of compacted excavated material. Not recommended on side slopes greater than 30% because the filled portion is susceptible to slope failure and/or may require higher levels of maintenance. Categorized as half-bench or ¾ Bench depending on amount of tread on the excavation cut. Diagram at right shows a partial bench cut cross section. See also Full Bench Cut.



Porous Pavement Panel: A permeable, rigid, multi-pocketed structural geogrid, typically plastic, that is used to harden areas of saturated or unstable soils without the use of gravel infill, bridges, or boardwalks. e.g. Geo-Block and Geogrid

Puncheon: A log or timber structure built directly on the ground or on sills, used for crossing degraded or boggy areas. (See photo at right.)

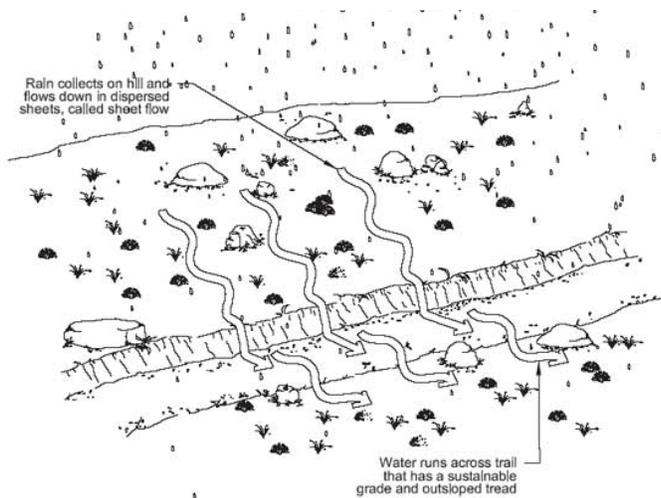


Retaining Wall (Revetment) – See Crib.

Right-of-Way – A legally reserved area for public passage.

Rolling Grade Dip – A trail structure that utilizes a ramp-like excavation, a flat-bottomed drain, and a built up compacted soil dam to direct water off the tread. Typically utilized as a maintenance structure on existing trails.

Shared-Use Trail: A trail that is designed to accommodate multiple user groups.



Sheeting (Sheet Flow): The natural flow of water downward across the landscape. Controlled grade and integrated water control designed in sustainable trail design seeks to maintain sheet flow over and across constructed trails to prevent concentrated water flow along the tread that would focus and accelerate erosion. (See drawing at left.)

Short Pitch Maximum: See Maximum Trail Grade.

Sideslope: See Slope.

Sill: The perpendicular timber or foundation upon which boardwalk, planking, or bridge stringers rest.

Singletrack Trail: A narrow trail typically requiring passage by users in a single file. Commonly used to describe all-terrain (mountain) bicycle trails.

Slope: Refers to the relative steepness of the natural terrain. Slope can be calculated by determining the vertical rise over a given horizontal distance, but it is more often directly read from a slope measurement instrument called a Clinometer. Slope can be expressed in degrees, but for trail use, it is more commonly expressed as a percentage. For example, a 10% slope has 10 feet of rise over 100 feet of horizontal distance. A 10 foot rise over a 10 foot distance would be a 100% slope, which is equivalent to a 45° angle.

Slough: Tread material, backslope material, or other debris that has moved due to gravity or erosion, usually into or out of the tread. See illustration at “Berm”.

Snowmachine (snow vehicle or snowmobile): A motorized vehicle of 850 pounds or less, primarily designed to travel over snow or ice, and supported, in part, by skis, belts, cleats, or low-pressure tires.

Snow Trails: Trails that have a surface consisting predominantly of snow or ice that are designed and managed to accommodate use on that surface during the winter season.

Social Trail – An unplanned, usually unmaintained trail alignment that develops informally as a result of public route pioneering, overuse, or degraded trail avoidance.

Sustainable Trail: A trail that conforms to its terrain and environment, is capable of handling its intended use without serious resource degradation, and requires minimal maintenance.

Swamping: Technical term referring to the physical removal of slash or downed trees on a trail. A swamper usually works in cooperation with a sawyer removing slash and logging fuel and oil.

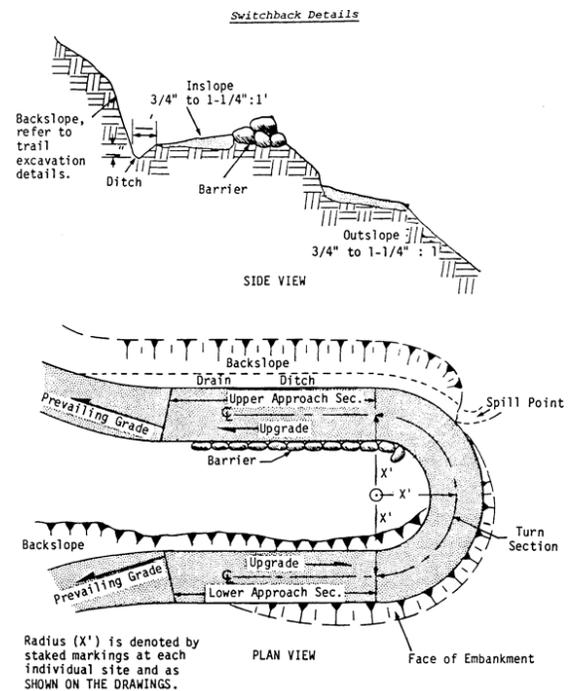
Switchback: A sharp turn in the tread alignment, often 180 degrees, used to gain elevation on steep side slopes (typically required on slopes above 22%). Switchbacks are a highly technical trail structure and should be avoided in favor of Climbing Turns located on slopes below 22% when possible. **See illustration at right. (Not there; need to move illustration.)**

Technical Trail Features (TTF): Objects that have been introduced to the trail to add technical challenge. Examples include: rocks, logs, elevated bridges, jumps, and drop-offs.

TMO – Trail Management Objective

Ten-Percent Average Grade Guideline: Average trail grade refers to the overall average grade of a trail alignment between two major control points—typically the trail head and destination point—but may apply to other trail segments depending upon the terrain the trail crosses. An average trail grade of 10 percent or less is conservatively considered sustainable, but true “sustainability” is dependent on a number of factors.

Terra (Standard) Trails: Trails that have a tread surface consisting predominantly of native soil or rock that are designed and managed to accommodate use on that surface. A terra trail may also have sections of boardwalk, or other hardened tread.



Trail: A linear route managed for human-powered, stock, boats, or OHV forms of transportation or for historic or commercial values.

Trail Class: The prescribed scale of trail development, representing the intended design and management standards of the trail.

Trail Corridor: The total cleared area on both sides of a trail.

Trail Hardening: A technique to modify the surface characteristics of a tread. Usually applied in wet or boggy ground or to enhance ADA characteristics. This ranges from aggregate capping to boardwalk or planking to turnpike construction to the use of porous pavement.

Trail Management Objective (TMO): Documentation of the intended purpose and management strategies of a trail based on its designed use, design parameters, and special considerations.

Trail Opening: Identifies the date a particular trail will be opened to the public after a closure.

Trail Segment: A specific section of a trail with identified starting and ending points. May be used to describe a general area of a trail such as in a TMO or a short specific section of trail with a distinct set of physical characteristics, such as in a trail condition assessment.

Trail Standards: Trail maintenance specifications that define the level of quality and service the trail manager will provide for the trail user.

Trail Structures: Any component of a trail that has been purposely constructed. This would include developed treadway, bench cuts, switchbacks, retaining walls, drainage devices, culverts, bridges, hand railings, boardwalks, and trail signs and posts.

Trail Type: A category that reflects the predominant trail surface and general mode of travel accommodated by a trail. There are three trail types: terra (standard), water, and snow trails.

Tread: The wear surface of the trail upon which a user travels. The tread, or treadway, is the most fundamental component of a trail.

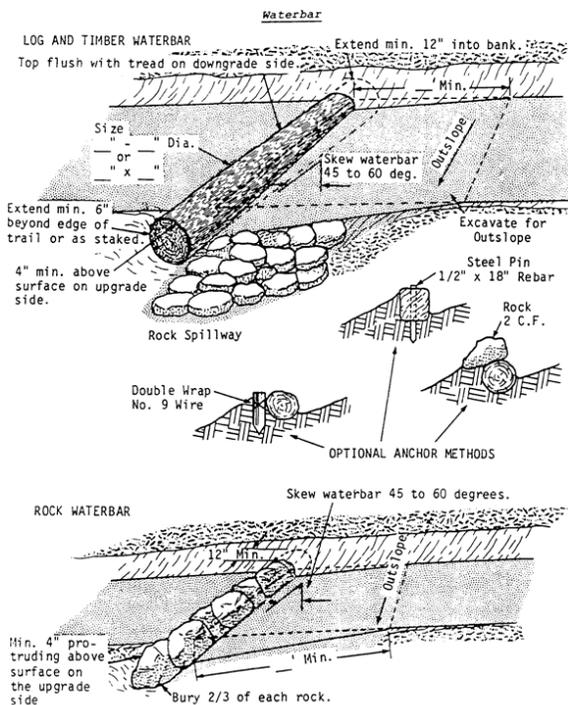
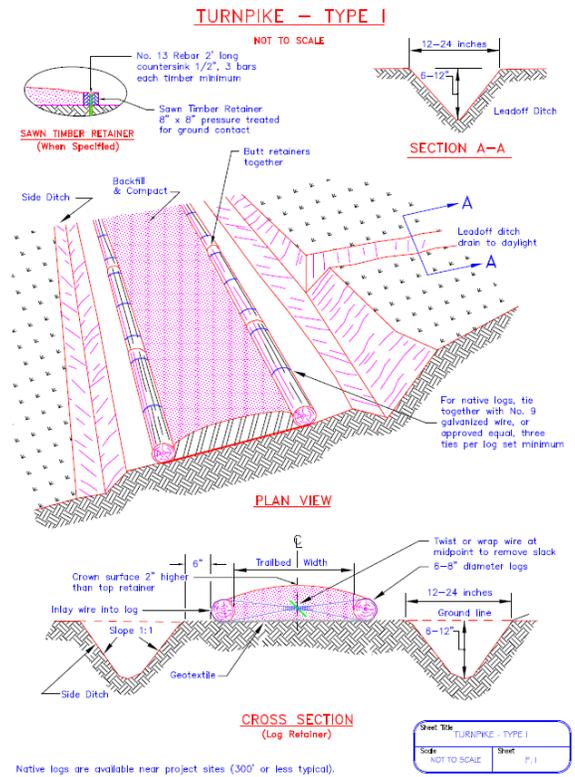
Tread Creep: Areas along a contour trail where the tread is sliding downslope due to compaction, slope failure, or fill failure of a partial bench cut. May be caused by trailside features such as trees, bushes, roots, or another projection that forces traffic onto the critical edge, compacting it downslope.

Tread Watershed: A trail segment defined by the trail tread between a local high point (crest) and the next local low tread point (dip) plus the land area above the trail that drains onto this segment.

Turnpike: An elevated tread feature constructed of mineral material excavated from adjacent ditches. May have log, timber, or rock curbing. Typically used for crossing degraded or boggy areas. May also be partially backfilled with imported mineral soil or capped aggregate. (See right.)

Vehicle: A mechanical device used for carrying persons or objects over land, water, or through the air, including automobiles, motorcycles, bicycles, snowmachines, all-terrain vehicles, motorized boats, and aircraft. Vehicle does not include non-motorized sailboats, canoes, kayaks, rafts, sailboards, hang gliders, gliders, or parasails.

Waterbar: A trail structure typically constructed of wood, rock, or reinforced rubber and soil that is set at an angle across tread to direct water off the treadway. Generally being phased out in favor of Grade Reversals and Outslope integrated into new construction, and Outslope and Rolling Grade Dips retrofit into existing construction. (See below.)



Water Trail: Trails that have a surface consisting predominantly of water that are designed and managed to accommodate use on that surface, and which may include land-based portages.

APPENDIX 5

Trail Management Objectives (TMO)

TMO's are the method used by the US Forest Service to describe the planned status and maintenance of each trail. Below is the TMO for the Girdwood Iditarod National Historic Trail.

TRACS Trail Management Objectives

City:

Area:

Trail Name:

Trail Number:

Trail Beginning Termini:

Beg. Milepost:

Trail Ending Termini:

End. Milepost:

Trail Inventory Length: Miles

Trail Mileage Source: Wheel GPS Map Unknown

TMO Trail Section

1

Section Beg. Termini:

Beg. Milepost:

Sec. #

Section End. Termini:

End. Milepost:

Designed Use Objectives

Trail Type (Check one)

Standard Terra Trail

Snow Trail

Water Trail

Trail Class (Check one)

1 (Primitive/Undeveloped)

2 (Simple/Minor Development)

3 (Developed/Improved)

4 (Highly Developed)

5 (Fully Developed)

Recreation Opportunity Spectrum (Check one)

Urban

Rural

Roaded Modified

Roaded Natural

Semi-Primitive Motorized

Semi-Primitive NonMotorized

Primitive

Designed Use (Check one)

Hiker / Pedestrian

Pack & Saddle

Bicycle

Wheelchair

Motorcycle

All Terrain Vehicle (ATV)

Cross-Country Ski

Snowshoe

Dog Sled

Snowmobile

Watercraft - NonMotorized

Watercraft - Motorized

Design Parameters (Fill in all that apply)

Tread Width (inches)

Clearing Width (feet)

Clearing Height (feet)

Switchback Radius (feet)

Grade: Target Range (%) (>30% of TMO segment)

Grade: Short Pitch Max (%) (up to 200' lengths)

Cross-Slope (%)

Target Frequency Per Year (Fill in all that apply)

Trail Opening

Tread Repair

Drainage Cleanout

Logging Out

Brushing

Snow Trail Grooming

Condition Survey

TRACS TMO Form v4.2 - Side 1 (8/19/2005)

Page of



TRACS Trail Management Objectives

City: **Municipality of Anchorage**

Area: **Girdwood**

Trail Name: **Girdwood Iditarod National Historic Trail**

Trail Number: **118**

Trail Beginning Termini: **adj. to Alaska Railroad ROW**

Beg. Milepost: **0.500**

Trail Ending Termini: **approx. mp 4 Crow Creek Road**

End. Milepost: **6.000**

Trail Inventory Length: **6.000** Miles

Trail Mileage Source: Wheel GPS Map Unknown

TMO Trail Section

2

Section Beg. Termini: **jct with AEP trail (Girdwood school)**

Beg. Milepost: **3.000**

Sec. #

Section End. Termini: **approx. mp 4 Crow Creek Road**

End. Milepost: **6.000**

Designed Use Objectives

Trail Type

(Check one)

Standard Terra Trail

Snow Trail

Water Trail

Trail Class

(Check one)

1 (Primitive/Undeveloped)

2 (Simple/Minor Development)

3 (Developed/Improved)

4 (Highly Developed)

5 (Fully Developed)

Recreation Opportunity Spectrum

(Check one)

Non-Wilderness

Urban

Rural

Roaded Modified

Roaded Natural

Semi-Primitive Motorized

Semi-Primitive NonMotorized

Primitive

Designed Use

(Check one)

Hiker / Pedestrian

Pack & Saddle

Bicycle

Wheelchair

Motorcycle

All Terrain Vehicle (ATV)

Cross-Country Ski

Snowshoe

Dog Sled

Snowmobile

Watercraft - NonMotorized

Watercraft - Motorized

Design Parameters

(Fill in all that apply)

36"

Tread Width (inches)

10'

Clearing Width (feet)

10

Clearing Height (feet)

NA

Switchback Radius (feet)

<15%

Grade: Target Range (%)

(>30% of TMO segment)

20%

Grade: Short Pitch Max (%)

(up to 200' lengths)

8 to 15

Cross-Slope (%)

Target Frequency

Per Year

(Fill in all that apply)

1

Trail Opening

0.33

Tread Repair

0.33

Drainage Cleanout

0.33

Logging Out

0.5

Brushing

Snow Trail Grooming

0.2

Condition Survey



TRACS Trail Management Objectives

Trail Name: **Girdwood Iditarod National Historic Trail** Trail Number: **118**

Travel Management Strategies FSH 7731 (WO 7700-34-1)

Managed Use

(Fill in all that apply)¹

| | From Date (mm/dd) | To Date (mm/dd) |
|--|-------------------|-----------------|
| <input checked="" type="checkbox"/> Hiker / Pedestrian | 5/15 | 11/15 |
| <input type="checkbox"/> Pack & Saddle | | |
| <input checked="" type="checkbox"/> Bicycle | 5/15 | 11/15 |
| <input type="checkbox"/> Wheelchair | | |
| <input type="checkbox"/> Motorcycle | | |
| <input type="checkbox"/> All Terrain Vehicle (ATV) | | |
| <input type="checkbox"/> _____ | | |
| <input checked="" type="checkbox"/> Cross-Country Ski | | |
| <input checked="" type="checkbox"/> Snowshoe | | |
| <input type="checkbox"/> Dog Sled | | |
| <input type="checkbox"/> Snowmobile | | |
| <input checked="" type="checkbox"/> ski jour | | |
| <input type="checkbox"/> Watercraft - NonMotorized | | |
| <input type="checkbox"/> Watercraft - Motorized | | |

Prohibited Use

(Check if applicable)¹

| | From Date (mm/dd) | To Date (mm/dd) |
|---|-------------------|-----------------|
| <input checked="" type="checkbox"/> All Motorized Use | 1/1 | 12/31 |
| (Or, fill in all that apply) | | |
| <input type="checkbox"/> Hiker / Pedestrian | | |
| <input type="checkbox"/> Pack & Saddle | | |
| <input type="checkbox"/> Bicycle | | |
| <input type="checkbox"/> Wheelchair | | |
| <input type="checkbox"/> Motorcycle | | |
| <input type="checkbox"/> All Terrain Vehicle (ATV) | | |
| <input type="checkbox"/> _____ | | |
| <input type="checkbox"/> Cross-Country Ski | | |
| <input type="checkbox"/> Snowshoe | | |
| <input type="checkbox"/> Dog Sled | | |
| <input type="checkbox"/> Snowmobile | | |
| <input type="checkbox"/> _____ | | |
| <input type="checkbox"/> Watercraft - NonMotorized | | |
| <input type="checkbox"/> Watercraft - Motorized | | |

Other Use

(Optional: Check any that apply)¹

| | Accept | Discourage | Eliminate |
|--|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> Hiker / Pedestrian | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> Pack & Saddle | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Bicycle | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Wheelchair | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Motorcycle | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> All Terrain Vehicle (ATV) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Cross-Country Ski | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Snowshoe | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Dog Sled | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Snowmobile | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Watercraft - NonMotorized | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Watercraft - Motorized | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Special Considerations

(Check any that apply. Underline appropriate clarifier in parenthesis. Provide specifics and reference information below.)

- Accessible per Current Agency Guidelines
- Mechanized Tools or Equipment Prohibited
- T&E or Sensitive Species Present (Plant / Wildlife)
- Heritage Resource Present
- Easement across Non-FS Land (Needed)
- Existing Permit or Agreement (Trail-Specific / Area)
- _____

Remarks / Reference Information

in some sections trail follows original alignment of Crow Creek Rd, some old cordoroy and original drainage structures may still be found. Trail is dedicated in Holten Hills subdivision (near school), and near Industrial Park. Can give easement to FS.

GTC Chair: Name **Carolyn Brodin**
 Title **Girwood Trails Committee Chair**

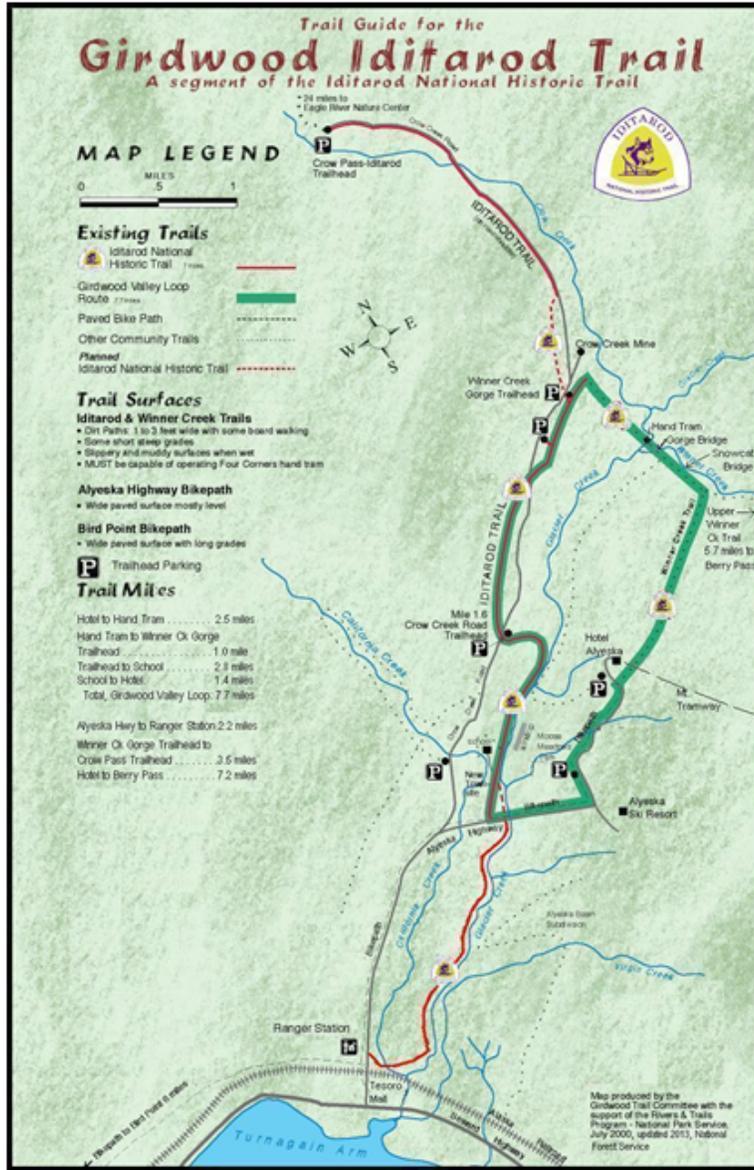
Signature _____
 Date _____



TRACS Trail Management Objectives

Trail Name: **Girdwood Iditarod National Historic Trail** Trail Number: **118**

Remarks / Reference Information (Continuation Sheet)



APPENDIX 6

Past Work Projects, Cost Data, Permits, & Process

Specific information about projects, costs, permits, and process are available at the Girdwood Parks and Recreation office.

APPENDIX 7

Interagency Agreements

Documents outlining the agreements for trail work such as Interagency Land Management Agreement, Memorandum of Understanding, and contracts made through Alaska Trail Volunteers and other organizations are available at the Girdwood Parks and Recreation Office.

Established Partnerships with Government Organizations:

- ◆ USFS, Glacier Ranger District
- ◆ Alaska State Parks, Chugach State Park
- ◆ Municipality of Anchorage, Heritage Land Bank
- ◆ Girdwood Board of Supervisors

Grant Organizations:

- ◆ Anchorage Park Foundation
- ◆ American Hiking Society
- ◆ Kenai Mountain-Turnagain Arm Heritage Area
- ◆ Land and Water Conservation Fund
- ◆ Recreational Trails Fund

Volunteer Organizations:

- ◆ Student Conservation Association (SCA)
- ◆ Youth Employment in Parks (YEP)
- ◆ Alaska Trails Volunteers (Adopt-A-Trail)
- ◆ Girdwood Nordic Ski Club

Other:

- ◆ Various service organizations assist with work on Girdwood Trails under the supervision of the Girdwood Parks and Recreation office.