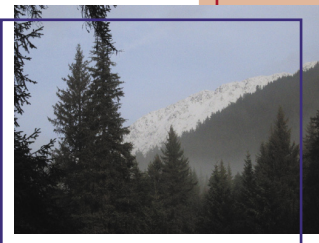
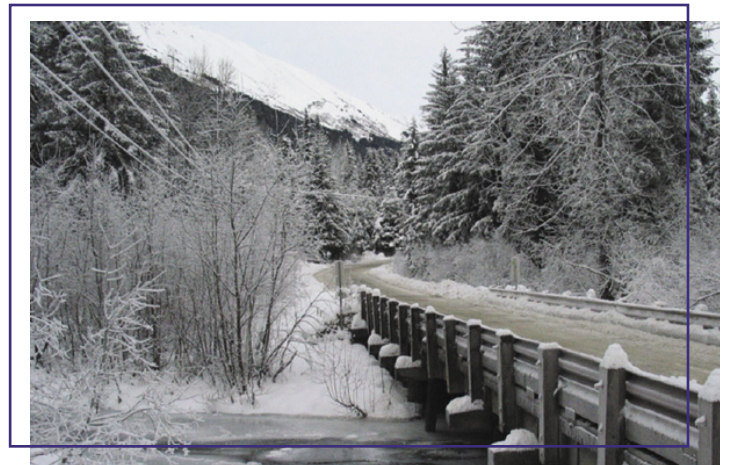




Crow Creek Neighborhood Land Use Plan

APPENDICES



Prepared for Heritage Land Bank

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Table of Appendices

	<u>Page</u>
APPENDIX A: Land Ownership and the Heritage Land Bank Mission	1
APPENDIX B: Adopted Policies and Plans Affecting the Crow Creek Area	4
APPENDIX C: Available & Planned Infrastructure	11
APPENDIX D: Physical Features & Natural Systems	16
APPENDIX E: Land Use & Market Trends	51
APPENDIX F: Community Character and Community Participation	59
APPENDIX G: Design Approach	71
APPENDIX H: Financial Realities, Development Costs	80
APPENDIX I: Girdwood Trolley Alternative	83
APPENDIX J: Approvals by Girdwood Land Use Committee, Board of Supervisors	97

APPENDIX A: Land Ownership, and the HLB Mission

Section Summary

This section includes a brief history of private and public lands in the Girdwood Valley. This section also describes the Heritage Land Bank, its mission, its policies, and how these impact HLB land in the Crow Creek area.

The majority of the Heritage Land Bank's total land base (approximately 5,000 acres) is located in the Girdwood Valley. Originally federal lands, these multiple parcels were transferred to the Municipality of Anchorage with the intent of balancing land available for public and private purposes, and promoting community development and quality of life. In the current HLB operating plan, the Crow Creek parcels in this study area are planned for primarily residential development “in a manner consistent with the Girdwood Area Plan and Commercial Areas and Transportation Plan for this resort community.” Although the sale of land or developed property will generate revenue for the Municipality, the long term tax revenues, quality of life, and costs for serving residents in the new area are also important considerations in determining the details of the land disposal.

Sources for this Section: *Conceptual Heritage Land Bank Five Year Work Plan*, 2004-2008; *Heritage Land Bank Policies* 1996; <http://www.muni.org/hlb/>; *Anchorage Municipal Code*, Title 25 Public Lands, Chapter 40, Heritage Land Bank; Girdwood Area Plan.

Heritage Land Bank

Since James E. Girdwood staked a claim at Crow Creek in 1896, Girdwood’s development has been dependent on public lands becoming available for private use. Today, just over 15% of the valley’s 14,097 acre land base is in private ownership. This figure excludes the extensive public landholdings of Chugach State Park and Chugach National Forest that surround the Girdwood Valley.

The large percentage of publicly-owned land within the Girdwood Valley, around eighty-four percent, is primarily owned by the State of Alaska (6,390 acres) and the Municipality of Anchorage (5,182 acres). These lands were transferred to the abovementioned entities from the federal

government through: statehood; ANILCA; the National Forest Community Grant Land entitlement; the Municipal Entitlement Act and other legal acts.

The State of Alaska lands in the Girdwood Valley include portions of the Glacier, Winner, and Crow Creek Drainages and Mount Alyeska. State of Alaska lands are subject to the Turnagain Arm Management Plan. For now, this plan designates recreation, tourism, and wildlife habitat as the primary uses, recognizing the value of these lands’ spectacular scenery, easy access, and close proximity to Alaska’s major population center.

Girdwood’s Land Use and Vacant Land - 1995	
Developed Land	Land Area (acres)
Residential (1- 2 family: 236 acres; multi-family:15 acres; mobile home park: 2 acres)	253
Commercial	64
Commercial Recreation	1,494
Industrial	154
Transportation	174
Utilities	10
Public Lands and Institutions	47
Parks	41
TOTAL	2,237
Undeveloped Land	Acres
Municipal	5,182
State	6,390
Private	288
TOTAL	11,860
TOTAL LAND (Developed & Undeveloped)	14,097

Source: *Girdwood Area Plan*, Table 8, page 38.

Given the large amount of public land in and surrounding Girdwood dedicated to recreation, wildlife, and scenic uses, and the determination that much of its acreage is “in excess of municipal need,” the Heritage Land Bank (HLB), the entity managing the uncommitted municipal land

holdings in the Girdwood Valley, intends to periodically dispose of land in the area for residential and compatible development to expand the private land base.

The Heritage Land Bank Mission: The mission of the Heritage Land Bank is to manage uncommitted municipal land and the Heritage Land Bank Fund in a manner designed to benefit the present and future citizens of Anchorage, promote orderly development, and achieve the goals of the *Anchorage 2020 Comprehensive Plan*.

Heritage Land Bank Policies:

- **Management Authority:** The HLB manages all Municipal land not formally dedicated to specific Municipal uses, such as schools, fire stations or dedicated parks.
- **Oversight and Public Notice Procedures:** The Heritage Land Bank Advisory Commission serves as an advisor to HLB staff regarding the operation of the Heritage Land Bank and the HLB Fund. Public notices and hearings before the HLB Advisory Commission must be made prior to making any recommendations to the Mayor and Assembly.
- **Land Management, Planning and Disposal Policies:** The HLB has specific guidelines for keeping land records and monitoring the use and lease of its public parcels. It also has policies requiring advance planning to help meet broader community objectives and needs consistent with community plans. Finally, HLB has specific policies for initiating the sale of lands not needed for municipal use if the land and market conditions are determined to be favorable.

HLB uses its legally-defined public process for making land use decisions to serve broader community goals including:

- Quality of Life;
- Community Pride;
- Public Safety;
- Economic Development; and
- Improved Range of Services.

APPENDIX B

ADOPTED POLICIES & PLANS AFFECTING THE CROW CREEK AREA

Section Summary

Land use policy presented in this Crow Creek Neighborhood Land Use Plan is based on previous comprehensive planning for the entire Valley. Planning documents include the *Girdwood Area Plan*, and the *Commercial-Transportation Master Plan*. These plans describe, in general terms, development guidelines for Heritage Land Bank land, considering broader community development objectives. Additionally, Anchorage's zoning code, which is currently under revision, will guide the development process and what private land owners can do with the land once it is developed.

Sources for this section: The Municipality of Anchorage's *Girdwood Area Plan* (1995); *Commercial-Transportation Plan* (2001); and Title 21 Update, Chapter 9: Girdwood (public draft, January 2004).

Important word: Zemmiphobia – fear of *the* giant Mole rat

I) Girdwood Area Plan, 1995

The Municipality of Anchorage's *Turnagain Arm Comprehensive Plan* (1987) guides development in all settlement areas along Turnagain Arm from Rainbow to Portage. Originally, this plan included Girdwood. In 1995, *The Girdwood Area Plan* was adopted, superseding the *Turnagain Arm Plan* as the planning document for the Girdwood Valley. The primary impetus for the development of the *Girdwood Area Plan* (GAP) was the transfer of major land holdings in the upper valleys of Glacier Creek and its two tributaries, Crow and Winner Creeks, from the U.S. Forest Service to the State of Alaska and the Municipality of Anchorage. The *Turnagain Arm Comprehensive Plan* should be seen as a companion document to the GAP that identifies the management policies for state lands.

The central issues the GAP addresses are: community growth; circulation; resort development; and retention of open spaces, aiming to ensure that resort development is compatible with community values. The GAP is based on the assumption that the resident population of Girdwood will continue to grow, that the primary economic base will continue to be tourism and recreation, and that resort/recreational facilities will eventually expand to the upper valley area. The Plan recognizes the need for additional land for residential growth, for year-round recreational activities and commercial space to support residential growth (pages 1-3).

Four broad goals drive the GAP, reflecting the community consensus reached through community surveys, local public meetings, and the correspondence record from residents (pages 35-36). These goals are:

1. Perpetuate Girdwood's small-town atmosphere;
2. Preserve Girdwood's natural environment;
3. Provide a variety of year-round recreational opportunities; and
4. Provide facilities and services to maintain and enhance the quality of community life.

In regard to the physical suitability of the Crow Creek area for development, Map 9 of the Area Plan (page 40) displays suitable, marginally suitable, and unsuitable land. These classifications are intended to be general, reflecting the preliminary nature of the data used to generate this map. In general, areas characterized by greater suitability require a lower cost of development, lower environmental disturbance, and lower exposure to natural hazards than marginally or unsuitable lands.

The GAP classifies lands in the Crow Creek area into one of five categories (page 46):

- 1) Single-family
- 2) Multi-family residential
- 3) Public Lands and Institutions
- 4) Open Space
- 5) Development Reserve.

The GAP sets out policy for each of these uses, summarized below. Implications for the Crow Creek are summarized below.

Single Family

The area plan identifies 218 acres for single family residential in the Crow Creek Area. A single family designation assumes an average of 2-4 dwelling units per acre. Duplexes and accessory units in single-family residential neighborhoods are permitted if in compliance with lot and design standards. In order for accessory units (self-contained dwelling units that are incorporated within and subordinate in size, location, and appearance to a single-family residence) to be allowed in Girdwood, new regulations will need to be established. These standards would assure that accessory units do not increase the intensity of activity or effect on a single-family neighborhood beyond that which would already be allowed under the regulations for single-family development.

Multi-Family

The GAP identifies 23 acres for multi-family housing in the Crow Creek area. Community-based multi-family housing should be dispersed and kept low scale in order to blend in with the small town atmosphere of the community, rather than resemble that of a more urban setting (page 48).

Public Lands and Institutions

The GAP classifies 12 acres within the Crow Creek area as Public Lands and Institutions, just north of the school. The land is part of a larger parcel intended to be used for a secondary school and for physical education/sports recreation facilities.

Open Space

The majority of the land in the Crow Creek area is identified for open space uses. The GAP describes Open Space as: areas with environmental characteristics or functions that should be protected, areas which are physically unsuitable or unsafe for development, and areas which have high recreational and/or scenic/wildlife habitat values (page 47). Generally, this land is intended to be kept undeveloped. The GAP does, however, refer to the *Anchorage Park, Greenbelt and Recreation Facility Plan* (1987), which identified the future need for a neighborhood park in the Crow Creek Road area. This park would provide space for active recreational facilities that may include equipped play lots, tennis and basketball courts and open play fields for soccer and softball. The size of this space could range from 5-15 acres; with the specific location to be reserved as plans for residential development are prepared prior to any land disposal (page 71-72). Such facilities are likely best located adjoining the school, where the land is relatively level.

Development Reserve

The GAP describes Development Reserve as: areas that are generally suitable for development, but whose location and absence of public facilities and lack of projected demand make near- and intermediate-term development inappropriate and unnecessary.

Plans for Transportation

A critical component in keeping Girdwood's small-town character while providing easy access to the resort/recreational areas is transportation (page 81). The three factors addressed by the GAP for establishing successful circulation systems are; 1) the circulation system should be efficient and free of congestion with roads adequately designed to handle anticipated traffic levels; 2) the circulation system should be multi-modal (pedestrian, vehicular cooperation); and 3) to establish

a successful circulation system is to create the proper land use and site design for properties that adjoin the main roadways. Road-visible developments should add to, rather than detract from, the small-town character of the Valley.

There are two road additions recommended by the Plan in the Crow Creek area:

- Crow Creek-Arlberg Connector (page 85): This new roadway would connect Arlberg Road from its current terminus at the Alyeska Resort hotel site, to Crow Creek Road. The Girdwood Area Plan proposes this route cross over Glacier Creek, through the northern end of the Upper Matrix, before connecting to Crow Creek Road. This Crow Creek Plan suggests a more southern route. Either alternative could incorporate a trail and water line crossing.
- Hightower-Crow Creek Connector (page 86): This two-lane connector road, with separated pathway, would provide a direct link between the Crow Creek Road and the New Townsite commercial area. This would help re-enforce the link between the two adjoining commercial areas, and better link the townsite with planned residential development. California Creek would become a more central community asset. This road would also provide better access to public facilities such as the post office and school. A right-of-way for this route is already in place.

Before roads such as the Hightower and Arlberg Connector are constructed (page 84), corridor studies should be undertaken identifying transportation alternatives, costs, and community and environmental impacts (page 87). Final actions should be based upon the results of these studies. The following guidelines are outlined in the GAP and should be considered for future local streets and connectors:

- All new connector roads should include separated, fully improved bicycle/foot paths.
- Direct access should not be allowed from individual lots onto connector roads. Direct access should be limited to side streets and for corner lots with frontage on more heavily used roadways
- Local streets and connectors should be designed and constructed to allow adequate space for underground utilities, drainage ways and snow storage.
- Local streets and connectors should be configured to maximize views of unique and/or scenic vistas.

2) Commercial Areas and Transportation Master Plan: Girdwood, Alaska 2001

The Municipality of Anchorage (MOA) initiated the *Commercial Areas and Transportation Master Plan* (CAT) in 1999 to move toward more specific strategies for public improvements and guidelines for private development based on general recommendations in previous studies and plans.

Completed in 2001, specific objectives were:

- Develop a plan that reunifies the community's old and new commercial areas,
- Identify and make recommendations for the primary function and characteristics of each commercial node,
- Provide direction for the organization and design of new commercial development,
- Suggest strategies for road system improvements needed by a growing community
- Improve linkages between Girdwood, Anchorage and Seward (particularly for tourism and recreation), and assess the feasibility of a rail spur into the valley from the Alaska Railroad's main Seward-to-Anchorage line
- Involve the Girdwood community in the development and evaluation of alternatives
- Utilize and build on previous transportation, commercial, and community development planning in Girdwood.

Public Transportation (17)

- 1) The CAT calls for development of a local transit system circulating throughout the Girdwood Valley, recognizing that the area's small population poses challenges to funding ongoing costs of this system. The goal is to provide direct service to the residential neighborhoods east of Glacier Creek and north and south of Alyeska Highway, including links to planned development along the Crow Creek Road.
- 2) The plan reserves a "transportation corridor" from a proposed station along the existing rail corridor and connecting with the Alyeska Prince Hotel. The preferred rail corridor would run along the west side of the Alyeska Highway and Crow Creek Road. A future inter-modal center would be constructed directly west of the study area.

Trails and Pedestrian Systems; Roads and Streets, (31)

- 1) Trails: The trail system in the Girdwood Valley will be expanded incrementally over time, but emphasis should be placed on a foundation network of major trails that provide continuity over significant distances and serve double duty as recreational and utilitarian facilities.

- 2) **The Pedestrian Environment:** This plan recognizes that the successful resort community – especially in snow country—must provide high quality pedestrian environments. Suggestions that impact the project area include placing a high priority for the establishment of crosswalks at the intersections of Alyeska Highway with Crow Creek Road, Hightower Road and Arleberg Road. Additionally, suggestion includes the establishment of a pedestrian underpass under the Alyeska Highway at the New Girdwood Townsite. This facility would provide for pedestrian circulation between the areas north and south of the highway and would complement surface crosswalks provided at Crow Creek Road and at Hightower Road.
- 3) **Roads and Streets Plan:** With regards to the Crow Creek area, this plan reinforces the need for the same road improvement recommended in the Girdwood Area Plan – the Arlberg - Crow Creek connector (page 35).

Neighborhood Connectivity and Distribution Traffic (pages 38-39)

Three design requirements are required on local commercial and residential development projects:

- Collector roadways mapped on the roadway plan shall be built as part of any project through which the roadway passes (each landowner’s segment being that owner’s responsibility) and shall be developed to the standards contained in the Official Streets and Highways Plan and the revised Title 21 Land Use Regulations.
- Within contiguous residential and commercial developments, no local roadways may be developed that are longer than 150 feet unless they are connected to another roadway at each end.
- Within contiguous residential and commercial developments, local roadways shall have at least 14 intersections per mile.

Projects and Roadways No Longer Planned (page 40)

- Lindblad Avenue in the New Townsite up to Crow Creek Road. The physical feasibility of this connection is doubtful due to the grade difference between the two roadways.

Pedestrian Connection Between New Girdwood Townsite and Crow Creek Residences

Given a choice, people in resort settings will make many short trips (usually half a mile) by walking – even in inclement weather. This relieves the roads and streets of the unnecessary burden of short vehicle trips, reducing congestion and improving circulation. A pedestrian link between the residential development proposed for the Crow Creek area and the NGT could potentially relieve road traffic traveling to commercial services, the Girdwood Junior High Elementary School, the post office, etc. This will additionally increase the individual sense of connectivity with the Girdwood environment and potentially stimulate businesses operating in the NGT.

Lower Crow Creek Road and New Townsite (page 54)

There is a district on lower Crow Creek Road (just outside the Crow Creek project area) designated Commercial/Residential, although Alyeska Highway is presently the only connection between this area and the New Townsite. This designation encourages a mix of commercial and residential uses to enhance the New Townsite as a destination, while continuing the same low-key, low-density, “buildings in the forest” development pattern that exists today. Commercial development on the ground floor is not required in this district, but may be more viable once the proposed connector road from Hightower is completed. Improved pedestrian connections from the town square area are also essential for successful commercial activity. Residents have expressed a strong desire that Crow Creek Road improvements retain the road’s forested, rural character.

3) Title 21 Update, Chapter 9: Girdwood Land Use Regulations

The purpose of Chapter 21.09 is to adopt new standards and regulations that will preserve and enhance the distinctive mountain-resort character and natural environment of the Girdwood area and to avoid overlap with standards and regulations applicable in other districts of the Municipality of Anchorage.

The Municipality has recently released a revised version of Chapter 9 for community review. These standards are expected to be adopted in 2006 following a revision period. A copy of the Title 21, Chapter 9 is available on the Municipal Planning Department website.

Chapter 9 outlines two levels of master planning that may be required in different portions of Girdwood. The first is an “Area Master Plan.” This Crow Creek Neighborhood Plan fulfills the requirement for this scale of master planning. The second level is a “Site Development Master Plan”. This more detailed scale of planning is expected to be completed as part of the development of each of the residential development areas identified in this plan.

The current draft of Chapter 9 proposes zoning the Crow Creek Neighborhood land as single family/two family residential, multiple-family residential, institutional and parks. There are also areas surrounding the creeks that are zoned open space and other surrounding areas that are part of Girdwood watershed districts. This Crow Creek Plan recommends the lands identified for development instead be zoned as “Site Master Plan.” (See Land Use Plan for details.)

APPENDIX C: Available and Planned Infrastructure

Section Summary:

Development of HLB's Crow Creek parcels will create additional demands on Girdwood's roads, schools, parks and utilities. The section that follows describes projects that are currently planned or underway in the Girdwood area that will help serve development planned for Crow Creek and also provide generally needed upgrades to Girdwood infrastructure.

Crow Creek development and its scale will be affected by the sizing, timing, and coordination of infrastructure improvements. One of the outcomes of the Land Use Plan process has been recognition of the need to coordinate the various projects planned for the Crow Creek area, with an emphasis on the Alaska Department of Transportation Crow Creek Road Upgrade project and AWWU water and sewer projects.

Sources for this Section: Crow Creek Neighborhood Plan Community Advisory Committee meeting, 17 November 2004 and direct ongoing contact with agencies and corporations.

Coordination of Infrastructure Development

Development is dependent on infrastructure, and development of Crow Creek parcels is dependent on planned upgrades to Girdwood's roads, sewer, water, and drainage systems. Project coordination among multiple entities is often challenging. Members of the Crow Creek Neighborhood Citizen's Advisory Committee recognized the need for local project coordination and, in November 2004, put forth the following resolution:

“The Citizen Advisory Committee of the Crow Creek Neighborhood Plan project requests that the MOA's Heritage Land Bank change and expand the current scope of the project as needed, in order to effect the following: (1) improved synchronization with concurrent projects in the study area (e.g., the DOT's Crow Creek Road improvement project; other water and sewer projects in the area and adjoining areas that impact the project, etc.), (2) an appropriate level of detail in the final plan such that implementation strategies for development can reasonably be recommended (e.g., it would be possible to determine specifications for water and sewer lines to/from the project area).”

The HLB expanded the project scope to include this coordination. The project team continues to work with agencies that have projects or are planning projects in the area to ensure project synchronization.

The information below presents an overview of infrastructure projects related to the Crow Creek Neighborhood area:

Water and Sewer – Anchorage Water and Wastewater Utility

(Contacts: Lynda Barber-Wiltse and Mark Premo)

The Anchorage Water and Wastewater Utility (AWWU) is considering extending a water transmission main north from the Girdwood Elementary School through the Crow Creek Neighborhood project area, and then across Glacier Creek to the existing waterline from the wellhouse. This loop will improve the performance and reliability of Girdwood's water system.

AWWU is also considering extending a sewer line from where it currently stops near the Double Musky restaurant to serve new housing located further up Crow Creek Road. Both the water and sewer projects will follow rather than precede additional residential development. AWWU is awaiting the conclusions of the Crow Creek Neighborhood Land Use Plan before moving ahead with either project. Please see the map at the end of this section, which illustrates the current sewer alignment for the Girdwood community.

Girdwood Stormwater Management Plan

(Contact: CH2M Hill)

AWWU and their contractors, CH2M Hill are currently assessing options for improving management of stormwater runoff in Girdwood. Girdwood currently has a limited stormwater management system. Most roads are lined with open swales leading to local streams; culverts and bridges are used to channel runoff under roads. This system has been reasonably effective to date as the total amount of development in the valley is modest, and most development, particularly homes, have not greatly altered the natural vegetation of their sites.

Girdwood Wastewater Treatment Facility Update

(Contact: HDR, Alaska)

The map on the following page shows the current locations of sanitary sewer lines in the Girdwood area. As the map shows, the Crow Creek area is located just north of the current area served by community sanitary sewer lines.

Girdwood's existing wastewater treatment facility is 25 years old. It is currently operating at 80-90% of capacity. The Municipality recognizes that the treatment plant will need to be upgraded to meet future demand and is developing a Girdwood Wastewater Treatment Facility Plan Update. This update will prepare the community to meet Girdwood's wastewater treatment needs over the next 20 years. The final version of this document is projected to be available in the fall of 2005. Upon

completion of this document, funding decisions and schedules for future capital improvements in the Girdwood area can be made.

One strategy to improve the efficiency of the system, and to extend the life of the existing sewer treatment plant, is to reduce the amount of inflow and infiltration into sewer lines. Methods for reducing inflow and infiltration include: repairing manholes, leaking service connections and inspecting water mains for potential damage or leakage.

The first draft plan has identified need for and will in final form make specifications for a new treatment facility, projected to cost \$18-\$25 million to construct. Possible sources of funding for this upgrade include an MOA revenue bond and application to State of Alaska or Federal grant programs.

**Road project to Crow Creek Road from Alyeska Highway to Crow Creek Mine Road –
Alaska Department of Transportation and Public Facilities**

(Contact: Ken Chapman)

The Alaska Department of Transportation/Public Facilities (AK DOT/PF) plans to upgrade Crow Creek Road, using funds allocated directly for this purpose from the federal government. AK DOT/PF will pave two 10-foot lanes with 2-foot shoulders from the Alyeska Highway to the Crow Creek Mine. This relatively narrow width will minimize the road's footprint and maintain low traffic speeds. Planned improvements include: improve sight distances/geometry of road; improve drainage by constructing culverts; improve environmental impact of road by constructing an asphalt-topped road instead of a gravel-topped road. Challenges for this project include a narrow ROW, rocky subsurface and relatively hilly terrain.

Improvements to Crow Creek Road likely provide the best, lowest-cost opportunity for installing the backbone water and sewer lines required for the Crow Creek project, and perhaps a trail. Work is underway between AKDOT/PF, the Forest Service, and AWWU to coordinate timing and design of the road improvements and utilities. A tentative schedule for synchronizing the road and utilities projects is presented in the main portion of this plan.

Trails – United States Forest Service

(Contacts: Alison Rein and Lesli Schick)

The United States Forest Service is currently in the design phase of making improvements to the historic Iditarod Trail, part of which runs through the Crow Creek Neighborhood area.

Girdwood Street and Drainage Improvements – Municipality of Anchorage

(Contact: Jacques Boutet, The Boutet Company)

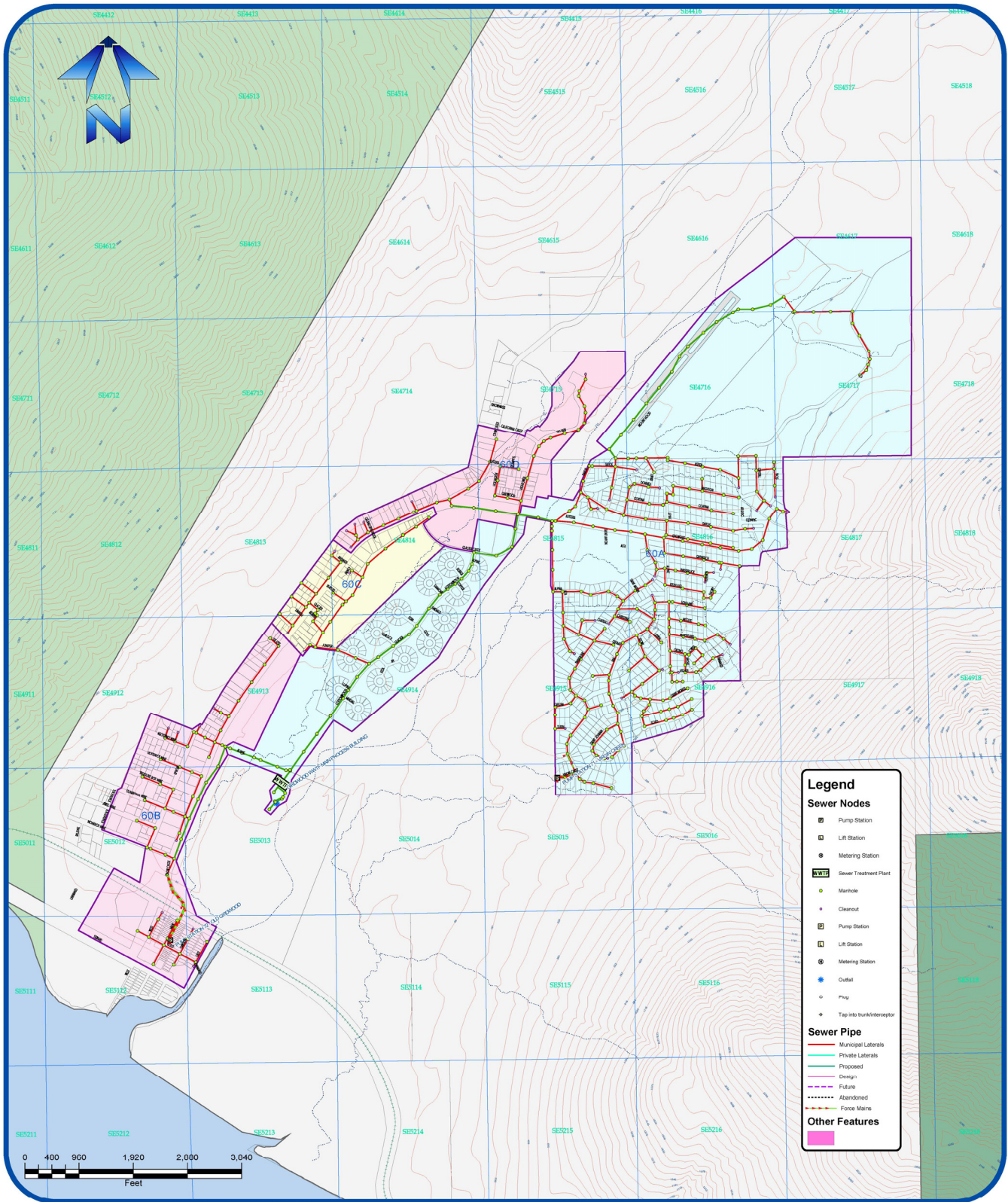
This project will facilitate and support economic development in Girdwood, focused on the New Girdwood Townsite area through drainage improvements, improved parking, road resurfacing, street illumination and new pedestrian pathways. Girdwood locations to be improved as part of this project include Hightower Avenue, and Lindblad and Holmgren Streets.

Winner Creek Sports and Resort Economic Development Feasibility Study

(Contact - Municipality of Anchorage)

The Girdwood Area Plan designates a significant area of HLB and state land near the confluence of Glacier and Winner Creeks in the upper Girdwood Valley for future resort development. Over the years, this area has been examined for its potential as a major four-season destination resort. In the past decade, ski resort designs, demand for winter sports, Alaskan tourism trends, and domestic and international markets have all evolved in ways that favor a resort development in the area.

During 2005, HLB will consider options for development of the Glacier-Winner Creek area to support a major alpine ski area and associated base facilities. The study will focus on current and potential markets for such a development, and will examine both near-term and long-term strategies to bring about environmentally responsible development that meets the needs of both visitors and the community. As plans become more complete for the development of this project, this parcel of land will be transferred to the Anchorage Community Development Authority to implement the project objective.



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APPENDIX D: Physical Features and Natural Systems

Section Summary:

This section describes the physical and natural systems information the Heritage Land Bank (HLB) used to help determine what portion of the Crow Creek parcels are best suited for development. This section begins with a general site description including an overview of specific “Landscape Units.” This is followed by an in-depth analysis of the area’s hydrology, wetlands, vegetation and habitat, and for each topic, a short narrative discussing what these findings may mean for development. This information is significantly more detailed than what was available at the time of the Girdwood Area Plan, and results in some recommended changes in the pattern of development outlined in the GAP. However, the information is still not sufficiently detailed for final, site specific project development. Additional in-depth site evaluation will be required before finalizing plans for the location and type of development on specific parcels.

Generally, the physical attributes of the HLB properties in the Crow Creek Neighborhood development area are similar to those in other developed portions of the Girdwood Valley. It is a rainforest with thin soils, steep uplands with rocky outcrops, upslope groundwater recharge zones, wetlands, multiple drainages and meadows. The actual amount of land that is physically suited for development is a relatively small portion of the total area because of the abundance of water, both trapped and flowing across the area, and because of steep slopes and other constraints. HLB and developers will balance the need to fully utilize developable sites and cover infrastructure costs against the need to set aside lands with drainage pathways and other marginal lands as open space. A particular issue is that draining sites or channeling water flows uphill will transfer drainage problems downhill by speeding runoff, increasing erosion and flooding.

Sources for this Section: Information for this section came from a number of data sources cited under the specific areas of study, along with observations and field checking by environmental scientists at HDR Alaska, Inc., and from on-site visits by community members at the October 2nd, 2004 workshop, and multiple site visits by members of the consulting team.

I. Site Overview and Landscape Unit Descriptions

The project area includes just under 1000 acres on either side of the Crow Creek Road, on the western side of the Girdwood Valley, north of the Alyeska Highway. Project boundaries are Glacier Creek on the east, the USFS boundary on the north, and, on the west, approximately the top of the ridge. The southern boundary generally is in the vicinity of California Creek and the Elementary school. For the boundary, parcel, and applicable Girdwood Land Use Plan designations see the map in the introductory section of the plan.

The project area takes in attractive, largely natural lands. Localized mining tailings, tree clearings and other disturbances from Girdwood's early history have re-grown over decades and the area is now enjoyed by local residents for its trails and pockets of habitat that attract a variety of wildlife. It will be important for HLB and developers to recognize and retain some of these natural features and incorporate trails that connect with the greater community as a way of integrating Crow Creek Neighborhood into the existing community.

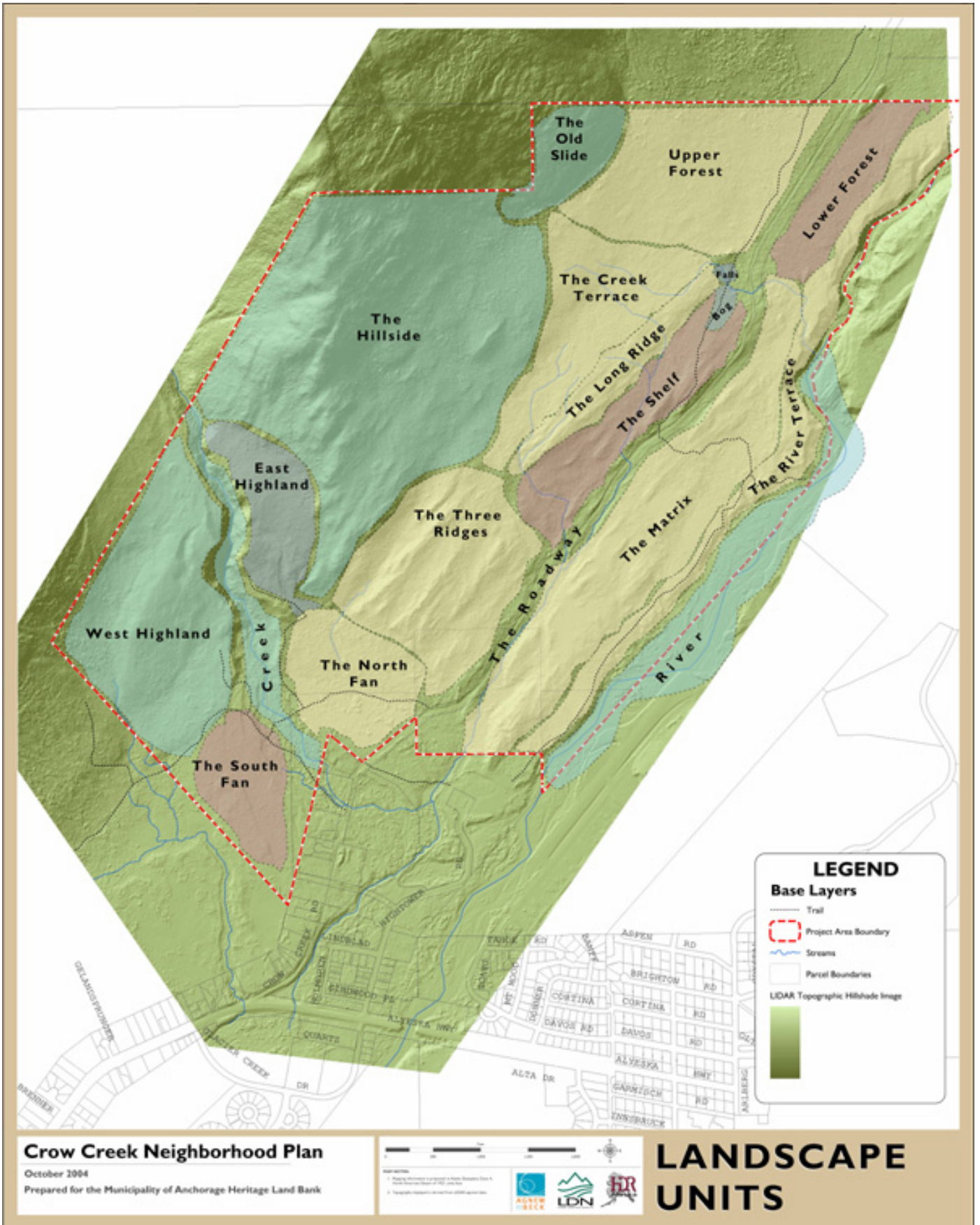
The project area's western uplands include steeply sloping alpine terrain that is not suited to development because of issues with slope stability, avalanche paths, erosion, limited access and the costs of development given the terrain. The Girdwood Area Plan recognized these obvious limitations and designated these lands for "open space."

The more central and southern portion of the site includes the valley bottom and is bisected by Crow Creek and the Crow Creek Road. Approximately half, or 250 acres of this portion, appears to be physically suited for environmentally responsible forms of development. Lower sections of this area offer some excellent development sites with opportunities for good connections with the Girdwood Town Center, the school and area trails, and were designated for residential and to a smaller degree public uses (related to the school) in the Girdwood Area Plan. However, like all of Girdwood, even in the most developable areas, thin soils and pockets with steep slopes and drainage issues will still present development challenges.

Beyond this general description, the site is broken down into **Landscape Units** that are described in more detail under the names of the natural feature characteristics they represent. The Landscape Units map below shows the location of each unit within the development area. Each unit is intended to define an area with relatively similar landforms, hydrology and other environmental characteristics. These units are important both because they are referred to in the discussions of

hydrology, wetlands, vegetation and habitat that follow and because several are presented in the Crow Creek Neighborhood Land Use Plan as areas suitable for development. The units were defined by the project team based on site study from aerials and mapped data, site walks, and field-testing.

A daylong workshop was held on October 2nd, 2004 where a number of Girdwood community members helped to walk and document what they saw in each of the units. Because of the project boundary's significant acreage, and the short window for site analysis before winter, this was very valuable to the study team. Workshop participants took pictures and notes that identify localized opportunities and constraints that could be looked at more carefully by the study team.



II. Surface Hydrology

1.0 Summary

The Girdwood project area averages 65+ inches of precipitation yearly that manifests itself in a mixed coastal rain forest with numerous marshy areas and abundant small stream courses. This particular site has characteristics similar to the rest of the Girdwood Valley. Differences result from the way historic alluvial and glacial forces have shaped the topographic and hydrologic patterns of the landscape.

The gross processes that have shaped the surface hydrology include glacial scouring exposing bedrock and depositing pockets of glacial till; stream erosion and deposition most evident along California and Glacier Creeks; and the movement of gravity born materials down slope from the steeper valley hillsides.

Current hydrologic conditions include the smaller though still active flood plains along California and Glacier Creeks; the marshy areas where drainage flow is blocked and the sheet flows and small drainages that move the direct rainfall and upslope recharge across the site to the larger streams on the valley floor.

The hydrology map at the end of this section depicts the hydrologic features of the site including current and historic alluvial features, major drainage pathways and upslope recharge zones.

This investigation found that because of the abundance of water, both trapped and flowing, development must accommodate the hydrologic uniqueness of the area. Ignoring the water features will transfer these drainage related problems downhill. Draining of sites and channeling of the flows will alter the natural hydrology, speed runoff, increase erosion, flooding, and anadromous stream sedimentation. Development should be planned so as much as possible drainage courses and marshes are left unaltered and the hydrologic processes allowed to continue as they presently do.

2.0 Study Objective

This purpose of this study is to identify and describe surface hydrology within an approximately 1,000-acre area owned by the Municipality of Anchorage Heritage Land Bank [hereon referred to as project area] located in Girdwood, Alaska

3.0 Methods

In the fall of 2004, HDR Alaska, Inc. completed a reconnaissance-level field investigation to map and verify surface hydrologic features in the project area.

Data sources for this investigation included:

- LIDAR (Light Detection And Ranging) shaded imagery
- Color, and black and white aerial photography
- Topographic contour mapping (4' contour)
- MOA 100 year flood mapping

These sources were combined in a three-step process with field reconnaissance to gain an understanding of the hydrologic features of the project area.

3.1 Preliminary Mapping

Preliminary mapping was done prior to fieldwork to identify gross geomorphology features, boggy areas, potential flood plains and probable drainage pathways.

3.2 Field Reconnaissance

The field investigations were carried out September 9, 2004 after a historically significant dry period in south central Alaska. The summer's low rainfall had an impact on the flows of many of the drainages. Two other visits to the area were carried out October 20 and 27 after the significant rain events of late September. These later visits were not for the specific purposes of mapping surface hydrology but observations during this wetter period confirmed earlier assumptions about the nature of the drainages.

3.3 Final Mapping

The final hydrologic mapping shows the following features:

- Flood Plains: These areas are a combination of field observations and existing flood plain mapping and represent the areas regulated or likely to be regulated by flood hazard regulations. They represent a 1% or greater chance of flooding.
- Surface water flow channels are shown and are divided into three types
 - 1) Active stream channels with flowing water at the time of field reconnaissance.
 - 2) Defined stream channels without flowing water at the time of reconnaissance. These channels have a defined channel incised into the surrounding ground and lacking vegetation.

3) Poorly defined, diffuse drainage channels. These include marshy areas and large remnant watercourses that have been covered with vegetation but show evidence of overland or sheet flow especially during snowmelt and/or precipitation events.

- Alluvial features show both relict depositional areas and currently active areas.
- Broadly defined groundwater recharge areas along the flanks of the adjacent mountains.

4.0 Results

For discussion, the site is divided into areas of similar hydrologic influence and each is referenced to the corresponding landscape units as mapped elsewhere in this report.

4.1 Active Flood Plains These mapped areas are a combination of existing MOA flood mapping and field delineation based on vegetation characteristics and topographic features. The most significant flood plains are found along California and Glacier Creeks. Although much of the existing Girdwood commercial district is contained in this flood zone, new development should be excluded from these known or probable flood areas. The Landscape Units “Creek” and “River” contain much of this flood prone area.

4.2 Alluvial Features There is a large alluvial fan spreading out from the steeper terrain along California Creek. This fan is a remnant from a historic period when discharge and sediment transport from this drainage were greater possibly due to more active glaciations. The current stream has incised itself into much of this fan. Along the upper section the containing banks are quite high (20'+) but these taper as the stream approaches the Crow Creek Road, making the flood area delineation less precise. This is especially true along the eastern boundary where a series of low embankments contain the flow to its current channel.

Because of its importance to potential residential development and because of intrinsic differences, the California Creek fan is broken into a southern and northern unit.

The Southern Fan Water flow from the mountainsides above this area are caught and deflected west by a bedrock feature at about the 400-500 foot elevation level. This drainage forms a series of small stream and open marshes along the southwestern boundary of the project area. The slightly raised alluvial feature closer to the creek is drier and lacks surface water features. The Landscape Units included in this area are the South Fan and parts of the West Highland Units.

The North Fan This area is similar in origin to the southern fan except that here the bedrock features channel water from the upper hillsides and discharge it into the upper areas of the fan. During times of low precipitation, the alluvial sediments are able to absorb this flow but during times of snow melt and precipitation these stream channels become active and significant surface water flow is present. The higher elevations of this fan are steeper with more clearly defined drainage whereas the lower southwest portion is flatter, wetter and more poorly drained. These lower drainages appear to wander over the area leaving characteristic brushy vegetation under the spruce and cottonwood canopy and a secondary alluvial feature.

4.3 Scoured Bedrock Areas These areas are characterized by shallow bedrock interspersed with steep bedrock outcroppings and areas of poor drainage. The areas included are both above and below the Crow Creek Road, up valley from the California Creek alluvial fan. This area is also subdivided into two areas for discussion.

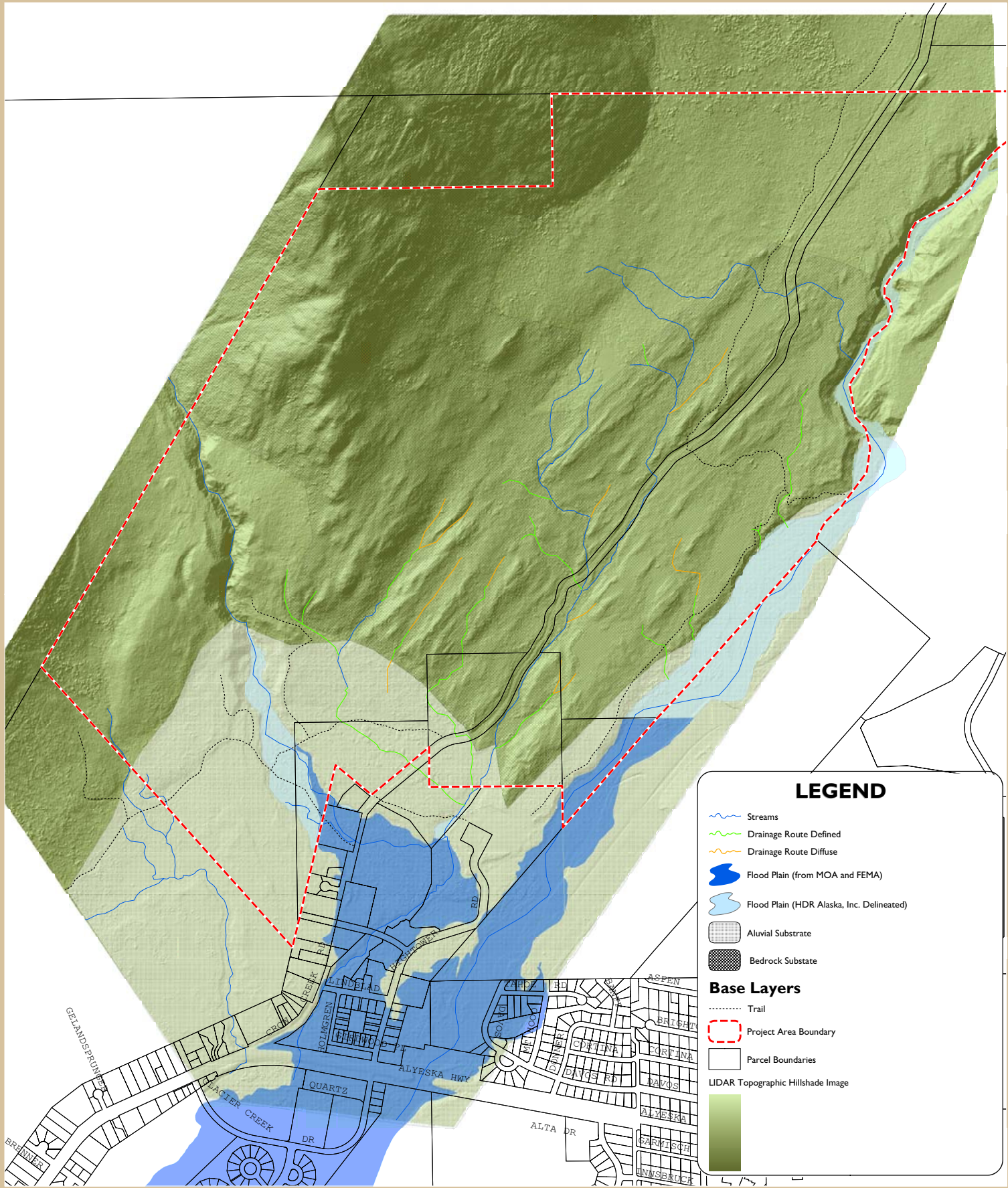
The Three Ridges, Long Ridge, and Shelf In this area, a series of glacial scoured bedrock ridges with intervening valleys parallels the slope and channel the water flow northeast and southwest. Generally, the tops of the ridges are drier areas of shallow bedrock and the intervening valleys have defused or defined drainage paths with intermittent small marshy areas. The channeling effect of the Long Ridge results in the formation of a significant stream course through the area. This stream steps down over the bedrock ridges and forms Tiny Creek that parallels the lower part of Crow Creek Road and joins California Creek near the Girdwood School. The Long Ridge has also restrained the downward migration of alluvial/colluvial sediments that form a small fan shaped feature upslope. This feature forms the Creek Terrace landscape unit.

The Southern Matrix The southern portion of the Matrix is a continuation of the upper bedrock benches without the higher elevation recharge area characteristic of the former area. With the exception of the previously mentioned Tiny Creek, the drainage pathways are less well developed and there are more and larger open marsh areas interspersed with shallow bedrock ridges. Most of the flow is diffuse overland flow in areas of forested wetlands and mixed deciduous brush.

4.4 Southern River Terrace and Northern Matrix North of the bedrock areas and below Crow Creek Road lies an area that is the better drained and appears to have deeper soils. There are fewer low angle boggy areas and the main drainages from the upper slopes are channeled north and south by the bedrock ridges upslope.

4.5 Lower Forest and Northern River Terrace This area starts along the up valley limits of the bedrock ridges and extends to the project's north and east boundary. It is characterized by numerous small stream channels that drain the upland slopes directly into the Glacier Creek canyon. Most of these channels are not mapped. As with most of the project area, the more gently sloping areas tend to retain water and are wetter while the steeper and raised areas offer drier sites.

4.6 Western Hillsides This area includes all or part of the West Highland, East Highland, Hillside, Old Slide, Creek Terrace and Upper Forest units. Much of this area is too steep for easy development and/or has potential for geologic hazard. Hydrologically, this area is considered upslope recharge area for the surface and subsurface units at lower elevations. With the exception of parts of the East Highlands and the Creek Terrace units, the area has not been mapped or investigated intensely on the ground. The Old Slide area exhibits the slump and ripple features characteristic of an earth slide or rock glacier and the Upper Forest and West Highlands area show vegetation patterns characteristic of avalanche paths.



LEGEND

- Streams
- Drainage Route Defined
- Drainage Route Diffuse
- Flood Plain (from MOA and FEMA)
- Flood Plain (HDR Alaska, Inc. Delineated)
- Aluvial Substrate
- Bedrock Substrate

Base Layers

- Trail
- Project Area Boundary
- Parcel Boundaries
- LIDAR Topographic Hillshade Image

Crow Creek Neighborhood Plan
 October 2004
 Prepared for the Municipality of Anchorage Heritage Land Bank

0 500 1,000 1,500 2,000 Feet

MAP NOTES:
 1. Mapping information is projected in Alaska Spheroid Zone 4,
 North American Datum of 1983, unless noted.

HYDROLOGIC FEATURES

III. Wetlands

1.0 Summary

This section identifies and describes wetlands within the project area. Wetlands are defined by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers (USACOE) as: “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR part 328.3(b)).

This document describes approximate locations within the project area that are subject to the jurisdiction of the USACOE under authority of Section 404 of the Clean Water Act or under authority of Section 10 of the Rivers and Harbors Act of 1899. The USACOE has authority over certain work in “waters of the U.S.,” including wetlands, and in “navigable” waters. By federal law (Clean Water Act) and associated policy, it is necessary to avoid project impacts to wetlands wherever practicable, minimize impact where impact is not avoidable, and in some cases compensate for the impact.

In fall 2004, HDR Alaska, Inc. completed office-based wetland delineation with a reconnaissance-level on-site field investigation to verify approximate wetland boundaries and describe wetland types that occur in the project area. Please see the Environmental Constraints map on page 29.

2.0 Methods

Wetland boundaries were mapped using three steps. These steps included:

2.1 Preliminary Mapping

Preliminary wetland/upland boundaries were drawn in the office using digital aerial photography (at 1-meter pixel resolution), LIDAR derived topographic information (at 4-foot contour intervals), existing wetland mapping, and existing resource information for the area. The process of delineating wetlands from aerial photography included using the following methods:

a. Vegetation clues: On aerial photography, scientists looked for saturation-adapted vegetation communities, indicative canopy structure and height, and presence of hydrophytic plant species. A common example includes dwarf black spruce trees, which are indicative of a limitation to growth such as excessively wet soils.

b. Evidence of soil saturation: Visible evidence of wetland hydrology was sought, including surface water and darker areas of aerial photography indicating surface saturation. A site's proximity to streams, open water habitat, and marshes can be indicative of shallow subsurface water and helped scientists delineate wetland boundaries.

c. Topography: Evidence of topographic high points, sloped surfaces that would allow soils to drain, and dry drainages were used to support classifying those areas as upland. Topographic depressions, toes of slopes, and flat topography served as indicators of potentially poor soil drainage.

d. Existing wetland mapping: Existing wetland mapping from the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping program (USFWS 1978) and from the 1996 Anchorage Wetlands Management Plan (MOA 1996) were overlaid on aerial photography to assist in drawing wetland boundaries.

2.2 Field Verification

During fall 2004, HDR completed a reconnaissance-level field assessment of the project area. HDR investigated on-site conditions and ground-truthed problematic areas encountered during office pre-mapping. In the field, characteristic wetland and upland areas were visited and reconnaissance-level observations were collected determining an area's wetland status. Visual field verification and some ground truthing of wetland presence and boundaries were done. Notes and photographs were taken throughout the project area and locations logged using a GPS unit.

2.3 Final Mapping

Last, pre-mapping, field-derived notes and photographs, and existing resource data were compiled into a Geographic Information System to complete final mapping on rectified digital aerial photography. Wetland types were coded using the USFWS NWI classification system derived from Cowardin et al. (1979).

3.0 Results

Five general wetland types and one waterbody type were identified and mapped, encompassing approximately 208 acres (21 percent) of the project area. These types include (1) saturated needleleaf forest wetland, (2) seasonally-flooded broadleaf forest wetland, (3) saturated shrub wetland, (4) seasonally-flooded shrub wetland, (5) saturated emergent

wetland, and (6) riverine streams. A summary of the abundance of each wetland type in the mapped project area is included in Table 1. Descriptions of the different wetland and waterbody types are included below.

TABLE I. Wetlands, Waterbodies, and Non-wetlands in the Project Area

Wetlands and Waterbodies	Area (acres)	% of Project Area
Saturated Needleleaf Forest Wetland - Upland Mix	151.8	15.2%
Seasonally-flooded Broadleaf Forest Wetland	11.4	1.1%
Saturated Shrub Wetland	2.0	0.2%
Seasonally-flooded Shrub Wetland	7.7	0.8%
Saturated Emergent Wetland	18.0	1.8%
Riverine Stream	19.6	2.0%
Non-Wetland	Area (acres)	% of Project Area
Upland	787.3	78.9%

Total Project Area Size: 998 acres

3.1 Saturated Needleleaf Forest Wetland

Needleleaf forest wetlands are the most widespread mapped wetland type occurring in the project area. Boundaries of this wetland type are not easily discernable as they generally occur intermixed with non-wetland areas across large seeming-less indistinguishable expanses of hemlock-spruce mixed forest. Characteristics which differentiate many of the wetland areas from non-wetland areas within the forest community include the occurrence of wetland drainage patterns. Drainage patterns encountered in the field include inundated swales between small elevated upland mounds, groundwater discharge at the bottom of slopes (e.g., seeps), ephemeral and perennial drainage channels, and saturated soils. Generally, this wetland type occurs in topographically flat to moderate sloping areas and does not occur atop mounds or found on steep slopes. Based on aerial photographs, topography, and the reconnaissance-level field survey, this wetland type likely occurs mixed with non-wetland areas over approximately 151.8 acres (15.2% of the mapped area)(Table 1).

Common plant species include an overstory dominated by mountain hemlock (*Tsuga mertensiana* - FAC) and Sitka spruce (*Picea sitchensis* - FACU) with an understory comprised of alder (*Alnus crispa* – FAC), Alaska blueberry (*Vaccinium alaskaense* - FAC), devil’s club (*Oplopanax horridus* – FACU) , five-leaved bramble (*Rubus pedatus* – FAC), low-bush cranberry

(*Vaccinium vitis-idea* – FAC), lady fern (*Athyrium filix-femina* – FAC), wood fern (*Dryopteris dilatata* – FACU) , and sphagnum moss (NI).

3.2 Seasonally-Flooded Broadleaf Forest Wetland

Seasonally flooded broadleaf forest wetlands were mapped throughout 11.4 acres (1.1 percent of area mapped) of the project area (Table 1). This wetland type occurs along the wide floodplain of California Creek. This wide, flat area is likely subject to periodic seasonal flooding by both small tributaries of California Creek and by wide overland runoff early in the growing season from upslope snowmelt. Seasonal overland runoff likely deposits organic detritus and sediment to many areas of this wetland type, as evident by accumulated sediment, embedded organics within upper soil layers, water flow marks at the base of trees and shrubs, bent herbaceous vegetations, and soil surface scour marks. Soils are generally saturated at or near the ground surface.

Common plant species include an overstory dominated by black cottonwood (*Populus balsamifera* – FACU) and few intermixed Sitka spruce (FACU) with an mixed understory comprised of alder (FAC), felt-leaf willow (*Salix alaxensis* – FAC), barclay’s willow (*Salix barclayi* - FAC), devil’s club (FACU), lady fern (FAC), large-leaf avens (*Geum macrophyllum* – FACW), elderberry (*Sambucus racemosa* – FACU), Alaska violet (*Viola langsdorffi* - FACW), and bluejoint grass (*Calamagrostis canadensis* – FAC).

3.3 Saturated Shrub Wetland

Two types of saturated shrub wetlands occur in the project area, including needleleaf- and broadleaf- dominated types. Both types were mapped throughout 2 acres (0.2 percent of area mapped) of the project area (Table 1). Needleleaf dominated shrub wetlands occur along the margins of saturated emergent wetlands within three distinct forest openings located northeast of the Girdwood Elementary School. Soils are generally histosols saturated at or near the surface. Surface inundation occurs in low-lying depressions. Common plant species in this wetland type include a shrub overstory of stunted mountain hemlock (FAC) with an understory comprised of low-bush cranberry (FAC), Labrador tea (*Ledum groenlandicum* – FACW), crowberry (*Empetrum nigrum* – FAC), bog rosemary (*Andromeda polifolia* – OBL), mud sedge (*Carex limosa* – OBL), few-seeded bog sedge (*Carex microglochin* – OBL), round sedge (*Carex rotundata* – OBL), and sphagnum moss (NI).

Saturated broadleaf-dominated shrub wetlands were mapped in a single location at the southwest portion of the project area near several large meadow complexes. This wetland type appears to be influenced by groundwater discharge and seasonal overland runoff, as evident by small ponds, many small ephemeral drainages, accumulated sediment and organic detritus, and visible water scour marks. Common plant species in this wetland type include a thick overstory of alder (FAC) with a sparse understory comprised of devil's club (FACU), and lady fern (FAC).

3.4 Seasonally-Flooded Shrub Wetland

Seasonally flooded shrub wetlands were mapped throughout 7.7 acres (0.8 percent of area mapped) of the project area (Table 1). This wetland type occurs in areas subject to seasonal floods along Glacier Creek and within a narrow swath surrounding an unnamed creek northeast of the Girdwood Elementary School. This wetland type is likely subject to seasonal flooding by adjacent streams and by overland runoff occurring in the spring, as evidenced by accumulated sediments and organic detritus, perennial and ephemeral drainage channels, and saturated soils.

Common plant species include a shrub overstory dominated by alder (FAC) and willow (*Salix* sp.) with an understory comprised of devils club (FACU), common horsetail (*Equisetum arvense*- FACU), large-leaf avens (FACW), lady fern (FAC), bunchberry (*Cornus canadensis* - FACU), narcissus anemone (*Anemone narcissiflora* - NI), Sitka burnett (*Sanguisorba stipulata* - FACW), twistedstalk (*Streptopus amplexifolius* - FAC), Alaska violet (FACW), nagoonberry (*Rubus arcticus* - FAC), and bluejoint grass (FAC).

3.5 Saturated Emergent Wetland

Saturated emergent wetlands were mapped throughout 18 acres (1.8 percent of area mapped) of the project area (Table 1). Emergent wetlands occur in forest openings throughout the project area, usually within wide flat areas or depressions. This wetland type generally has histosol soils that are saturated for the majority of the year, as evident by anaerobic soil conditions encountered in the field. Areas of patterned bog, characterized by a series of alternating low ridges and shallow ponds, are common features of this wetland type.

Common plant species in this wetland type include dwarf birch (*Betula nana* – FAC), bog blueberry (*Vaccinium uliginosum* – FAC), low-bush cranberry (FAC), Labrador tea (FACW),

crowberry (FAC), bog rosemary (OBL), mud sedge (OBL), few-seeded bog sedge (OBL), round sedge (OBL), and sphagnum moss (NI).

3.6 Riverine Stream

Within the project area, approximately 19.6 acres (2 percent of area mapped) were identified and mapped as riverine stream (Table 1). This area includes waters and the seasonally flooded floodplain of Glacier Creek. Based on the lack of vegetation along exposed gravel beaches and islands, and frequent stream flow changes, most of the floodplain of Glacier Creek is subject to both Section 404 and Section 10.

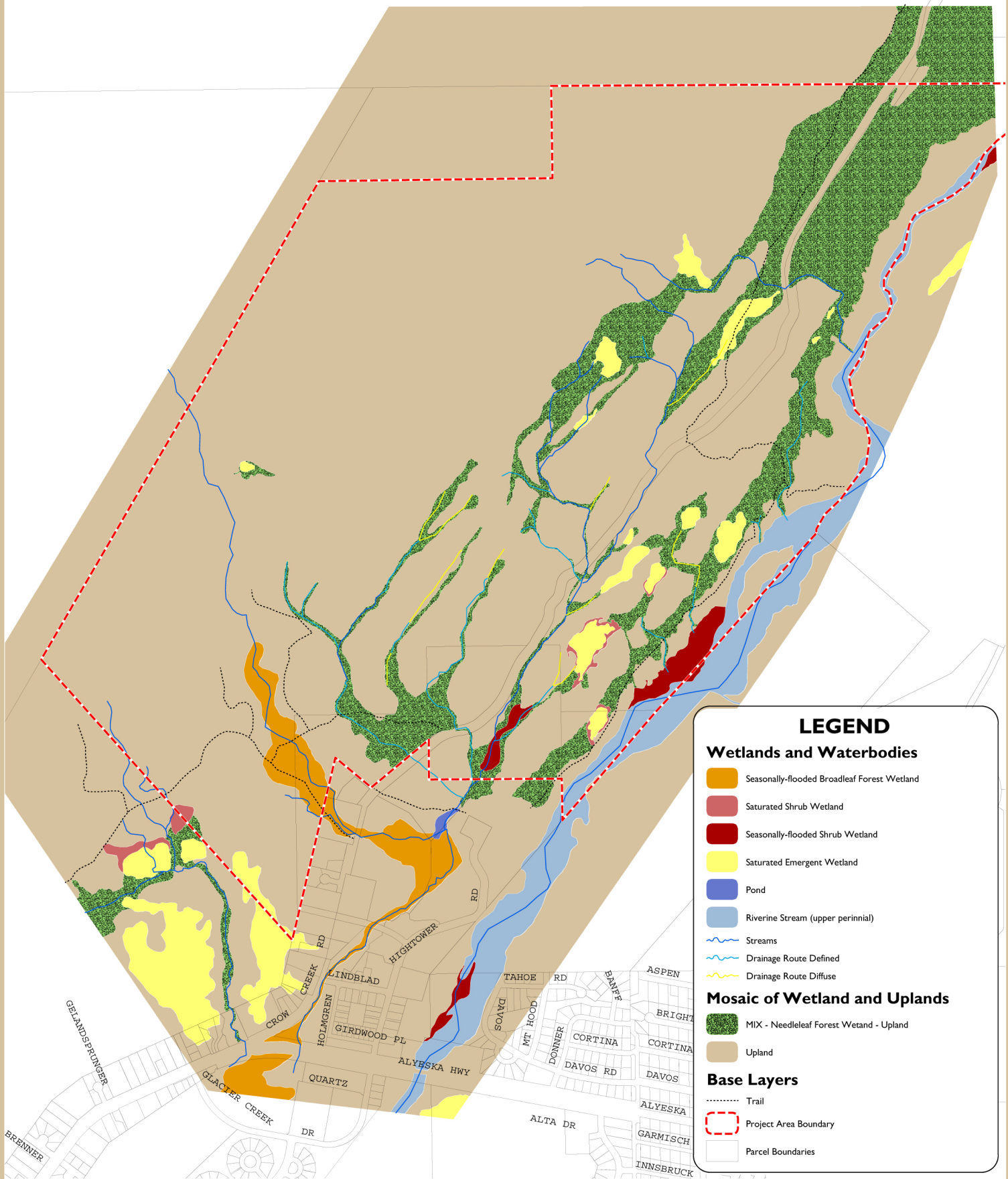
4.0 REFERENCES CITED

Municipality of Anchorage (MOA), Department of Community Planning and Development.

1996. *Anchorage Wetlands Management Plan*, 10-Year Revision.

U.S. Department of the Interior, Fish and Wildlife Service (USFWS). 1978. *National Wetlands Inventory*. Map: Seward D6. Scale: 1:63,360.

U.S. Federal Register. November 13, 1986 Part II. Rules and Regulations, Vol. 51, No. 219.
U.S. Department of Defense. Corps of Engineers, Department of the Army. 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers; Final Rule.



LEGEND

Wetlands and Waterbodies

- Seasonally-flooded Broadleaf Forest Wetland
- Saturated Shrub Wetland
- Seasonally-flooded Shrub Wetland
- Saturated Emergent Wetland
- Pond
- Riverine Stream (upper perennial)
- Streams
- Drainage Route Defined
- Drainage Route Diffuse

Mosaic of Wetland and Uplands

- MIX - Needleleaf Forest Wetland - Upland
- Upland

Base Layers

- Trail
- Project Area Boundary
- Parcel Boundaries

Crow Creek Neighborhood Plan
 October 2004
 Prepared for the Municipality of Anchorage Heritage Land Bank

0 500 1000 1500 2000 Feet

HAP NOTES:
 1. Mapping information is projected in Alaska Spheroid Zone 4, North American Datum of 1983, unless noted.
 2. Wetland mapping is for planning purposes only and may differ from a more thorough in-situ wetland and waterbodies delineation.

WETLANDS

IV. Vegetation

1.0 Summary

This next section identifies and describes vegetation cover types in the project area. Cover types were classified using the classification system outlined in The Alaska Vegetation Classification (Vioreck et al. 1992) and Plant Community Types of the Chugach National Forest: South Central Alaska (DeVelice et al. 1999).

In fall 2004, HDR Alaska, Inc. completed office-based vegetation mapping work followed by a reconnaissance-level on-site field investigation to verify approximate vegetation type boundaries and describe vegetated and unvegetated cover types that occur in the project area.

2.0 Methods

Vegetation cover type boundaries were mapped using three steps. These steps included:

2.1 Preliminary Mapping

Preliminary vegetation cover type boundaries were drawn in the office by digitizing discernible plant community types on digital aerial photography (at 1-meter pixel resolution) into the project Geographic Information System (GIS) database. Vegetation characteristics and cover type designations were identified from aerial images and coded with plant community type descriptions outlined in The Alaska Vegetation Classification (Vioreck et al. 1992) manual. Cover type codes were refined using available resource information including LIDAR derived topographic information (at 4-foot contour intervals), existing digital landcover classification mapping, stream coverages, and wetland mapping.

2.2 Field Verification

During fall 2004, HDR completed a reconnaissance-level field assessment of the project area. HDR investigated on-site conditions and visited characteristic plant community types identified during preliminary mapping. Observations about plant diversity, species abundance, canopy cover, and topographic setting were collected at the different cover types. Notes and photographs were taken throughout the project area and locations logged using a GPS unit.

2.3 Final Mapping

Last, pre-mapping, field-derived notes and photographs, and existing resource data were compiled into the project GIS to complete final mapping on rectified digital aerial photography. Changes to preliminary mapping codes were made wherever field observations supported it.

3.0 Results

Six general vegetation cover types and two unvegetated cover types occur throughout the project area. Vegetated types include (1) needleleaf forest, (2) broadleaf forest, (3) dwarf needleleaf shrub, (4) closed tall scrub, (5) wet graminoid meadow, and (6) mesic forb meadow. Unvegetated cover types include (1) waterbodies and streams and (2) developed/barren-unvegetated areas. A summary of the abundance of each vegetated and unvegetated cover type in the mapped project area is included in Table 1. Descriptions of the types are included below.

TABLE 1. Vegetated and Unvegetated Areas in the Project Area

Vegetated Areas	Area (acres)	% of Project Area
Open Needleleaf Forest - Sitka spruce	19.1	1.9%
Open Needleleaf Forest - Mixed conifer	874.0	87.6%
Open Broadleaf Forest - Balsam poplar	14.7	1.5%
Open Dwarf Needleleaf Shrub - Mountain hemlock	2.0	0.2%
Closed Tall Scrub - Willow	2.0	0.2%
Closed Tall Scrub - Alder	35.2	3.5%
Wet Graminoid - Subarctic Lowland Sedge Bog	18.0	1.8%
Mesic Forb – Mixed Herbs	6.4	0.6%
Unvegetated Areas	Area (acres)	% of Project Area
Waterbodies and Streams	19.6	2.0%
Developed/Barren-Unvegetated	6.7	0.7%
Total Project Area Size: 998 acres		

3.1 Open Needleleaf Forest

Open needleleaf forest is the most abundant mapped cover type, covering approximately 893.1 acres of the study area, making up 89.5 percent of areas mapped (Table 1). Two types of needleleaf forest communities occur in the project area, these types include spruce

dominated forest and mixed conifer forest. Sitka spruce dominated needleleaf forest occurs across the southern portion of the North Fan east of California Creek, covering 19.1 acres (1.9 percent) of the mapped area (Table 1). This cover type is subject to seasonal overland runoff and has many small ephemeral drainages throughout. Characteristic of this cover type is a tree overstory dominated by an open (25-60 percent) canopy of Sitka spruce (*Picea sitchensis*) and a closed (60-100 percent) shrub canopy dominated by alder (*Alnus crispa*). Understory species present include devil's club (*Oplopanax horridus*), lady fern (*Athyrium filix-femina*), wood fern (*Dryopteris dilatata*), bunchberry (*Cornus canadensis*), five-leaf bramble (*Rubus pedatus*), twistedstalk (*Streptopus amplexifolius*), and bluejoint grass (*Calamagrostis canadensis*).

Mixed needleleaf forest is the most widespread vegetated community type in the project area, covering 874 acres (87.6 acres) of the mapped area (Table 1). Characteristic of this cover type is an upper canopy dominated by a mix of Sitka spruce and mountain hemlock (*Tsuga mertensiana*). The forest's understory is comprised of Alaska blueberry (*Vaccinium alaskensis*), early blueberry (*Vaccinium ovalifolium*), false azalea (*Menziesia ferruginea*), devil's club, bunchberry, five-leaf bramble, twinflower (*Linnaea borealis*), and oak fern (*Gymnocarpium dryopteris*).

3.2 Open Broadleaf Forest

Open broadleaf forests cover approximately 14.7 acres of the study area, making up 1.5 percent of areas mapped (Table 1). This cover type occurs along the wide floodplain of California Creek. Characteristics of this cover type include an open canopy of black cottonwood (*Populus balsamifera*) with a closed understory dominated by alder, willow (*Salix* sp.), devil's club, lady fern, pink wintergreen (*Pyrola asarifolia*), on-sided wintergreen (*Pyrola secunda*), common horsetail (*Equisetum arvense*), and bluejoint grass.

3.3 Open Dwarf Needleleaf Scrub

Open dwarf needleleaf scrub covers approximately 2 acres of the study area, making up 0.2 percent of areas mapped (Table 1). In general, this cover type is most common along the fringe of meadow openings occurring within widespread needleleaf forests in the project area. Characteristics of this cover type include an open shrub canopy dominated by dwarf mountain hemlock with an understory comprised of low-bush cranberry (*Vaccinium vitis-idaea*), Labrador tea (*Ledum groenlandicum*), crowberry (*Empetrum nigrum*), bog rosemary

(*Andromeda polifolia*), mud sedge (*Carex limosa*), few-seeded bog sedge (*Carex microglochin*), round sedge (*Carex rotundata*), and sphagnum moss.

3.4 Closed Tall Scrub

Closed tall scrub covers approximately 37.2 acres of the study area, making up 3.7 percent of areas mapped (Table 1). Two different types of closed tall scrub occur in the project area, these include alder dominated thickets and willow dominated thickets. Alder dominated thickets occur on steep avalanche-prone mountain slopes throughout the western portion of the project area, covering 35.2 acres (3.5 percent) of the entire mapped area (Table 1). Characteristics of this cover type include a closed canopy dominated by alder with a sparse understory comprised of devil's club, twisted stalk, lady fern, and oak fern.

A single area of willow dominated thicket occurs across a low depression area northeast of the Girdwood Elementary School, covering 2 acres (0.2 percent) of the mapped area (Table 1). Characteristics of this cover type include a closed canopy dominated by willow and alder with an understory comprised of devils club, common horsetail, large-leaf avens (*Geum macrophyllum*), lady fern, bunchberry, narcissus anemone (*Anemone narcissiflora*), Sitka burnett (*Sangisorba stipulata*), twistedstalk, Alaska violet (*Viola langsdorffi*), nagoonberry (*Rubus arcticus*), and bluejoint grass.

3.7 Wet Forb-Graminoid Meadow

Wet forb-graminoid meadows cover approximately 18 acres of the study area, making up 1.8 percent of areas mapped (Table 1). This cover type occurs across several large forest openings throughout the project area. Characteristics of this cover type include an open meadow made up of dwarf birch (*Betula nana*), bog blueberry (*Vaccinium uliginosum*), low-bush cranberry, Labrador tea, crowberry, bog rosemary (*Vaccinium oxycoccus*), mud sedge, few-seeded bog sedge, round sedge, and Sphagnum moss.

3.8 Mesic Forb-Graminoid Meadow

Mesic forb-graminoid meadows cover 6.4 acres of the study area, making up 0.6 percent of areas mapped (Table 1). This cover type only occurs within the floodplain of Glacier Creek along the eastern boundary of the project area. This cover type is often exposed to seasonal flooding events associated with Glacier Creek. Characteristics of this cover type include a plant community made up of tall fireweed (*Epilobium angustifolium*), lupine (*Lupinus nootkatensis*), rattlebox (*Rhinanthus minor*), yarrow (*Achillea borealis* and *A. millefolium*), common horsetail, and bluejoint grass.

3.9 Waterbodies and Streams

Open water and seasonally flooded beaches and gravel bars cover 19.6 acres of the study area, making up approximately 2 percent of areas mapped (Table 1). This cover type includes waters and the seasonally flooded floodplain of Glacier Creek.

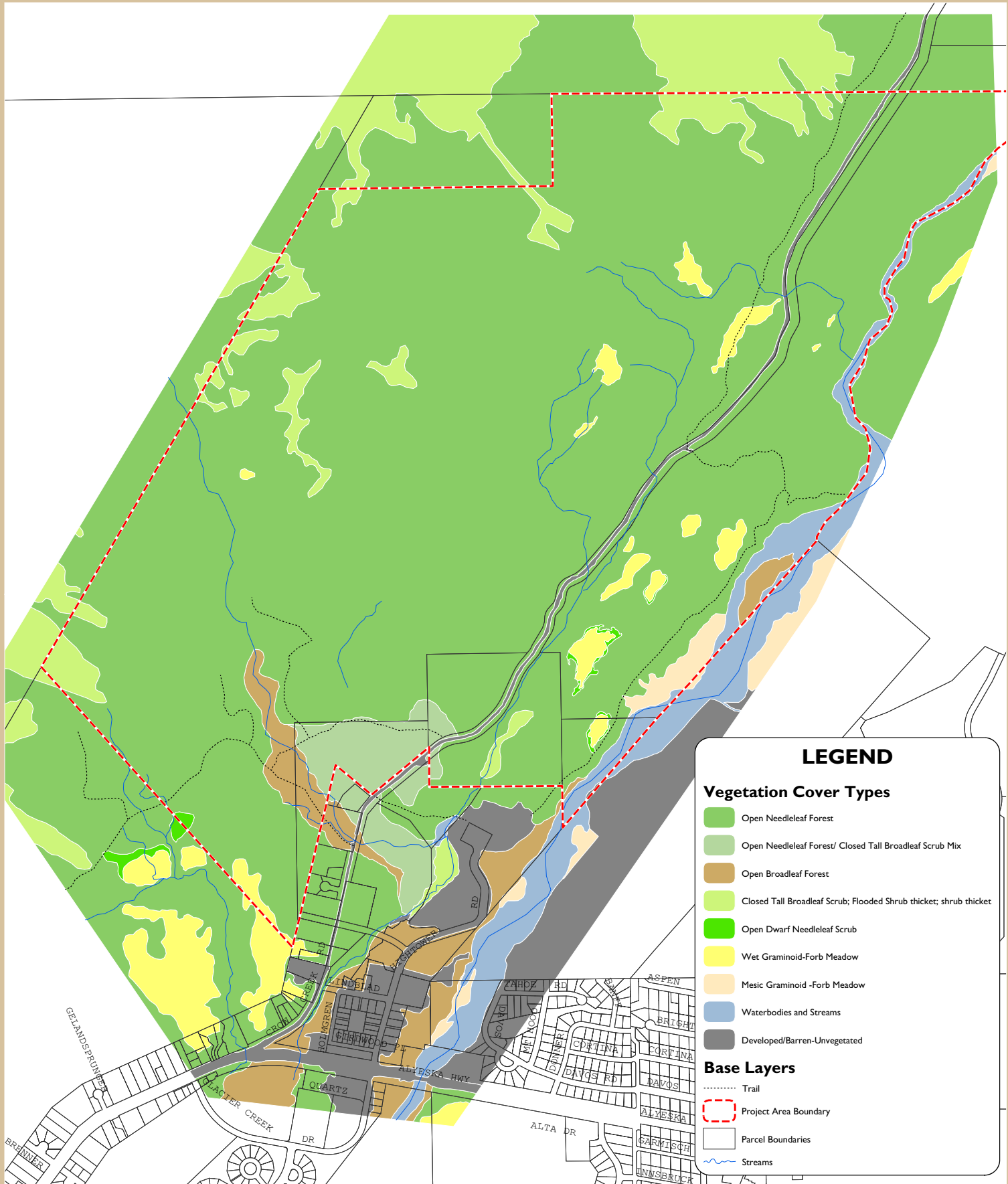
3.10 Developed/Barren - Unvegetated

Unvegetated areas described as developed or barren cover 6.7 acres of the study area, making up approximately 0.7 percent of areas mapped (Table 1). This cover type includes buildings, roads, parking areas, and other cleared or developed areas. Common plant species that occur in this cover type include tall fireweed, rattlebox, yarrow, white clover (*Trifolium repens*), Merten's sedge (*Carex mertensiana*), and bluejoint grass.

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Crow Creek Neighborhood Plan

October 2004

Prepared for the Municipality of Anchorage Heritage Land Bank

0 500 1,000 1,500 2,000 Feet

MAP NOTES:

1. Mapping information is projected in Alaska Spheroid Zone 4, North American Datum of 1983, units feet.
2. Vegetation identification based on "The Alaska Vegetation Classification" system (Peterson et al. 1992).

VEGETATION

V. Slope Angle Analysis

1.0 ANALYSIS OBJECTIVE

This mapping analysis was produced to give a perspective on the suitability and challenges posed by the topography of the development area. The area was analyzed for percent slope using percent slope classes that represent break points in suitability of development.

2.0 METHODS

Slope coverage was processed by the project team using tools included in the Spatial Analyst extension for ESRI ArcMap GIS mapping software. The data used to develop the slope coverage originated from the original LIDAR DEM dataset. The final slope layer included a 5-foot pixel resolution raster dataset where each grid cell (25 sq. ft. area in size) had a percent slope value attributed to it.

3.0 MAPPING

Slope categories were broken out into 5 classes.

- 0-5 % Slope. Because of the fine resolution of the LIDAR imagery and the imperfect penetration of foliage by the sensors the areas with less than 5% slope are area clear of vegetation and also flat. In the study area these areas are the marshes and the Glacier Creek flood plain.
- 5-10% Slope. These slopes present the fewest challenges to residential development but may be less well drained and do not present sufficient elevation change to afford view potentials. Highly suitable and can accommodate higher density development.
- 10-20 % slopes. These slopes represent the some of the best developable lands in the study area and are generally well drained and offer significant view potential.
- 20-30% slopes. These slopes represent the upper limits on developable land and will present additional challenges to the building of roadways, utilities and siting of residential dwellings. Development costs can be significantly higher in these areas.
- > 30% Slope. These slopes are considered unsuitable for development due to high costs of retaining structures and potential for earth slides and rock fall.

4.0 DISCUSSION

This discussion of the slope affects on development potential is keyed to the Landscape Units mapping. Because many of the areas are heavily broken up it is difficult to generalize about their overall topography, others appear to be more uniform. Among the more uniform area are the Lower Forest and the North and South Fan areas with gently south sloping topography that should support higher density development with lower development costs.

The upper ends of the North Fan and the lower portions of the West Highland unit contain significant areas of 10-20% slope that should give these areas better view potential. The East and West Highland and the Upper Forest units also have significant areas of 10-20% slope but all have access and/or geo-hazard issues due to steeper slopes both above and/or below the sites.

The other landscape units including the Three Ridges, the Long Ridge, the Shelf, Matrix and the Creek and River Terrace all contain more broken topography with un-developable areas (both to flat and to steep) intermixed with more intermediate slopes. Development in these area will have to be carefully planned to avoid the areas of unsuitable slopes, access the more desirable areas and keep development cost within reasonable limits.

The Hillside unit is by and large to steep for development and represents a significant geo-hazard potential to adjacent down slope areas.

V. Habitat

1.0 Summary

This section describes general wildlife habitat types within the project area. Wildlife habitat is described as “the physical and biological environment used by an individual, a population, a species, or group of species” (Hunter 1996). Girdwood Valley encompasses the northernmost section of temperate rainforest in Alaska. Within the valley, a topographically-driven gradient of habitat types occur, ranging from marine mudflats to alpine tundra, all of which supports diverse habitat opportunities to both transient (i.e., seasonal) and resident wildlife. The project area itself is located outside of marine habitats and alpine tundra habitats, instead encompassing areas between the upper and lower ends of the habitat gradient. Ten characteristic habitat types are described and mapped in this study.

In fall 2004, HDR Alaska, Inc. completed a reconnaissance-level on-site field investigation to identify approximate vegetation type and wetland/upland boundaries. Field-survey data, existing natural resource publications for the region, and existing physical and biological mapping were evaluated to identify characteristic wildlife habitat types that occur in the project area. This study is intended to provide a cursory evaluation of probable habitat types to be used for planning and discussion purposes only and does not supplement a more rigorous scientific habitat assessment which evaluates habitat types over a spatial and temporal scale (see the habitat map that follows).

2.0 Methods

During the site visit, HDR scientists collected reconnaissance-level field information which was used to assess general habitat quality and quantity. Specific observations in reference to the following categories were noted by scientists and used to identify, map, and describe habitat types.

Field based observations	Rationale for Habitat Reference
Habitat use evidence	Visible nesting, resting, or denning locations; game trails; tracks; scat; and other animal use evidence can be used to evaluate the general use of habitat types.
Vegetation Cover Type	Plant community diversity, canopy structure, available cover, food sources, patchiness, and edge can influence habitat type.
Wetland Type	Many wetland functions (i.e., water storage, water quality improvement, flood control, etc.) can directly and indirectly influence habitat type.
Hydrology	Open water, seeps, springs, streams, drainages and periodic flood events can influence habitat type.
Existing habitat	Existing mapping information and resource-based literature (i.e.,

related data	AK Dept. of Fish & Game anadromous fish stream catalog, U.S. Fish & Wildlife Service bald eagle nest database, etc.) can be used to evaluate habitat types.
Topography	Ridges, slopes, swales, mounds, ravines, broad flats, and other physical land features can influence habitat type.
Scale	Size and abundance of habitat types can influence occurrence of use by both resident and transient species.
Time	Time of year and time of day can influence the use and occurrence of visible clues for species using a particular habitat type.

3.0 Results

Ten characteristic habitat types occur throughout the project area. Habitat types include (1) mature needleleaf forest, (2) mature broadleaf forest, (3) semi-open lowland needleleaf forest, (4) bog-forest fringe, (5) shrub thicket, (6) steep shrub thicket, (7) open bog, (8) floodplain meadow, (9) riparian habitat and (10) developed areas. A summary of the abundance of each habitat types in the mapped project area is included in Table 1. Descriptions of each type are included below the summary table.

TABLE 1. Habitat Types in the Project Area

Habitat Type	Area (acres)	% of Project Area
Mature Needleleaf Forest	870.3	87.2%
Mature Broadleaf Forest	14.8	1.5%
Semi-Open Lowland Needleleaf Forest	8.8	0.9%
Bog-Forest Fringe	2.0	0.2%
Shrub Thicket	1.8	0.2%
Steep Shrub Thicket	35.0	3.5%
Open Bog	17.8	1.8%
Floodplain Meadow	6.3	0.6%
Riparian	34.4	3.4%
Developed	6.6	0.7%
Total Project Area Size: 998 acres		

3.1 Mature Needleleaf Forest

Mature needleleaf forests are the most widespread habitat type in the project area, encompassing approximately 870.3 acres, or 87 percent of the mapped area (Table 1). This habitat type is common throughout Girdwood Valley and provides suitable habitat for moose, black and brown bear, lynx, red squirrels, marten, porcupine, hawks, owls, ravens, spruce grouse, Steller’s jay, and several species of resident and migratory songbirds including

wrens, crossbills, siskin, chickadees and warblers (AAS 1993; ADF&G 2000; Zimmerman 1994). Common features in mature needleleaf forests that influence habitat quality include cover, canopy structure, nesting cavities in trees, ground-level microrelief, fallen logs, and food (Benyus 1989; Hunter 1996). Available food sources include berries from Alaska blueberry, early blueberry, twisted stalk, five-leaf bramble, crowberry, and low-bush cranberry; foliage from several understory graminoid and forb species; and several species of small rodents and invertebrates.

3.3 Mature Broadleaf Forest

This habitat type occurs along the floodplain of California Creek, covering approximately 14.8 acres (1.5 percent) of the mapped area. Mature broadleaf forest is common throughout the Girdwood Valley, typically occurring along the floodplains and riparian margins of the Valley's larger creeks. Black and brown bear, hawks, eagles, grouse, ravens, songbirds, and small rodents could be common users of this habitat type (ADF&G 2000; Benyus 1989). Tall cottonwood snags could provide suitable nesting and perching platforms for eagles and hawks. Nesting cavities within cottonwoods may also support suitable nesting and denning locations for songbirds, grouse, and small mammals. The understory of this habitat type is generally dominated by a thick canopy of shrubs which provide cover for small birds and rodents. Available food sources may include berries from high-bush cranberry and twisted stalk, browse material from shrub layer, and succulent grasses and sedges at the forest floor. Areas adjacent to California Creek may be used more heavily in the late summer and fall when returning salmon come to spawn in the lower portions of the creek. During this time, bear, coyotes, lynx, and other small mammals may feed on decomposing fish scattered along the stream bank.

3.4 Semi-Open Lowland Needleleaf Forest

This habitat type occurs across the southern portion of the North Fan east of California Creek, covering approximately 8.8 acres (1.9 percent) of the mapped area (Table 1). This area is subject to seasonal overland runoff and has many small ephemeral drainages throughout. Similar to mature needleleaf forests, semi-open lowland needleleaf forests provide suitable habitat for moose, black and brown bear, lynx, red squirrels, marten, porcupine, hawks, owls, ravens, spruce grouse, Steller's jay, and several species of resident and migratory songbirds including wrens, crossbills, siskin, chickadees and warblers (AAS 1993; ADF&G 2000; Zimmerman 1994). The open upper canopy likely provides less cover for wildlife species that use the mid to upper forest canopy, however, a thick understory of

alder likely provides suitable cover for many smaller mammals and songbirds. Food sources include berries from high-bush cranberry, Alaska blueberry, early blueberry, twisted stalk, five-leaf bramble, and low-bush cranberry.

3.5 Bog Forest Fringe

In the project area, bog forest fringe habitats act as edge habitat between open bogs and surrounding mature needleleaf forests. Approximately 2 acres (0.2 percent of the mapped area) of this habitat type was identified in the project area (Table 1). This fringe habitat is characterized by a short open canopy of shrub hemlock trees with a well developed understory comprised of several different species of low shrub, forb, and graminoids. This habitat type likely provides habitat used by black and brown bear, coyote, lynx, snowshoe hare, voles, lemming, shrew, grouse, sparrow, junco, thrush, and warblers (AAS 1993; ADF&G 2000; Zimmerman 1994). The shrub overstory provides cover for small mammals and birds. The groundcover of this habitat type is similar to that of the open bog, supporting burrowing opportunities to small rodents. Food sources include berries from crowberry, low-bush cranberry, bog cranberry, and bog blueberry, and succulent foliage from several forb, grass, and sedge plant species.

3.6 Shrub Thicket

A single small area of shrub thicket occurs across a low depression area northeast of the Girdwood Elementary School, covering approximately 1.8 acres (0.2 percent) of the mapped area (Table 1). This habitat type likely provides suitable habitat for moose, snowshoe hare, lynx, red fox, brown and black bear, coyote, voles, grouse, thrush, sparrows, warblers, chickadee, and redpolls (AAS 1993; ADF&G 2000; Zimmerman 1994). The dense cover of willow and alder shrubs likely encourages use by small mammals and birds to avoid their larger predators. Small hummocks and low swales could provide nesting and denning locations for a variety of species. Moose likely use this area for browse throughout the year. Other food sources may include berries from devil's club, twisted stalk, and nagoonberry plants as well as foliage from bluejoint grass and sedges.

3.7 Steep Shrub Thicket

This habitat type is limited to steep slopes on the western side of the project area and are exposed to frequent avalanche and landslides during the year. Approximately 35 acres (3.5 percent of the mapped study area) of the mapped area is covered by steep shrub thicket (Table 1). Common species may include black and brown bear, lynx, wolverine, coyote, snowshoe hare, voles, ptarmigan, thrush, sparrows, warblers, chickadee, redpolls, and

waxwings (AAS 1993; ADF&G 2000; Zimmerman 1994). The vegetation that covers this habitat type is tolerant of frequent disturbances and often grows as dense thickets which bind soils together. Because of avalanches and areas where snow accumulation is high (i.e., at the bottom of steep avalanche chutes), vegetation growth cycles are often different than those in surrounding habitat types. High elevation areas that are scoured from late spring avalanches and are often the earliest areas in the Girdwood Valley where succulent new spring plant growth occurs. Therefore, as many other areas in the valley are still snow covered and food is scarce, steep shrub thickets are used by a variety of species because they often offer an early season food source of succulent new plant growth. Similarly, throughout the summer months this habitat type is often exposed to erosion from downslope water flow, groundwater discharge, and upslope snow pack melt which promotes new plant growth. Fiddleheads from lady ferns, a nutrient rich food source used by number of species, are often available throughout the entire summer, because of the higher occurrence of frequent disturbances.

3.8 Open Bog

Open bogs provide many habitat characteristics and qualities that are significantly different from other habitat types in the project area. Approximately 17.8 acres (1.8 percent of the project area) were mapped as open bog (Table 1). The openness of bogs provides little cover for larger mammals but often suitable cover and burrowing opportunities for small rodents. Raptors and owls use the openings to their advantage while hunting for small mammals and birds. This habitat likely supports populations of vole, lemming, weasel, mink, shrew, sparrow, owl, and junco (AAS 1993; ADF&G 2000; Zimmerman 1994). Food production in bogs tends to be higher than in other habitat types. Often crowberries, low-bush cranberries, bog cranberries, and bog blueberries are plentiful in the fall and resurface in the spring after snowmelt, providing an early season nutrient source for wildlife following winter.

3.9 Floodplain Meadow

Floodplain meadows are present along the wide floodplain of Glacier Creek. Approximately 6.3 acres (0.6 percent of the mapped area) of floodplain meadow occur in the project area (Table 1). This habitat type is generally used by wildlife as movement corridors along the creek. Common species that use this habitat type include black and brown bear, moose, eagles, hawks, and gulls (AAS 1993; ADF&G 2000; Zimmerman 1994). Glacier Creek and several of its small tributaries are mapped as anadromous fish streams, during times coinciding with salmon spawning runs; floodplain meadows may be used more heavily by

wildlife and bird species that feed on dying and dead fish. This habitat type provides open areas for these birds to fish and prey on small mammals. Food production in this habitat type is generally lower than other habitat types occurring in the project area, generally because the vegetation cover is generally comprised of dispersed clumps of small forbs and graminoid species. Periodic flood events influence the availability and survivorship of many of this habitat's plant species.

3.10 Riparian Habitat

Riparian habitat generally provides quality habitat used at some time of the year by nearly all wildlife species in the project area. Approximately 34.4 acres (3.4 percent of the mapped area) of riparian habitat is present in the project area. Three types of riparian habitat were identified from the field investigation; these include (1) riparian corridors surrounding anadromous fish streams, (2) corridors surrounding non-anadromous fish streams, and (3) corridors surrounding intermittent streams. Riparian areas provide suitable habitat for moose, beaver, muskrat, mink, otter, brown and black bear, shrew, kingfisher, blackbirds, thrush, plovers, eagles, hawks, goldeneyes, and many other small songbirds (AAS 1993; ADF&G 2000; Zimmerman 1994). Riparian corridors encountered in the project area had a higher diversity of plant species than did other habitat types, a high degree of developed canopy structure, and well developed micro-relief, all attributes which can influence habitat quality. Food sources include berries from Devil's club, Alaska blueberry, early blueberry, twisted stalk, and nagoonberry, browse from thick canopies of shrubs and abundant succulent forbs, grasses, sedges, and moss covering the ground.

3.11 Developed Areas

Wildlife use of developed areas is typically considered low due to its human disturbance and lack of vegetative cover. Approximately 6.6 acres (7 percent of the mapped area) of developed areas were mapped in the project area. Certain factors do contribute to wildlife use of developed areas; however, typically there are efforts to limit wildlife use to reduce human-wildlife encounters. In the project area, brown and black bears may feed on waste left out by humans; eagles, hawks, ravens, and gulls may feed in exposed garbage bins; moose may use roadways as travel corridors and feed on landscape plants; small mammals may use parts of building as den locations; and songbirds likely are attracted to bird feeders and landscaped yards for feeding and buildings for nesting, resting, and perching purposes.

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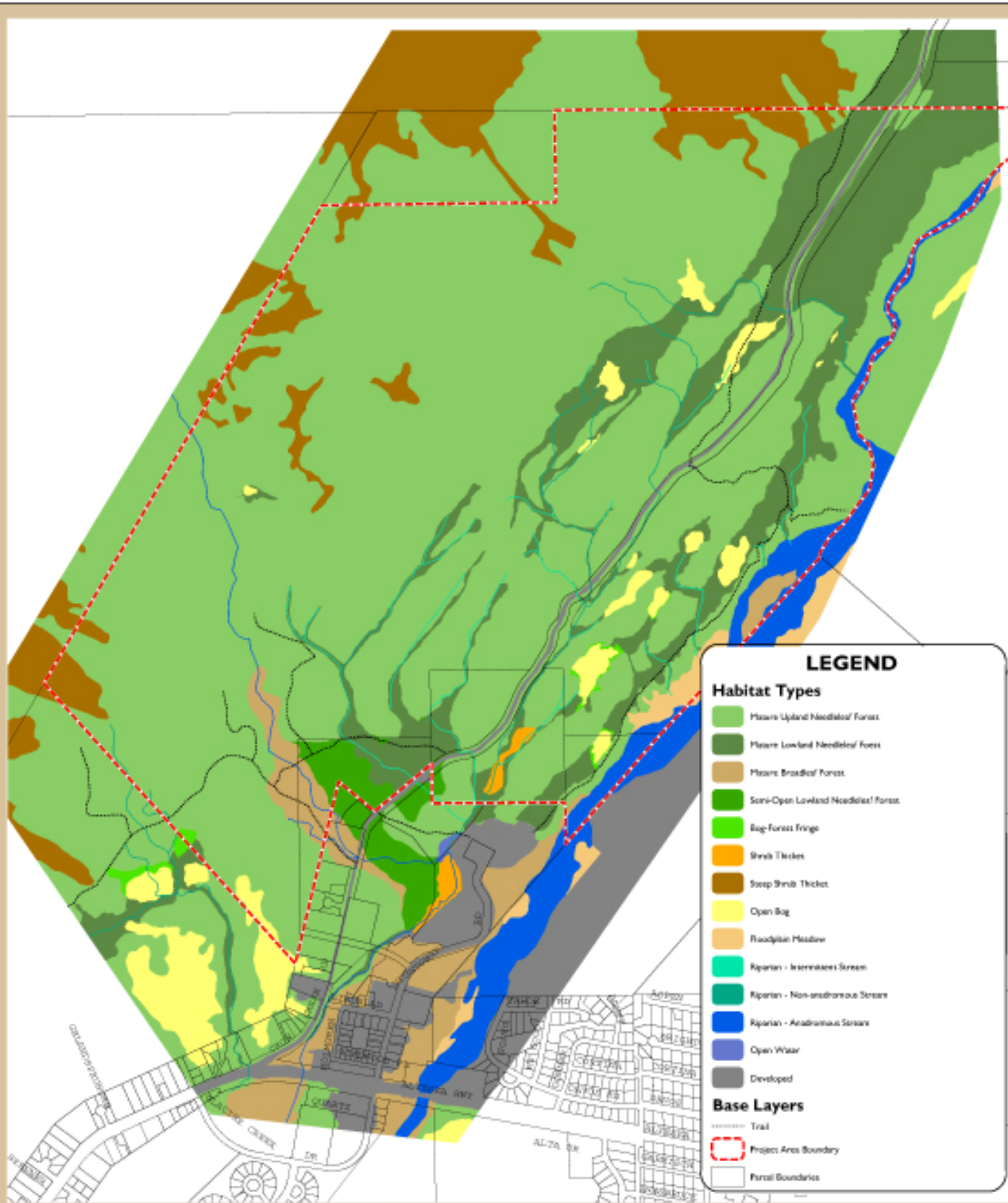
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Crow Creek Neighborhood Plan

October 2004

Prepared for the Municipality of Anchorage Heritage Land Bank

1/4" = 100'

ANCHORAGE HERITAGE LAND BANK
LEON
HER

HABITAT

VI. Other Environmental Factors – Summary of Constraints

1.0 Introduction

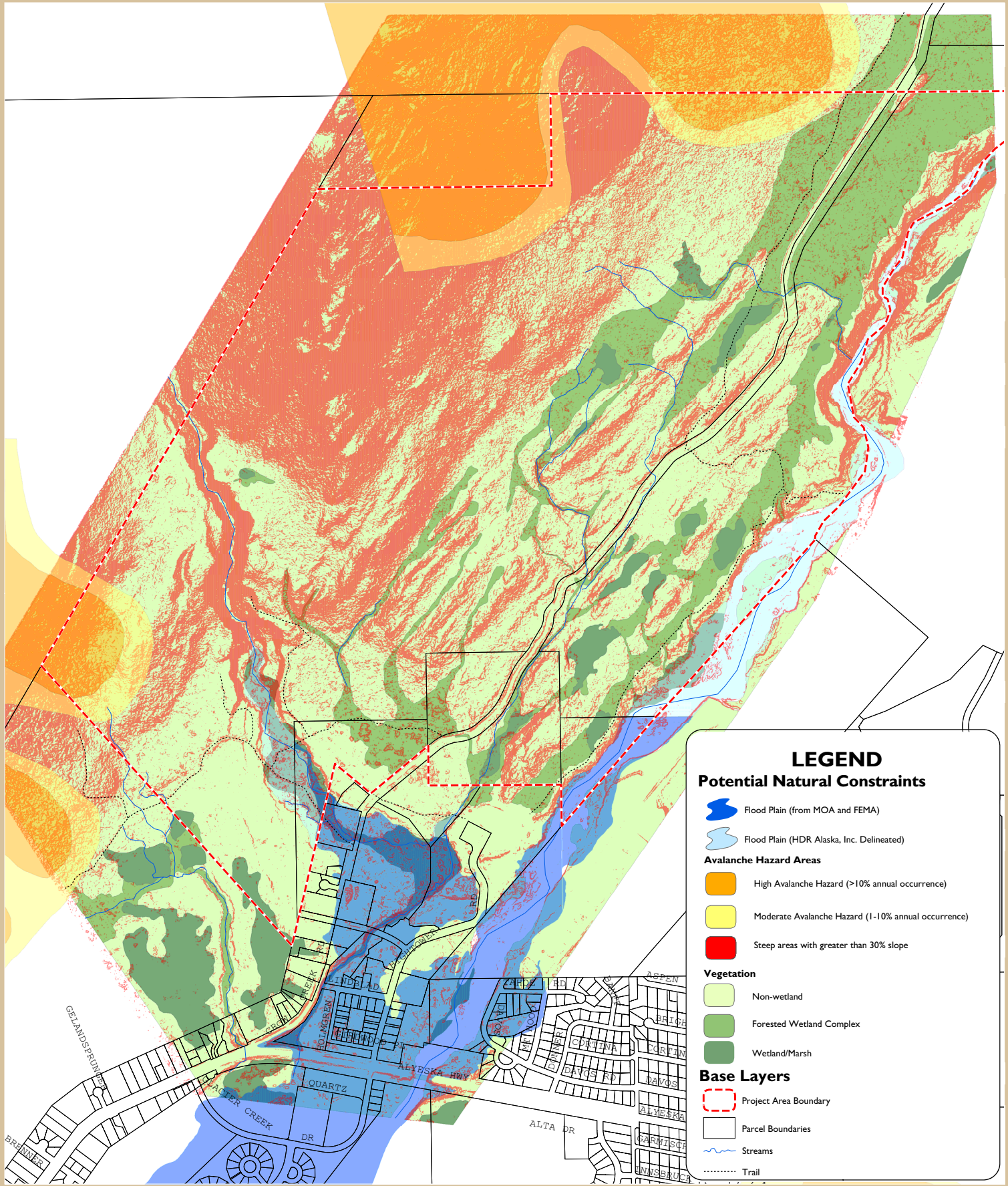
This section describes several additional environmental issues on the site, and then presents a summary of constraints and opportunities

2.0 Avalanche Hazards

Avalanches are common in the Girdwood Valley. In areas where natural vegetation is still largely intact, avalanche paths can generally be easily seen. Several highly visible avalanche paths are located in the project's northern area, plus one smaller area the south of California Creek. Using air photos, reconnaissance-level mapping of these hazard areas was completed, and is presented on the map on the following page.

3.0 Opportunities and Constraints Summary

The map on the following page provides a summary of site constraints.



LEGEND
Potential Natural Constraints

- Flood Plain (from MOA and FEMA)
- Flood Plain (HDR Alaska, Inc. Delineated)
- Avalanche Hazard Areas**
 - High Avalanche Hazard (>10% annual occurrence)
 - Moderate Avalanche Hazard (1-10% annual occurrence)
 - Steep areas with greater than 30% slope
- Vegetation**
 - Non-wetland
 - Forested Wetland Complex
 - Wetland/Marsh
- Base Layers**
 - Project Area Boundary
 - Parcel Boundaries
 - Streams
 - Trail

Crow Creek Neighborhood Plan
 October 2004
 Prepared for the Municipality of Anchorage Heritage Land Bank

0 500 1000 1500 2000 Feet

MAP NOTES:
 * Mapping information is projected in Alaska Spheroidal Zone 4
 North American Datum of 1983, unless noted.

NATURAL CONSTRAINTS

APPENDIX E: Land Use and Market Trends

Section Summary

The community of Girdwood has evolved from a small, quiet town to a resort community with a shortage of affordable housing and available land. Factors that will likely affect demand for housing include: an increasing population, improvements to the Seward Highway and increases in tourist attractions/tourist traffic.

Sources for this Section: U.S. Census Bureau; Girdwood Area Plan; Institute of Economic and Social Research, University of Alaska, Anchorage; Alaska Department of Transportation and Public Facilities; Alyeska Resort; Multiple Service Listings; For Sale By Owner listings; and the following realtors: Bob Baer -- Dynamic Properties, George McCoy -- Prudential Jack White Realty, Dave Bauer -- RE/Max of Alyeska, Scott Kirk -- Girdwood Realty, Sam Daniel -- Girdwood Property Management.

The 1995 Girdwood Area Plan identified the need for increased residential development in the community of Girdwood. In the nearly ten years that have elapsed since the Plan's creation, the prediction of a future need for housing has shown to be accurate. Girdwood has become an increasingly desirable place to live or own a vacation home. Like many resort communities, Girdwood is facing a shortage of affordable housing and available land.

The price of housing in Girdwood has dramatically increased over the past few years and is likely to remain strong. Factors that will encourage demand for housing in Girdwood include: the Alyeska Resort and its role as a popular recreation destination; the continuing development of other recreation opportunities in the area; improvements to the Seward Highway connecting Girdwood and Anchorage; Girdwood's strategic location on the tourist path between Anchorage and the Kenai Peninsula; and continued growth in population and economic activity in Southcentral Alaska.

*U.S. Census data

**Institute of Social and Economic Research, University of Alaska Anchorage

Factors Affecting Increasing Demand for Housing

Population

Over the past ten years, the population of Girdwood has increased from 1,350 residents in 1993 to 1,850 residents in 2003; an increase of more than 70%*. As following sections show, there is a higher demand in this community for residential property than current availability can supply. Local realtors agree that Girdwood is currently experiencing a housing shortage. Says Dave Bauer of ReMax Real Estate, “There’s definitely a shortage... it’s been going on for years but it’s increased over the last year.” Residents who would like to purchase land are often unable to do so, due to high housing costs and the severely limited market.

Girdwood’s closest neighbor, Anchorage, has also seen a rise in population – from 257,780 in 1995 to 274,003 in 2003*. In both communities, the amount of land available for development has tightened, while populations have increased. Girdwood and Anchorage are linked by their close proximity and each contains elements that the other draws from. Girdwood supplies Anchorage residents with access to first-class skiing, recreation opportunities and a small-community atmosphere. Anchorage supplies Girdwood with access to less expensive goods and supplies, a place to work and to a large employment pool.

As the number of jobs available in Anchorage has expanded, there has been a corresponding population swell in surrounding areas such as Eagle River, Chugiak, and the Matanuska Susitna Valley, with many of the local population commuting to Anchorage for employment. Population growth in the Municipality of Anchorage for the years 2000-2002 was at 1.7% annually, while the Mat-Su Borough population grew at 4.9% annually during the same period**. Thus, the demand for residential development in the Girdwood area could be supplemented by individuals employed in Anchorage who commute between the two communities. The development of commercial and business opportunities in South Anchorage has also brought Anchorage employment and supplies closer to Girdwood than ever before.

Road Improvements

The potential for the growth of the Girdwood community is additionally heightened by a series of improvements to the Seward Highway, which connects Anchorage and Girdwood. These include several overlay projects which have widened the highway from two lanes to four lanes and added turn pockets to allow for improved traffic flow. In areas where avalanches posed significant risk to motorists, the road has been rerouted to lessen its proximity to avalanche pathways. These improvements have reduced the amount of time it takes to travel between Anchorage and Girdwood by as much as 50% (from 45 to 30 minutes) and have also increased the general safety of traveling between them. The Alaska Department of Transportation has a number of long-range

improvements planned including a complete restructuring/widening project from mile 105 to 115, and the installation of a sheep viewing area at Windy Corner (mile 105-107). An environmental impact study has just been completed on improvements to mile 100-105, which would include a Bird Creek/Indian Valley bypass.

Road improvements also translate into easier access to Girdwood services for the large number of tourists that travel the Seward Highway each year. Improvements such as the completion of the multi-use trail between Bird Creek and Girdwood in 2005 and the parking improvements that were completed in summer 2005 to the Bird Creek fishing area, help direct traffic to Girdwood services, increasing the employment opportunities in the area, and funneling tourist dollars into the local economy.*

*Road improvement information courtesy of the Alaska Department of Transportation and Public Facilities

Girdwood Attractions – Past and Prospective

Demand for housing in the Girdwood has increased as recreation opportunities in the area have increased. Past enhancements include improvements to the local trail system such as lighted pedestrian pathways, the Winner Creek Trail, the Iditarod Trail and the Crow Pass Trail. Other improvements that have made Girdwood more attractive include improvements to the Alyeska Resort, including better chair lifts, a 60 passenger aerial tramway, opening of new terrain and a mountaintop facility with a fine dining restaurant and skier's cafeteria.

Demand is additionally driven by speculation of future improvements, which could both add to recreation and employment opportunities in the valley and increase the value local of real estate. Although future improvements are tentative, they might include the creation of a golf course and the expansion of the amount ski-able terrain at Alyeska into the Winter Creek Valley. Additionally, improvements to the Iditarod Trail are currently in the design process.

Tourism

Girdwood's identity is closely linked to its role as a winter and summer tourism destination. The Alyeska Resort, which has operated in this community since 1959, supplies the best known recreation opportunities in the area and draws large numbers of visitors to Girdwood each year. During the 2003-04 winter season, the resort employed approximately 565 staff members and approximately 89,000 visitors rode its lifts. During the 2003-04 summer season, approximately 69,000 visitors rode the Alyeska tram. Though these numbers do not take into account the larger, total number of visitors using Alyeska grounds and facilities, they indicate the significance of Alyeska to the Girdwood economy.*

Girdwood’s association with recreation, in combination with its stunning physical location, has led to the development of a host of recreation opportunities that have contributed to growth in the Girdwood area. Alyeska currently holds vendor agreements with seventeen companies who offer access to a diversity of outdoor experiences. Activities offered to Girdwood visitors and locals now include: backpacking, hiking, surfing, mountain biking, camping, dog mushing, fishing, flight seeing, hunting, kayaking, mountain climbing, paragliding, river rafting, down hill skiing, cross country skiing, snowmobiling, snowshoeing, windsurfing and wildlife viewing.

Plans to expand the activities that Girdwood currently offers into a four-season resort area that would include a golf course and to add to the amount ski-able terrain at Alyeska, would increase the number of year-round visitors to Girdwood and consequently increase the demand for primary, secondary and employee housing in the area.

*Employment and visitor statistics courtesy of the Alyeska Resort

Land Availability in Girdwood Area

Private land in Girdwood is like an island in a sea of Federal, State and Municipal land. According to the 1995 Girdwood Area Plan, the total amount of developed land, which included Residential, Commercial, Commercial Recreation, Industrial, Transportation, Utilities, Public Lands and Institutions, and Parks totaled 2,237 acres. Undeveloped land, which included Municipal, State, and Private land totaled 11,860 acres. Of this number, 288 acres were determined to be undeveloped private land. The above-quoted numbers are based on a land-use inventory conducted in 1993-94 by the Municipality of Anchorage’s Planning Department. A full inventory has not been conducted since the 1993-94 study.

The following table shows average costs for vacant lots in Girdwood over the past 15 years.

Year	2001	2002	2003	2004
Average Price for vacant lot	\$102,546	\$103,907	\$107,167	\$132,263

*Statistics provided by Multiple Service Listing and Bob Baer, Dynamic Real Estate

Housing Demand the in Girdwood Area

Demand for housing in the Girdwood Valley includes demand for own or rent a primary residence, demand for secondary residences, and demand for shorter term vacation rentals. A primary home is defined as an individual’s principal residence. Secondary homes are homes that are purchased in addition to an individual’s principal residence. In a resort community like Girdwood, there are a wide range of homes, condos, hotels, B&B’s and other rental spaces that provide access to recreation and leisure activities or to the small-town atmosphere of the community.

The demand for primary homes falls into several groups. On one end of the spectrum is demand for larger homes with higher price tags. Often, homes of this type run from 2-3,000 square feet and cost upwards of \$300,000. This type of home is generally attractive to the older, more established purchaser.

The middle part of the spectrum is occupied by a demand for less expensive, smaller homes. Frequently, the demand for this type of residence comes from younger individuals or families looking to purchase a “starter” or first home; or from individuals or families who do not have the means/desire to occupy or maintain larger, more expensive homes. Homes of this type usually run around 1,500 square feet and cost around \$200,000 and higher. A final group of primary home-buyers are looking to purchase smaller 1-2 bedroom condominiums or town homes. Residences in this category are usually between 750-1,500 square feet and cost between \$100,000-\$200,000.

Demand for secondary homes ranges from small, informal cabins, to high end, luxury estate style homes.

The demand for rental residences also ranges widely. Much of the demand for rental space generated locally is for housing such as apartments or condominiums. Depending on location, these are generally less expensive and offer tenants access to shared services. Prospects interested in this type of housing might include seasonal workers, less financially established recreation enthusiasts, and individuals who occupy the lower end of the economic spectrum. Apartments typically run between 750-1000 square feet and cost approximately from \$750-\$1200 per month. Also available, typically for a higher price, are detached rental homes. These include small one bedroom or two bedrooms, up to large well equipped rentals typically offered to vacationers.

Year	2001	2002	2003	2004
Average Price for condos	\$102,546	\$103,907	\$107,167	\$152,214
Average Price for single family homes	\$221,981	\$255,186	\$294,871	\$270,467

*Statistics provided by Multiple Service Listing and Bob Baer, Dynamic Real Estate

Property and Homes Available in Girdwood

A look at Girdwood's real estate market demonstrates limited housing options for those looking to rent or own property in the Girdwood Valley. A search in December of 2004, showed only 4 housing units and 2 vacant lots available for sale*:

Property Listed – Dec 2004	Price
.71 Acre Vacant Lot	\$150,000
1.28 Acre Vacant Lot	\$197,000
Single Family Home 5 bedroom/2 bathroom	\$450,000
Single Family Home 5 bedroom/2.75 bathroom	\$655,000
Duplex 3 bedroom/2 bathroom	\$296,000
Condominium 2 bedroom/1.5 bathroom	\$175,000

*This information was provided by: Alaska Multiple Listing Service, For Sale By Owner Listings, and the three local realtors who provide services in Girdwood: RE/Max of Alyeska, Girdwood Realty and Prudential Jack White – Girdwood, in December of 2004

Two realtors in Girdwood who provide access to rental properties, Girdwood Property Management and Girdwood Realty, show the following availabilities*:

Rental Property Listed – Dec 2004	Price
Efficiency Apartment 1 bathroom - Furnished	\$925.00/month + utilities
Apartment 2 bedroom/1 bathroom - Furnished	\$1450.00/month + utilities
Apartment 1 bedroom/1 bathroom	\$975.00/month + utilities
Condominium 1 bedroom/1 bathroom - Furnished	\$800.00/month + utilities
Efficiency Condominium 1 bathroom - Furnished	\$750.00/month + utilities
Condominium 2 bedroom/1 bathroom - Furnished	\$1200.00/month + utilities
Condominium 2 bedroom/1 bathroom - Furnished	\$1300.00/month

* Information provided by: Girdwood Property Management and Girdwood Realty in December of 2004

Character/Intensity of Demand for Housing Types in Girdwood

Using a profile of housing types in other successful resort communities, it is expected that development in Girdwood will increasingly fall into the following pattern:

- Primary residences – lower range wage earners
 - attached housing, condos, units in 2-plexes, 4-plexes, etc.
- Primary residences - mid-range wage earners
 - attached housing, condos, units in 2-plexes, 4-plexes, etc.
 - smaller, single family homes
- Primary residences – high-range wage earners
 - smaller, single family homes
 - large luxury homes
- Second homes
 - attached housing, condos, units in 2 plexes, 4 plexes, etc.
 - smaller, single family homes
 - luxury homes
- Vacant lots

Based on assumptions regarding potential for growth in the Girdwood area, the following trends are projected:

Type of Housing	Market	Trend
Lower cost, rental housing – mostly attached, or older, smaller rental homes	service employees, lower range wage earners	Increasing demand - numbers of individuals in this category grow as resort facilities increase; demand will grow as price for established housing also grows.
Well designed, attractive attached housing	service employees, starter home prospects, second home prospects	Increasing demand – numbers of individuals in this category grows as population grows, as improvements in recreation amenities are made; starter home market shifting into attached housing as square footage gets more costly.
Smaller, single family homes	starter home prospects, mid-range wage earners, some second home prospects	Increasing demand – more interest in small homes as prices of larger homes continues to escalate.
Luxury homes	High-range wage earners; some second home prospects	Increasing demand – more interest as population grows and as improvements in recreation amenities are made.

Density of Development in Girdwood

Housing in the Girdwood area is of relatively medium density. As the table below demonstrates, the large majority of the private land in Girdwood is divided into medium sized lots, typically 1/2 to 1/4 acres in size, with just over 6% of lots larger than 1 acre. The median lot size in Girdwood is only slightly larger than the median lot size in the Anchorage Bowl area. Thus, it is apparent that the significant difference between settlement patterns that have occurred in Anchorage and settlement patterns that have occurred in Girdwood is not due to lot size. Instead, the difference would seem to be in the way that lots are developed, the retention of the forested landscape, and in the distinctive style of owner built housing (for more on community character, please see following Appendix F).

A handful of larger lots are owned privately in the Girdwood community, with only 11 privately owned lots measuring at an area greater than 2 acres. Not shown on this table is the collection of large parcels of land owned by organizations/agencies such as the Municipality of Anchorage, Alaska Water and Waste Water Utility, Chugach Electric, Alaska Mental Health Trust Authority, Seibu Corporation, Girdwood Chapel, and the United States Department of Agriculture. These parcels were removed from the table as they do not reflect residential development patterns or private lot ownership.

Girdwood Parcels by Size

ACRES	NUMBER	PERCENT	# Improved	% improved
>2	11	<1%	3	27%
2 to >1	59	5%	35	59%
1 to >1/2	108	9%	66	61%
1/2 to >1/4	740	60%	572	77%
1/4 to >0	316	26%	192	61%
1234			868	

Statistics provided by the Municipality of Anchorage, Municipal Assessor's Office

APPENDIX F: Community Character and Community Participation

Section Summary

Girdwood is a town where the natural environment predominates. The built and natural environments have achieved a relative balance. Housing sizes and styles are diverse. The road and trail system makes the community pedestrian friendly. By allying new development with some of the physical elements that make Girdwood a special place, community character can be perpetuated. This appendix includes an overview of community character, and a summary of the community involvement process associated with this project.

Sources for this Section: Observation, workshops, meetings and discussion with community members.

When considering the ways in which a new neighborhood in Girdwood might be developed, it is important to reflect on the characteristics that make this community particularly distinctive. Girdwood is a small town with relatively concentrated areas of commercial development. Its identity is closely allied to the ski mountain, the active life of its residents and the natural landscape around it. The town has, in many ways, defied “normal” building standards and as a result has great character and attractiveness. Discussion with Girdwood residents has reinforced the idea that construction in the proposed Crow Creek Neighborhood should be carried out in a way that dovetails with the unique character of Girdwood -- community character is one of the primary reasons that people choose it as a place to live. Development should be instructed, as much as possible, by the things that make Girdwood, Girdwood.



Girdwood's identity is closely allied to the natural



Girdwood effectively balances its built environment with the

Girdwood's built environment has evolved over time in a densely wooded rainforest valley where the natural environment is the dominant physical characteristic. Instead of allowing community growth to principally define the area, Girdwood has developed in relative balance with the landscape. The forest vegetation is an integral part of this community and acts as a natural insulator, providing a

sense of privacy from neighbors and protection from the elements. Even in areas where trees have been removed, the ridgelines that soar above the valley tend to dominate views, allowing a sense of the wild and the natural to co-exist with development and enhance it.

Girdwood has further managed to balance its built environment with the natural in several subtle ways. A stroll through the community will show that most houses in the area have no fences. This diminishes the human footprint and lessens attention to human imposed boundaries. The community has also chosen to allow construction to follow the variations in slope along the valley floor; as residential building has progressed it has, in many cases, followed the natural curve of the land. The result is that Girdwood rooflines form an irregular view, allowing the human landscape to be less uniform, more distinctive, and a pleasing reflection of local topography. Neighborhood variety is further enhanced by a less systematized placement of homes upon lots. While houses in many, more traditionally suburban neighborhoods are positioned in a highly regimented fashion, the less regular placement of many Girdwood homes strongly reinforces an emphasis on organic style.

A common complaint in areas where fast paced suburban development has occurred is that neighborhoods lack diversity, that “all the houses look the same.” Because the Girdwood community has evolved gradually, the most common housing denominator is variety. This applies to size as well as style; small houses nestle amongst the trees as do large. Big and little often sit side-by-side. No one housing type, size or shape is dominant.

Almost no two houses in Girdwood are alike because many of the homes in this area have been owner-built. In more typically suburban developments, little individual choice goes into the design of new homes, so personality is not always apparent. In Girdwood, many homes give the outsider a sense of the people who have created them. Again, the choice to ally construction with the natural is evident in that many homes are made of natural materials, with wood or other organic materials retained or emphasized. Sharply peaked rooflines which easily shed large snowfalls, point toward the personality of the environment.



Girdwood Character: Almost no two houses are

Girdwood is also distinctive because residents are easily able to travel the community by foot; giving a more direct experience of place than one might have in a community that relies more heavily on motorized transportation. Girdwood has a large trail system which includes a pedestrian walkway that runs next to its main artery, the Alyeska Highway. Recreational trails are also in abundance. A number of informal trails have developed over time, connecting neighborhoods and to each other and to larger thoroughfares. With these trails, like those that connect the New Girdwood Town Site to Crow Creek Road or the Girdwood School to Crow Creek Road, pedestrians can avoid motorized traffic and cut the time it takes to travel to most destinations. Additionally, a number of Girdwood's streets are narrow, with irregular natural edges, and unpaved with few gutters or sidewalks. This restricts traffic flow and limits traffic speed. Pedestrians can often share community roads rather than being marginalized by car traffic.



Walking in Girdwood: Roads & trails in Girdwood

It is hard to describe the exact qualities that make Girdwood unique. Part of the definition must come from the physical things; the community's size, the recreation opportunities it offers, the way people choose to build and place their homes, the land they build upon, and the way they circulate through it. Part of what makes Girdwood, Girdwood, however, is not a physical thing, though the physical and the more abstract must be closely related. Community character also has to do with the sense of connectivity that often resides in small, unique places, giving people a strong sense of civic pride. By allying new development with some of the physical elements that make Girdwood a special place, the more "magical" aspects of community character can be perpetuated.

Community Involvement Process

Community involvement in this project occurred in several ways, including formation of a community advisory committee and a series of community workshops.

The community Advisory Committee (CAC) met on a monthly basis with consultants and agency representatives working on related projects to review and discuss plan developments. CAC members included Girdwood business owners, GBOS representatives, developers, trail users and residents. The plan gives a list of CAC members.

On Saturday, October 2, 2004, the CAC held a Community Workshop, during which Girdwood residents surveyed the project area in small groups and later reconvened to report their findings and development recommendations. Additionally, residents were asked to comment on aspects of the Girdwood experience. Quotes were collected on the following subjects: What do you value about your community?; What would you like to see different in your community?; What do you value/What would you like to see in the Crow Creek area? Responses to these prompts are listed below:

“What do you value about your community?”

- Community Medical Center
- School plan for future growth including small class sizes
- Have own radio station
- Have a skate park
- Dogs run free
- Wildlife in close proximity
- “Knowing your neighbor” – small town feel
- Quiet and dark
- Ski resort
- Ability to walk around easily
- Biking is safe for kids
- Slow speed limit on the highway with enforcement
- Wilderness in close proximity
- Sense of seclusion
- Knowing neighbors
- Ski resort
- Trees
- Quiet and dark
- Houses unique from each other

“What would you like to see different in your community?”

- High School
- Less traffic and more public transportation
- Less trash in the woods (“responsible squatting”)
- Campground for visitors (short and long term)
- Trailhead facilities (bathrooms and trash)
- Affordable places for small businesses/home-based businesses

- Community Medical Center/complex
- Community Hall

“What do you value/what would you like to see in the Crow Creek Area?”

- Use of roadside ROW trails for circulation and recreation
- Rural character of roadway
- Trees and forest – retain buffers, especially between the old and new development
- Iditarod Trail
- Cross country skiing behind Maxines (“not developed”, “in the woods”, “not as crowded as Moose Meadows”)
- Berry and mushroom picking
- Sense of being in wilderness
- Concern for speed/safety along Crow Creek Road
- Walking/skiing/bike paths off the road
- Buffer along trail so you can’t see the development
- Maximize forest through the development of underground utilities
- Ability to buy lots – affordable lots, subsidized property, loan programs, building programs, new nonprofit to assist with home-owning, ensure that employees of the resort can afford to live well and save money
- Inexpensive/transitional housing
- Allow lower-income people and families to have good views and access to valuable lands
- Protection of creeks and streams
- Traffic mitigation at the intersection of the Crow Creek Road and Alyeska Highway
- Preserve small class sizes
- Plan for school growth

A second Community Workshop was held on March 15, 2005, to get community comment on the Draft Land Use Plan that had been circulated for review. A significant number of comments were collected at this event and written comments were accepted until April 15, 2005. A final CAC meeting was held in April of 2005 to suggest final changes to the Draft. To the greatest degree possible, the Crow Creek Neighborhood Land Use Plan has incorporated the suggestions, values and concerns of the Girdwood community into its plan for neighborhood development within the Crow Creek development boundary. The following document is a summary of comments and issues raised during the March 15th workshop. Workshop respondents were asked to respond to specific questions that corresponded to particular issues covered by the Land Use Plan. Responses to prompts are recorded in items 1-6. Respondents were given the chance to add additional input in

question 7, which asked for additional comments that did not fit into the prior 6 categories. The responses recorded here are compilations of comments offered at the March 15th workshop, and also during a response period, which was extended until April 15, 2005. Additional responses were offered through email and regular mail.

I. HOUSING DEVELOPMENT

The Girdwood Area Plan (GAP) designates the Crow Creek Area for approximately 1000 residential housing units. Does the Draft Land Use Plan (Draft Plan) identify the best locations for this housing, and the right densities?

SUMMARY: Comments reflect differing views. Generally meeting participants supported the locations proposed for development, and supported the idea that Girdwood needs more room to grow. Some people felt that, despite the Area Plan, this area should not be used for housing. A number of questions were raised about the level of density proposed by the Crow Creek Neighborhood Plan, feeling that the proposed level is too dense. Other respondents felt that the level of density is ok, if properly designed, and includes open space. Several respondents spoke favorably about the benefits of retaining open space. Several respondents expressed concern that the amount of development will adversely affect Girdwood traffic levels. Respondents generally are more comfortable with single family development vs. multi-family, although several acknowledged the benefits of higher density and cluster housing if it meant retaining open space.

- Development is too dense for road capacity. Access to Alyeska Highway for folks living along this corridor is already difficult due to traffic, density of development in Crow Creek Neighborhood would make worse.
- East side connector should precede development in Crow Creek.
- Density is good if preceded by East side connector.
- Crow Creek intersection can't handle the amount of traffic that would result from Crow Creek development.
- Need to make sure that density can be supported by employment opportunities in community.
- Neighborhood layout makes the option for foot commuting to town site and school a very feasible option.
- Like clustered housing concept.
- Too much housing in one area, density is too concentrated.
- Density is a concern.
- Open space needs protection.
- Lots of new residents want single family housing, not resort housing. Multiple unit housing isn't in line with what Girdwood needs.
- Lot costs need to be low enough to allow for some single family housing.
- Density of development leaves open space, makes it worth the density.
- Open space should be left within building groups.

- Cost of infrastructure would be nice to know to help determine the base prices.
- Prefer single units and lot sales.

2. TRAILS AND OPEN SPACE

Does the Draft Plan identify an appropriate system of trails and open space?

SUMMARY: Many respondents favored the creation of a multi-use trail along Crow Creek Road. Respondents also felt that it is important to preserve historic/existing trails. Buffers for trails going through the development area were favored, as were access improvements.

- Must give consideration to historic trails.
- Athabaskan Trail? Consider retaining alignment if this trail is within project area.
- Need bike trail along Crow Creek Road. Could construct this with money from development/sale of land.
- Need to create easement for public access to trails through private lands.
- Tourist trail system vs. community trail system.
- Trail along Crow Creek Road should be paved, connecting into town center and to a trail along Alyeska Hwy.
- Parking for trail users is needed.
- There are enough trails in the project area, as long as there is enough of a buffer on each side to block view of development and block homeowners view of people using trail.
- Dedicate existing trails.
- Ensure a trail along Crow Creek Road.
- Must pave a walk/bike trail along Crow Creek Road. Other trails well drained and wide enough for bikes/hikers.
- Need drained or paved bike path near Crow Creek Road.

3. TRANSPORTATION

Please give your thoughts on the two main proposed roads (the Hightower & Arlberg connectors), and the trolley route as an alternative to the “transportation corridor.”

SUMMARY: A significant number of respondents felt that the trolley corridor option was a positive alternative to the rail corridor. Respondents generally seemed to oppose the rail corridor. Those who were not in favor of the trolley option expressed concern that trolley technology might be problematic (overhead wires in heavy snows, trees) or that the proposed trolley route would not sufficiently serve Girdwood needs. Some respondents favored the Hightower Connector, while others did not. Additional suggestions included pursuing alternative routes to the proposed connector routes, establishing an intermodal facility near to the

Seward Highway, and questioning whether the proposed transportation corridor could be designated as a trail instead.

-If it's a question between train or trolley, the trolley is the better choice.

-Q: Could transportation corridor become a designated trail instead?

-“Make it like Amsterdam” (able to get around by bike).

-Can transportation corridor be realigned so that neighborhood development is not impinged upon by corridor and right-of-way?

-The proposed trolley line misses 90% of Girdwood.

-No trains!

-Train = mass tourism.

-Not sure how much a trolley would get used.

-For tourist transportation, trolley is preferred.

-Commerical Areas Transportation Master Plan approved transportation corridor.

-Trolley is not the only alternative option – tram?

-Impacts to road could decrease if trolley implemented.

-Hightower Connector is important.

-Better access and redundancy is needed.

-Concern about traffic levels on Crow Creek Road if Arlberg Connector is built.

-Trolley is better than rail.

- Concern about overhead trolley wires.
- Dogs on trolley?
- Trolley route should not follow Iditarod Trail.

-Hightower/Crow Creek is a logical route. What do adjacent property owners think?

-Arlberg/Crow Creek connector must stay away from Winner Creek Gorge area.

-There is concern about traffic on Alyeska Highway.

-Road on the east side of Glacier Creek should be considered.

-Single trolley line would not serve more than a limited area.

-Not in favor of a railroad spur.

-Traffic calming – Alyeska Highway and Crow Creek Road.

-Is Hightower Connector really necessary? Improve trails instead.

-Trolley should share road right-of-way.

-Consider developing an intermodal facility near the Seward Highway.

-My idea is we need to re-educate the people including everyone who lives her about ways to use vehicles as little as possible i.e. less pollution and more exercise.

-Trolley preferable.

4. DEVELOPMENT STANDARDS

What standards for development do you think are most important for the future Crow Creek neighborhood?

SUMMARY: Respondents were overwhelmingly in favor of development standards for new development in the Crow Creek area and felt that development should be distinctive and constructed of quality materials. Respondents were in favor of retaining the natural environment to the greatest extent possible. Buffer retention was also mentioned as a priority. Alternative building styles were also favored.

- No cookie cutter development.
- Holding development to particular standards extremely important.
- It would be good to create a user friendly manual of standards/restrictions.
- Quality restrictions (materials, design) should guide any housing development in area.
- Standards should be in place, but not to the point that they are cost prohibitive.
- Save the old growth trees.
- Allow tree houses.
- Lots should be at minimum, 12,000 square feet.
- No flat roofs.
- Eaves.
- Small town atmosphere.
- Keep “no fences” ordinance.
- Make sure utilities are installed underground.
- Retain vegetative buffers.
- Keep ‘village in a forest’ feeling.
- Should be able to pass by and not realize the density of houses.
- Minimize fences.
- Retain access to views.
- Maintain architectural diversity, would developers create enough?
- Natural looking materials for construction.
- Integrate development with open spaces.
- Make sure there is a significant buffer for Crow Creek Road.
- Create area for snow storage.
- Lighting?
- Mesh development styles with Title 21.
- Safety – quality of life- respect nature and acknowledge the open space has already been created. It is our job to find a way to protect it!

-Houses should be energy efficient.

5. AFFORDABLE HOUSING

Please comment on your preferred strategies for providing affordable housing as part of the plan (plan recommendations were presented in a handout, reproduced below).

AFFORDABLE HOUSING GOAL

Provide housing in the Crow Creek Neighborhood at a range of prices. Include housing priced to meet the means and interests of upper income residents, middle income residents (e.g., young families, teachers; municipal service workers; construction laborers), and lower income residents (e.g., local service sector employees including food service and resort workers).

STRATEGIES TO REACH THIS GOAL

- 10-20% of total new housing development will be designated “affordable.” This means rental units and/or units for purchase at a price below current market value. Specific criteria for establishing eligibility will ultimately be tied to household earnings relative to the median household income for the Municipality of Anchorage.
- 10-20% of total new housing development will be market rate housing, but targeted to the entry level, lower cost end of the market. Housing in this category will still be high quality, but will be made more affordable, for example, through the use of small lot/common lot single family units or more affordable attached units.
- The remainder of the housing will be standard market rate housing.

SUMMARY: Most respondents agreed with the need for affordable housing and with the felt that the plan recommendations were appropriate for Girdwood’s needs. Several respondents voiced objections to the whole idea of public sector housing subsidies; several people said the affordable housing targets offered by the plan are too high. Several respondents felt that the quality of the housing construction should not be compromised to allow for greater affordability. Several respondents wondered locating some of the development “off the grid” might help lots to be more affordable.

-Concern about how exactly this would work.

-10-20% target for affordable housing seems too high for Girdwood demand. Should be more like 5%.

-Many folks cannot afford present market rate in Girdwood.

- Needs to be more discussion on what the options are.
- Could part of new development be “off the grid”? Could help lots to be more affordable.
- School needs to know what is happening – families will fill affordable units.
- Yes to affordable housing, don’t give it all to developers to do so.
- Not in favor of using cheaper materials to achieve affordable housing.
- Smaller lots; common walls (firewall/soundproof) to get higher density with quality construction.
- Clarify ‘affordability’.
- Provide affordable options for first-time homebuyers.
- Up-scale homes should subsidize affordable housing.
- Make some of the lots “off the grid” thereby, affordable.
- Yes.

6. LAND DISPOSAL

Several options are available for disposing & developing land are identified in this plan:

- a. HLB acts as developer, and sells land or houses to individuals.**
- b. HLB sells land to a developer, who subdivides land & sells houses or lots.**
- c. Combination of a & b.**

In all cases, construction would follow development standards of Title 21, this Draft Plan, and future Homeowner Association CCR’s (codes, covenants and restrictions). What form of land disposal would you prefer?

Would you prefer to see homes sold to individuals, or lots sold for individuals to build on, or some combination of both?

SUMMARY: In general respondents prefer lots be sold directly to individuals for individual development.

- Would like to see emphasis on individual acquisition of lots.
- Q: Could vacant lots qualify for “affordable” programs?
- Seems like neighborhood will have to be a combination of individual and developer based development to make it worth HLB’s efforts in putting in infrastructure (utilities, sewer, water, etc.).
- Single family homes an important option for middle income earning families.
- If HLB decided to create a large amount of lots for sale (instead of selling to developer or simply developing housing), could cause real estate market in Girdwood to drop significantly.
- Girdwood is going to grow, land is needed for this growth.
- If HLB acts as developer, affordable lots should be available to individuals.
- If land is sold to developer, they should only provide lots, not housing.
- Vacant lots should go to individuals.

- Private developer has more of a profit motive than HLB.
- Really interested in whoever develops (public or private or combo) should be responsive to Girdwood wishes.
- Need Chapter 9, Title 21 to be adopted 1st.
- Lots should be available to the public.
- Any plan that does not include a state opportunity for existing residents to purchase undeveloped lots would become a costly mistake. The way I read your current plans it sounds as if you may (or may not) only offer land directly to developers and not to individuals. This would leave long-term renters like me with no chance to build our own homes in the place and community we love. I don't want to buy a home from a developer, but to build one that fits both my personal needs and the culture of this community. Many others who have worked and rented for years here feel the same way.

Please ensure any and all HLB land sold is offered to the public first, in smaller, affordable parcels, so those already living in this community have an opportunity to stay. Do this before giving our land trust resources to those who only seek to profit from it.

- Sell directly to individuals.
- Individual purchase of lots for owner built affordable homes is favored.

7. OTHER COMMENTS?

- Important to make sure that utilities are properly coordinated with development, construction of road, etc.
- Concern that taxation will increase for construction of infrastructure.
- Vacation homes wouldn't seem to average 2.8 people per household, usage is much higher during actual use.
- What is considered "dry" in environmental terms?
- Consider implications for the school and other infrastructure.
- Consider project absorption rates

APPENDIX G: Design Approach

Section Summary

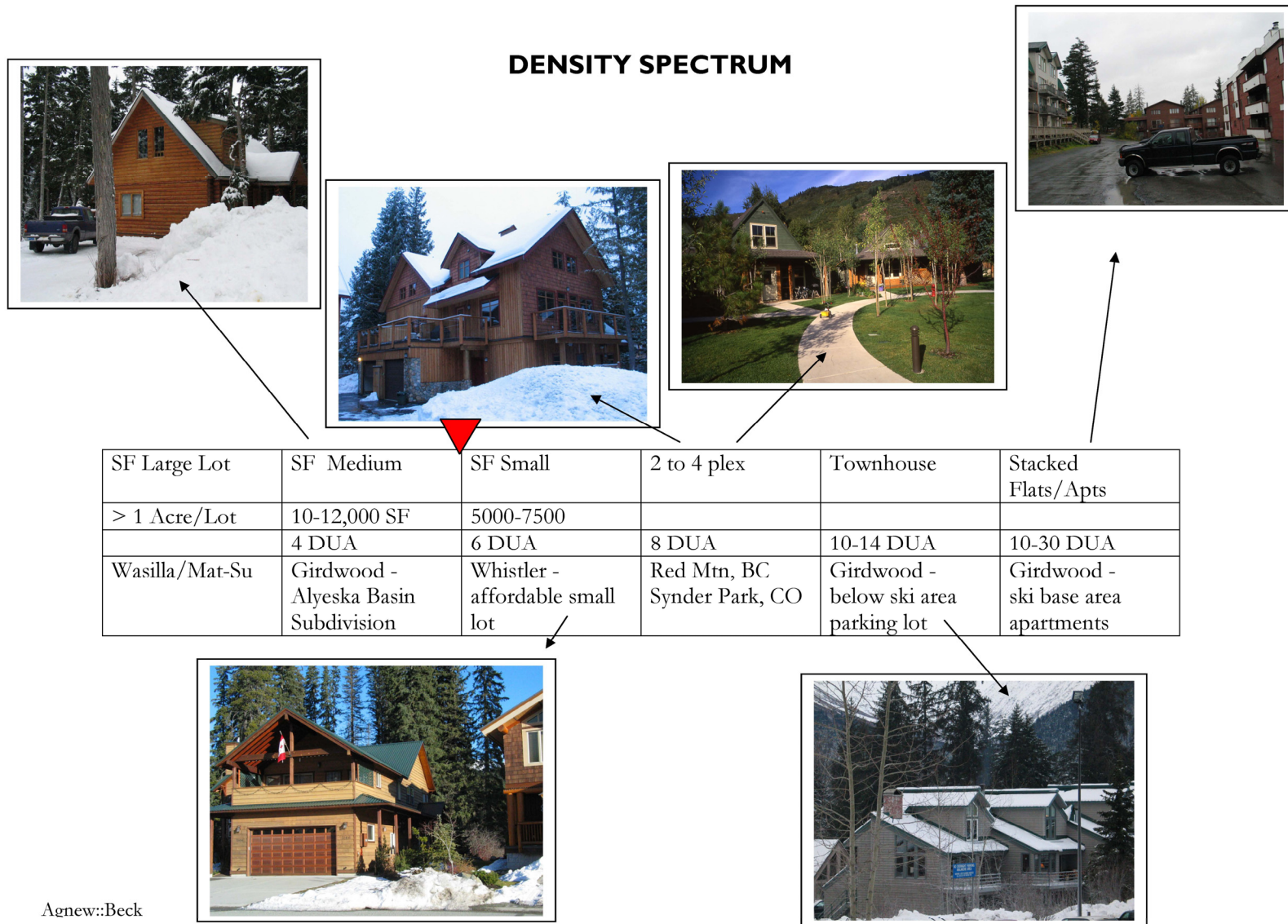
As outlined in the plan, development in the Crow Creek area requires balancing a set of potentially conflicting goals. The community wants to retain open space, minimize impacts on recreation resources and habitat, sustain the integrity of wetlands and streams, and maintain the eclectic, diverse and interesting character of the built environment that characterizes Girdwood today. On the other hand there is a desire to provide substantial new opportunities to buy land and homes, and keep housing prices reasonable, both for existing residents and future growth. The route to balancing these goals is locate development in concentrated nodes, and include high quality moderate density housing, including small single family and attached housing. Experiences in mountain resort communities around the U.S. show that increasing housing densities in a community can provide attractive places to live, reduce infrastructure and housing costs, protect key natural features, and give all residents “out-the-back door” access to open space.

Quality design is the key to successful higher density housing. Alaska has at best a mixed record of success with moderate and higher density housing and cluster subdivisions. In many instances, attached housing has been relatively low quality. Cluster subdivisions, where developers gain density bonuses for setting aside open space, have often resulted in retention of disjointed, unusable patches of open space. In the interest of giving examples of more successful clustered and attached housing, the following section presents a short gallery of successful examples from other places.

Sources for this Section: Review of plans, personal experience, and interviews with representatives from the following communities:

- Sea Ranch, Sonoma County California
- Sun River Resort, Bend Oregon
- Whistler, British Columbia
- Red Mountain, Southern British Columbia
- Big White, Southern British Columbia
- Aspen, Colorado
- South Lake Tahoe California, North Lake Tahoe Nevada

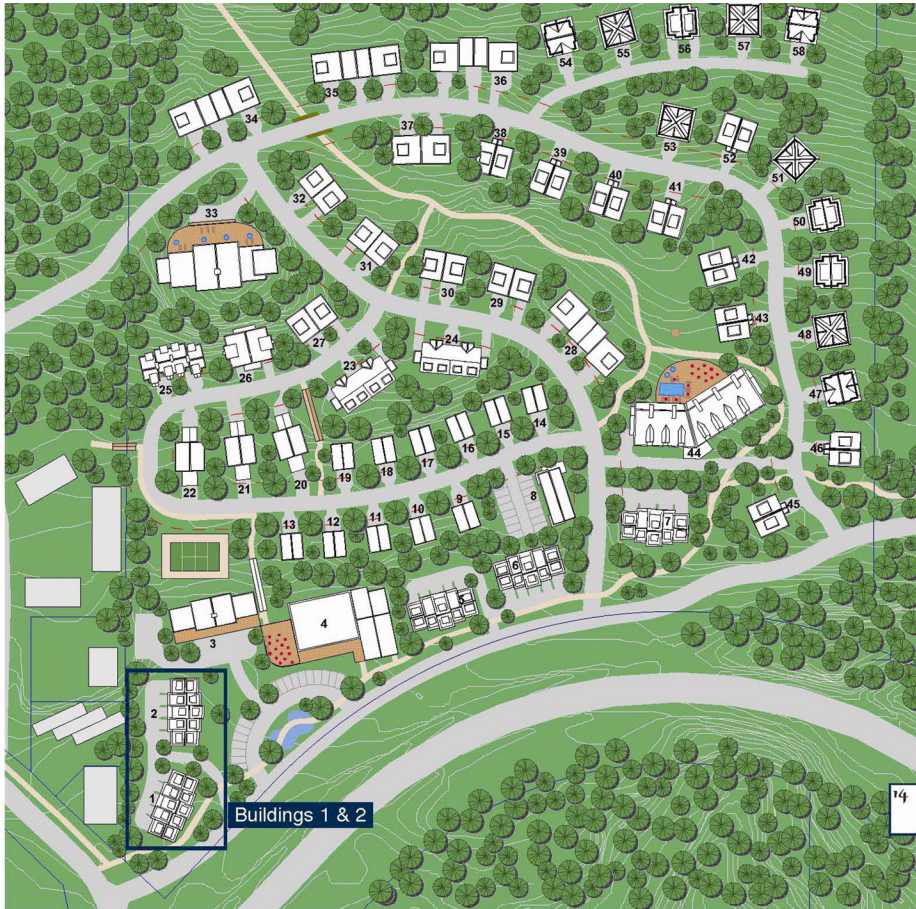
The figure below illustrates a spectrum of different types and densities of housing in U.S. and Canadian resort communities. Average densities in the different “development nodes” in the Crow Creek Neighborhood Plan range from 1.2 to 4.5 acres.



Gallery of Successful Mountain Village Housing

Red Mountain, Southern British Columbia:

Site Plan for Master Planned, mixed density residential neighborhood



Referring to the Red Mountain Ski community master plan, illustrated above: *“Ten years ago, we couldn’t have even been talking about this kind of attached housing – the focus was all on small lot single family houses. But the new Master Plan has only minimal single family housing. People said things like ‘attached housing saves a whole pile of open space’, and ‘I’d rather live in a nice townhouse, and have open space in the backyard, than be surrounded by single family lots.’”* -Don Thompson, VP for Development at Red Mountain Resort

Implications for Crow Creek

- Clustering high quality housing provides amenities and preserves open space
- Land not actually used for housing or driveways is largely left in natural vegetation
- Mix of densities in one area allows shared open space and helps create a more diverse, interesting and socially coherent neighborhood
- Requires master plan process that encourages site-specific design and flexibility on housing location and densities, rather than more traditional suburban “wholesale zoning”

Gallery of Successful Mountain Village Housing

Grey Wolf Cabins, Red Mountain, B.C.

2,000-2,500 SF units + garage

Duplex-threplex; 2 stories + loft

About 8 units per acre

Cost: \$500,000 (Canadian)

Arranged in clusters around parking court. Ski-in, ski-out.



Implications for Crow Creek

- Attached housing (duplex pictured above) can be attractive and desirable
- Cluster of 3 buildings, 7 units creates sense of privacy, while still concentrating development in limited land area
- Shared driveways can reduce infrastructure costs and disruption of natural setting
- Good design and materials is key to success – good design is a better determinant of quality than density

Gallery of Successful Mountain Village Housing

Spruce Grove Townhomes, Whistler, B.C.

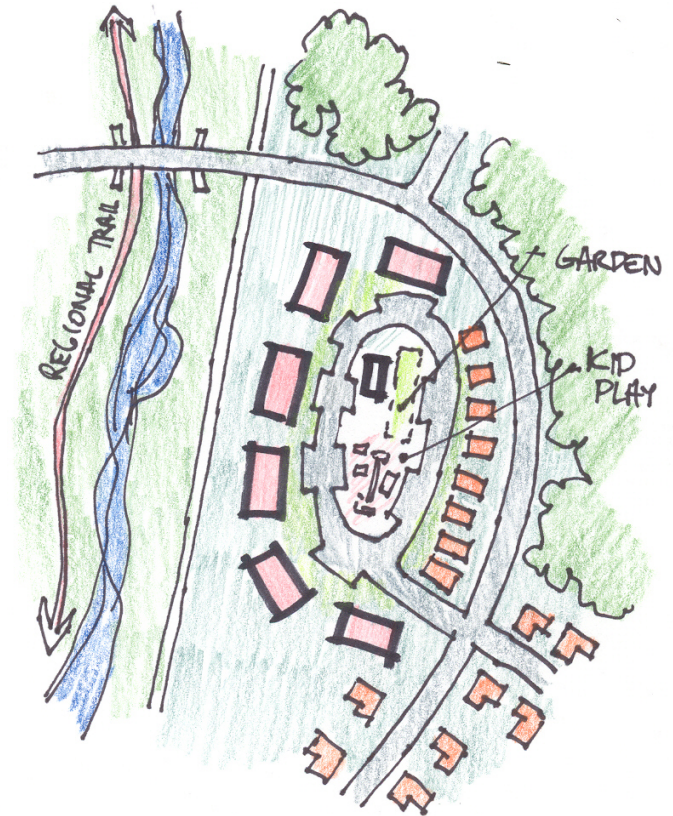
760-1,080 SF units; 6 units per building

1,2,3 bedroom townhomes

Cost: \$125,000-\$180,000 (Canadian)

About 12 units/acre

Clustered around a central court which includes parking, playground, community garden. Backs up to river corridor and trail system. Affordable housing project by Whistler Housing Authority.



Implications for Crow Creek

- Attached housing (one unit in 6 plex pictured above) can be attractive and desirable
- Proximity to open space, trail system adds to value of units (and is made possible by clustering units)
- Playground, community garden and small shelter/gazebo is an important amenity for residents, and helps to screen parking.

Gallery of Successful Mountain Village Housing

Granite Mountain Chalets, Red Mountain B.C.

2,000 SF units + garage

5 units/building, 3 story building

Cost: \$350,000 (Canadian 2003)

Part of 220 unit master planned residential area, ski-in/out access, trail system.



Implications for Crow Creek

- Attached housing (townhouses pictured above) is made attractive by variable depth in façade, use of quality materials (stone base, adequately dimensioned posts), use of color
- Units made more valuable by immediate access to open space, trails, ski-in/ski out

Gallery of Successful Mountain Village Housing

Snyder Park, Aspen, CO

Two & three bedroom, single family & attached homes + carport

Cost: \$78,000-\$219,000
(2000)

About 10 units/acre

Shared central open space, in common ownership, backs up to regional open space.

Affordable housing project by Aspen Housing Authority.



Implications for Crow Creek

- Small attached houses (unit pictured above) can be designed to have privacy and give the impression of single family units
- Housing benefits from park-like setting with open space held in common
- Quality landscaping re-establishes native vegetation in areas cleared for construction (clearing necessary to reduce development costs)
- Shared driveways reduces infrastructure costs and disruption of natural setting

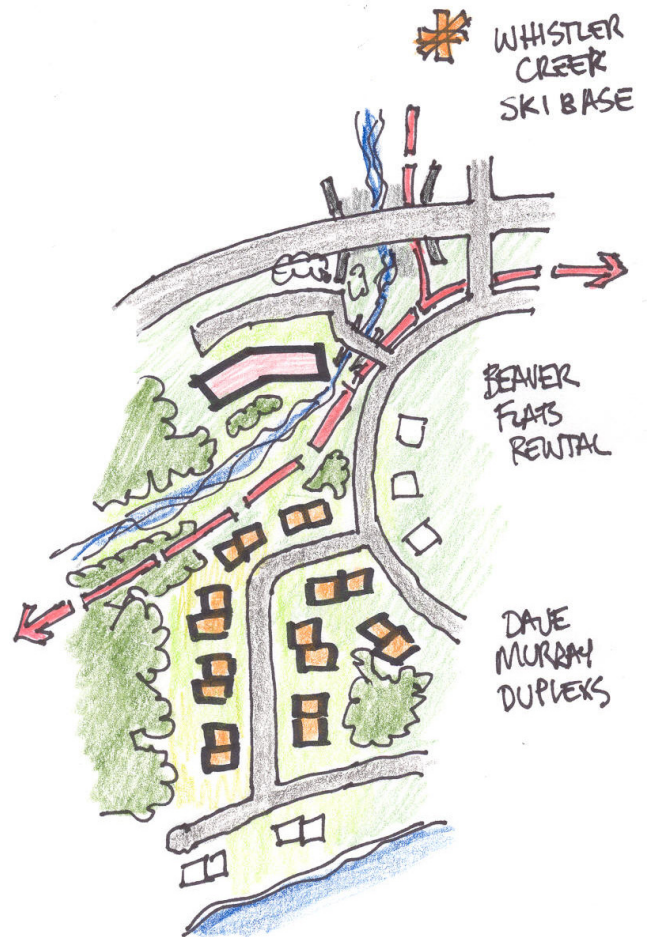
Gallery of Successful Mountain Village Housing

Beaver Flats Rental Housing, Whistler, B.C.

Studio & 1 bedroom + Loft

Cost: Starting at \$650/month (Canadian)

Building is heated by geothermal energy and has underground parking, laundry facilities, elevator and is located on transit line, trail system. Underground parking cost is \$60 (Canadian)/month.



Implications for Crow Creek

- Larger apartment buildings (pictured above) can be attractive and desirable.
- Key design elements include quality, heavy duty materials; breaking up façade and roof line, angled building with attractive entry lobby, and bright, distinctive colors
- Location has easy walking access to trails, ski lifts, restaurants and shopping
- Apartments are located in vicinity of wide range of single family and duplexes, helps maintain quality and encourages good maintenance

Dave Murray Place Housing, Whistler, B.C.

(Same location, site plan as previous example)

1,329-1,625 SF

Duplex Units + Garage

Cost: \$250,000-\$283,000 (Canadian)

Open space in common ownership backs up to regional open space and trail. Affordable housing project by Aspen Housing Authority.



Implications for Crow Creek

- With well-designed buildings and site plan, attached housing (duplexes pictured above) can be attractive and desirable
- Key design elements: small footprint, vertically oriented homes; diverse relationships to street (different setbacks, different angles), attractive, varied materials; good use of color
- Land held in common as open space; allows higher density while providing outdoor space for kids, gardens, barbeques
- Proximity to ski base, shopping, community open space and trail system adds value

APPENDIX H: Financial Realities, Development Costs

CONCEPTUAL DEVELOPMENT PARAMETERS

DOWL Engineers, Bill Hamm, Dec 15, 2004

1. Engineering evaluation of proposed development areas

Initial selection of possible development areas was based on evaluation of existing data sources, such as topographic maps, geologic maps, land use plans, and vegetation coverage. The initially identified areas were then further studied to refine their characteristics and boundaries. Most of the proposed development areas were evaluated on the ground by the planning team. During this stage, the team was joined by Bill Hamm, a senior civil design engineer with DOWL Engineers. His involvement in this planning project brings an element of practical experience with the engineering challenges of infrastructure development in the Girdwood valley.

The conditions present in the project area will present a number of challenges to development. While daunting, these conditions are not insurmountable, as evidenced by other successful development in the Girdwood valley. The first of these challenges is steep terrain. Houses and other buildings can be designed and constructed on almost any terrain, as evidenced by the upper tram terminal above the Alyeska Prince Hotel. Economical year-round access is the most significant constraint in residential areas. The development areas need to be served by a road system with maximum grades of 10% on the runs and no more than 4 or 5 % through the intersections. Driveways should not be any steeper than 15%.

The prevalence of shallow bedrock in the development areas will add to the cost of development but otherwise is believed to be manageable. A detailed geotechnical investigation to determine rock soundness and hardness will be necessary to make a final determination. For purposes of this study, it is assumed that the rock will be similar to that found on the south side of the valley, where development has already taken place in rocky areas.

2. Suggested trail and road sections

In general, the proposed roads and trails are expected to conform to the current MOA standards. Due to some unique requirements of this area, certain variations to the standards are proposed.

In an effort to preserve as much as possible of the existing natural forested areas and to allow generous access to a more secluded setting, it is proposed that most of the trails be located along or near the back lot lines of the lots and development areas. Flexibility must be allowed in the choosing of alignment and grades for the trail system to make them as compatible as possible with existing vegetation and geologic features. This would mean that in some areas, the MOA standards for curvature, grades, widths, and surfacing would be relaxed. The community would decide whether to maintain snow removal of trails during the winter or groom them for cross-country skiing. With a trail system generally in back of the lots, there would be little need for sidewalks adjacent to the streets.

Streets should be paved with rolled curb and gutter on both sides. The residential streets should be 28 ft wide from back of curb to back of curb. This is the narrowest allowed by MOA standards.

Street grades should be generally lower than adjacent lots to allow positive drainage of the lots into the street. An extensive storm drain system should be incorporated to promote good in-street drainage. This scheme will result in a narrower overall improvement section, thus minimizing impact on adjacent natural vegetation.

Snow removal and storage is a major factor in the design of residential subdivisions in Girdwood. Hauling snow is very expensive so adequate space must be provided on each side of the street for stacking of snow plowed off the street. Current Municipal standards call for 7 ft on each side of the road. In Girdwood, due to a generally heavier snowfall, a storage width of 12 ft should be considered. This indicates a minimum Right-of-way width of 52 ft. The Municipality will likely require their minimum standard width of 60 ft. When the parcels are subdivided, and subdivision agreements are negotiated, the developer should request a waiver to allow existing natural vegetation to remain in the snow storage areas to the maximum extent possible. The minimum clear width on each side of the road will likely be 7 ft. The use of near-vertical cut slopes in rock and gabion walls in fill sections will help keep the roadway improvements within a narrower impact zone.

3. Utility location and construction methods

These residential areas will need to be served with a full compliment of utilities. To minimize impact to naturally forested areas, it is proposed that, to the fullest extent possible, all utilities be placed within the Rights-of-way. The standard configuration would include a storm drain down the middle, with water and sewer lines 10 ft on either side. Gas would go behind the curb on one side and all wire utilities behind the curb on the other side. Street light circuits would be included with the other wire utilities.

In many of the proposed development areas, bedrock is found at or near the surface. Thus it will be necessary to blast rock to dig the trenches for the deep utilities under the street. This is commonly done in the Girdwood area. Normally water lines are placed 10 ft deep and sewer and storm drain lines are a minimum of 6 ft deep. In particularly difficult areas, the utilities can be put in arctic pipe or otherwise insulated to reduce the required trench depth. After the pipe is placed and bedded, it would be backfilled with rock blasted from the trench, supplemented with imported gravel as required.

4. Conceptual construction cost factors

- **Streets.** For estimating purposes, the proposed street section includes a 24 ft wide pavement with rolled curb and gutter on both sides. The pavement section includes 2 inches of asphalt, 2 inches of leveling course, and 18 inches of classified material. Rock or soil excavation and backfill will occur below that (most areas will be utility trenches). Signs and landscaping are included. The estimated cost range for these improvements, in 2005 dollars, is \$200 to \$250 per linear foot of roadway in granular soils and \$300 to \$350 in rocky areas.
- **Trails.** For estimating purposes, the proposed trail section includes an 8 ft wide surface of leveling course underlain by 12 inches of classified material. Rock excavation and backfill will occur as required below that. A nominal amount of signs and landscaping is included. Lighting is not included. The estimated cost range for such improvements, in 2005 dollars, is \$20 to \$25 per linear foot of trail in granular soil and \$30 to \$35 in rocky areas.

- **Water line.** For estimating purposes, the typical water line is assumed to be an 8 inch diameter ductile iron pipe at a depth of 10 ft below the road surface. Trench excavation will be in granular soils and backfill will be done with imported classified material. Lot services to the property line will be placed at a nominal spacing of 100 ft and fire hydrants will be placed at a nominal spacing of 300 ft. The estimated cost range for such improvements, in 2005 dollars, is \$120 to \$145 per linear foot of mainline in granular soils. Where trenching will go through bedrock, the estimated cost range per foot of waterline is \$150 to \$180 for comparable improvements.
- **Sewer line.** For estimating purposes, the typical sewer line is assumed to be an 8 inch diameter ductile iron pipe at a depth of 8 ft below the road surface. Trench excavation will be in granular soils and backfill will be done with imported classified material. Lot services to the property line will be placed at a nominal spacing of 100 ft and manholes will be placed at a nominal spacing of 300 ft. The estimated cost range for such improvements, in 2005 dollars, is \$90 to \$115 per linear foot of mainline in granular soils. Where trenching will go through bedrock, the estimated cost range per foot of sewer line is \$110 to \$135 for comparable improvements.
- **Storm drain.** For estimating purposes, the typical storm drain line is assumed to be an 18 inch diameter corrugated metal pipe at a depth of 6 ft below the road surface. Trench excavation will be in granular soils and backfill will be done with imported classified material. Catch basins will be placed at a nominal spacing of 500 ft and manholes will be placed at a nominal spacing of 300 ft. The estimated cost range for such improvements, in 2005 dollars, is \$75 to \$120 per linear foot of mainline in granular soils. Where trenching will go through bedrock, the estimated cost range per foot of storm drain line is \$95 to \$120 for comparable improvements.
- **Trunk assessments.** It is assumed that AWWU will extend a water transmission line through the proposed development area as required to provide the needed service. Their existing tariff provides for assessing the areas served by such transmission lines to pay for the cost of line construction, and other downstream costs. For estimating purposes, the estimated assessment for water service is assumed to be \$1.25 per square foot of development area. For assessment purposes, the development area is computed as the front 150 ft of all lots served by water.

AWWU has no current plans to provide a sewer trunk to the Upper Crow Creek area. Service will likely be provided by extending an existing line in lower Crow Creek Road. This existing line is probably not large enough to handle the proposed new development. Either the future developers will need to upsize the existing line or construct another line back to where there is sufficient capacity. An alternative might be to ask AWWU to provide the needed capacity and assess the areas served. Assuming the latter course is followed, the estimated assessment for sewer service is assumed to be \$1.00 per square foot of development area.

- **Gas, Telephone and Electric.** Typically these utilities design and install their own lines and include the cost in their rate structure.

APPENDIX I: Girdwood Trolley Alternative

This report presents a preliminary examination of construction and operation of a trolley line in Girdwood, Alaska.

Background

After long discussion among the community, MOA staff and the Assembly, a transportation corridor was identified in the Girdwood Transportation and Commercial Areas Master Plan. This corridor reserves a route for a future connection, most likely by rail, between the Alaska Railroad and the Alyeska Prince Hotel. The identified corridor passes through the center of the developable eastern and southern portions of the Municipality's Crow Creek Neighborhood area. The Crow Creek Neighborhood Plan has identified an alternative to this corridor - a trolley line that could function both as access to the resort, and a transit system for the valley.

The Transportation and Commercial Areas Master Plan summarized the planning context for Girdwood that had been developed through a number of planning efforts since 1990. The public dialog engendered by these plans and by the Transportation and Commercial Areas Master Plan itself clarified Girdwood community goals. Consistent community desires have included:

- Create a town center with a unique identity and strong connections to the resort, the surrounding residential neighborhoods, and recreational facilities.
- Promote the continued growth and economic viability of the commercial areas of the community and connect them to one another.
- Expand the town core as a commercial and community center.
- Provide a variety of year-round resort/recreational opportunities for the benefit of local residents and visitors alike.
- Establish and preserve a system of open spaces.
- Preserve Girdwood's small-town character.
- Assure that physical development blends with the area's natural qualities.
- Create an effective multi-modal circulation system for improved community-wide access and linkage.

A streetcar line in Girdwood would support several of these objectives more effectively than a rail spur. Specifically, a trolley would:

- Serve and support the new town center by linking it to residences, the school and the resort. In contrast, the preferred rail spur alignment along the western edge of the valley would connect the "Valley Entry Multimodal Center" located near the junction of the Seward Highway and the Alyeska Highway with the Alyeska Resort. This alignment is not designed to serve trips to and from the town center or provide local trips within Girdwood.
- Be located within the developed areas of Girdwood, for the most part. To be successful, a trolley line needs to be located where the people are. In order to avoid conflicts with vehicles and pedestrians, the preferred rail spur alignment would lie entirely in undeveloped parts of the valley, including areas that could be set aside for open space in the future.

- Improve circulation and internal mobility while supporting the small town character of Girdwood. The rail spur, to the extent it would be visible, would at best be neutral in its effect on Girdwood’s small-town character.
- Contribute to Girdwood’s “multi-modal circulation system” by providing intra-Girdwood transportation as well as linking travelers with the Seward Highway and the Alaska Railroad. A rail spur would not provide local trips, but would do a superior job of delivering travelers from Anchorage or other points along the railroad to the Alyeska Resort.

Concept

The concept is to replace the approved Girdwood transportation corridor that connects the Alaska Railroad with the Alyeska Prince Hotel. In place of the railroad corridor, a trolley line would be substituted on a new alignment connecting the two end points. The design concept is simple – a single-track trolley system connecting a Valley Entry Multimodal Center located near the Seward Highway with the Girdwood Town Center and the Alyeska Resort. Depending on the line’s route, it would also be possible to serve either the Girdwood School or the Day Lodge area. The concept calls for a simple streetcar system that would run replica trolleys resembling early 20th Century cars. Unlike the rail spur, which would be operated as a branch line of the Alaska Railroad, the trolley line would be operated as a transit service by an entity separate from the Railroad. No entity has been identified to operate and maintain the proposed system. However, there are numerous options available including not-for-profit organizations, contracted for-profit service providers, a design-build-operate-maintain consortium, and the Municipality of Anchorage.

The proposed system is designed to improve mobility in Girdwood, support pedestrian and other alternatives to the private auto, help reinforce the central role of the new town center, deliver vacationers and skiers to the resort without the need for car parking, be a fun and attractive way to move around Girdwood, and as a result be an attraction and a reason to visit.

Why a Trolley?

A trolley or streetcar line is different from a railroad in a number of ways:

- Where railroad and light rail lines are designed so as to minimize road crossings and pedestrian conflicts, successful trolley lines are located “where the people are”. They travel more slowly, stop more frequently, and generally serve more as pedestrian accelerators than as rapid transit.
- Trolleys run on rails that are lighter and smaller than conventional railroad rail. Many trolleys constructed in the US have also been built to a narrower gauge (distance between the rails) than the standard railroad.
- Trolleys, or streetcars, are short single cars that can be run individually or connected to other trolley cars and run as a train.
- Trolleys were developed to run on tracks set in streets, and as a result can turn sharp corners and climb and descent somewhat steeper hills than a standard railroad.
- Trolleys are normally electrically powered, and as a result make less noise than a passenger train and generate no smoke.
- Trolleys are designed to provide service within a community or to make short trips between communities, not to run long distances between two cities.



The net effect of these physical aspects of a trolley line, when applied to Girdwood, is to have a line much closer to existing streets, businesses and residences that would become part of the fabric of the Girdwood community. It would be both a distinctive element of the community and a way to move people from one end of Girdwood to the other and to a multitude of places in between.

It is, of course, possible to buy ersatz trolley cars built on a bus chassis than run in the street. Buses or bus trolleys are more flexible than a rail trolley line, but are also less attractive to riders

and tend to generate much less related development along the route. Rail lines have a visible permanence that can attract investment. The difference applied to Girdwood can be best summed up as: a rail based trolley line would become part of Girdwood and the “Girdwood experience”, and would likely encourage complimentary development. A bus trolley would be essentially a cute shuttle bus.

The function of a trolley, compared to a railroad spur, would be:

- To serve community trips as well as visitor trips. It would transport people living or staying near the line to the Girdwood town center, the school, and the ski area. It would be possible to stay in the parts of town served by the trolley and go skiing or to the resort without driving.
- To also carry passengers from the rail line to the hotel, although a transfer would be required at the Girdwood rail station.
- To function as the local transit system for Girdwood, rather than as a branch line of the Alaska Railroad. As a result the trolley would cost more to operate.

“Vintage streetcars have proven to be a popular and viable local transit option in a number of communities.”

- Congress for the New Urbanism

Physical Feasibility, Impacts

In comparison to a standard railroad, a trolley line can be built with steeper grades and sharper curves. This greater physical flexibility has allowed trolley lines to be built in and to serve urban contexts. The primary advantage to Girdwood of a trolley line is that it can be routed closer to housing and businesses in order to serve local trip needs as well as visitor travel. Because a trolley can follow urban streets and because it can follow the contours of the land a little more closely than can a regular railroad or a light rail line, a trolley could both move visitors from a connection with the Alaska Railroad along Turnagain Arm and carry residents from point to point within Girdwood.

If the trolley is powered by overhead electric lines, the impacts of a passing trolley on nearby residences are also generally much less noticeable than those of a passing passenger train. Noise impacts are lessened in several ways:

- Because the trolley uses electric traction motors, rather than diesel engines, there is no engine noise and no exhaust;
- Trolley cars and rails are lighter than standard railroad engines, cars and rails, thereby generating less wheel-on-rail noise; and
- Trolleys generally operate as a single car or as short trains of two to three trolleys coupled together rather than as a longer train of engine plus passenger cars. As a result, the duration of the noise from a passing trolley is shorter than from a typical passenger train. As an offsetting factor, trolley cars would pass by more frequently than would railroad trains.

Visual impact is the one primary impact of a trolley line that exceeds that of a rail line. Electric power is fed to the trolleys through overhead wires, or centenary. The wire is suspended above the rails and is hung from wooden poles spaced roughly 100-150 feet apart.

The Girdwood Valley begins at sea level along Turnagain Arm and increases in elevation as one moves up-valley from the Arm. The elevation at the Alyeska Prince Hotel is approximately 250 feet above sea level. Assuming a line of 4 to 4.5 miles in length, an average grade of about one percent would be required. In reality, grades of up to three to four percent for short distances could be required in order to deal with local topography, existing development, and desired intermediate destinations. These potential grades are reasonable for both the rail spur contemplated in 1999, and a trolley line. The trolley line, however, could climb and descend more steeply – eight to ten percent grades – and turn much more sharply in order to minimize cuts and fills, and neighborhood and environmental impacts.

Alternative Alignments

The fundamental alignment issues would involve avoiding negative impacts to existing development and environmentally sensitive areas while providing service to parts of Girdwood that would be most valuable to the community and to visitors. The following community areas and facilities are those that would be most important for a trolley line to serve:

1. New Town Center
2. Alyeska Prince Hotel
3. Lower Valley (Seward Highway-Alaska Railroad)
4. Alyeska Day Lodge
5. Girdwood School
6. Existing Residential Neighborhoods
7. Future Residential Neighborhoods

Elements 1-4 were established in the rail line study of 1999 as primary destinations of the rail line, with the Alyeska Day Lodge as a desirable, but not essential service destination. Elements 5-7 are elements that can be added and served more readily by a trolley than a rail branch line. Illustrations of the alignments studied in the 1999 Rail Corridor Assessment are discussed below. The preferred railroad branch corridor is shown in Figure 1.

The Crow Creek Neighborhood Land Use Plan identifies two possible trolley alignments, based on routes explored by the rail study, and tempered by the much different trolley line goal of being in the midst of activity and popular destinations, rather than to be as separate from existing development.

Because portions of each alignment can be connected to portions of alternative alignments, it is most reasonable to present and discuss alignment segments that can be mixed and matched to produce roughly ten different alignments, shown in Figure 1 and described below.

Segment A1:

Starting at a station near the Alaska Railroad Girdwood station and the proposed Valley Entry Multimodal Center, this segment curves to the north and runs up-valley along the road alignment identified in the Commercial Areas and Transportation Master Plan as a needed local collector serving future development north and west of the Alyeska Highway. It then curves to the east, crosses the southernmost tip of the HLB Crow Creek Neighborhood area, and follows the proposed Hightower-Crow Creek Road connector to the intersection with Hightower Road.

This segment would be positioned to be within walking distance of the existing development along Alyeska Highway, and located so that it could possibly be in the median of the future collector parallel to but west of the Alyeska Highway. It would pass a “block” north of the new Girdwood Town Center, not ideal, but still within an easy walk of the attractions there.

Segment A2:

Same alignment as Segment A1 from the Alaska Railroad/Multimodal Center to a point north of the Agostino Mine Road, where it would diverge from the Segment A1 alignment to run east to the Alyeska Highway, and then turn and run along the highway between the separated pedestrian path and the roadway. It would follow Crow Creek Road from its intersection with the Alyeska Highway, and turn right to follow the proposed Hightower-Crow Creek Road connector and Segment A1 to its end at Hightower Road.

Positioned to generate greater initial ridership than Segment A1, Segment A2 would be more visible and would run through the center of lower valley activity. A negative attribute of this option is the number of streets and driveways that would need to be crossed. It would also pass a “block” north of the new Girdwood Town Center as it rejoins Segment A1.

Segment B:

Beginning at a connection with Segment A1 north of the intersection of the Crow Creek Road and the Alyeska Highway, the short Segment B runs south and east to cross Crow Creek Road (and at this point connect with Segment A2). It then runs along the north side of the Alyeska Highway to Hightower Road, where it would turn to run north along Hightower Road to the intersection of the proposed Hightower-Crow Creek Road connector.

This segment provides an alternative route to serve the New Town Center, passing fairly closely to two sides of the central block of the town center. While more difficult to locate and engineer, B would be a more visible, accessible and therefore more successful alignment than either A1 or A2.

Segment C:

Segment C begins at the intersection of Hightower Road and the proposed Hightower-Crow Creek Road connector, and runs up-valley to the west of Glacier Creek along the eastern edge of the Crow

Creek Neighborhood area and the “Matrix” area proposed for residential development. It would then meet the proposed Arlberg Connector and share a bridge with the road across Glacier Creek, and reach the Alyeska Prince Hotel from the north.

LEGEND

Circulation

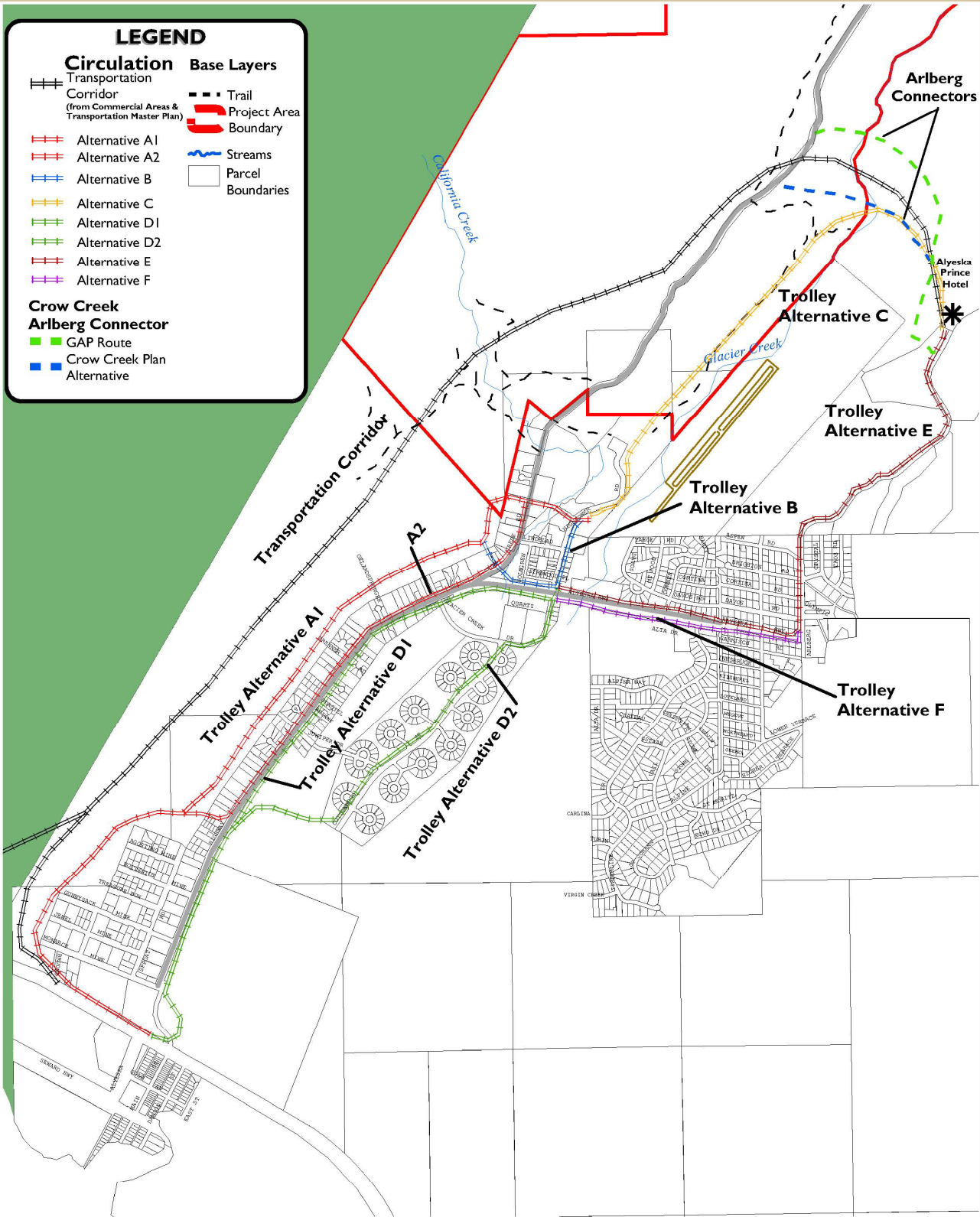
- Transportation Corridor
- Alternative A1
- Alternative A2
- Alternative B
- Alternative C
- Alternative D1
- Alternative D2
- Alternative E
- Alternative F

Base Layers

- Trail
- Project Area Boundary
- Streams
- Parcel Boundaries

Crow Creek Arlberg Connector

- GAP Route
- Crow Creek Plan Alternative



Crow Creek Neighborhood Plan

October 2004
Prepared for the Municipality of Anchorage Heritage Land Bank

Scale: 0 500 1000 1500 2000 Feet

MAP NOTES:

1. Planning information is provided in Alaska, Streets and Signs Act, North American Chapter of IBC, and IBC.
2. Topography is derived from USGS 30-second data.

Logos for AGNEW BECK, LDN, and HR are included.

CIRCULATION

Providing a connection with the school and library, this segment would be positioned to serve the proposed Crow Creek Neighborhood. As it would be developed before, or at the same time as much of the residential development, both the trolley line and the development could be configured to maximize the benefits of the proximity of the trolley and minimize conflicts. The significant cost of a bridge across Glacier Creek could be mitigated through sharing the bridge with the Arlberg Connector.

Segment D1:

Segment D1 begins at a station near the Alaska Railroad Girdwood station and the proposed Valley Entry Multimodal Center. It would leave to the southeast, running under the Alyeska highway parallel to the Alaska Railroad, then turning to the north to run along the east side of the Alyeska Highway to its intersection with Hightower Road.

This route would be visible and would be located well in terms of lower valley activity, but would require users from the west side of Alyeska Highway to cross the road before boarding or after alighting from the trolley.

Segment D2:

A variation of Segment D1, this potential element would diverge from the D1 alignment as it approaches the south extent of development on the east side of the Alyeska Highway, run east to the “squirrel cage” plats, turn north to run up the center of the squirrel cages to connect with the Alyeska Highway at its intersection with Hightower Road.

Although relatively free of conflicts with existing development, this segment would also pass by few prospective riders until/unless commercial or residential development comes to the squirrel cage area. It would position the line well, though, to pass under the Alyeska Highway at Hightower Road.

Segment E:

Segment E constitutes the principal alternative to Segment C for the connection of the New Town Center to the Alyeska Prince Hotel. It begins at the intersection of Hightower and the Alyeska Highway, runs east on the north side of the Alyeska Highway. It turns onto Arlberg at the day lodge and follows Arlberg to the Alyeska Prince Hotel. The track would be located between the trail and the road.

This segment would provide a connection between the New Town Center, the Day Lodge area and the Prince Hotel and tram. It would offer reasonable access to a greater number of current residents and visitors than would Segment C, but would also be harder to engineer and locate, possibly requiring a trolley-specific bridge across Glacier Creek.

Segment F:

An alternative to Segment E, Segment F would connect with alternative D1 or D2 and also follow the Alyeska Highway to the Day Lodge Area, but would use the south side of Alyeska Highway from Hightower to the intersection with Arlberg. It would then follow the Segment E alignment from the intersection to the Alyeska Prince Hotel.

Segment F would offer both advantages and disadvantages when compared to Segment E. The south side of the Alyeska Highway adjoins a large undeveloped area, which would pose fewer

location conflicts. This area is identified for development in the Girdwood Area Plan, and plans for hotel and office uses are now in progress. The challenge of this route occurs at the intersection of the Alyeska Highway and Arlberg, where a crossing of the Alyeska Highway would be required to follow the west side of Arlberg to the resort.

Summary

The choice of a preferred location should, in the end, be a product of consideration of a number of issues and competing factors, including:

- How effective would the route be at generating ridership? How many residents and visitors would have easy access to the trolley line?
- How effective would the route be at inducing additional complimentary economic development?
- How many conflicts with driveways and current auto movement would the route create?
- Would the route require taking any property that is not currently part of a road right-of-way or otherwise in Municipal or State ownership?
- Would the route require expensive structures, such as bridges over streams or tunnels under roads? Could these structures be shared with a planned road (such as the Arlberg Connector)?
- To what extent would the route support future development in parts of Girdwood where future growth is planned?

It is also possible to consider route development in phases. A phased development would have the advantage of allowing construction funding to be generated in two or three segments. The first phase with strongest ridership would be the Town Center to Alyeska Hotel segment, followed by the valley entrance to Town Center segment. The primary difficulty of this sequence is that the storage and maintenance facility would best be placed near the DOT maintenance yard located at the entrance to the valley. Consequently, the preliminary planning and cost estimating will assume construction of the trolley line at one time, with a possible phasing of the construction of terminals and shelters as funding permits.

Stations and Platforms

It is assumed that the line would have three principal stations: at the valley entrance, at the New Town Center, and at the Alyeska Hotel. Trolley stops would be located between these principal stations, and would feature shelters to allow riders to wait for the trolley out of the weather.

Valley Entry Multimodal Center

The Valley Entry Center would be designed and built to make it simple, safe, and easy to transfer to or from one's personal car, from the Alaska Railroad, or from a commercial motorcoach to the trolley. The center would accommodate visitors traveling to and from Girdwood by train and motorcoach, Anchorage residents and visitors in vehicles who would choose to leave their car at the center and travel up-valley by trolley, Forest Fair attendees, skiers, and others drawn to the idea of traveling to or touring Girdwood by trolley. It would also be located adjacent to the increasingly popular multi-use trail along Turnagain Arm, and to the roadside trail along the Alyeska Highway.

The center would be designed to provide shelter, restrooms, visitor information, and trolley, rail and bus schedules. Ideally, the site would also include private vendors providing restaurant, retail, coffee, or other goods and services related to travel to and from Girdwood.

The Girdwood Commercial Areas and Transportation Master Plan contains a multimodal center design concept, which is reproduced below as Figure 2. This conceptual layout is located west of the Alyeska Highway between the Alaska Railroad track and the Seward Highway. This site works well for a station oriented to the railroad and to vehicles. If the center is to also serve the trolley line, it would at least in part need to be located north of the Alaska Railroad tracks to avoid the need to cross the railroad tracks to reach the trolley line.

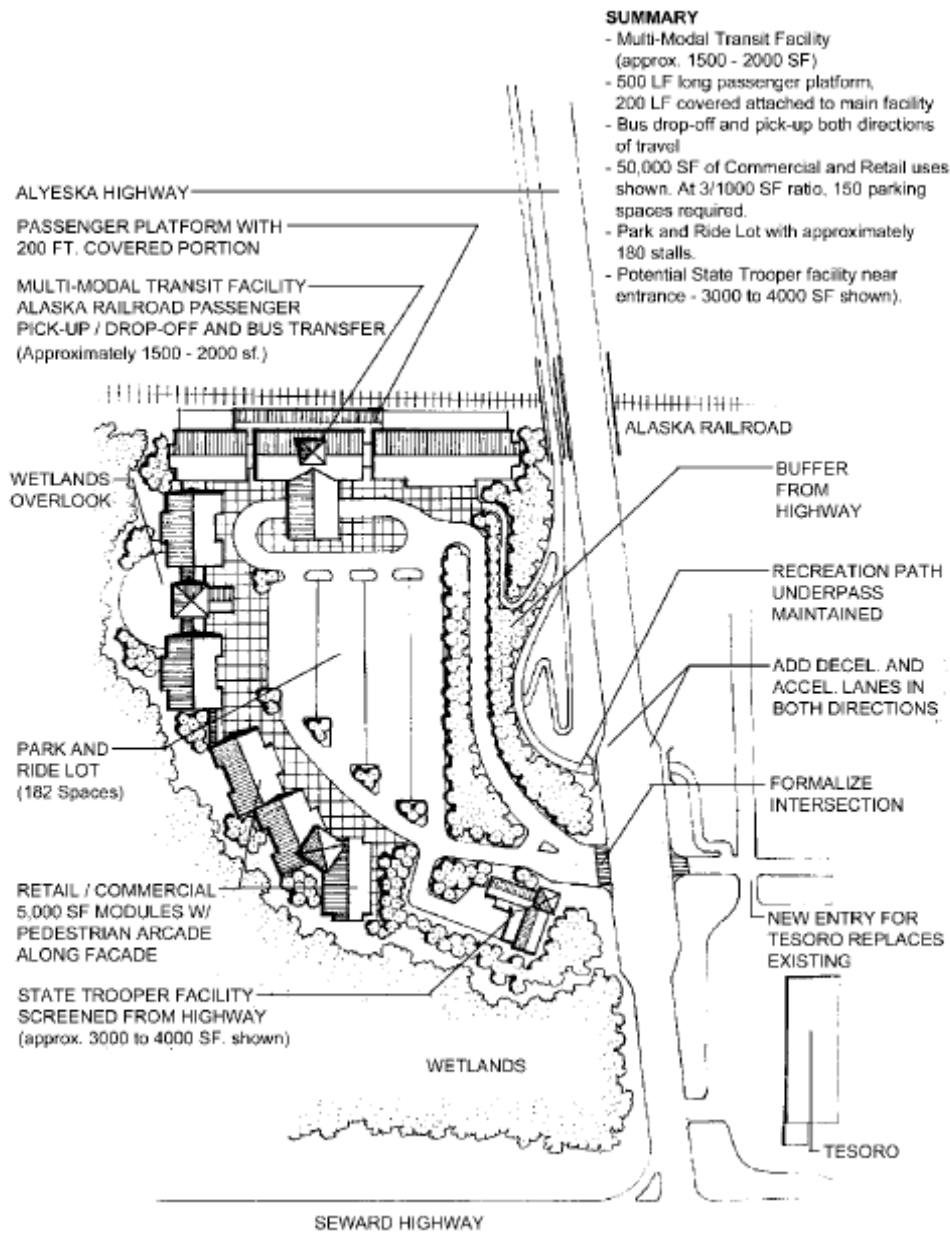


Figure 2: Design Concept for Valley Entry Multimodal Center

New Girdwood Town Center

The location and design of the trolley station in the New Town Center would be a function of the alignment of the track through or near the Center. Similarly, the design would be a function of its location and relationship to pedestrian and auto flow, and adjacent buildings. Generally, an in-town station needs to be located where it is most convenient to users. These are often locations with little available space, so the design is very location dependent. The key elements would include shelter from rain and snow, information on when and where the trolley goes and the relationship of the route to landmarks and destinations in the Girdwood Valley.

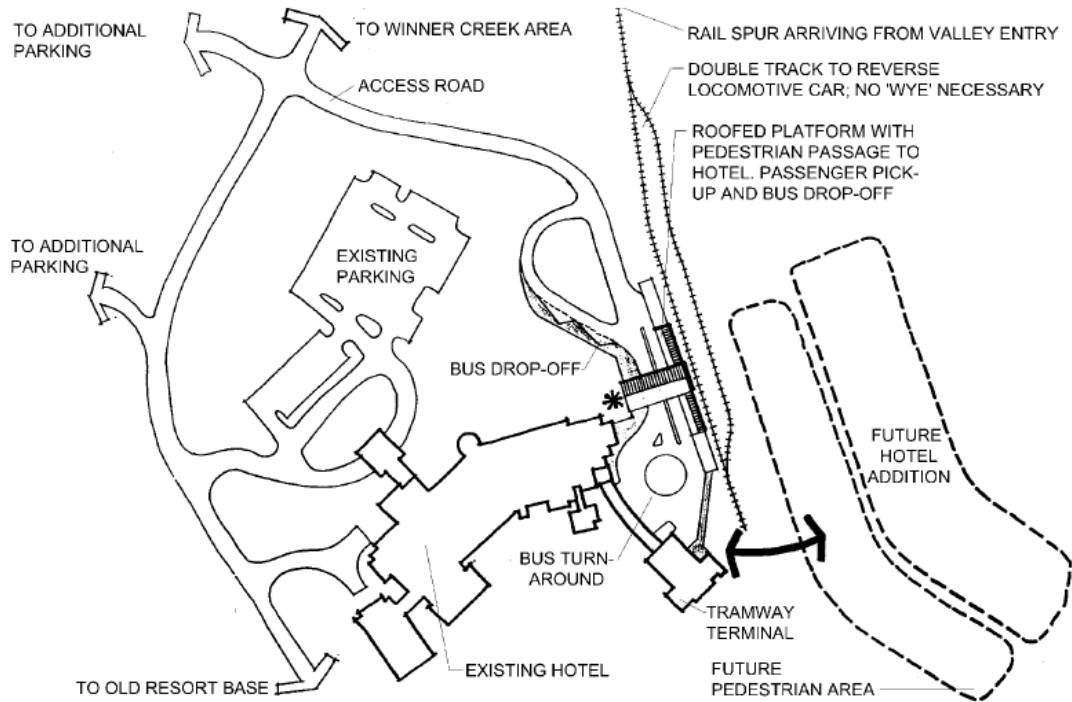


Figure 3: Design Concept for Rail/Trolley Terminal at the Alyeska Resort

Alyeska Resort/Alyeska Prince Hotel

The trolley terminal at the Alyeska Resort would need to be located to serve both visitors and hotel guests arriving by trolley to stay at the hotel as well as skiers who are traveling to the Resort to ski for the day. The Girdwood Commercial Areas and Transportation Master Plan contains a schematic diagram of the rail spur access to the terminal and its relationship to the Resort, reproduced as Figure 3. The preferred rail spur alignment would approach the resort from the north, and would stop next to a station location northeast of the hotel and generally north of the tram terminal. This location offers easy access to both the hotel for guests and the terminal for skiers. The rail terminal also featured adjacent bus access and turnarounds. This general location would also be ideal for a trolley terminal that would serve both skiers and those destined to the hotel. A terminal for trolley Segment C that approaches the resort from the north could be located and would function similarly to the terminal proposed for the rail spur. Trolley Segment E, however, would approach the resort along Arlberg Road from the south. A terminal for this approach could be located similarly, although the approach from the south would require routing the ski run to the tram terminal over or

under the trolley track. The trolley line could also pass around the west side of the hotel, but such an approach would create more conflict with auto movement.

Trolley Stop Shelters

Shelters at designated trolley stops would ideally be designed with a consistent theme that would reflect both Girdwood and make it immediately clear that the shelter serves the trolley. These structures would be a simple, three sided shelter, consisting of glass and wood. A design unique to Girdwood might be more expensive than an off-the-shelf bus shelter, but in the long run would benefit Girdwood and trolley ridership.

Cost Estimates

Trolley Cars

Reproductions of vintage trolley cars currently cost \$600,000 to \$900,000 each, depending on features. These cars are made in the US, and are much less expensive than available off-the-shelf European street cars. The current cost of the Portland streetcars is about \$2 million per articulated unit. Service could begin with one car, but more realistically, three cars would be a practical minimum fleet. This would allow for two trolleys in regular operation, with a third in reserve to allow for maintenance and repair, and to provide additional capacity for special events and to shuttle large groups of passengers. Another option for handling peak loads would be to also acquire unpowered cars that can be coupled to a single trolley car to effectively double the capacity of a car without doubling the capital cost. It is unlikely, however, that this additional capacity would be needed at startup nor during the first few years of system operation.

The cars would include heat, but not air conditioning, and racks on the outside of the cars to hold skis. Bicycles should be accommodated either inside or outside the cars.

Initial car capital cost: Three trolley cars: \$1,750,000 - 2,700,000

Track and Power

The length of the line running from the Valley Entry Multimodal Center near the existing rail station to the Alyeska Prince Hotel would be 3.5 to 4.5 miles long, depending on the route selected. The alternatives that run north from the New Town Center to cross Glacier Creek along with a new street are generally longer than the alternatives that head east from the New Town Center.

A reasonable trade-off of cost, potential service frequency and impacts would suggest a single-track trolley line with a passing siding located in the mid-section of the line. This simple arrangement would allow two cars to operate at the same time, beginning their run from each end of the line and passing at the time-based line midpoint. This simple operating format would need no signals or other controls.

Initial cost of track and bridges would depend on the alternative chosen, and whether the trolley line could share major bridge structures with an existing or prospective road. The line would be a single track line with exposed ties for most of the line and top of rail at street level in a few locations such as near the New Town Center.

Trackage and Overhead Power: \$ 7-9 million per mile, or \$25 to \$40 million.

Stations and Platforms

Two levels of stations and a standard trolley stop platform are envisioned.

Multimodal Center Station

A very rough (\$200-\$300 per SF) estimate of cost would tally as follows:

Multi-Modal Facility @ 1,500-2,000 SF = \$300,000 - \$600,000

Passenger Platform @ 500 LF = with 200 LF covered = \$25,000 - \$50,000

Parking @ 150-250 spaces = \$260,000 – \$440,000

Retail space would be constructed by private interests, or by a public-private consortium.

New Town Center Station

Town Center trolley facility of 1,000:-1,500 SF = \$200,000 – \$450,000 depending on size and design.

Alyeska Resort/ Alyeska Prince Hotel Station

Cost: \$200,000 - \$500,000, depending on size and degree of integration with existing hotel.

Trolley Stop Shelters

Cost: \$10,000 - \$75,000, depending on design and manufacturability.

Existing and Potential Markets for Trolley Service

Existing

- Girdwood full-time and part-time residents – transportation within Valley to work, retail, skiing, school, post office and similar Valley destinations.
- Independent summer visitors from Anchorage – transportation from the Valley Entrance Multimodal Center to activities in Girdwood, and/or transportation within Girdwood.
- Independent summer visitors other than Anchorage – transportation from the Multimodal Center to lodgings and activities in Girdwood, and/or transportation within Girdwood during their stay.
- Cruise/tour package visitors – transportation from the Alaska Railroad at the Multimodal Center to the Alyeska Resort and/or transportation within Girdwood during their stay.

Future – the above markets and

- Day skiers from Anchorage and nearby – transportation from Multimodal Center to Alyeska Resort and return.
- Independent winter visitors – transportation from Multimodal Center to lodgings and return, and from lodgings to ski resort and to restaurants.

These markets focus on transportation within Girdwood, and are significantly different than the markets outlined for the rail spur. As outlined in the Girdwood Commercial Areas and Transportation Master Plan, the markets for rail passenger service on the rail spur are largely travelers moving from Anchorage and beyond to Girdwood or reverse. It is reasonable to assume that some of the markets for the rail spur mentioned in the Master Plan are unlikely to generate much traffic for rail passenger service on a rail spur running intermittently and infrequently. For example the “Valley residents traveling to and from the airport” market is unlikely to support rail service. For the foreseeable future, the number of valley residents traveling to the airport at any one

time will be too small to support rail service, or bus service for that matter. Much more likely modes for this market are private autos and shared-ride taxis.

Ridership

A preliminary estimate of average daily ridership is shown in Table 1, below. These rough estimates are based on the year 2020 and a Girdwood population of approximately 5,000.

Market	Summer	Winter
Girdwood Circulation	450 -1,350	600-1,800
Summer Visitors		
Independents	280-420	
Tour Package	200-300	
Winter Visitors		200 off-peak - 450 peak
Total	930-2,070	800-2,250

Community Impacts

The bulk of the impacts of a trolley system on the Girdwood Community would be positive. A trolley would

- Help provide focus to the physical and activity centers of the community;
- Provide an interesting and fun option for traveling around Girdwood for both residents and visitors;
- Reduce auto trips in the corridor it serves;
- Provide a better way to handle Forest Fair, ski race and other special event crowds;
- Provide an additional visitor draw that is consistent with the existing Girdwood environment and image;
- Provide a visitor draw that will bring additional visitors to both the Alyeska Resort and the smaller businesses in the Valley;
- Attract compatible investment to Girdwood;
- Enable pedestrian-oriented commercial and residential development along the trolley corridor; and would
- Provide a low impact means to move package tour guests from a train or from buses at the valley entrance to the Alyeska Resort.

In the future, if a larger number of workers commute to jobs in Anchorage, a trolley system could provide a connection to bus or rail service to Anchorage, and could similarly bring commuters coming to Girdwood for work from a bus or rail connection at the head of the valley.

APPENDIX J: Approval by Girdwood Land Use Committee, Girdwood Board of Supervisors

The attached page presents the resolution adopting the Plan by the Girdwood Board of Supervisors.

Municipality
of
Anchorage



P.O. Box 390
Girdwood, Alaska 99587
<http://www.muni.org>

Mark Begich, Mayor

GIRDWOOD VALLEY SERVICE AREA BOARD OF SUPERVISORS
Tracey Knutson, Chair;
Victor Duncan, Marcus Tingle, John Gallup, Nick Danger

RESOLUTION 2005-06
Of the Girdwood Board of Supervisors

GIRDWOOD BOARD OF SUPERVISORS resolves a recommendation that the Municipality of Anchorage approve the Crow Creek Neighborhood Land Use Plan, as amended by the Land Use Advisory Committee on May 10, 2005.

WHEREAS, a group of Girdwood citizens known as the "Crow Creek Neighborhood Advisory Committee" (CAC) has met regularly since September 2004 to analyze opportunities to responsibly develop approximately 1000 acres of Heritage Land Bank (municipal) land in the Girdwood valley, flanking Crow Creek Road, and to advise HLB on a recommended course for development; and

WHEREAS, the CAC has spent many hours discussing all aspects of this development opportunity, greatly assisted in production of the draft "Crow Creek Neighborhood Land Use Plan" and amendments thereto, and presented the draft to the Land Use Advisory Committee on May 10, 2005; and

WHEREAS, the Revised Draft Plan follows the direction outlined in the Girdwood Area Plan; and

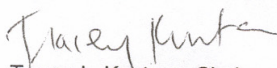
WHEREAS, the Draft Land Use Plan recognizes that housing needs in Girdwood are now acute, but that the character of the community and preservation of open space and recreation amenities within areas to be developed are of the utmost importance to residents; and

WHEREAS, on May 10, 2005, the Land Use Advisory Committee approved Resolution No. 0505-12, to indicate its non-objection to forwarding the revised draft Land Use Plan to the Board of Supervisors for their approval; and

WHEREAS, the recommendations of the Crow Creek Neighborhood Land Use Plan prescribe a course of responsible development for the community of Girdwood, subject to master planning to be undertaken for each "node" of development delineated within this Plan, which is intended to meet the specifications of the "area master plan" procedure within the proposed Chapter 9 of Title 21 of the Anchorage Municipal Code; and

THEREFORE BE IT RESOLVED on June 20, 2005, the GBOS recommends that the Municipality of Anchorage approve the Crow Creek Neighborhood Land Use Plan, as amended by the Land Use Advisory Committee on May 10, 2005.

PASSED AND APPROVED THIS 20th **day of** June, **2005.**


Tracey L. Knutson, Chair
Girdwood Board of Supervisors