



Girdwood Area Plan Update

Existing Conditions, Land Suitability Analysis, & Housing
Demand Forecast

December 12, 2022

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Report Purpose

The Girdwood Area Plan Update Committee, Imagine! Girdwood, is in the process of updating the Girdwood Area Plan (GAP). The GAP was originally completed and adopted in 1995. Imagine! Girdwood engaged the consulting firms Huddle AK and Agnew::Beck Consulting to conduct an existing conditions inventory, land suitability analysis and housing demand forecast of Girdwood to inform the area-wide planning process.

The first portion of this report goes over existing conditions including environmental conditions, zoning, land ownership, land use, utilities, transportation, and existing plans. The next portion covers the land suitability analysis which maps out which lands are suitable for construction based on environmental factors. The last part of the report summarizes trends in population and housing and the impact those trends are expected to have on the demand for residential land.

Existing Environmental Conditions

The community of Girdwood sits in a narrow valley in Southcentral Alaska, near the head of Turnagain Arm. Girdwood is at the tip of North America's northern-most temperate rainforest and is surrounded by the glaciated Chugach Mountains. The town is approximately 42 miles southeast of Alaska's largest city, Anchorage, and is accessed from the Seward Highway. The valley is bordered by Chugach State Park and Chugach National Forest land, which provide ample opportunity for outdoor activities year-round. The location, natural beauty, and ski resort infrastructure make Girdwood a desirable place to live and a valued year-round recreation hub for residents and visitors. (Figure 1 – Girdwood Location Map)

The terrain and climatic conditions provide scenic beauty, but also create constraints on how the town can be planned and developed. Waterbodies, wetlands, avalanche zones, and topography create constraints that affect sustainable and maintainable development in the valley.

Slopes

The base of the Girdwood Valley is broad and flat and then quickly rises in elevation in between peaks of the Chugach Range. Mt. Alyeska, which is home to the Alyeska resort and ski area, has a summit elevation of 3,939 feet creating the dramatic terrain relief that characterizes the valley. Figure 2 – Slope Analysis shows three slope ranges within the valley: slopes ranging from 0 – 15 percent steepness, 15 – 35 percent, and greater than 35.

Avalanche Paths

Due to the steep nature of the Girdwood Valley, avalanche activity needs to be a consideration for future development. Avalanches most frequently occur on slopes between 35-50 degrees. The majority of the Girdwood Valley, aside from the valley floor, contains slopes within this range. The avalanche hazard zone mapping was developed in the 1982 Anchorage Snow Avalanche Zoning Analysis report.

Avalanche paths are categorized into high and moderate hazard zones. The high hazard avalanche zones are defined as a 10-year approximate return period whereas the moderate zones are defined as a 100-year approximate return period. The 1982 report states that buildings and other facilities that concentrate human activity should be excluded from the high hazard zone. The report also states that development should be limited in moderate hazard zones. It recommends that if buildings are permitted in the moderate zone they should be reinforced for design-avalanche loads. The report states that utilities and roads can be permitted in moderate areas, but they should be placed as far away from the high hazard zone as possible, and roads should be signed with avalanche hazard and no parking. (Figure 3 – Avalanche Hazard Zones)

Waterbodies

The Girdwood Valley is surrounded by several glaciers that feed into various creeks within the valley that empty into the Turnagain Arm. The main creek channels which flow through or near the downtown core include Glacier Creek and California Creek, and there are numerous secondary creeks (Winner, Crow, Alyeska, and Virgin Creeks) and unnamed creeks that feed into these main channels. Figure 4 – Water Bodies.

Flood Hazards

Glacier Creek is a major glacial melt-water stream that runs through the center of the valley. The nature of the glacial stream banks and contributing drainage areas create a flood hazard at the center of the valley, adjacent to portions of the town's development. Figure 4 – Flood Hazard Map shows the extent of Glacier Creek's floodway, 100-year, and 500-year flood hazard areas. Figure 4 includes information from the Federal Emergency Management Agency (FEMA). FEMA publishes flood hazard maps (Flood Insurance Rate Maps, or FIRMs) showing Municipal areas subject to flooding that are currently regulated by FEMA.

The current FEMA maps are the official documentation used for development policy and setting flood hazard permit requirements. While the FEMA map for Girdwood is the currently adopted map some things should be noted. First, the FEMA mapping was developed in the 1970s using rainfall data at that time, and does not account for any culvert installations that have occurred along the stream since. An updated map would likely reflect higher precipitation due to changing climate conditions. Second, the nature of a glacial stream floodplain can be less predictable than other river-types. While the FEMA map shows a floodway in an updated map, hydrologists may not delineate a distinct floodway corridor in the same way potentially altering flood hazard areas significantly.

The Municipality should work with FEMA to develop a more up to date flood map for Girdwood that reflects recent rainfall data and climate change expectations. For current planning purposes the FEMA map should be used as a general reference for flood hazard areas, but granular parcel design within or near flood hazard areas should be based on more recent flood hazard modeling.

Wetlands

Girdwood contains a variety of wetland types ranging from open patterned ground peat bog in the middle and upper valley, to floodplain wetlands along stream corridors, and intertidal wetlands on Turnagain Arm. The wetlands are further categorized into a series of classes that are distinguished by wetland value classifications. The wetland designations for this area includes A (high valuation), B (moderate valuation), C (low valuation), D (undesigned), and P (potential). The classification data is derived from Anchorage's online mapping database and the Anchorage Wetlands Management Plan (AWMP) adopted in 2014.

The AWMP defines Class A wetlands as those that "have the highest wetland resource values. They perform at least two, but typically more, significant wetland functions. 'A' wetlands are considered most valuable in an undisturbed state, as most uses or activities, especially those requiring fill, negatively impact known wetland functions." The AWMP states that "A" wetlands are generally not to be developed, cleared, or filled unless actions enhance or restore a site's functions and values. The AWMP provides caveats to development for public recreation facilities, utilities, or some private development needs along fringe edges. The AWMP states that projects in class A wetlands can be reviewed on a case-by-case basis in accordance with Individual Section 404 Permit through the Army Corps of Engineers.

While the goal of the AWMP is to preserve wetland values and functions the plan notes that there is potential for development in some wetland classifications with a nuanced approach. Any proposed land uses in or near wetland areas should assume that Best Management Practices of balancing preservation of productive wetland functions and development needs will need to be used for site design.

GIRDWOOD AREA PLAN: LOCATION MAP

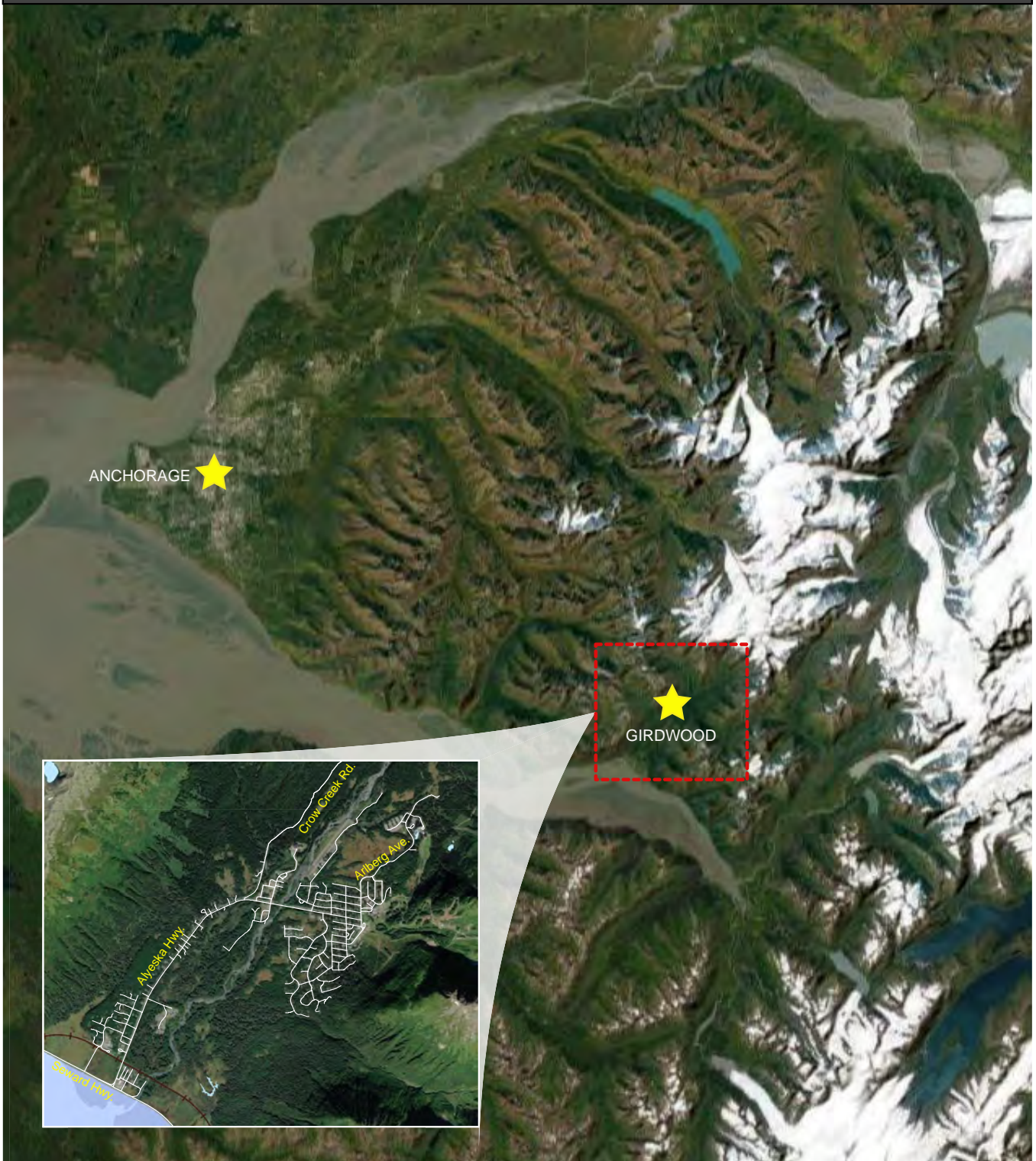


Figure 1 - Girdwood location map

GIRDWOOD AREA PLAN: SLOPES MAP

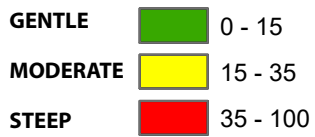
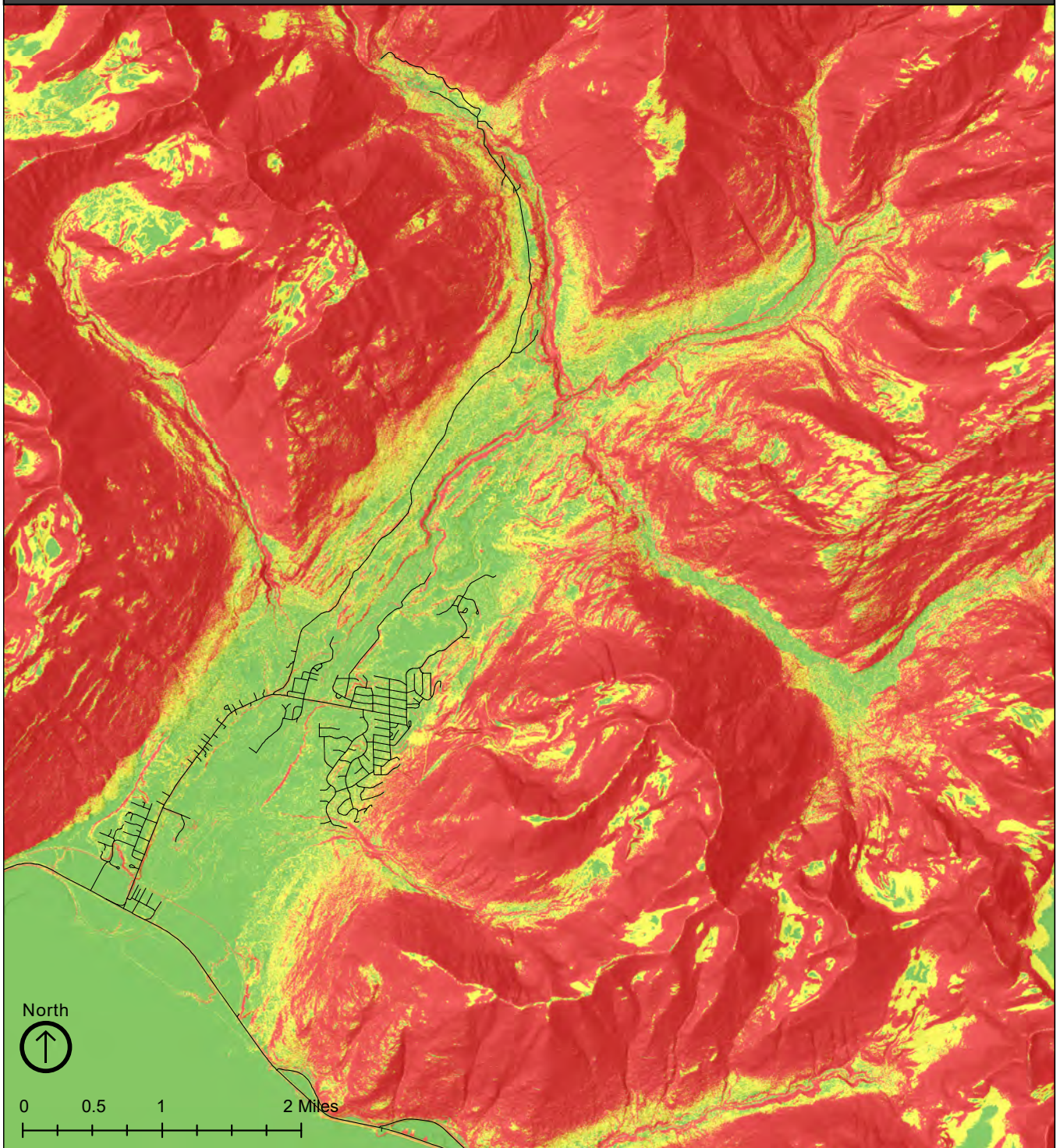
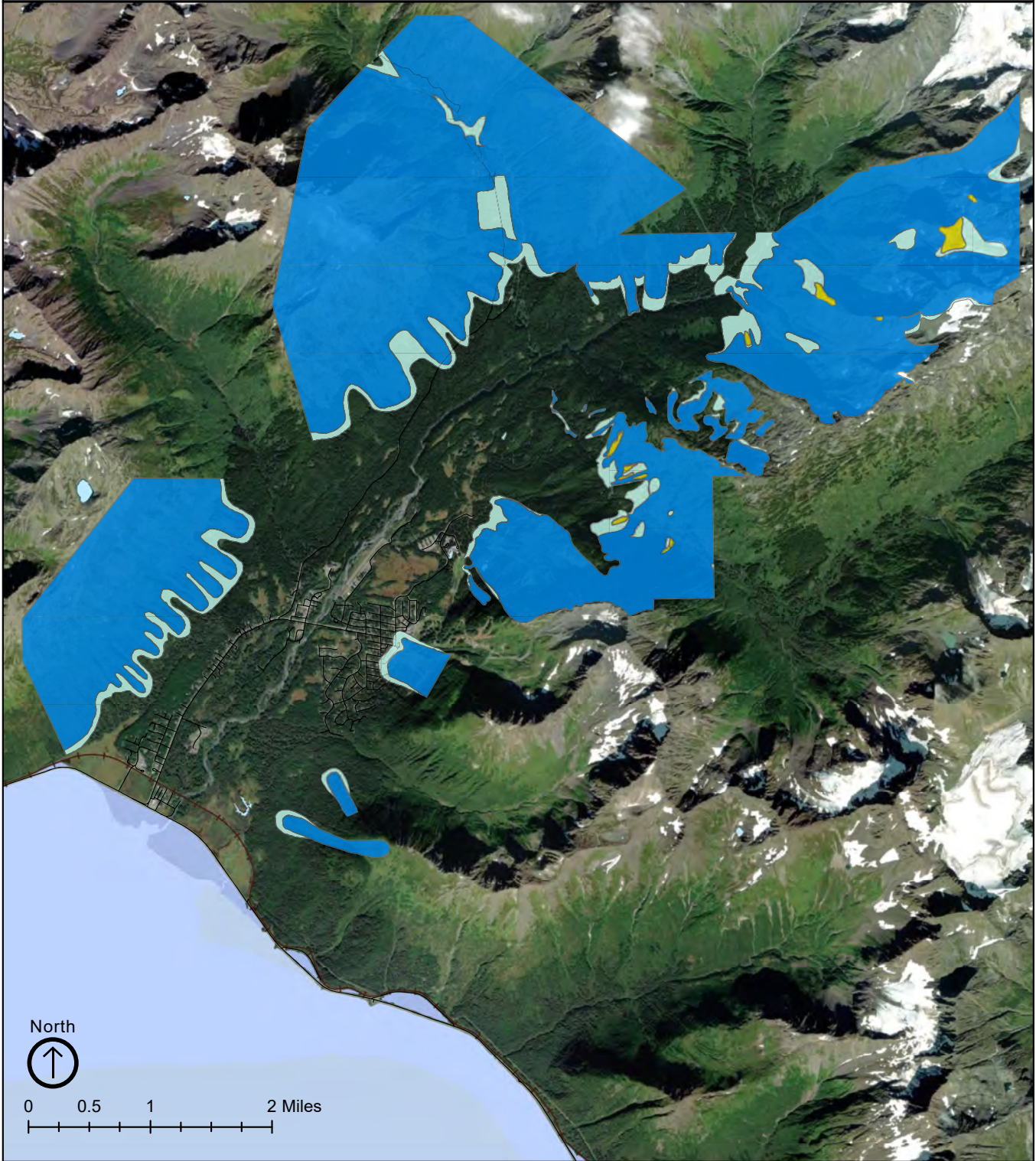


Figure 2 – Slope Map

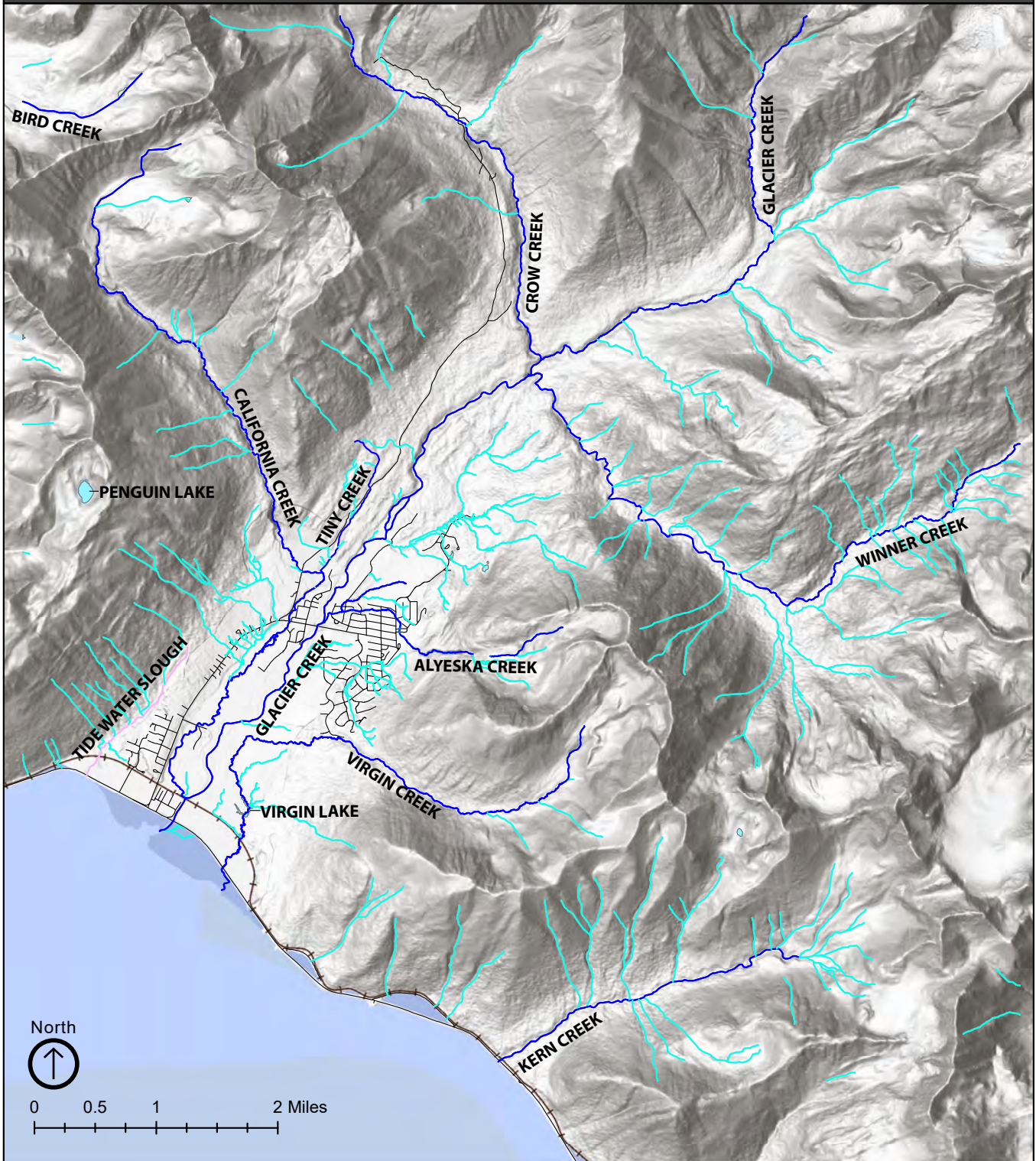
GIRDWOOD AREA PLAN: AVALANCHE MAP



Blue HIGH HAZARD **Light Green** MODERATE HAZARD **Yellow** ISLAND

Figure 3 – Avalanche Hazard Map

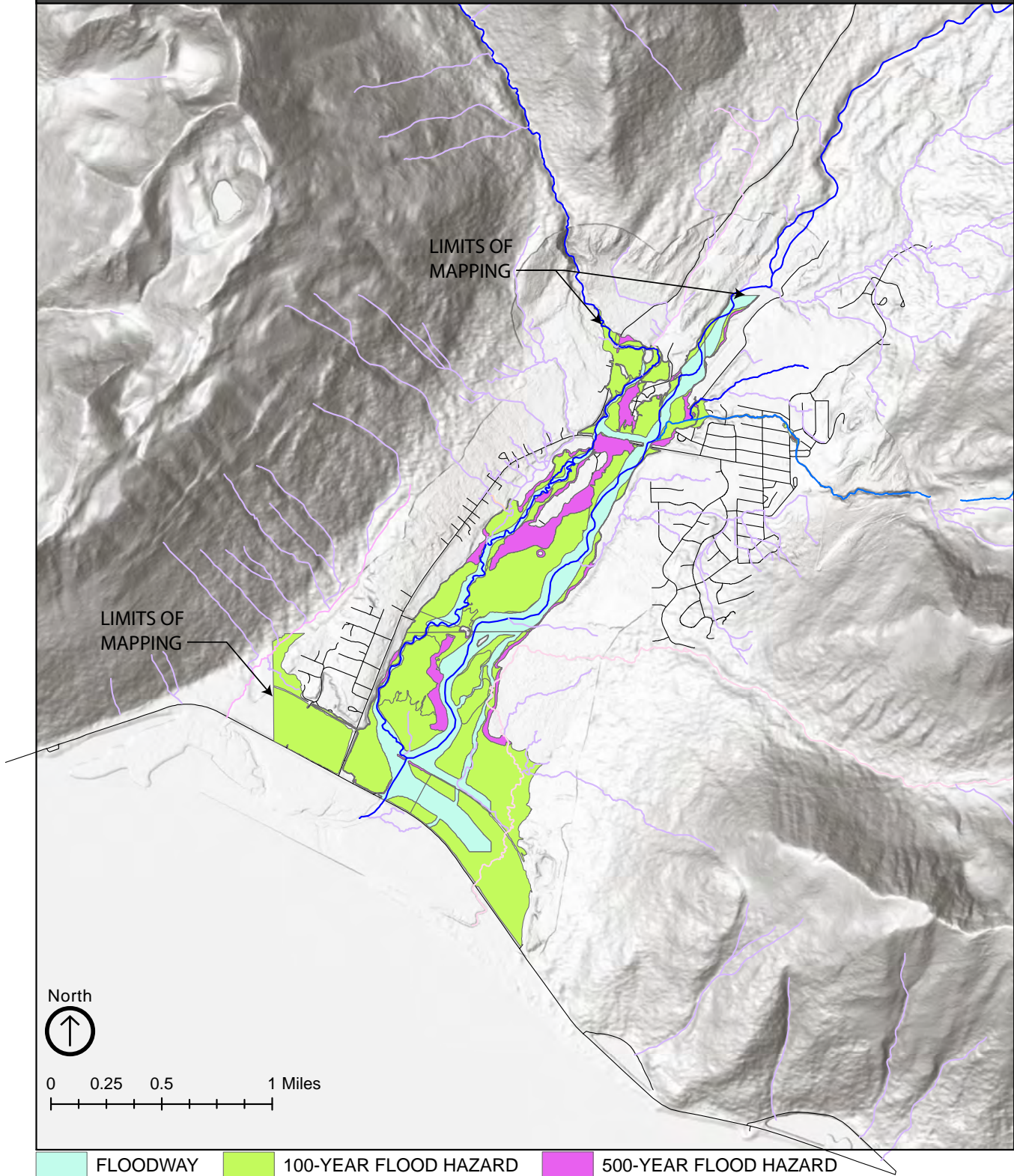
GIRDWOOD AREA PLAN: WATER BODIES MAP



UNNAMED CREEKS

Figure 4 – Water Bodies Map (Creeks and Lakes)

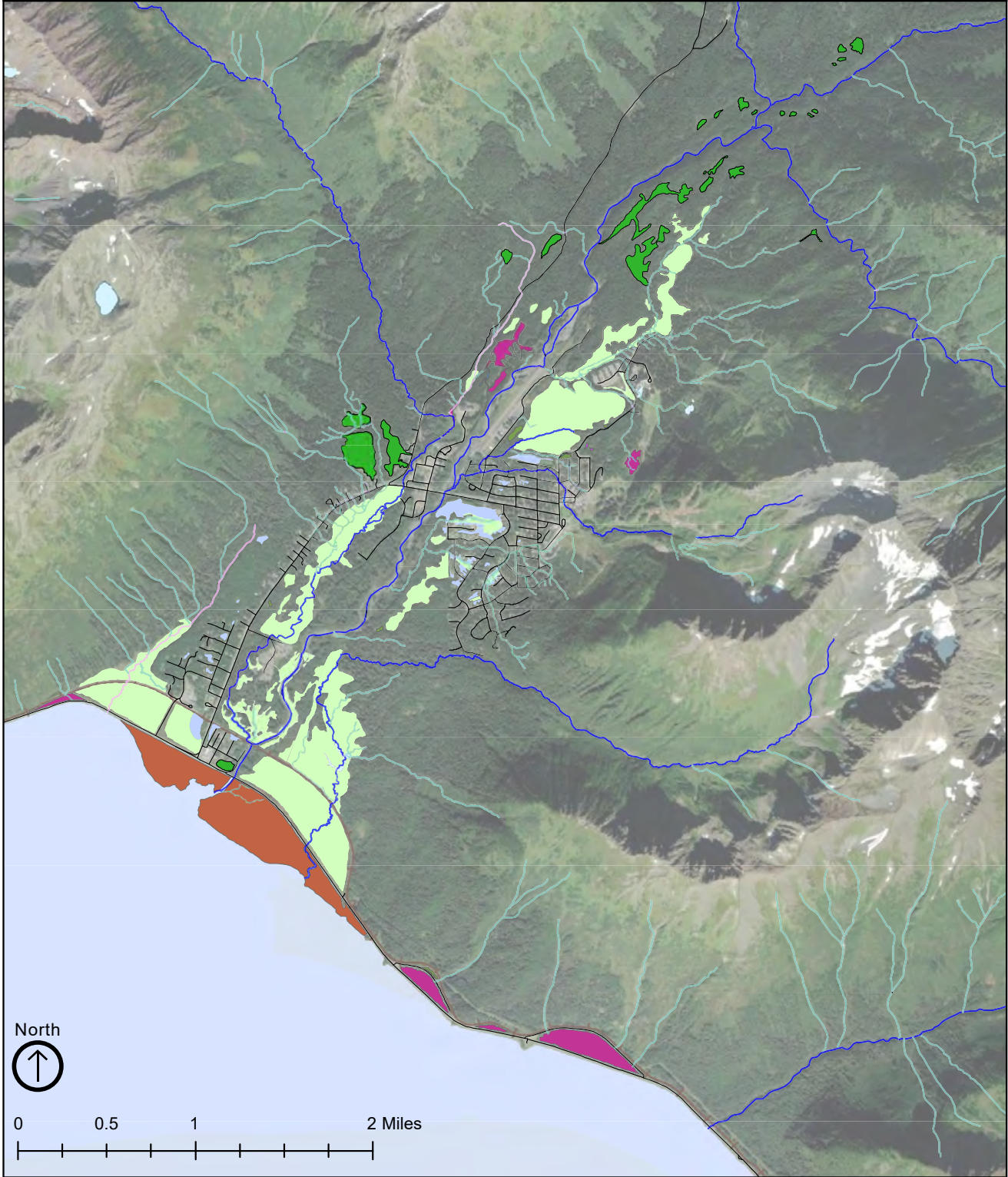
GIRDWOOD AREA PLAN: FLOOD HAZARD MAP



* MAP LAYERS DOWNLOADED FROM FEMA

Figure 5 – Flood Hazard Map

GIRDWOOD AREA PLAN: WETLANDS MAP









- | | | |
|--|--|--|
|  INTERTIDAL |  B-MODERATE |  D-UNDESIGNED |
|  A-HIGH VALUATION |  C-LOW |  P-POTENTIAL |

Figure 6 – Wetlands Map

Existing Zoning, Land Ownership, and Land Use

Zoning

The Girdwood Valley is within the Municipality of Anchorage (MOA); therefore, Girdwood’s land use code is within the Anchorage Municipal Code (AMC). The Girdwood zoning districts and associated allowed uses, dimensional standards, and design criteria are established in the AMC Title 21 Land Use Planning code. Chapter 9 of Title 21 establishes the overall municipal land use guidelines and regulations specific to Girdwood.

Girdwood’s zoning includes residential, commercial, industrial, and resort specific districts as well as other Girdwood-specific districts. The table below is derived from section 21.09.040 of Title 21 and outlines all the district types in the valley.

Table 1 - Table of existing Girdwood zoning districts. (Table 21.09-1 from Title 21)

GIRDWOOD ZONING DISTRICTS ESTABLISHED		
District Type	District Name	District Description
Residential Districts	gR-1	Alyeska Highway Mixed Residential
	gR-2	Single-Family/Two-Family Residential
	gR-2A	Single-Family/Two-Family Residential (Crow Creek Road)
	gR-3	Single-Family/Two-Family Residential
	gR-4	Multiple-Family Residential
	gR-5	Multiple-Family Residential
Commercial Districts	gC-1	Seward Highway/Alyeska Highway Commercial
	gC-2	Girdwood Station/Seward Highway Commercial
	gC-3	Old Townsite Commercial/Residential
	gC-4	Lower Alyeska Highway Commercial
	gC-5	New Townsite South Commercial
	gC-6	Crow Creek Road Commercial/Residential
	gC-7	Townsite Square Commercial
	gC-8	New Townsite North Commercial
	gC-9	East Hightower Commercial/Residential
	gC-10	Upper Alyeska Highway Commercial
Industrial Districts	gI-1	Ruane Road Industrial
	gI-2	Upper Crow Creek Industrial
Resort Use Districts	GRST-1	Original Mountain Base Resort
	GRST-2	New Base Resort
Other Districts	GA	Girdwood Airport
	GOS	Girdwood Open Space
	GIP	Girdwood Institutions and Parks
	GCR-1	Commercial Recreation (Golf Course/Nordic Ski Course)
	GCR-2	Commercial Recreation (Glacier – Winner Creek)
	GCR-3	Commercial Recreation (Crow Creek Historic Mine)
	GDR	Development Reserve
	GRR	Recreation Reserve
GW	Girdwood Watershed	

Land Ownership / Land Use

Girdwood’s land uses include Alyeska resort’s infrastructure and facilities, residential uses, supporting commercial uses, public facilities, and recreational uses. While many developed parcels are privately

owned most of the land in the area is publicly owned by a combination of the Municipality of Anchorage, the State of Alaska, and the Chugach National Forest. Most of the municipal land is managed by the Heritage Land Bank (HLB). In fact, Girdwood has the most HLB lands in the Municipality. Private lands consist of residential and commercial uses as well as the Alyeska Resort.

Parks and Trails

Girdwood Parks and Recreation is a department within the MOA that manages parks and recreation facilities and events for the Girdwood Valley. Girdwood Parks & Recreation oversees:

- Ten (10) parks
- Town square
- One (1) ball field
- One (1) soccer field
- One (1) playground with a separate "tot lot"
- One (1) tennis court
- One (1) skate park
- One (1) disc golf course
- Two (2) sheltered park pavilions with picnic tables
- One (1) tent-only campground during the summer camping season

The Girdwood trail network runs through park land as well as through easements. Trails provide year-round recreation ranging from hiking and biking to skiing and snow biking. Many of the in-town trails provide connections to trails within the Chugach National Forest and Chugach State Park land as well as the Alyeska Resort which includes a large network of downhill mountain bike trails and summer hiking trails.

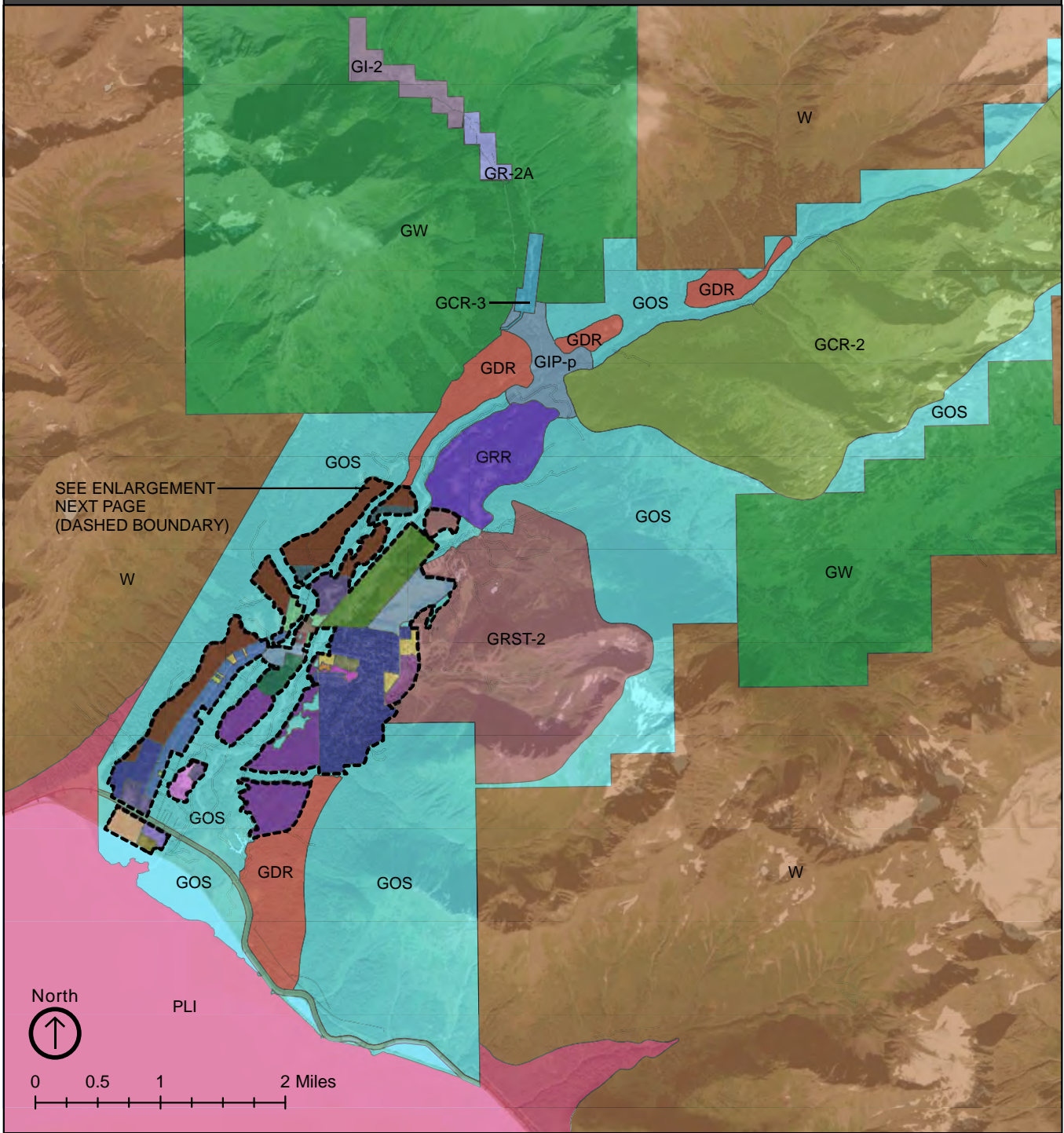
In Girdwood, trail managers are defined as non-profit organizations or businesses that have obtained an easement from the MOA Heritage Land Bank to build and manage trails for public use in the Girdwood Valley. Current trail managers include the Girdwood Nordic Ski Club, Chugach Powder Guides, Bikewood, and the Girdwood Trails Committee.

The community is currently undergoing a process to update the Girdwood Trails Plan (GTP). As the GAP land use plan update is developed the updated GTP should be referenced for consistency.

Public Facilities

In addition to the variety of recreation facilities, Girdwood has rich availability of public facilities. The public library, Girdwood K-8 school, fire station, and post office all support the residents of the area. These public facilities are located in the central area of Girdwood in and near the New Townsite surrounding Town Square north of the Alyeska Highway and there is a hub of facilities just south of Town Square along Egloff Drive at the Girdwood South Townsite.

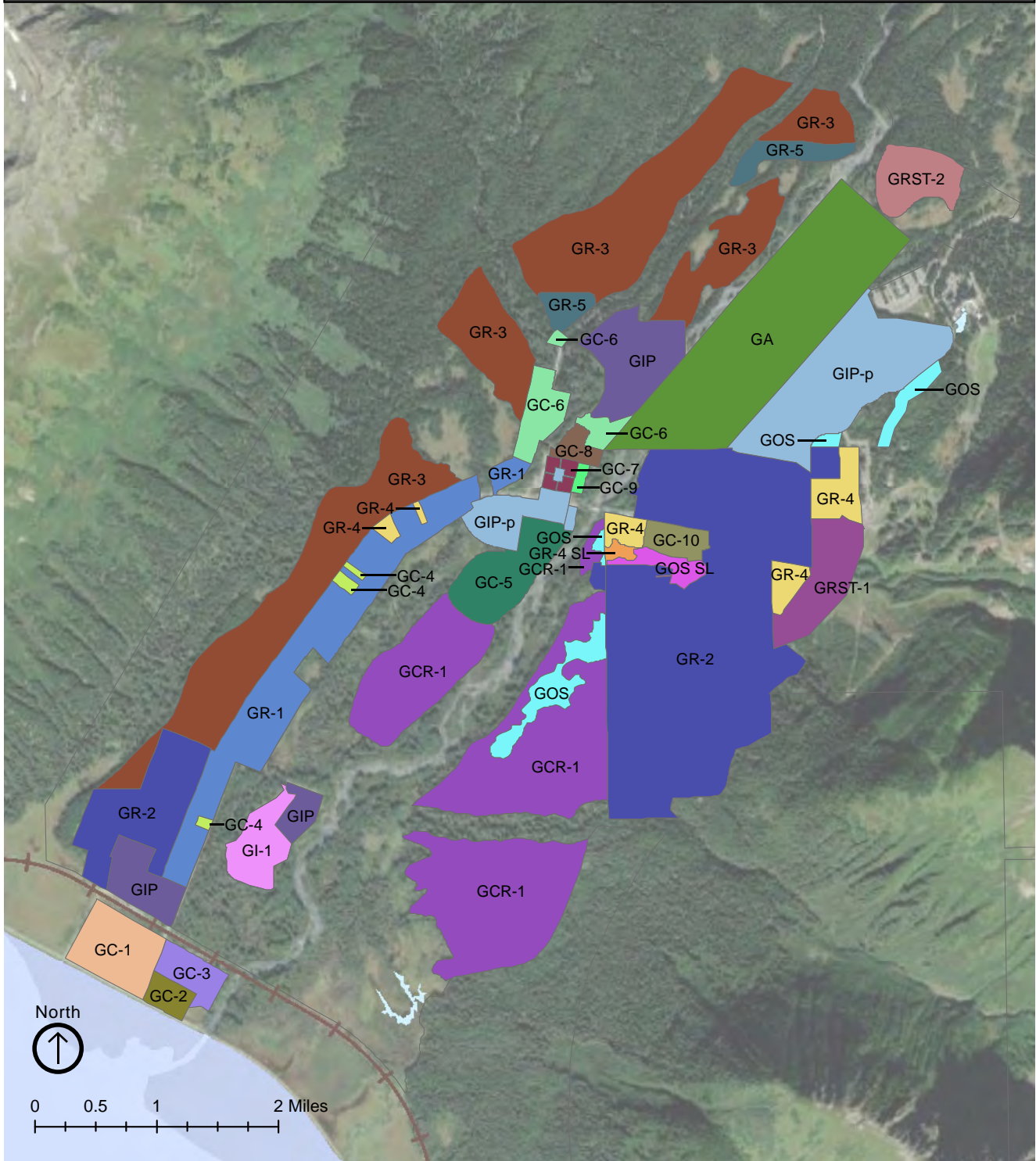
GIRDWOOD AREA PLAN: ZONING MAP



GC-1	GC-5	GC-9	GR-2A	GR-5	GOS SL	GRR	GI-1	
GC-2	GC-6	GC-10	GR-3	GIP	GCR-1	GRST-1	GI-2	GA
GC-3	GC-7	GR-1	GR-4	GIP-p	GCR-2	GRST-2	PLI	GW
GC-4	GC-8	GR-2	GR-4 SL	GOS	GCR-3	GDR	W (ANCHORAGE WATERSHED ZONE)	

Figure 7 - Zoning Map

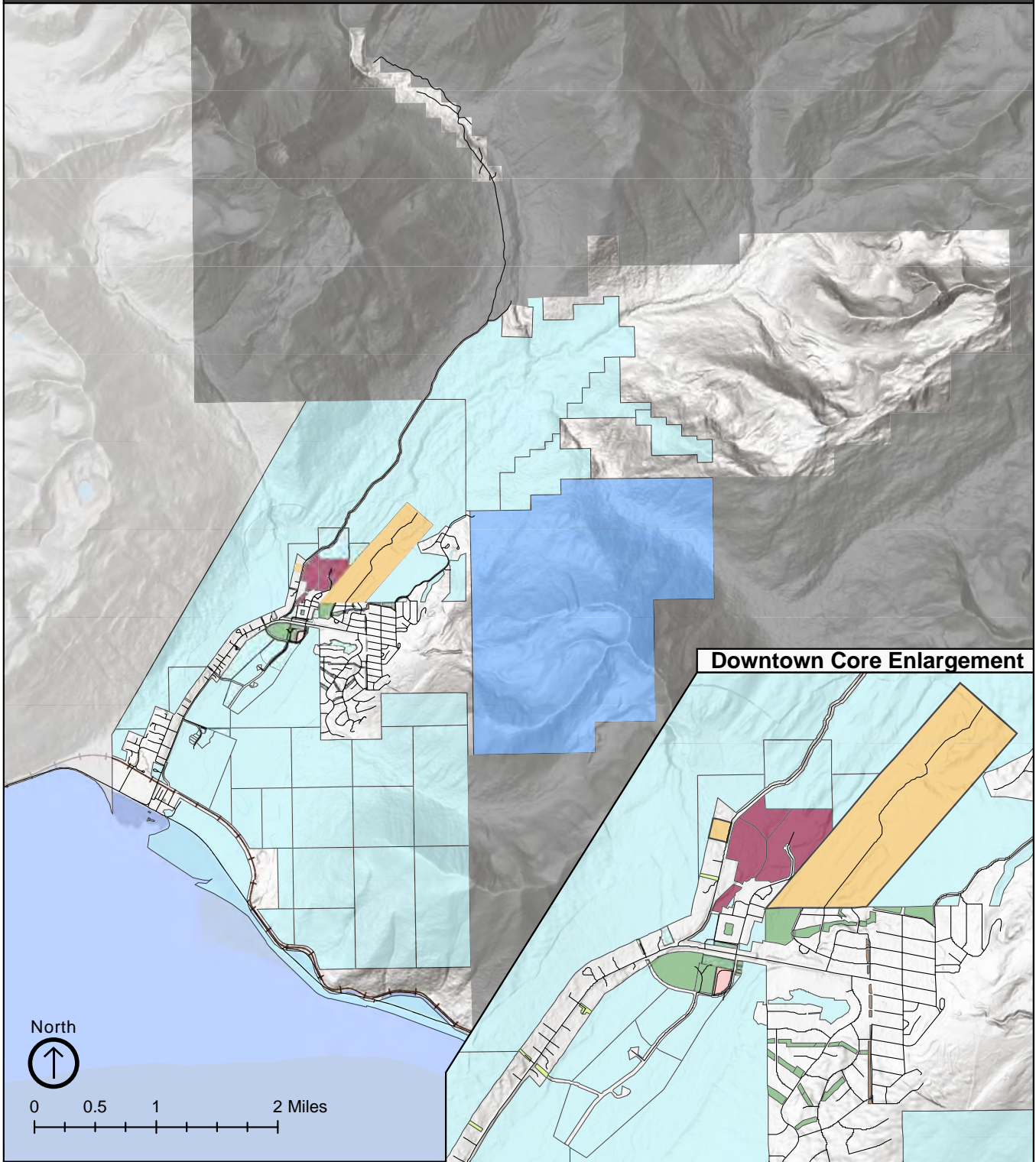
GIRDWOOD AREA PLAN: ZONING MAP



GC-1	GC-5	GC-9	GR-3	GIP	GCR-1	GA
GC-2	GC-6	GC-10	GR-4	GIP-p	GI-1	
GC-3	GC-7	GR-1	GR-4 SL	GOS	GRST-1	
GC-4	GC-8	GR-2	GR-5	GOS SL	GRST-2	

Figure 8 - Zoning Map Enlargement

GIRDWOOD AREA PLAN: LAND OWNERSHIP MAP



- | | | | |
|---------------------------|-------------------------------|--------------------|-----------------|
| Girdwood Fire Department | Chugach State Park | Heritage Land Bank | Private Parcels |
| Anchorage School District | AK Dept. of Natural Resources | Parks & Recreation | |
| Chugach National Forest | AK Dept. of Transportation | Street Maintenance | |

Figure 9 - Land Ownership

GIRDWOOD AREA PLAN: PARKS, TRAILS, AND PUBLIC FACILITIES

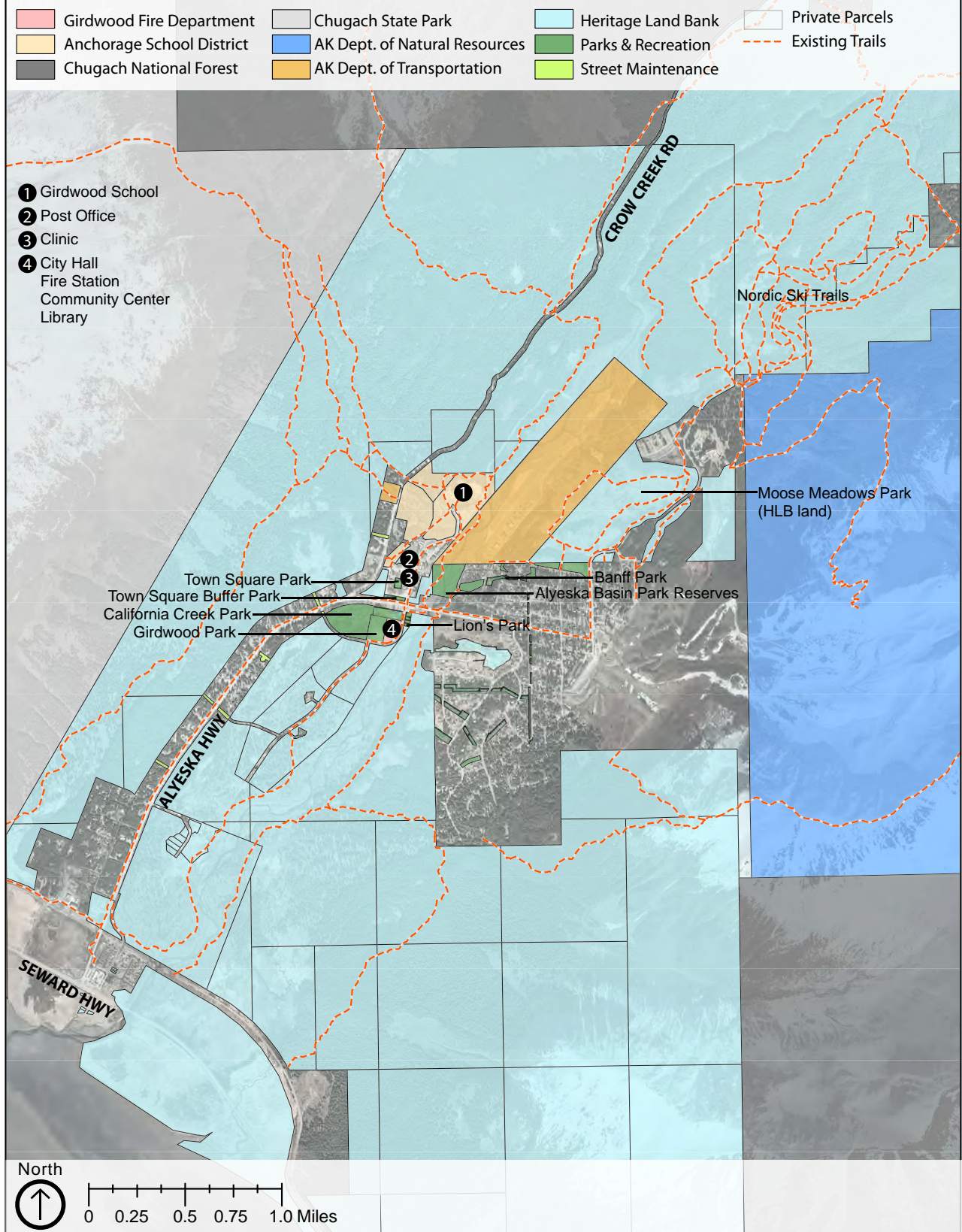


Figure 10 - Girdwood Parks, Trails, and Public Facilities

Existing Utilities and Transportation

Water & Wastewater

The Anchorage Water and Wastewater Utility (AWWU) provides water and wastewater services for Girdwood. The majority of Girdwood is served by wastewater services while the valley is only partially served by water services. Figure 11 below shows the distribution of water and wastewater services.

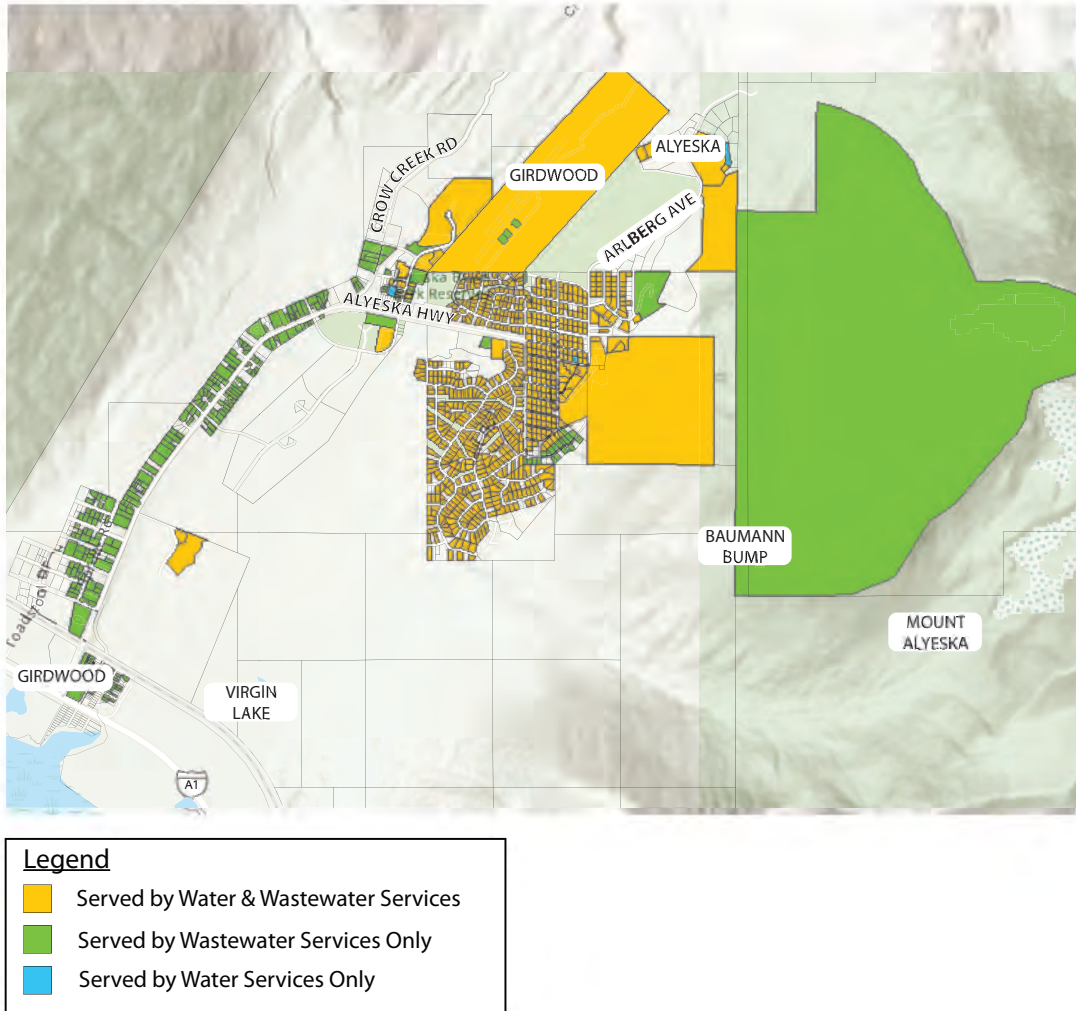


Figure 11 - AWWU Girdwood service distribution map.

The Girdwood water system relies on an independent water system separate from the infrastructure that serves the Anchorage Bowl and Northern Communities. The Girdwood water system consists of two groundwater wells and a reservoir tank with delivery through a distribution network. The valley east of Glacier Creek is served by water, except for some parcels; while areas west of Glacier creek along the Alyeska Highway, the Old Girdwood Townsite near the Seward Highway, and areas along Crow Creek Road are served by private wells. The 2012 Water Master Plan notes that there have been reports of saltwater intrusion in the wells serving the Old Girdwood Townsite, and areas west of Glacier Creek have reported water-quality issues including arsenic contamination.

The wastewater system covers most of the valley except for some residential parcels near the Seward Highway, areas up Crow Creek Road, and a few parcels highlighted in blue in Figure 11. Wastewater is treated at the Girdwood Wastewater Treatment Facility (GWWTF) located at the end of Ruane Road east of the Alyeska Highway.

Areas currently not served by AWWU services are likely due to a lack of need or the costs of expanding service to these areas is potentially cost prohibitive; in either case the property would be served by a private septic system and/or private well.

AWWU completed the Water Master Plan in 2012 and Wastewater Master Plan in 2014. AWWU is in the process of updating the Water Master Plan and will be updating the Wastewater Master Plan in the coming years. The purpose of these plans is to take inventory of existing conditions, plan for maintenance and upgrades, and understand if the systems are adequate for existing and estimated future needs. Future needs are based on population projections and anticipated possible projects subject to available funding. Both the 2012 and 2014 plans assume increases of about 2% average population growth over 20 years. It should be noted that AWWU will be reassessing population projections in their master plan updates and the projections from the currently available plans are almost ten years old.

Expansion of either system will be driven by population growth and development projects such as the Crow Creek Neighborhood planned development, Alyeska Resort expansion, and development in the New Townsite area. Both master plans anticipate that estimated future demands can be met by the current infrastructure capacities in conjunction with system adjustments as projects come online.

The 2012 Water Master Plan identified the following recommendations to address potential water system needs over the next 20 years and beyond for Girdwood:

1. Consolidation of pressure zones allowing decommission of aged infrastructure.
2. Improvements to existing well supply to provide better water quality (this is specific to the backup well which meets all water quality parameters but has elevated iron and manganese).
3. Construction of additional water storage for redundancy if the system expands.

The 2014 Wastewater Master Plan identified the following recommendations to address the wastewater system upgrades, maintenance, and potential future needs for Girdwood:

1. Continue to upgrade and replace the GWWTF to meet current and future wastewater flows and permit requirements.
2. Continue the Inflow and Infiltration (I&I) abatement program in the collection system. I&I refers to groundwater flow that enters the wastewater collection system through extraneous sources.
3. Work with private development to size and locate trunk sewer extensions.

In addition to following Municipal codes, State of Alaska statues, and federal law, AWWU operates under a water and wastewater tariffs, a set of policies and procedures outlining their services and facilities. AWWU focuses on maintaining and serving active customers while planning for potential growth through the master plan process. AWWU does not actively expand services unless a new project comes online when constructed by private developers. Individual developments must cover costs of additional connections or improvement districts can be created where parcels within a district pay for

improvements by special assessments levied against them in accordance with Municipal Code and tariffs. Although it is possible to serve future development in the valley with water and wastewater services, based on current growth predictions, infrastructure costs could influence feasibility of development.

Stormwater

The stormwater drainage system in Girdwood consists of surface drainage and the piped storm drain system. Existing surface drainage is a combination of streams, natural drainage ways, and roadside and non-roadside ditches of varying depths. Glacier, California, Virgin, and Alyeska Creeks carry significant amounts of sediments during flood events, which causes drainage issues in some areas. In developed areas, road ditches, culverts, and storm drain pipes overlay the original drainage pattern, altering the natural system as well as increasing storm water runoff due to an increase in impermeable surfaces and more direct flow routing. Other than road and driveway culverts, the piped storm drain system in Girdwood is limited.

Girdwood's climate, annual rainfall, significant snowfall, glacial melt, and intermittent development play a role in Girdwood's stormwater drainage system challenges. In the late fall and spring, culverts are often frozen preventing precipitation and melt water from draining which exaggerates problems. The 2006 Draft Girdwood Area Drainage Study warns that additional development will continue to strain the existing drainage network as density increases and expands into less suitable and often steep terrain. The plan outlines a series of recommendations that should be considered for new development; these include:

- Rigorously enforce the no net increase in runoff policy for all new development. With the steep topography and 70 inches of annual rainfall this is vitally important.
- Carefully evaluate and map existing streams and drainage ways in new development areas. New development should not mirror the present village area where small streams flow under cabins and decks, and down fence lines.
- Do not allow road ditches to capture and concentrate runoff, provide numerous connections to natural drainage ways. This will reduce erosion and icing problems. Layout road networks to off load drainage frequently at natural drainage ways. Avoid long extended downhill stretches that tend to collect and concentrate flows.
- Preserve natural detention storage in the form of wetlands and natural depressions.
- Restrict overall development footprints by increasing lot size and/or planning cluster housing developments.
- Provide a planned walking pathways network to reduce the wear on natural vegetation and compaction of soils caused by random access.
- Place restrictions on the amount of impervious area in the form of roof surfaces, decks, driveways etc.
- Preserve natural ground cover and vegetation. Reduce lawn areas.
- Avoid direct connections between impervious surfaces and the drainage system.
- Keep the groundwater in the ground. Avoid curtain drains that daylight to ditches, build above grade or use pile foundations, channel water to sumps or vegetation on the back of lots rather than to roadside ditches.

- Avoid development on steep terrain with significant subsurface flow that is easily captured and channeled by foundations, utilities, and road networks.
- Carefully evaluate development on alluvial fans. These are a source of potential drainage and flooding problems.
 - Some are remnants of larger glacial flows and have incised channels that protect the surrounding uplands from flooding. These include the upper California Creek and upper Virgin Creek alluvial fans.
 - Other areas are more active fans and should be developed with caution. These include lower California and lower Virgin Creeks fans.
 - The alluvial fan north of the Prince Hotel is an unknown quantity and should be evaluated before it is developed.

Natural Gas

Girdwood’s natural gas utility is provided by Enstar Natural Gas Company. Natural gas is a relatively new utility for the area with the first service lines installed in the summer of 1996 down the Alyeska Highway. Since 1996 service lines have continued to be installed providing coverage through most of the valley except for northern sections of Crow Creek Road and some other individual parcels. Enstar operates with a ‘cost cause is the cost payer’ system where each specific project is responsible for the capital costs associated with extending the utility to provide service. Enstar does not do future scenario planning unless there is a known project or development underway. Although Enstar does not model out various future scenarios, Enstar anticipates that the current system would provide sufficient capacity for the valley based on historic growth rates; large residential developments or large load facilities would have to be analyzed on a case-by-case basis to determine if the system was adequate. While growth can cause capacity concerns, homes and developments are becoming more and more efficient which helps reduce demand.

Electricity

Chugach Electric Association (CEA) is the electric provider for the Girdwood community. CEA has a substation in Girdwood at the Old Townsite north of the Seward and east of the Alyeska Highway. The main distribution line runs from the Seward Highway. The Alyeska Hotel is powered by an underground feeder to the hotel while the majority of the town is fed by overhead infrastructure.

The MOA’s Title 21 Code requires undergrounding of overhead electrical infrastructure throughout the Municipality. The purpose of this policy is mostly for aesthetic and viewshed purposes. While undergrounding electrical lines does improve viewsheds, the infrastructure needed for undergrounding lines can take up more real estate. Currently, 2% of retail sales in Girdwood goes towards undergrounding.

At this time, CEA does not have any capital improvement projects planned in Girdwood and does not anticipate any issues or load capacity restrictions providing electrical infrastructure as development progresses; a potential development that would exceed the load capacity in Girdwood would be the development of a large industrial complex. New development typically requires a primary line extension, expansion costs are covered by the developer on a project-by-project basis.

Solid Waste Services

Solid Waste Services (SWS) operates a transfer station in Girdwood on Ruane Rd, which is used to temporarily store waste before it is transported. The Girdwood transfer station typically transfers approximately 88% of its tonnage to the Central Transfer Station in Midtown Anchorage and the remainder to the Anchorage Regional Landfill (ARL). The Girdwood Transfer Station accounts for 0.64% of the total recycling material that SWS receives. The 2019 Integrated Solid Waste Master Plan recommends SWS expand yard and garden waste drop-off for beneficial use to the Girdwood Transfer Station within one to five years to divert waste from the landfill and to reduce greenhouse gas emissions.

Transportation

Road access to the Girdwood valley is from the Alyeska Highway which intersects with the Seward Highway at mile post 90. The Alyeska Highway is a minor arterial that creates a main spine through town leading the southern base of the Alyeska ski area. Several collector and local roads branch off from the Alyeska Highway providing access to commercial uses, residential uses, and public facilities. Crow Creek Road is a collector that provides the northern most access in the valley up into the Crow Pass Valley, dead ending at the Crow Pass trailhead. Hightower Road is a collector that provides access to the Girdwood New Townsite; just south of Hightower is Egloff Drive which gives access to the library, fire station, and park facilities. Arlberg Avenue is another collector road along the east side of the valley providing access to the Alyeska Hotel, dead ending at the Girdwood ski trails in the northeast area of the valley.

The 1995 Girdwood Area Plan (1995 GAP), the 2001 Girdwood Commercial Areas & Transportation Master Plan (CAT Plan), and the 2014 Municipality of Anchorage Official Streets and Highways Plan (OS&HP) plan all make recommendations for valley-wide road system improvements. While these plans have slight differences some of the consistent changes include:

- A new access road to the Seward Highway on the east side of the valley
- A new arterial connection between Arlberg Avenue and Crow Creek Road
- New collector roads west of the Alyeska Highway before the intersection with Crow Creek Road

Figures 14, 15, and 16 show the road network plans from the 1995 GAP, CAT, and OS&HP. Other area specific plans also make detailed recommendations on specific collector and arterial improvements; these plans include: the 1996 Glacier-Winner Creek Access Corridor Study Final Routing Report, the 2006 Crow Creek Neighborhood Land Use Plan, and the 2014 Girdwood South Townsite Master Plan. The GAP Update should consider the recommendations in these plans and develop a consolidated transportation plan.

Alyeska Highway, a portion of Crow Creek Road and the road in the airport parcel are State of Alaska Department of Transportation roads. Many of the collector and local roads are maintained by Girdwood Street Maintenance; the remaining roads are privately maintained.

Girdwood is served by Glacier Valley Transit (GVT) for bus services available to the public. GVT is a private non-profit, 501c (3), corporation funded by 5311 Rural Transportation grant funds from the Federal Transit Authority and the Alaska Department of Transportation. GVT provides service between the Seward Highway, Town Square, the Alyeska hotel and day lodge, and up to Crow Creek Mine.

The Alaska Railroad intersects the Alyeska Highway just north of the Seward Highway and has a stop in Girdwood on Brudine Road. This stop does not have services such as a depot or railroad staff and is not available in the winter. The next closest train stop is at the Portage Train Station southeast of Girdwood.

Planning Context

Below is a table of existing Girdwood plans and studies that are relevant to the GAP update. The table provides a general description of the plan and key elements that relate to the current plan. Section 21.01.080 and Table 21.01-1 Comprehensive Plan Elements of AMC’s Title 21 outline what plans are adopted as components of the Municipality’s overall comprehensive plan. The adopted comprehensive plans specific to Girdwood include the Girdwood Area Plan (adopted 1995); Crow Creek Neighborhood Land Use Plan (adopted 2006); Glacier-Winner Creek Access Corridor Study Final Routing Report (adopted 1997); Girdwood-Iditarod Trail Route Study (adopted 1997); and Girdwood Commercial Areas and Transportation Master Plan (adopted 2001).

Table 2 - Table of existing Girdwood Plans

Plan/Study	Plan Description	Considerations for the Girdwood Area Plan Update
Girdwood Area Plan (1995 GAP), 1995	The 1995 GAP provides a land use plan for the valley as well as direction for development of public facilities, transportation, and policy. It was adopted in 1995 and sets the land use policy for the Girdwood area. The GAP Update will supersede the 1995 plan once adopted.	<p>The GAP provides an overview of existing conditions in 1995, history of the valley, a land suitability analysis, a land use plan and an implementation plan. The context and proposed planning solutions from the 1995 plan are important context for the GAP Update.</p> <p>Elements in the 1995 GAP that will be important to revisit include:</p> <ul style="list-style-type: none"> - Land use categories/ zoning and layout - Residential zones, density, housing type - Public institution proposals - Transportation plans - Policy and regulation recommendations <p>(Figure 12, 13, & 14 – 1995 GAP Land Use Plans)</p>
Glacier-Winner Creek Access Corridor Study Final Routing Report, 1996	The purpose of this study was to look at how road access could be provided to the Glacier-Winner Creek area while minimizing disturbance to the natural landscape and provide access across Municipal land to access State land.	The study was developed in response to the 1995 GAP which identified the Glacier-Winner Creek area as a potential commercial recreational/resort development. This report included an analysis of the terrain and environmental conditions of the area and a proposed horizontal layout and profile for the road.
Girdwood Commercial Areas & Transportation Master Plan, 2001 (CAT Plan)	The Girdwood Commercial Areas and Transportation Master Plan provides a long-range, multi-modal transportation plan and a long-range strategy for improving the commercial areas in the Girdwood Valley.	The composite transportation system map proposes new collector connections based on the land uses in the 1995 GAP. The new connections include a new road to the highway on the east side of the valley and new collector roads within the valley connecting the east and west sides of the valley. The plan also includes a

		<p>potential railroad line that connects to the resort area along the west side of the valley. These proposed networks should be revisited as the new land use plan is developed.</p> <p>The commercial areas portion of the master plan proposes different pods for development as areas that include a mix of commercial, civic, and residential uses. The plan focuses on three areas: the new Girdwood townsite, the valley entry and the original Girdwood townsite, and the resort base area.</p> <p>Proposals within this plan along with area specific plans that make further recommendations should be considered and determined whether they should be revised.</p> <p>This transportation network should be reviewed along with the Official Streets and Highways Plan and area-specific plans in order to develop an updated GAP transportation plan. (Figure 15 – Composite Transportation Plan 2001)</p>
<p>Crow Creek Neighborhood Land Use Plan, 2006</p>	<p>The Crow Creek Neighborhood Land Use Plan was developed in 2006. Its purpose was to master plan a large portion of HLB land that had been identified as residential zoning in the 1995 GAP. The area of the plan is a portion of HLB lands on the west side of Glacier Creek along Crow Creek Road. The plan provides a land use suitability analysis and development recommendations with proposed preliminary site layouts.</p>	<p>The Crow Creek Neighborhood Land Use Plan proposes a residential development within the plan area. The proposed residential uses are consistent with the 1995 GAP and the current zoning. The plan accounts for sensitive habitat and trails connectivity by preserving areas of valuable habitat and proposing continued trail connections.</p> <p>The proposed residential uses include multifamily complexes, condos, and single-family homes. While the plan proposes a mix of different density types to preserve open space the overall plan accounts for a minimum of 465 units and a maximum of 710 units.</p> <p>In addition to the residential uses and conservation of lands the plan proposes transportation improvements. This includes a trolley route branching from the railroad that runs along the Seward highway, along the west-side of the valley, passing through this plan area and connecting to the resort.</p>

<p>Glacier-Winner Creek Resort Development Land Use plan, 2006</p>	<p>The purpose of this study was to develop a land use plan for a new ski and year-round resort development in the Glacier/Winner Creek Area.</p>	<p>The plan proposes various development zones within the Glacier/Winner Creek Area including ski area development with 7 new lifts, 18-hole golf course, Nordic trails, and real estate development for residential and commercial uses. The Glacier/Winner Creek Area encompasses over 3,000 acres north of Arlberg Avenue and the Alyeska Resort.</p>
<p>Girdwood South Townsite Master Plan, 2014 (Update from the 2009 Plan)</p>	<p>This area master plan establishes the general arrangement of land uses, circulation and infrastructure systems for the Girdwood South Townsite including proposed vehicular and pedestrian circulation and the types of acceptable proposed development.</p>	<p>The plan proposes a series of recommendations for the Girdwood South Townsite including:</p> <ul style="list-style-type: none"> ● Retain the Kids’ Playground and Skateboard Park in current locations ● Relocate the Little Bears Playhouse childcare center ● Improve the Forest Fair Venue ● Protect and improve the Iditarod Trail ● Provide for a flexible mix of civic and commercial uses ● Provide adequate access routes ● Provide adequate parking ● Provide a range of modestly priced housing ● Create South Townsite development standards ● Calm traffic on Alyeska Highway
<p>Municipality of Anchorage Official Streets and Highways Plan (OS&HP), 2014</p>	<p>The Official Streets and Highways Plan (OS&HP) provides a means for the community to prepare for future development through establishing the location, classification, and minimum rights-of-way of those streets and highways required to accommodate the street and highway transportation needs of the community in years to come. The OS&HP prescribes the location and classification of present and future primary streets within the Municipality.* *From the OS&HP</p>	<p>The map in Figure 16 is the OS&HP Girdwood map. The map shows the network of existing and proposed roads. The map differs from the CAT plan and recommendations in the Crow Creek Neighborhood Land Use Plan. The GAP Update should consider the differences in these plans and provide an updated transportation plan for the valley.</p>
<p>Heritage Land Bank Annual Work Program & 5-year Management Plan, 2021</p>	<p>The HLB Work Program is an annually approved guide for allocating and managing HLB land and resources. The programs functions and activities must be consistent with Municipal Code, HLB policies, and pertinent comprehensive or area plans.</p>	<p>The 2021 plan identifies the status of various Girdwood parcels and their potential for upcoming projects:</p> <p>2021 Potential Disposals, Exchanges & Transfers:</p> <ul style="list-style-type: none"> ● HLB Parcels 6-011, 6-251, 6-295, 6-296 – When located on HLB land, HLB’s involvement in the establishment of new trails generally begins in the conceptual phase, as proposals require the support of the landowner, and continues beyond approval with permitting and easements. HLB continues to work with trail groups and

		<p>Staff has participated in the drafting of the new Girdwood Trails Plan.</p> <ul style="list-style-type: none"> • HLB Parcel 6-039 – Phase II of the Iditarod National Historic Trail (INHT) began in 2020. Until the Girdwood Trails Plan and Girdwood Area Plan are completed and the previous alignment reconfirmed or a new one prescribed, the remainder of the INHT in the Lower Valley will be placed on hold. A permit was issued for improvement of an existing social trail that connects the prescribed INHT alignment to Karolius Drive through South Townsite. • HLB Parcels 6-076 & 6-134 – HLB continues to receive interest in developing the areas documented in the Master Plan. Tract D-5 (HLB Parcel 6-134) has been approved by the HLBAC for disposal. Further evaluation is necessary prior to seeking Assembly approval. • HLB Parcel 6-018 – Continued collaboration with Girdwood Board of Supervisors and the Cemetery Committee will occur in 2021 as they formulate a cemetery design. <p>Five Year Management Plan 2022 – 2026</p> <ul style="list-style-type: none"> • HLB Parcel 6-016, 6-017, & 6-040 – These parcels in Girdwood are being considered for residential development, but infrastructure costs remain the limiting factor • HLB Parcel 6-011 – While portions are being considered for an Umbrella Mitigation Bank and other portions near the airport are being considered for residential development, the remaining portions of this 414-acre parcel are being considered for retention as natural space in accordance with existing Girdwood Recreation Reserve (GRR) zoning. <p>(Figure 17 - Map of HLB lands from the 2021 HLB annual work plan.)</p>
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Land Use Plan

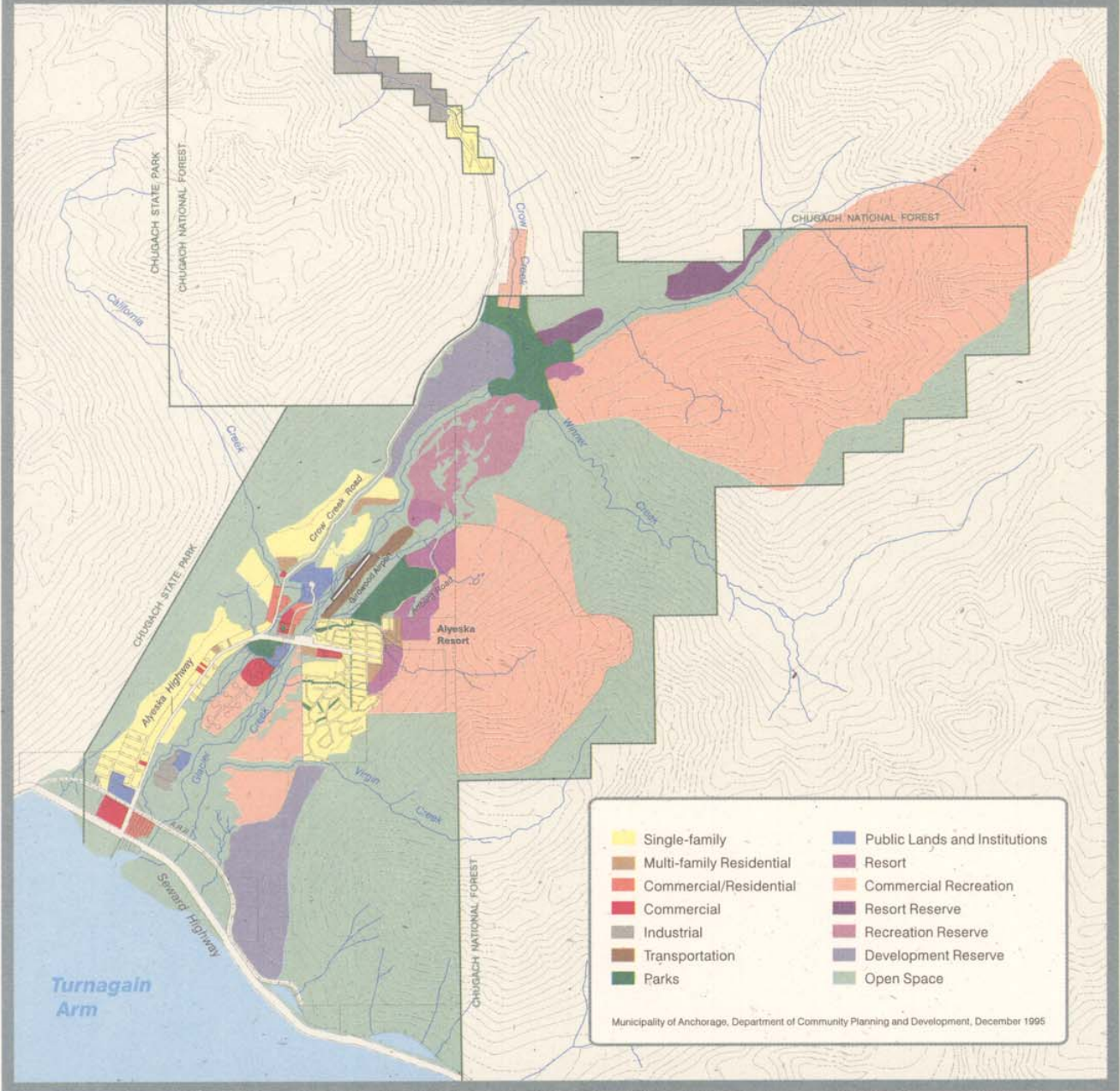
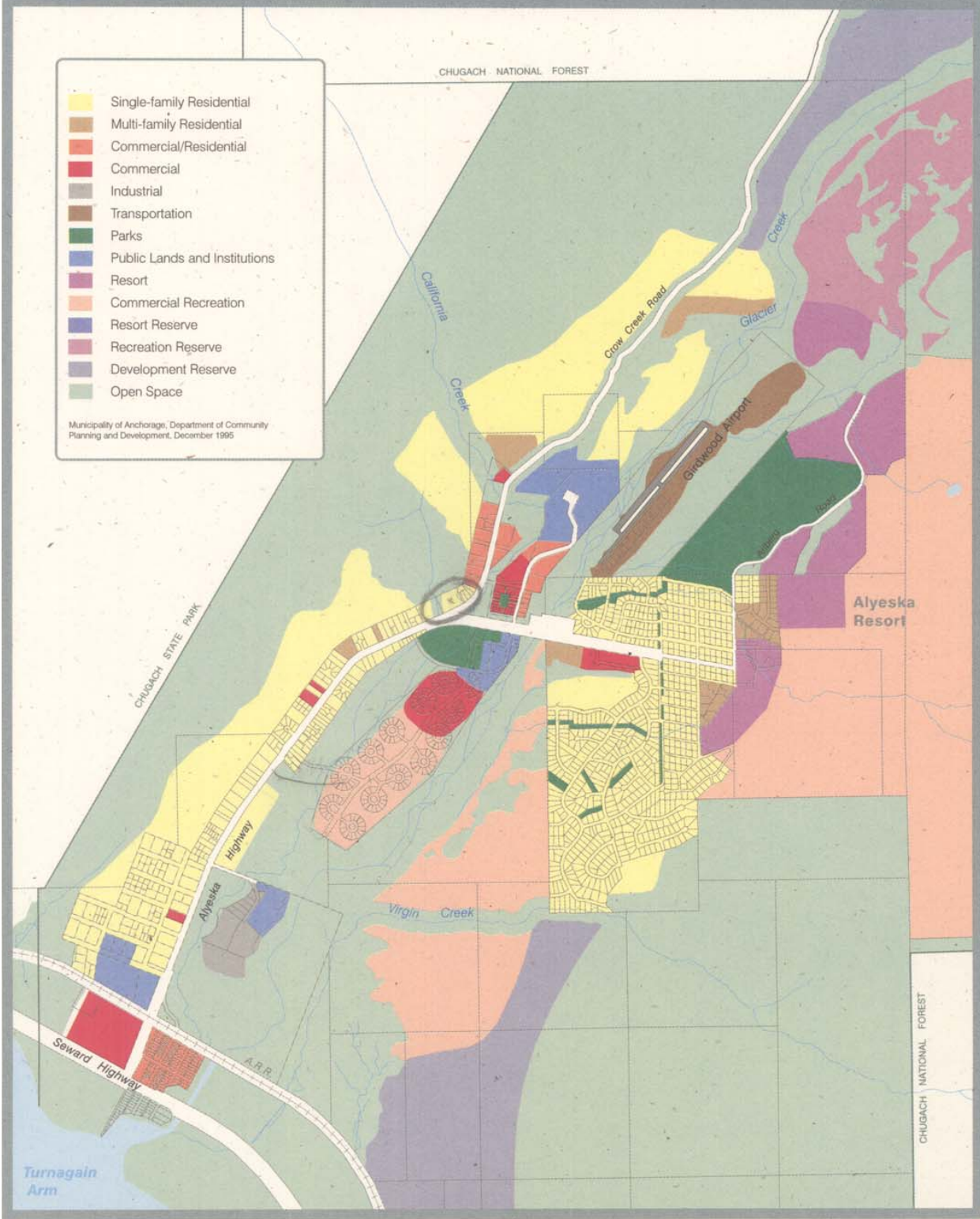


Figure 12 - 1995 GAP Land Use Plan

Land Use Plan (Lower Valley Enlargement)



Municipality of Anchorage, Department of Community Planning and Development, December 1995

Figure 13 - 1995 Land Use Plan Zoom-In

Transportation Plan, Proposed Roadways

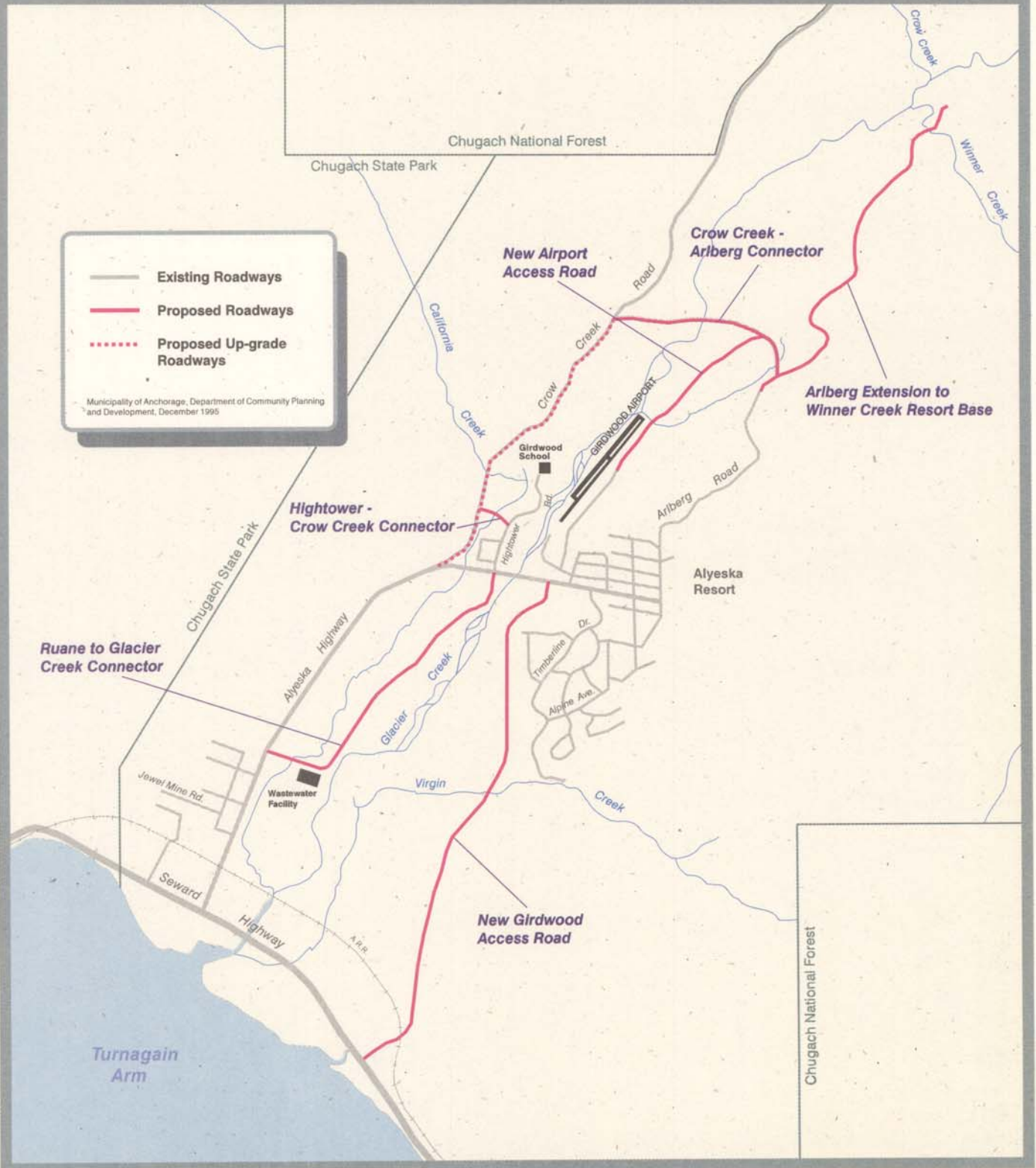


Figure 14 - 1995 GAP Transportation Plan

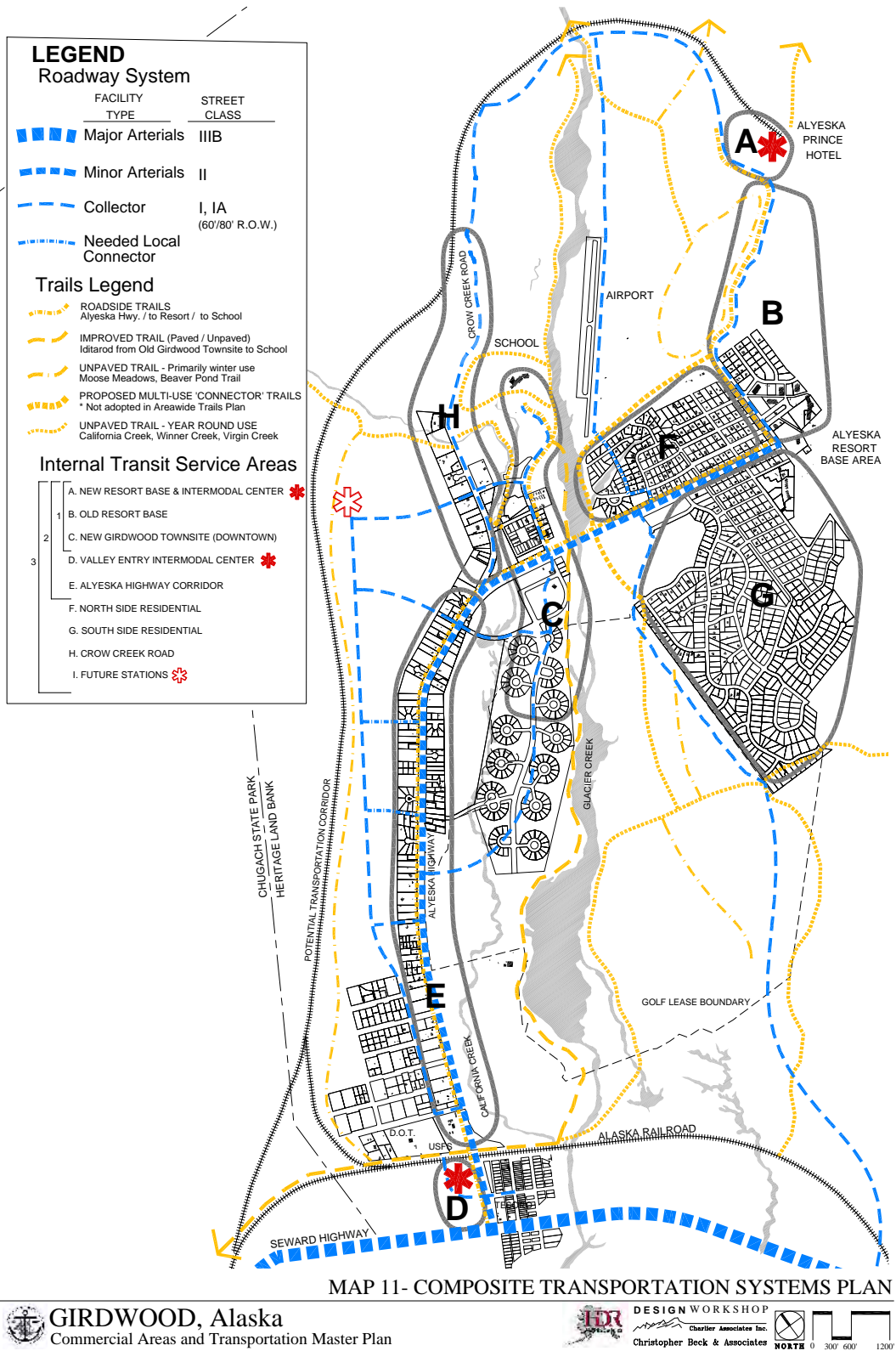


Figure 15 - Composite transportation plan map from the 2001 plan.

Official Streets and Highways Plan

Map 5. Girdwood



Figure 16 - 2014 Official Streets and Highways Plan for Girdwood

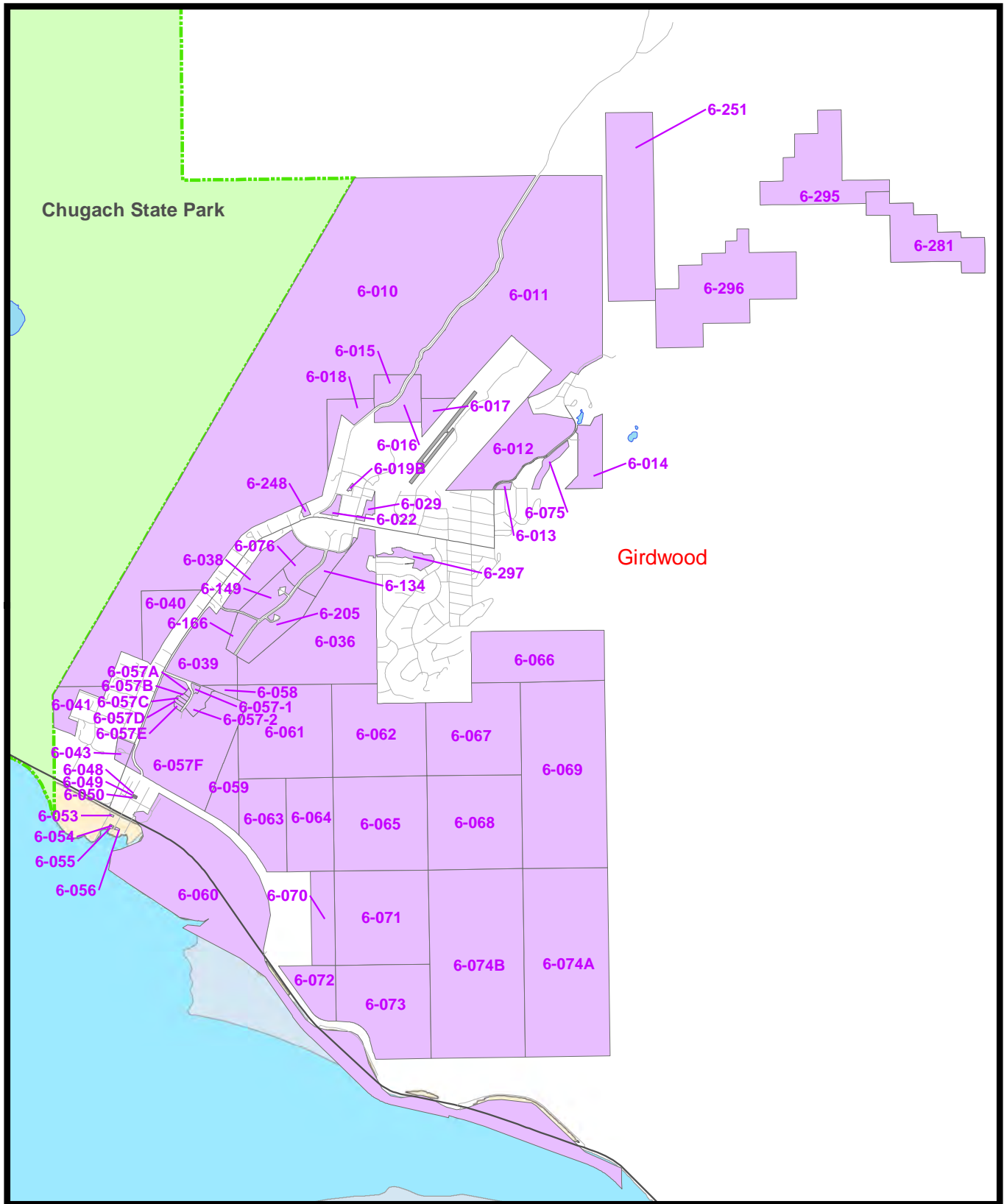


Figure 17 - Map of HLB lands from the 2021 HLB annual work plan.

Land Suitability Analysis

The purpose of the land suitability analysis is to assess where environmental factors could limit development. Land suitability is specific to buildable lands and is meant to show where construction may be appropriate. Areas that are shown as unsuitable for building may be suitable for land uses that do not require constructed buildings such as recreation uses. The Land Suitability Map is intended to provide general areas of potential buildability throughout the valley; it is not intended to provide development data on individual parcels. The developable design of any individual parcel would need to be looked in detail to assess its best potential use. Land suitability is one factor in developing the land use plan map for Girdwood. Other factors such as utility access, land ownership, and land use policies must also be considered in combination with the land suitability map in developing the land use plan.

Environmental Constraints Criteria

To determine what areas are suitable for building environmental factors were classified into three categories, either generally suitable, marginally suitable, or unsuitable. The classification was based on the environmental factors that affect constructability including slopes, avalanche hazards, water bodies, flood hazards, and wetlands.

Table 3 provides an outline of how each environmental factor was classified into the three suitability categories. Many of the ranges below are based on how the Anchorage 2040 Land Use Plan (2040 LUP) also defined suitable lands or how Title 21 defines building constraints.

Land Suitability Map

After each environmental factor was reclassified into the three suitability factors of generally suitable, marginally suitable, and unsuitable, the factors were then overlaid to create one overall map. The Land Suitable Map represents an overlay of all the factors with the most restrictive (most unsuitable) factor being represented graphically. For example, if an area includes a moderate avalanche hazard but a class A wetland the area will be represented as unsuitable (red) because that is the most restrictive factor of the overlays.

Table 3 - Environmental Constraints Criteria

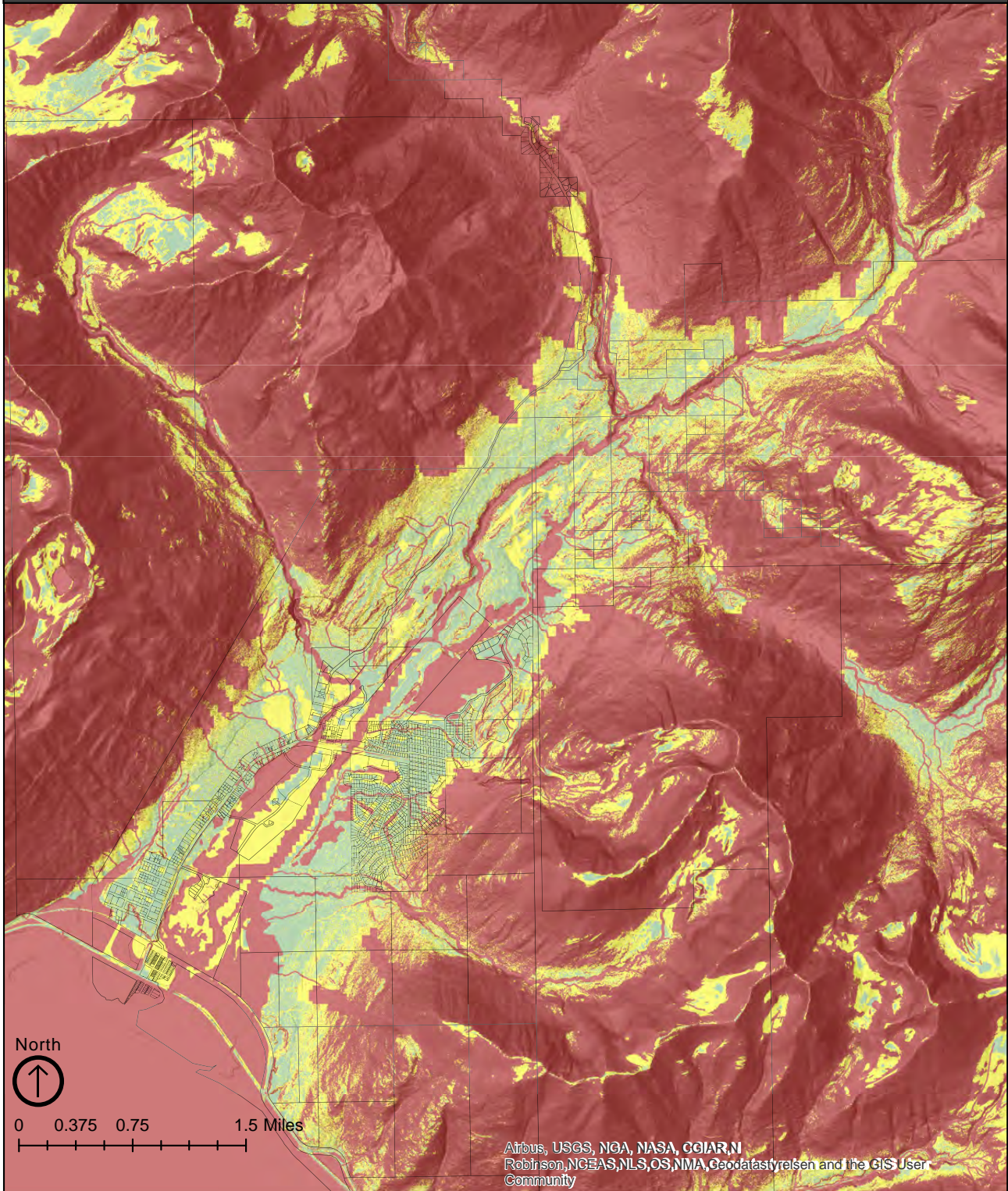
Environmental Constraints Criteria				
Level	Definition	Category	Criteria	How the Ranges Were Determined + (Data Source)
Generally Suitable or Unconstrained	Lands not constrained by environmental factors	All	Areas not impacted by environmental factors	

		Seismic	Not restrictive to buildable lands (zones 1-3 in Girdwood)	Seismically-induced ground failure mapping comes from a 1979 geotechnical report. The Girdwood area consists of hazard zones 1, 2, and 3. Zone 1 is considered the lowest ground failure susceptibility, 2 is moderately low, and 3 is moderate. All three zones are classified as generally suitable lands in the Anchorage 2040 Land Use Plan (2040 LUP). (Mapping is in the 1979 geotechnical report by the firm Harding-Lawson.)
Marginally Suitable or Partially Constrained	Lands with some environmental constraints that reduce the amount of development that the property can support	Slope	Between 15% and 35%	The low end of the range, 15%, is based on how the 2040 LUP defines marginal lands for industrial and commercial uses. The high end of the range, 35%, is based on section 21.09.070.C.1 of Title 21. This section states that no lot shall have an average slope of greater than 35%. (The mapping data is derived from Anchorage's GIS downloadable data.)
		Avalanche	Moderate Hazard	The 1982 Anchorage Snow Avalanche Zoning Analysis Report states that development should be limited in moderate hazard zones. It recommends that if buildings are permitted in the moderate zone they should be reinforced for design-avalanche loads. The report states that utilities and roads should be permitted in moderate areas but they should be placed as far away from the high hazard zone as possible and roads should be signed with avalanche hazard and no parking. (The mapping data is derived from Anchorage's GIS downloadable data.)

		Flood	100-year Floodplain 500-year Floodplain	The 2040 LUP defines the 100-year floodplain as a limiting factor in the marginal category. The MOA Watershed Department also recommends that the 500-year floodplain be included in the marginal category for Girdwood, because the nature of glacial stream flooding can be less predictable than other stream types. The 500-year floodplain should be considered restrictive to critical infrastructure. (The flood mapping is derived from FEMA's Flood Map data.)
		Wetlands	Class B, C, D, and P (permit review and undesignated wetlands) and a 15-foot buffer	Including these wetland classifications in the marginally suitable category is consistent with the 2040 LUP. The wetland buffer is derived from section 21.07.020.B.12 of Title 21. (This data is derived from Anchorage's GIS downloadable data and is based on the Anchorage Wetlands Plan.)
Unsuitable or Prohibitively Constrained	Lands assumed to be undevelopable and are subtracted from the buildable land supply	Slope	Greater than 35%	The high end of the range, 35%, is based on section 21.09.070.C.1 of Title 21. This section states that no lot shall have an average slope of greater than 35%. (The mapping data is derived from Anchorage's GIS downloadable data.)
		Avalanche	High Hazard Area	The 1982 Anchorage Snow Avalanche Zoning Analysis Report states that buildings and other facilities that concentrate human activity should be excluded from the high hazard zone. This criteria is consistent with the 2040 LUP. (The mapping data is derived from Anchorage's GIS downloadable data.)

		Flood	Floodways	Defining the floodway as unsuitable is consistent with the 2040 LUP. (FEMA Flood Map)
		Wetlands	Class A and a 15-foot buffer	Defining class A wetlands as unsuitable is consistent with the 2040 LUP land suitability classifications. The wetland buffer is derived from section 21.07.020.B.12 of Title 21. (This data is derived from Anchorage's GIS downloadable data.)
		Streams	100 Feet (California & Glacier Creek) 50 Feet (Crow, Virgin, & Winner Creek) 25 Feet (Moose Meadows Creek, Alyeska Creek; all other unnamed stream tributaries)	The stream buffers are based on Table 21.07-1 from Title 21. (This data is derived from Anchorage's GIS downloadable data.)
		Lakes	25 Feet from Ordinary High Water Mark	The lake buffer is based on section 21.07.020.B.11 of Title 21. (This data is derived from Anchorage's GIS downloadable data.)

GIRDWOOD AREA PLAN: ENVIRONMENTAL LAND SUITABILITY



- GREEN GENERALLY SUITABLE
- RED GENERALLY UNSUITABLE
- YELLOW MARGINALLY SUITABLE
- WHITE PARCEL LINES

Figure 18 - Land Suitability Map

Suitability for Vacant Residential Lands

The Land Suitability Map was used to determine what extent of existing vacant residential use lands would be suitable for residential development relative to the environmental factors. The purpose of this is to analyze the existing vacant lands that permit residential development and compare the amount of land with the housing demand forecast developed in this report.

The first step in this process was to look at the Girdwood zoning map and extract all the zones that would permit any type of housing development. The zones that were included are based on the Title 21 21.09-2 Table of Allowed Uses. This table shows which zones permit different types of housing. For this analysis the zones listed below were included because they permit housing without additional land use entitlements such as Site Plan Reviews or Conditional Use Permits.

- GR-1
- GC-3
- GC-9
- GR-2
- GC-4
- GC-10
- GR-2A
- GC-5
- GRST1
- GR-3
- GC-6
- GRST2
- GR-4
- GC-7
- GR-5
- GC-8

Table 4 - Title 21 table of allowed residential uses by zone.

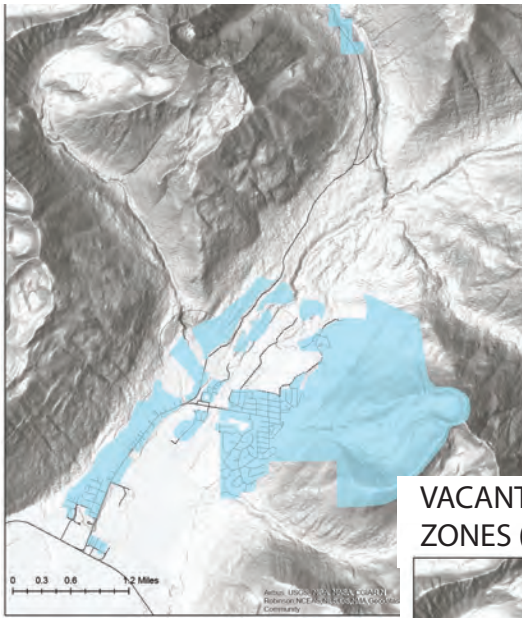
TABLE 21.09-2: TABLE OF ALLOWED USES																												
<i>P = Permitted; C = Conditional; S = Administrative Site Plan Review; M = Major Site Plan Review; O (with # inside) = see end of table For GIP, GCR-1, GCR-2, GCR-3, GDR, and GRR districts, see Section 21.09.040, Zoning Districts</i>																												
Use Category	Use Type	Residential					Commercial										Ind.		Resort		Other			Definitions and Use Specific Standards				
		gR 1	gR 2	gR 2A	gR 3	gR 4	gR 5	gC 1	gC 2	gC 3	gC 4	gC 5	gC 6	gC 7	gC 8	gC 9	gC 10	gl 1	gl 2	gR ST1	gR ST2	G A	O S		G W			
RESIDENTIAL																												
Household Living	Dwelling, single-family detached	P	P	P	P	P	P				P	P	P	P							P	P					21.09.050B.2.d. 21.09.080C.	
	Dwelling, single-family attached	S			S		S														P	P					21.09.050B.2.c 21.09.080D.	
	Dwelling, two-family	P	P	P	P	P					P	P		P							P	P					21.09.050B.2.f. 21.09.080 D.	
	Dwelling, townhouse	S			S		S														P	P					21.09.050B.2.e. 21.09.080E.	
	Dwelling, multiple-family (<4 dua)	P									P	P		P							P	P					21.09.050B.2.b. 21.09.080 E.	
	Dwelling, multiple-family (4-8 dua)	C				S	S				S	S	S	S							S	S					21.09.050B.2.b. 21.09.080 E.	
	Dwelling, multiple-family (>8-20 dua)					C	C				C		M	C							C	C					21.09.050B.2.b. 21.09.080 E.	
	Dwelling, multiple-family (>20 dua)																					C	C					21.09.050B.2.b. 21.09.080 E.
	Dwelling, mixed-use											P	P	P	P	P	P	P	P			P	P					21.09.080 E. 21.09.080F.

The second step in the process was to select which parcels were classified as vacant according to the Municipality’s Property Appraisal Department’s property data. All vacant lands were mapped excluding lands owned by:

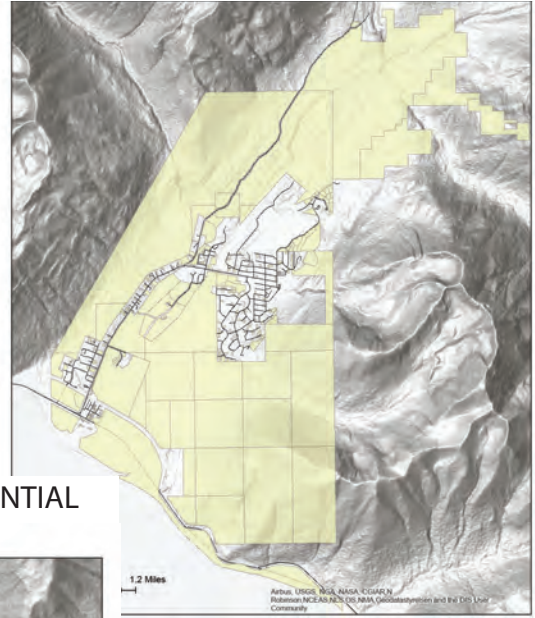
- Girdwood Parks and Recreation
- MOA – Street Maintenance
- MOA – Project Management and Engineering
- Chugach Electric Association Inc.
- State of Alaska Department of Transportation & Public Facilities
- Chugach National Forest Service

Next, the residential zone map and the vacant land map were overlaid to create a map of vacant residentially zoned lands. In Figure 19 the map on the bottom shows the overlay of vacant lands and residential zones highlighted in green. To determine the extent of suitable vacant residential lands compatible with environmental factors the Land Use Suitability Map was merged with the vacant-residential overlay. Figure 20 is a map of that overlay.

ZONES THAT ALLOW RESIDENTIAL



VACANT PARCELS (CAMA DATA)



VACANT PARCELS WITH RESIDENTIAL ZONES (GREEN)

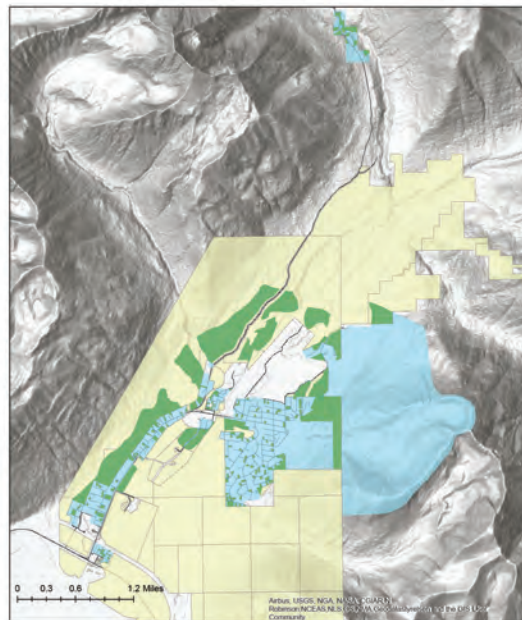
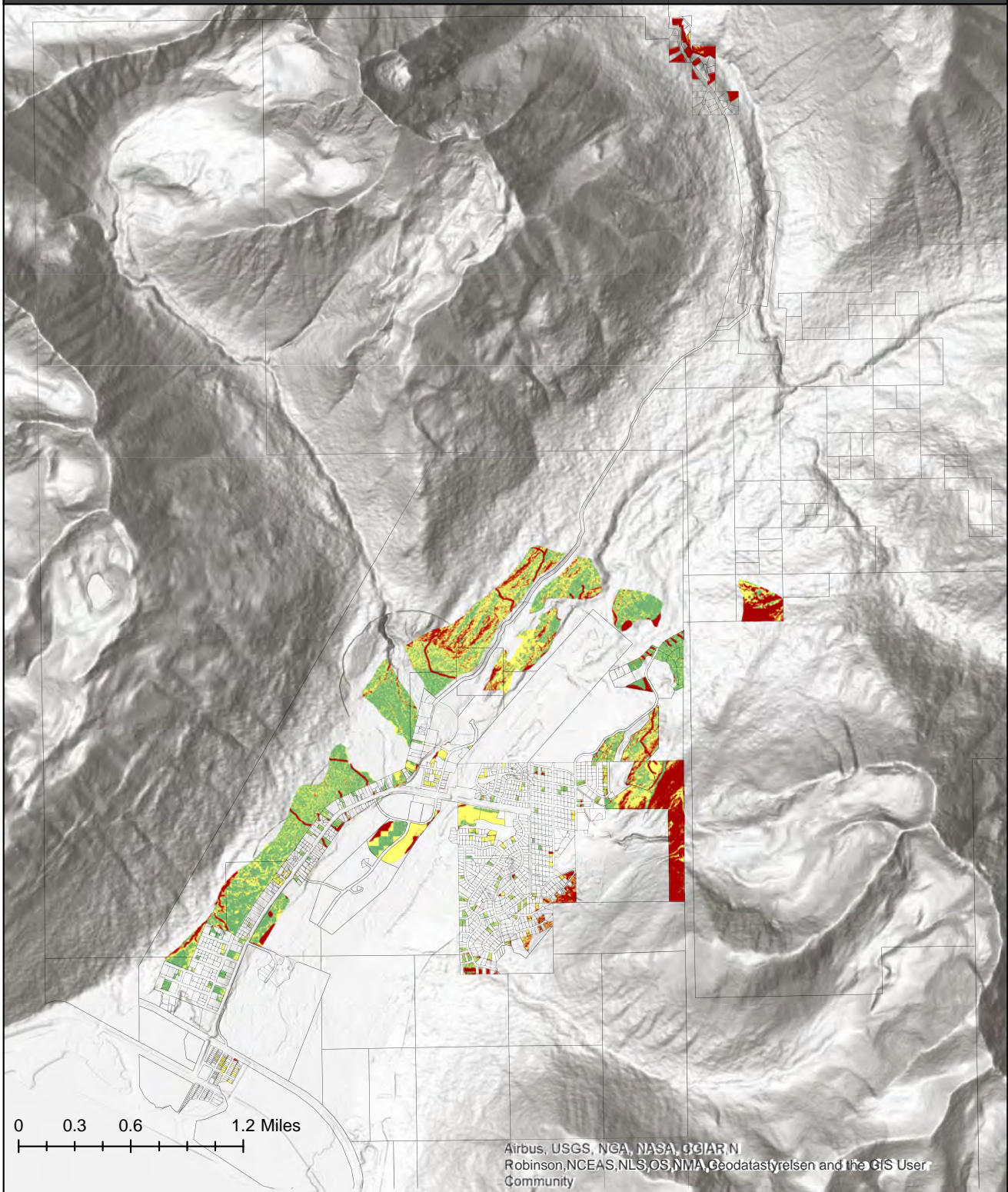


Figure 19 - Vacant Residential Lands

GIRDWOOD AREA PLAN: VACANT PARCELS & RESIDENTIAL ZONE SUITABILITY MAP



- GREEN GENERALLY SUITABLE
- RED GENERALLY UNSUITABLE
- YELLOW MARGINALLY SUITABLE
- WHITE PARCEL LINES

Figure 20 - Land Suitability of Vacant Residential Parcels

The Land Suitability of Vacant Residential Parcels map provides a general sense of where residential development could occur based on existing zoning, existing vacancies, and environmental factors. Other factors will play a role in determining the residential land use pattern of the GAP land use plan map. The intent of this initial analysis is to provide a sense of acreage that could be available for residential development based on current policies. The tables below show the amount of generally and marginally suitable land overall and how that total is broken down by parcel size. It should be noted that the numbers below are meant to provide a high-level estimates.

In addition to the criteria of parcels being vacant, zoning allowing residential, and environmentally suitable, other land use factors will need to drive the land use plan. Figure 21 includes notes that highlight items that should be considered for the land use plan development looking at the large-scale vacant residential parcels on the map.

Table 5 - Acres of Generally/Marginally Suitable Residential Vacant Land

Residential Suitable Acres		
Size of Parcels in Acres	Acres	Acres of Generally/Marginally Suitable Land
Generally Suitable (Green)	276	534
Marginally Suitable (Yellow)	258	
Unsuitable (Red)	161	-

Table 6 - Acres of Generally/Marginally Suitable Residential Vacant Land by Parcel Size

Vacant Residential Parcels					
Size of Parcels in Acres	Number of Parcels	Suitability Category	Acres	Acres of Generally/Marginally Suitable Land	Percent of Overall Generally/Marginally Suitable Acreage
> 5	18	Generally Suitable (Green)	229	449	84%
		Marginally Suitable (Yellow)	220		
		Unsuitable (Red)	129	-	-
1 to 5	25	Generally Suitable (Green)	25	38	7%
		Marginally Suitable (Yellow)	13		
		Unsuitable (Red)	18	-	-
< 1	172	Generally Suitable (Green)	22	47	9%
		Marginally Suitable (Yellow)	25		
		Unsuitable (Red)	14	-	-

GIRDWOOD AREA PLAN: VACANT PARCELS & RESIDENTIAL ZONE SUITABILITY MAP

RESIDENTIAL LAND USE CONSIDERATIONS FOR THE LARGE PARCELS

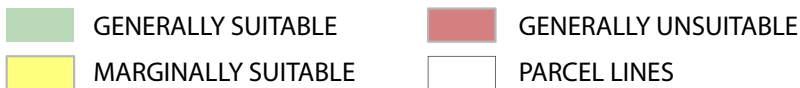
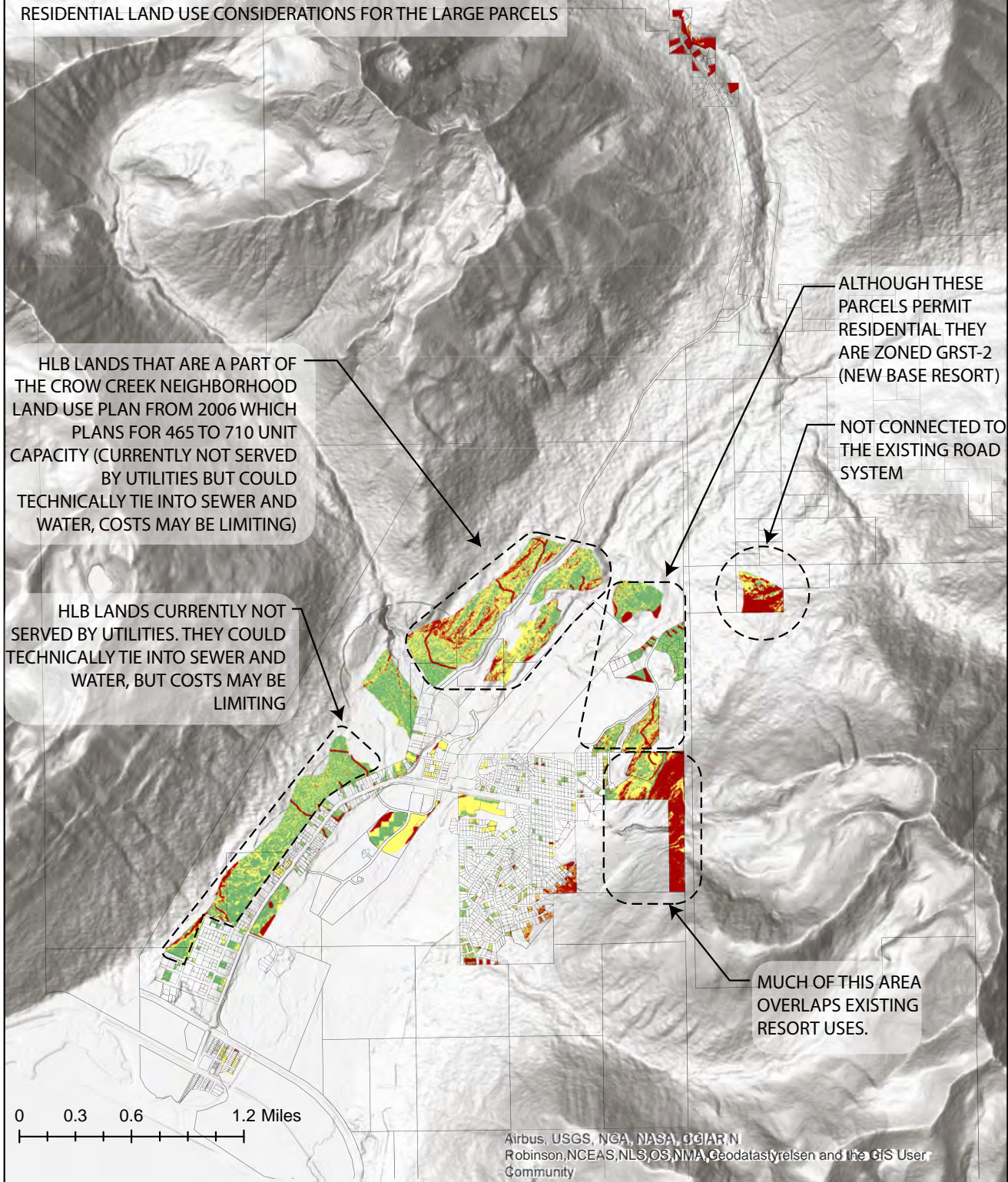


Figure 21 - Land Suitability for Vacant Residential Lands with Notes

Housing Analysis Purpose + Methods

The Girdwood Area Plan Update Committee, Imagine! Girdwood, engaged Agnew::Beck Consulting to conduct a housing demand analysis for the community of Girdwood to inform the area-wide planning process. The purpose of this summary is to share the findings related to trends in population and housing and the impact those trends are expected to have on the demand for residential land in Girdwood.

This analysis uses existing publicly available data to develop housing forecasts based on population growth in Girdwood, as well as other factors influencing housing demand, such as the share of units that may need to be replaced due to age, condition, overcrowding and the share of housing that is **tied up in use by non-local workforce such as** vacation rentals or second homes. This should be viewed as an initial high-level forecast, and more refined analysis and “deep dives” should be **conducted** and considered for future work.

Housing Forecast Versus Housing Action Plan

The housing forecast in this report aggregates housing demand in Girdwood that can be used to help inform the area-wide planning process. However, a forecast should not be interpreted as an exact measure of what will happen in a community with respect to housing. Instead, a housing forecast offers an approximate number of units a community can expect to see developed over a specific amount of time. Note that specific policies and strategies can start to change the trajectory of a housing market to achieve housing outcomes for specific populations and households.

Housing Action Plan Model: Using Data to Drive Collective Action for Local Housing Needs

The data in this forecast could be refined as part of a future effort to develop a housing action plan or implement the Girdwood Area Plan. A housing action plan is a tool that is often developed by multiple organizations collectively. A housing action plan identifies key housing needs and then defines strategies and next steps that a group of organizations can take toward implementation of community housing.

Specifically, a housing action plan could address the following items:

1. Identify the existing type of housing demand in Girdwood by income group (20-80% of AMI, 80-120% AMI and over 120% AMI).
2. Identify policies/housing types and potential funding that could be utilized to address housing issues by income group.
3. Analyze how plans by Alyeska Resort are likely to impact specific housing demand, the timing of that demand, and the type of household and employee demand in the community.



Existing Housing

The estimated number of existing housing units in Girdwood varies depending on the data source and geographic boundaries used. Where possible, this analysis uses the Municipality of Anchorage’s 2021 assessment data accessed through the CAMA database. The boundaries for Tax District 4 are a close geographic proxy for the Girdwood study area when combined with a few additional parcels located in Tax District 15 along upper Crow Creek Road. Based on these criteria there are an estimated 1,603 existing housing units in the Girdwood study area.

Table 7. Estimated Total Housing Units by Geographic Area

	Tract 29	Block Group 2,3,4	Zip 99587	Tax District 4*
Total Housing Units	1,912	1,773	1,669	1,603

Source: U.S. Census Bureau: American Community Survey 5-Year Estimates (2013-2019) and Municipality of Anchorage CAMA database (2021 Assessment)

* Includes 12 housing units along upper Crow Creek Road that are part of Tax District 15

Most of the existing housing units in Girdwood are single family homes, making up 45.7 percent of the existing units. Condos units make up roughly 30 percent of the existing housing stock and duplexes make up about 12 percent of existing units (see Table 8).

Girdwood is home to Alaska’s largest ski resort and offers access to exceptional biking, skiing, rafting, hiking, and fishing. It attracts residents from the nearby Anchorage as well as visitors from around the globe year-round. Many of the existing housing units in Girdwood are used for vacation rentals or second homes. A total of 492 units, or about 31 percent of existing housing units receive a residential tax exemption in Girdwood.¹ Because of limited data availability that reliably identifies permanent and seasonal units, the residential tax exemption is used in this analysis to estimate the number of units used for permanent residential housing versus seasonal/recreational units.

¹ To qualify for the residential property tax exemption the applicant must be the owner of record and the property must be the applicant’s primary residence and permanent place of abode for at least 185 days per year. When absent, the dwelling is not rented or leased to another. Anchorage Municipal Code 12.15.015. It’s important to note that there are permanent residents living in rental units in Girdwood who do not receive a residential tax exemption because they do not own their house. This analysis may undercount this type of household.

Table 8. Existing Housing Units by Unit Type and Residential Occupancy

	Total Units	Residential Tax Exemption	% Permanent
Single Family	734	318	43%
Condominium (Fee Simple)	484	57	12%
Duplex	190	71	37%
Apartment - Garden 1-3 Levels	100	4	4%
Single Family w/ Accessory Dwelling Unit	65	39	60%
Triplex	12	3	25%
Mixed Residential/Commercial	10	0	0%
4-Plex+	6	0	0%
Condominium (Common Element)	2	0	0%
Total Residential Units	1,603	492	31%

Source: Municipality of Anchorage CAMA database (2021 Assessment).

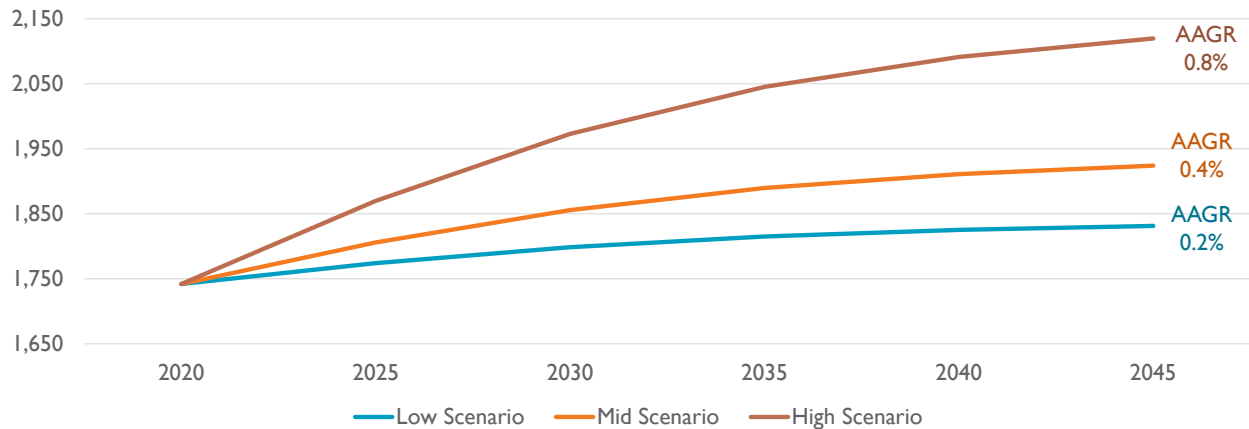
Estimated Housing Demand

The main factors influencing housing demand are changes in the residential population due to employment growth and lifestyle choices, existing overcrowding where multiple households are doubled and tripled up in one units and replacement of existing units due to housing condition. Due to Girdwood's unique market, additional demand for housing units that will be used for vacation rentals or second homes has also been considered in this analysis. **Future expansion decisions by the owners of Alyeska Resort will also impact population and employment growth in Girdwood.**

Population

The population in Girdwood has been stable or experience slight decline between 2013 and 2020. The Department of Labor (DOL) use data collected through the Permanent Fund Dividend (PFD) application even though this data source is broader than Girdwood and includes the surrounding Turnagain arm communities within Census Tract 29, it is viewed as the most accurate a localized estimate of historical population trends. For the Census Tract 29 area, the DOL reports an average annual growth rate (AAGR) of just under 0.5% between 2013 and 2020.

Figure 22. Girdwood Population Estimates, 2013-2020

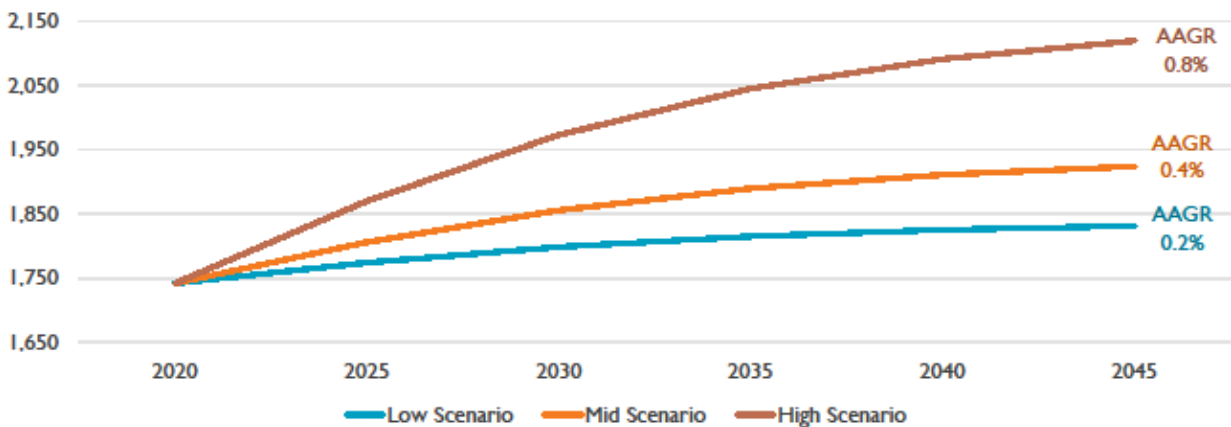


	2020	2025	2030	2035	2040	2045	Average Annual Growth Rate (AAGR)
Low Scenario	1,742	1,774	1,798	1,815	1,825	1,831	
Average Growth Rate		0.37%	0.28%	0.18%	0.11%	0.07%	0.20%
Mid Scenario	1,742	1,806	1,856	1,890	1,911	1,924	
Average Growth Rate		0.73%	0.55%	0.37%	0.23%	0.14%	0.40%
High Scenario	1,742	1,870	1,973	2,045	2,091	2,120	
Average Growth Rate		1.47%	1.10%	0.73%	0.45%	0.27%	0.81%

Source: Alaska Department of Labor Population Projections (2010-2020) and U.S. Census Bureau: American Community Survey 5-Year Estimates (2013-2019)

Agnew::Beck derived a future population for Girdwood that was based on Municipal level DOL official forecasts but also includes pent-up demand that is currently limited by the availability of affordable residential housing units in Girdwood. For this analysis three scenarios were developed to reflect varying levels of potential population growth over the next 25 years. The “low scenario” assumes an average annual growth rate of 0.20 percent and adopts the population growth trends forecasted by the DOL for the Municipality of Anchorage as a whole. The “mid scenario” assumes an average annual growth rate of 0.40 percent, which is double the rate forecasted for the Municipality of Anchorage to account for pent up demand and the desirability of Girdwood. A third “high scenario” of 0.80 percent is included as well based on requests from the Girdwood community to see how a high increase in population would affect housing demand.

Figure 23. Girdwood Population Projections, 2020-2045



	2020	2025	2030	2035	2040	2045	Average Annual Growth Rate (AAGR)
Low Scenario	1,742	1,774	1,798	1,815	1,825	1,831	
Average Growth Rate		0.37%	0.28%	0.18%	0.11%	0.07%	0.20%
Mid Scenario	1,742	1,806	1,856	1,890	1,911	1,924	
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High Scenario	1,742	1,870	1,973	2,045	2,091	2,120	
Average Growth Rate		1.47%	1.10%	0.73%	0.45%	0.27%	0.81%

Source: Alaska Department of Labor Population Projections (2010-2020) and U.S. Census Bureau: American Community Survey 5-Year Estimates (2013-2019)

[1] 2019 ACS 5-Year population Estimate for Zip Code 99587-assuming no change in 2020

[2] Low scenario based on projected growth rates for MOA published by the Dept. of Labor (2020-2045)

[3] High scenario assumes double the projected growth rates for MOA published by the Dept. of Labor (2020-2045)

Under the low scenario and estimated 40 new housing units will be needed to accommodate the projected population growth over the next 20 years. Under the mid scenario an estimated 81 new housing units will be needed to accommodate population growth. Under the high scenario an estimated 167 new housing units will be needed to accommodate population growth. The translation from population to housing units assumes the average household size will remain the same with 2.2 people per household and a 5 percent vacancy rate to accommodate a healthy housing market.

Housing Condition

The number of existing housing units that will need to be replaced in the next 20 years is estimated as the average of three indicators applied as a percent to the sum of occupied units and units on the market:

- occupied units lacking kitchen and plumbing facilities (5.6%)
- all units built before 1950 (0.1%)
- all units that are mobile homes (0%)

This methodology assumes that 2.8 percent of existing housing units or 46 units will need to be replaced over the next 20 years.

Overcrowding

Overcrowding is defined by Census and HUD as homes with more than one occupant per room. Severe overcrowding is defined as more than 1.5 occupant per room. Rooms are defined as the total number of rooms, not just the bedrooms. Roughly 3.2 percent of occupied housing in Girdwood is considered to be overcrowded, resulting in demand for 28 additional housing units over the next 20 years.

Seasonal/Recreational Demand

The Municipality of Anchorage CAMA assessor data shows that roughly 31 percent of existing housing units receive a residential tax exemption. This analysis assumes that the ratio of housing units used by permanent residents and temporary occupants (vacation rentals or second homes) will remain the same moving forward and roughly 70 percent of the total housing stock will be occupied by non-owner occupants. More data analysis is needed to understand the make-up of this 70% (full-time residents who rent long-term, seasonal workforce renters, dark homes, short-term rentals). This forecast “scales up” the permanent housing forecast to account for the high demand for seasonal/recreational units.

This study estimates demand for 107 to 149 residential housing units over the next 20 years based on forecasted population increase, overcrowding and housing condition. An additional 243 to 336 housing units are needed to meet the demand for seasonal/recreational units. In total there is an estimated demand for 350 to 484 housing units in Girdwood over the next 20 years. This averages out to 18 to 25 new units per year, which is consistent with recent trends in new construction in Girdwood as shown through CAMA assessor data. m,

It is important to note that this forecast layers demand for housing by permanent residents with demand for housing by seasonal/recreational households to create a more realistic estimate of overall housing demand in Girdwood. However, there are currently no policies that limit the number of seasonal/recreational households or guarantee a certain number of housing units for permanent residents or for the local workforce. This means that as new housing comes online, the first buyers to the table will secure the new unit. Households looking for second homes or vacation rental opportunities may be able to secure new housing before those who are looking for a permanent residence in Girdwood.

Table 9. Girdwood Housing Demand Summary Results

Item	Low	Mid	High	Notes
Current estimate of Housing Units	1,603	1,603	1,603	Municipality of Anchorage CAMA Database: 2021 Assessment
Current Estimate of Seasonal/Recreational Units	1,111	1,111	1,111	Municipality of Anchorage CAMA Database: 2021 Assessment. Total housing units that do not receive a residential tax exemption (proxy for permanent residents)
Total Permanent Units	492	492	492	Current number of housing units less housing units vacant for seasonal or recreational
New Units Needed Due to Population Change 2020-2030	40	81	167	Population estimates based on DOWLD forecast for MOA. Average Household size and a 5% vacancy rate are taken into consideration to estimate need.
New Units Needed Due to Housing Condition	46	46	46	Estimated as the average of three indicators applied as a percent to the sum of occupied units and units on the market: occupied units lacking kitchen and plumbing facilities (5.6%), all units built before 1950 (0.1%) and all units that are mobile homes (0%). 2019 ACS 5-Year Estimates
New Units Needed Due to Severe Overcrowding	28	28	28	Overcrowding is defined by Census and HUD as homes with more than one occupant per room. Severe overcrowding is defined as more than 1.5 occupant per room. Rooms are defined as the total number of rooms, not just the bedrooms. Three (3.2%) percent of occupied housing in Girdwood is overcrowded. 2019 ACS 5-Year Estimate
Less New Residential Construction	6	6	6	Municipality of Anchorage CAMA Database: Units constructed in 2020 (6 new units in 2020-26 new units in 2019)
Total New Units Needed	107	149	235	
New Units Due Needed to Seasonal/Recreational Demand	243	336	531	Municipality of Anchorage CAMA data shows that roughly 31% of existing housing units receive a residential tax exemption. We are using this as a proxy for permanent residents and scaling up projected new units using this ratio.
Total New Units Needed Including Seasonal/Recreational Units	350	484	766	
Estimated annual absorption	18 units/year	25 units/year	39 units/year	Estimated over a 20-year time frame (2040)