

Turnagain Arm Comprehensive Plan

Adopted December 1, 2009

Municipality of Anchorage
Planning Department

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Assembly Ordinance 2009-126

**Municipality of Anchorage
Planning Department**

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CHAPTER 1: Introduction



The Turnagain Arm Comprehensive Plan (Plan) is a revision of the 1987 Turnagain Arm Comprehensive Plan (1987 Plan), which covered the communities of Rainbow, Indian, Bird Creek, Girdwood, and Portage. In 1995 Girdwood adopted its own comprehensive plan called the Girdwood Area Plan. This Plan revision covers Rainbow, Indian, Bird, and Portage, including the Twenty Mile River area. (See Vicinity Map for planning area boundaries.) Like the 1987 Plan, this document addresses general land use issues and presents land use recommendations for future development. The Plan provides guidance for future growth through policies that will be carried out with the implementation actions identified in this Plan.

Orderly growth and community expansion in Turnagain Arm will accommodate future needs and preserve important community features. The land use plan for Turnagain Arm must balance growth with the core values of the Turnagain Arm communities, which include maintaining rural lifestyles and scenic values. Elements of the Plan focus on addressing this balance for the next 20 years and beyond.

WHAT IS A COMPREHENSIVE PLAN?

A comprehensive plan identifies major issues facing the community. It reflects community goals, objectives, and general policies for governing future land uses. The comprehensive plan serves as a best estimate of the future if the adopted policies and implementation actions are followed.

The Anchorage Municipal Code provides the process for creating such a plan. The Anchorage Assembly implements the plan through legislative action. Reviews and revisions of the comprehensive plan occur at least once every 20 years, usually after a decennial census.

N.B. – Unless otherwise noted, references to Turnagain Arm communities and conditions pertain to the four communities subject to this Plan revision, Rainbow, Indian, Bird Creek, and Portage.

HOW WILL THE TURNAGAIN ARM COMPREHENSIVE PLAN BE USED?

The document is meant to guide policy makers, community councils, the general public, and municipal, state, and federal agencies in evaluating if regulatory actions, public investments, and land use changes meet the Plan's goals. The goals, objectives, and strategies in Chapter 4 and the land use maps in Chapter 5 are used to implement the Plan.

WHY IS THE TURNAGAIN ARM COMPREHENSIVE PLAN BEING REVISED?

The last comprehensive plan for Turnagain Arm was adopted in 1987. The Anchorage Municipal Code requires comprehensive plans to be revised every 20 years. The Plan needs to reflect contemporary conditions and new demographics, as highlighted in the 2000 U.S. Census. It is being revised to address new and emerging land use issues in the region, including: land status conflicts along the Seward Highway and in Portage, Heritage Land Bank holdings in Indian and Bird Creek, two large-scale Seward Highway improvement projects, future uses and demands of Alaska Railroad holdings in Portage, isolated private parcels with poor access in Portage, and increasing Seward Highway tourism activities. These issues are outlined and addressed later in the document.

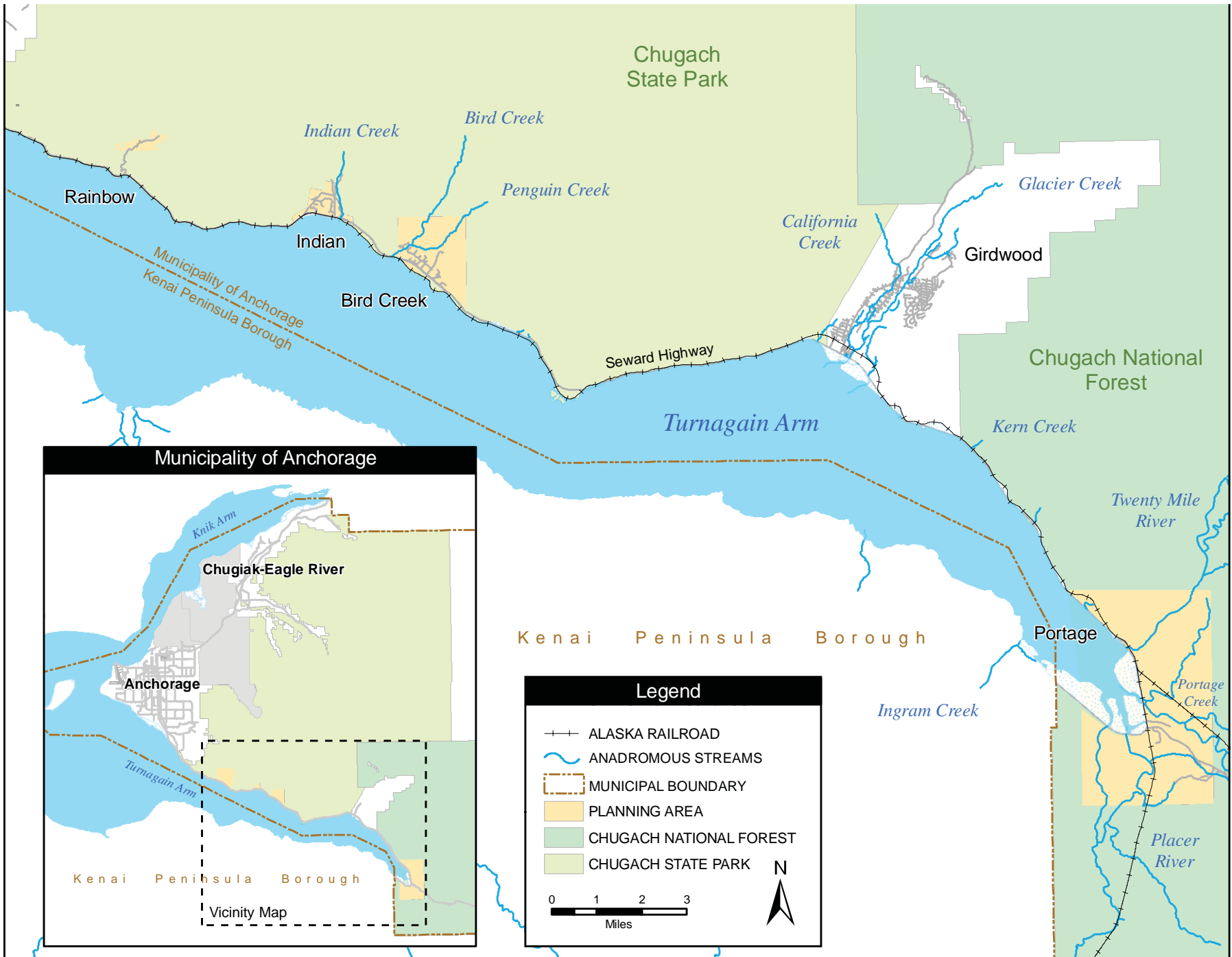
HOW WILL THIS PLAN BE IMPLEMENTED?

Comprehensive plans are implemented by Anchorage Assembly actions and the various land use decision-making boards and commissions, including the Planning and Zoning Commission and the Platting Board. Chapter 4 goals, policies, and strategies, the Chapter 5 land use plan maps, and the Chapter 6 implementation schedule table are the main implementation tools. Additional step-down plans, including revisions to the Turnagain Arm volume of the Parks Plan and other specialty plans, provide additional implementation actions.

PLAN DEVELOPMENT AND LAYOUT

The Plan is divided into sections, with Chapter 2 providing a planning area overview. Turnagain Arm's geography, demographics, and land use patterns are summarized and, when appropriate, compared to like conditions when the Plan was last revised in 1987.

Chapter 3 represents a summary of the public process. Planning staff attended community council meetings and held a community visioning and core values workshop, followed by an issues and opportunities workshop. A community survey was sent to all addresses in Turnagain Arm. The Plan incorporates these data and additional research, which are captured as a formal set of core values or community goals in Chapter 3.



Vicinity Map

Chapter 4 uses the goals as building blocks for the Plan’s new policies, objectives, and strategies, which are presented for each goal statement.

Chapter 5 includes the key elements and foundations of the Turnagain Arm Comprehensive Plan. Future growth guidelines and reference materials that will shape the communities for the next 20 years are represented here. This chapter presents the actual land use plan, which includes contemporary definitions of the proposed new land use categories and land use recommendations and details for each of the four communities.

Chapter 6 includes methods, actions, and details for Plan implementation and revision over the next 20 years and beyond.



Vistas such as this one of Turnagain Arm trumpeter swans and mountains help define the unique beauty of the area.



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CHAPTER 2: Community Overview



PLAN AREA DESCRIPTION AND SETTING

The Turnagain Arm region encompasses the southern portion of the Municipality of Anchorage (MOA) from Potter Marsh to Ingram Creek. Set amidst a dramatic backdrop of mountains and dynamic ocean tides, the region boasts classic Alaskan scenery.

Turnagain Arm was named by Captain James Cook who, while exploring the area in 1778, called the fjord “turn again” to reflect yet another dead-end waterway in his search for the Northwest Passage. Long before Cook arrived, indigenous people hunted and fished in the region and created a trade route between the Kenai Peninsula and Interior Alaska. That route was later used by miners and trappers during the 19th century rush for gold and furs. Construction of the Alaska Railroad in 1918 and the modern-day Seward Highway formalized the main travel route between Anchorage and Seward. The communities of Rainbow, Indian, Bird, Girdwood, and Portage developed during the height of mining and railroad construction.

Today the Seward Highway is designated a National and an Alaska Scenic Byway and All-American Road. It provides a vital link connecting Interior Alaska, Prince William Sound, and the Kenai Peninsula and provides access to the 495,000-acre Chugach State Park. Outdoor activities available in the Turnagain Arm region include skiing, dog mushing, ice climbing, hiking, rafting, jet boating, fishing, berry picking, gold panning, cycling, picnicking, and camping. The Turnagain Arm region has visitor amenities such as gift shops, hotels, ski areas, campgrounds, tours, and a wildlife park. The U.S. Forest Service Begich, Boggs Visitor Center serves thousands of visitors yearly. Commercial centers in Girdwood, Indian, and Bird provide additional services to visitors and residents. The Turnagain Arm region continues to evolve as one of Alaska’s busiest tourist attractions.

The dramatic Portage Valley draws thousands of visitors each year to view hanging glaciers perched on mountain cliffs and icebergs floating on Portage Lake. The U.S. Forest Service visitor center provides informative

programs and displays. Recreational opportunities are plentiful in Portage Valley and include camping, hiking, rafting, Nordic skiing, ice climbing and snow machining. The valley is also an important link to Prince William Sound; a tunnel connects Turnagain Arm to the port community of Whittier.

Geography and Environmental Features

Geology

Turnagain Arm's dramatic landscape is the result of metamorphic forces on marine deposits that were uplifted and subsequently carved by centuries of glacial activity. As the glaciers receded, subsequent melting fed the region's many lakes, rivers, and wetlands. Unconsolidated sediments now line the ocean bed and fill the alluvial valleys. Hanging glaciers, which are evidence of past earthquakes, are still visible, especially in the Portage area. The 1964 earthquake, which had a Richter scale magnitude of 9.2, lowered Portage Valley's elevation by as much as 6 to 12 feet, flooding areas previously above high tides. As a result, today dead trees line the tidal mudflats in Portage. This area is rebounding.

Marine

Turnagain Arm's extreme tidal fluctuations of 30 feet create the only regularly occurring bore tide in the United States. Fed by silts and sands from melting glaciers, the marine waters are a murky slate gray color. These deposited sediments produced extensive mudflats, which are dangerous, despite appearing deceptively benign. As deep as 1,000 feet, the mudflats are unstable and are subject to liquefaction during earthquakes. The mud supports vegetation such as sedges, salt-tolerant grasses, and algae in

some areas. The ongoing siltation of this ecosystem leads to relatively low invertebrate diversity. The mudflats are not especially attractive habitat for waterbirds.

Watersheds

Several major glacial or spring-fed streams and rivers carve courses out of the Chugach Mountains to deposit their silt-laden loads into Cook Inlet. Within these watersheds are numerous tributaries, lakes, ponds, and wetlands with steep-sloped uplands. Major streams and rivers include the Twenty Mile and Placer rivers and Portage, Peterson, Kern, Glacier View, Bird, Penguin, Indian, Falls, and McHugh creeks. Freshwater or marine-influenced wetlands are found primarily in the lower valleys of the Turnagain Arm region. Most wetlands are sedge-dominated wet meadows, intertidal marshes, or black spruce bogs. See Environmental Features Summary Map.

Tall mountains and ocean currents largely dictate the region's climate. Positioned between Cook Inlet and Prince William Sound, the area is influenced by weather systems from both ocean bodies. Permafrost is sporadic and generally confined to high elevations and north-facing slopes (Alaska Climate Research Center data). Wind is a dominant force in Turnagain Arm, and calm days are few. Wind speed averages 9.8 miles per hour (mph) in Portage. The mountains surrounding the arm create a wind tunnel effect when a pressure gradient exists between Prince William Sound and Cook Inlet. Winds exceeding 100 mph often occur in the spring or fall seasons. Of the five climatic districts in Alaska, Turnagain Arm is located within the Maritime zone where ocean currents maintain a relatively mild annual temperature range, averaging from 20 to 65 degrees Fahrenheit.

Table I compares weather averages in Turnagain Arm from Portage westward to Anchorage.

	PORTAGE	GIRDWOOD	ANCHORAGE
Average Annual Wind Speed	9.8 mph	N/A	7.1 mph
Avg. Maximum Temperature	64.8°	65.5°	65.9°
Average Minimum Temperature	10.5°	11°	5.4°
Average Total Precipitation	78.2"	41.5"	14.6"
Average Total Snowfall	147.9"	121"	56"

Climate

Note: Climate data for the Turnagain Arm region is incomplete. Data was obtained from Girdwood and Portage recording stations when they operated in the recent past.

Table I: Climate Comparison

The combined effect of heavy snowfalls and high winds causes snow loading to occur above steep mountain slopes, creating avalanche conditions. In addition, alternating freezing and thawing temperatures contribute to an unstable snowpack in the mountainous areas. During the winter and spring, warm Chinook winds exacerbate the threat of avalanches and create glaciating conditions in Turnagain Arm.

Vegetation

Turnagain Arm's position between the wet Prince William Sound and the drier Alaska Interior creates a unique overlap of floral and faunal species

native to each region. Temperature, precipitation, and elevation dictate the range of vegetation types in Turnagain Arm. Most of the region is forested up to treeline, and is characterized by alpine tundra on the peaks above.

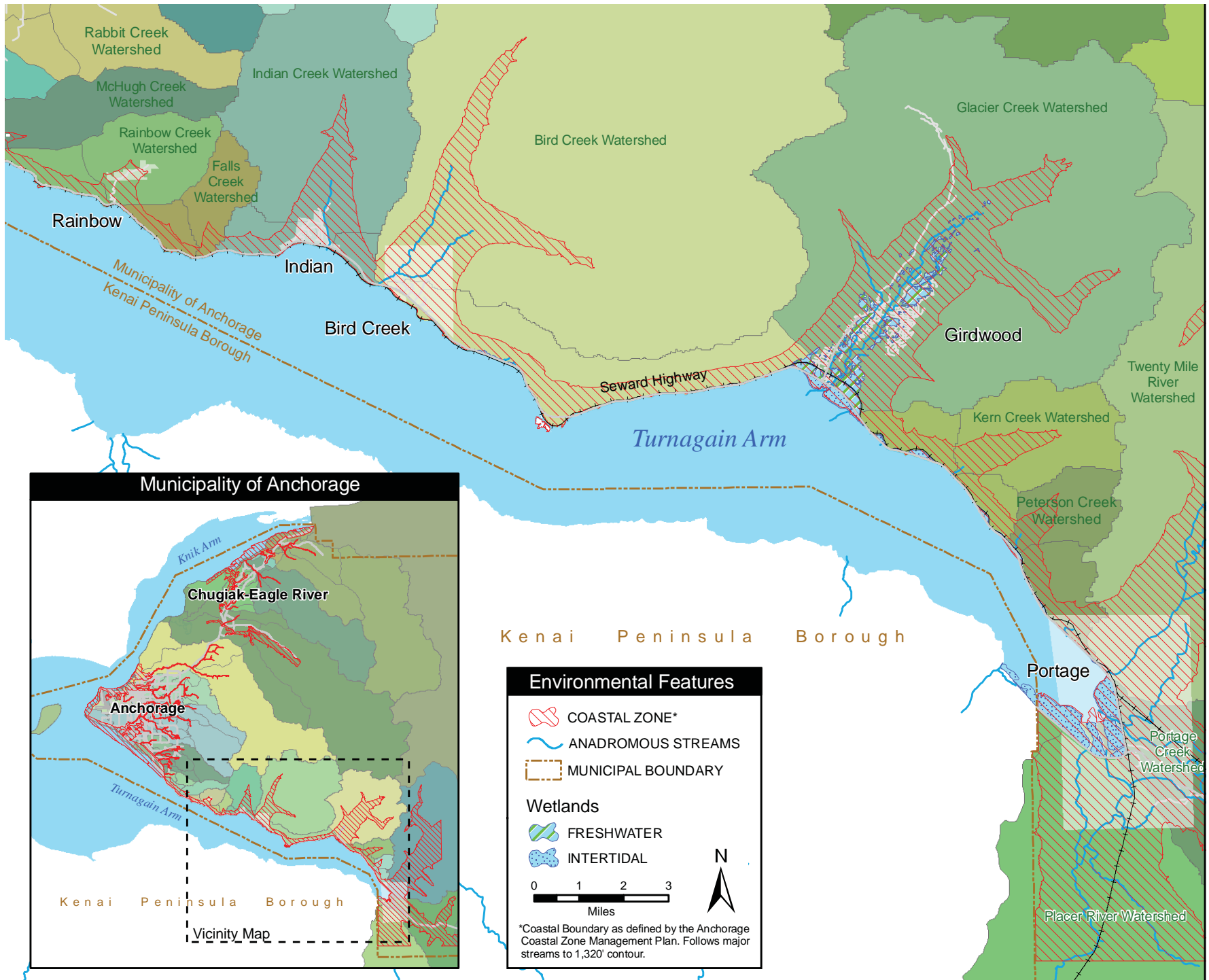
The Pacific Temperate Rainforest, an ecosystem consisting of mountain and western hemlock and Sitka spruce, reaches its northwestern limits at Bird Creek. Valleys at lower elevations throughout Turnagain Arm are lush with alder, willow, grasses, berries, devil's club, wildflowers, cottonwood, and paper birch. Wetlands and coastal mudflats are dominated by sedge or black spruce.

Wildlife

Although unusually turbid, the waters of Turnagain Arm support several marine species, including salmon, hooligan, harbor seals, and beluga whales. Orcas and other species of whales have been spotted and occasionally have beached on the mudflats. Belugas follow salmon into the inlet during the summer months. All five species of Pacific salmon spawn in area streams. Other fish species present are Rainbow trout, grayling, and Dolly Varden. Bird Creek and Portage Creek are usually the most productive fishing sites during the summer fishing season.

Throughout Turnagain Arm, moose and Dall sheep can be found in appropriate habitats. Dall sheep are easily seen from the Seward Highway near Windy Corner, and moose populations are concentrated in the Portage Valley, especially in winter. More elusive, but also present in the region, are black and brown bears, mountain goats, lynx, and coyotes. At least 148 bird species have been identified in the region. These species include bald eagles, trumpeter swans, Canada geese, ducks, shorebirds, gulls, hawks, owls and songbirds. Eagles tend to congregate in small groups primarily during the winter months and at the peak fish spawning times. Portage Pass is a

Environmental Features Summary Map



major route over the mountains for migratory birds passing seasonally between Prince William Sound and Cook Inlet. Geese, ducks, and shorebirds nest in the wetlands and waterways of Turnagain Arm.

No federally listed endangered or threatened species are found in Turnagain Arm. However, some bird species residing in the region are listed on the 1998 Alaska Species of Special Concern list developed by the Alaska Department of Fish and Game (ADF&G). These species are peregrine falcon, northern goshawk, gray-cheeked thrush, and Townsend's and blackpoll warblers. Beluga whales are also listed as a species of concern in Upper Cook Inlet.

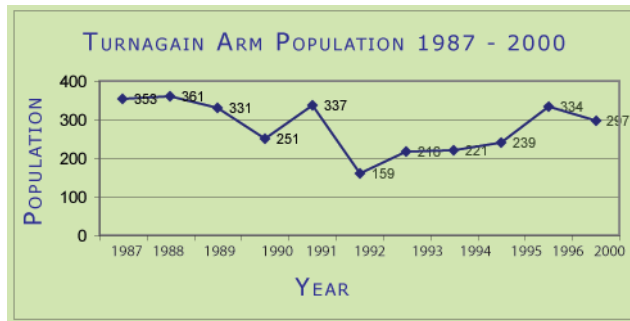
Demographic Overview

Population Trends, Growth, and Changes since 1987

According to U.S. Census data (2000), the population size and demographic structure in Turnagain Arm has not changed much since the 1987 Plan.

U.S. Census data reports that the communities of Rainbow, Indian, Bird, and Portage had a population of 353 in 1987. From 1987 to 2000, the population fluctuated. For example, the reported population for 1988 was 361 people and for 1991 was 159 people. Since production of the 1987 Plan, Turnagain Arm actually lost 56 people or 15.9% of its population. Figure 1 summarizes the population of Turnagain Arm from 1987 to 2000.

Figure 1: Population Changes (Source: US Census 2000)



Bird Creek has the largest population among the four Turnagain Arm communities, with 134 people. The populations of Indian, Rainbow, and Portage/Twenty Mile River are 103, 37, and 23, respectively.

Population Composition

The composition of a population affects the types of services needed and the land area required to accommodate the size of that population. Key characteristics such as age, household size, and income are indicators of future growth and service needs.

The average household size of 1.97 for the Turnagain Arm region is smaller than the Municipality average figure of 2.67.

Minorities are less represented in Turnagain Arm than in the rest of the Municipality. From the 2000 U.S. Census, 94% of Turnagain Arm residents reported their ethnicity to be White, non-Hispanic, leaving the remaining 6% as representing an ethnic minority. Of those reporting an ethnic minority, 1.3% were Hispanic and 2.4% were Alaskan Native or American Indian.

Table 2 summarizes ethnicity characteristics for Turnagain Arm:

Table 2: Ethnicity Characteristics (Source: US Census 2000)

ETHNICITY	PERCENT (%)
White Non-Hispanic	94
Hispanic	1.3
African American	0
Alaskan Native/American Indian	2.4
Asian/Pacific islander	0
Other	0.34
Multi-Race	3.4
Total	100%

Turnagain Arm has a higher percentage of males (55%) than females (45%).

Turnagain Arm residents on average have lower income than do residents in the Municipality overall. In 2000, the median household income for Rainbow, Indian, and Bird was \$48,906 compared to the Municipality figure of \$55,546. The number of individuals with household incomes below the poverty level was slightly higher at 8.8% than for the Municipality with an overall average of 7.3%.

A relatively small percentage (10.4%) of Turnagain Arm region residents were born in Alaska. This figure is one-third of the 32% overall average of Alaska-born residents for the Municipality.

A majority of Turnagain Arm residents (89%) over the age of 25 are high school graduates or have some college education. Less than a quarter of Turnagain Arm residents (22.4%) have a bachelor's degree or a more advanced degree; for the Municipality overall, those degrees are held by 29% of residents.

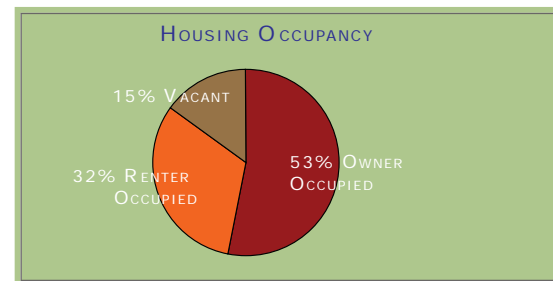
Housing

As of 2008, there are 177 total existing Turnagain Arm housing units. Of these, 151 units are occupied and 26 units are vacant. The housing stock is relatively stable. One indicator of stable supply is that 44% of structures were built between 1970 and 1979. The majority of housing development (94.8%) in Turnagain Arm has been on large lots (2.5 acres or larger), consisting of single-family dwellings with on-site water and wastewater systems.

A small percentage of people live in cabins, mostly in the Portage/Twenty Mile River area. Cabins in Turnagain Arm are considered to be single-family dwelling units if they have electricity and are inhabited year-round. There are very few multi-family dwellings (less than 3%) and mobile homes (also less than 3%).

The 2000 Census reported that 53% of the homes in Turnagain Arm were owner occupied and 32% were renter occupied. The Census also identified 15% of the homes as vacant or uninhabited year-round. Figure 2 summarizes the housing characteristics of the Turnagain Arm region identified in 2000.

Figure 2: Housing Characteristics (source: US Census 2000)



LAND USE PATTERNS

Land Ownership

The land ownership maps illustrate that the majority of land in the planning area consists of Chugach National Forest, Chugach State Park, Bird Creek Regional Park, state tidelands, or other municipal holdings. Relatively small areas of vacant developable areas remain, and nearly all available private lands are already platted.

Unlike the rest of the Municipality, public land ownership dominates the Turnagain Arm area. The federal government owns and manages the Chugach National Forest, whose Glacier Ranger District encompasses much of the southern end of the planning area. The State of Alaska owns a significant portion of the west half of the planning area where the southeast end of Chugach State Park interfaces with Turnagain Arm and the Seward Highway. The State also owns and manages all of the area's tidelands below the ordinary high watermark of Turnagain Arm. Two major rights-of-way parallel Turnagain Arm through the planning area, the Seward Highway corridor and the Alaska Railroad Corporation's (ARRC) main Anchorage to Portage and Seward line. The ARRC owns considerable acreage in the lower Portage Valley, most of which straddles its two main lines. The Alaska Railroad's future master plans will influence land uses for its Portage acreage. To some degree, state and federal permits for wetlands and tidelands will also regulate these lands.

The Municipal Heritage Land Bank (HLB) manages uncommitted municipal land and the Heritage Land Bank Fund in a manner designed to benefit

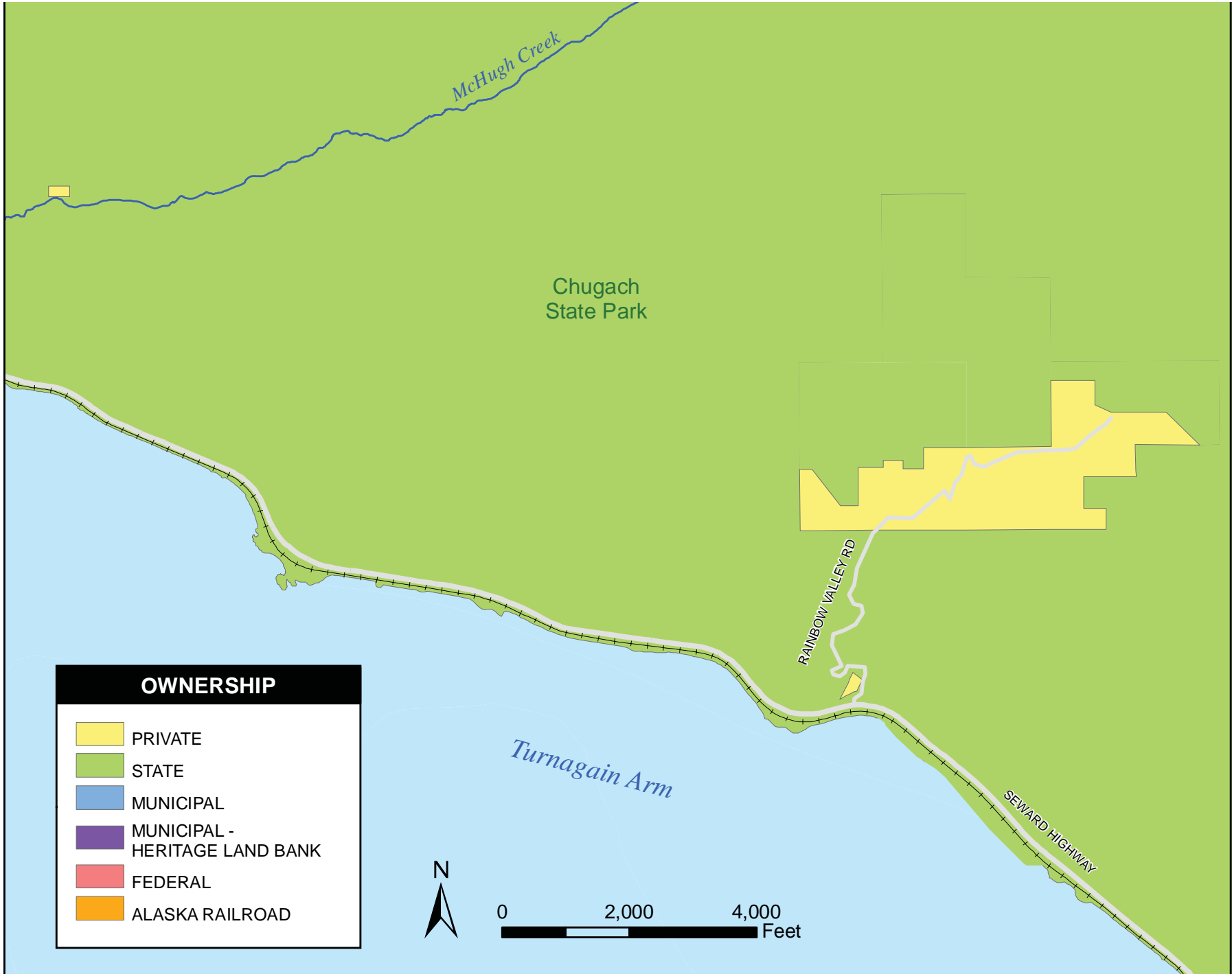
the residents of Anchorage, promote orderly development, and achieve the goals of the Comprehensive Plan. HLB has title to a cluster of small lots in Indian and five lots in Bird Creek, four of which are intended for a neighborhood park. As part of the Municipal Entitlement Act, HLB selected and is in the process of obtaining a large parcel of forested property at the east side of Indian from the State of Alaska. As of the Plan's writing, this parcel has been surveyed. Final land use and potential future disposals of this soon-to-be municipal land will require a land use analysis and Anchorage Assembly approvals. Much of this area is impacted by avalanche zones.

The Heritage Land Bank has interest in an approximately 150-acre parcel of state land at the east end of Bird Creek. Although the parcel is currently under interim management by the State of Alaska Division of Parks and Outdoor Recreation, it has been approved as a municipal selection for some time. HLB will undertake a survey of this parcel in the future and continue its conveyance to the Municipality.

Existing Land Use

New development in Turnagain Arm is dominated by residential construction, following the land use patterns of the 1987 Plan. See Table 3 for the estimated acre totals for each existing land use (as of fall 2007) from the 1987 Plan.

Commercial activities in the planning area are restricted almost entirely to the Seward Highway corridor, mostly in Indian and Bird Creek. Several previous commercial land uses from the Portage area are no longer active. Commercial uses are generally limited to convenience-type stores, gas



**Rainbow
Ownership Map**

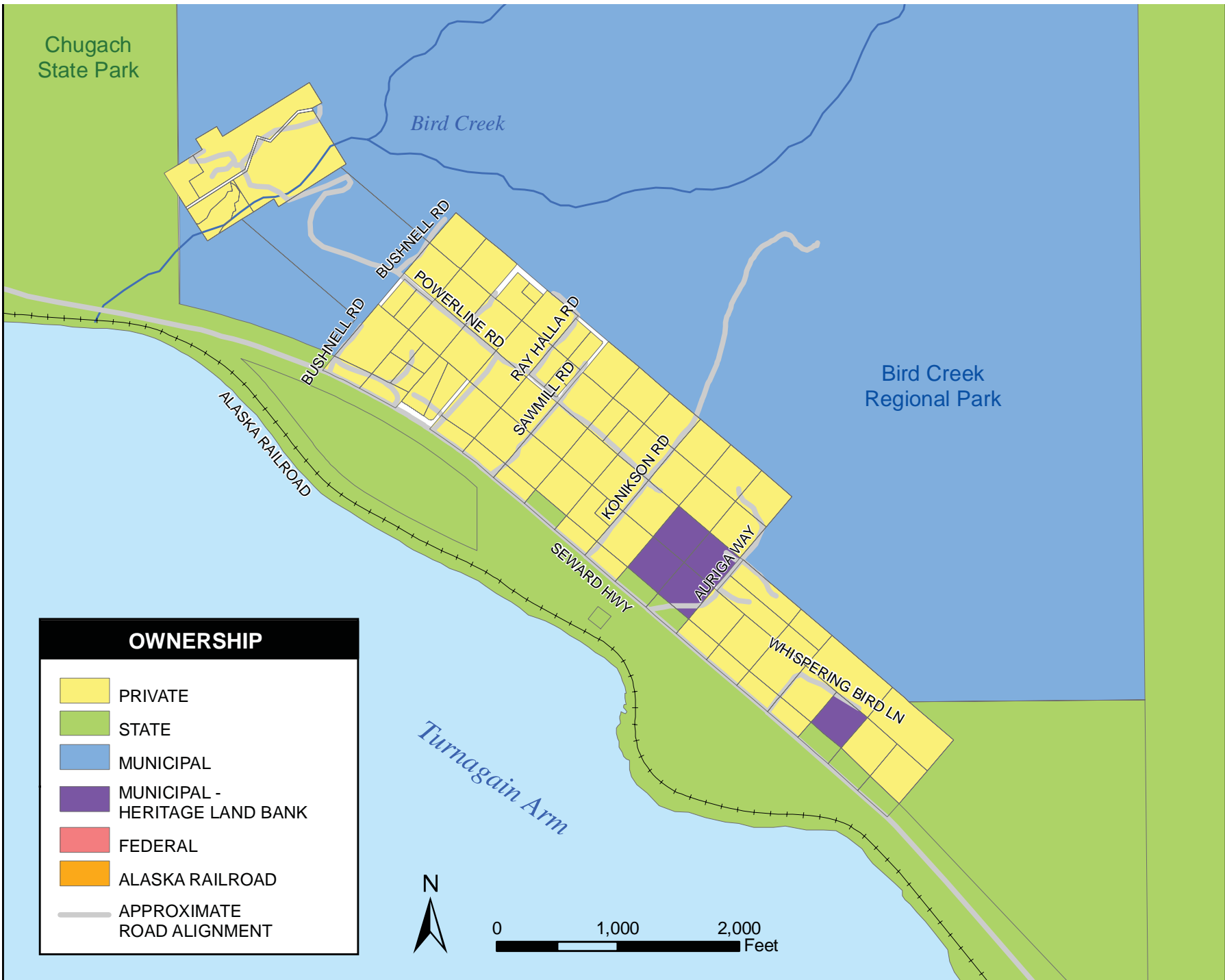
OWNERSHIP

- PRIVATE
- STATE
- MUNICIPAL
- MUNICIPAL - HERITAGE LAND BANK
- FEDERAL
- ALASKA RAILROAD
- APPROXIMATE ROAD ALIGNMENT

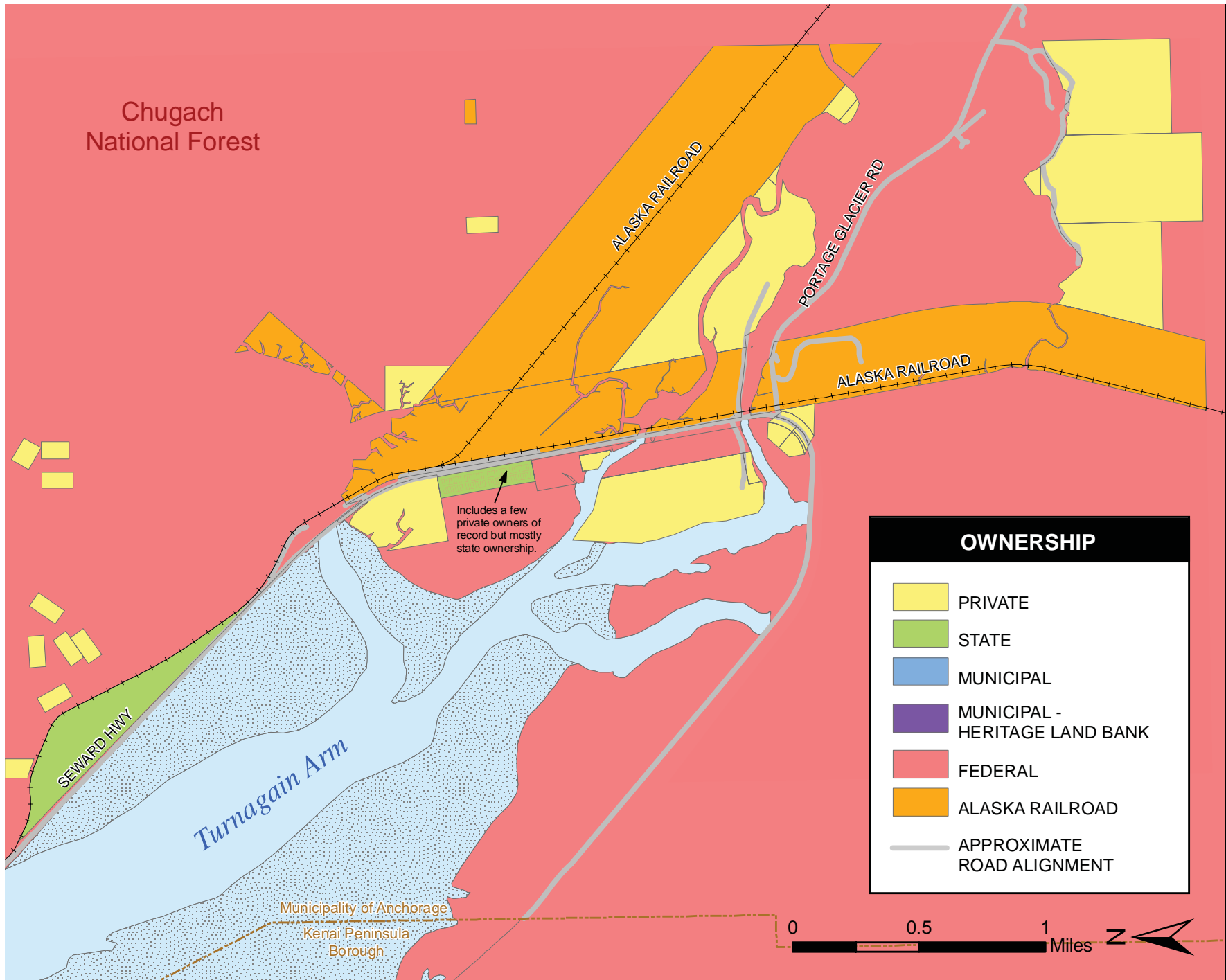


**Indian
Ownership Map**





**Bird Creek
Ownership Map**



Portage Ownership Map

stations, and restaurants, while the few industrial sites include a sawmill and a meat processing plant.

Rainbow Valley developed under unusual circumstances with a group of landowners sharing plots of land for their individual homes, without actual platted lot boundaries. According to the homeowner’s association no vacant land exists in the valley. All of the useable private land is developed with rural residential homes and associated accessory use structures such as sheds and garages.

There is a single 5-acre old homestead up the McHugh Creek drainage that continues in private ownership. There is no formal access to this vacant lot.

The Indian community includes a combination of large-lot rural residential developments with some scattered commercial uses along the Seward Highway and up-valley, including a small commercial nursery and Indian Valley meats, a large-scale meat processing facility. The east side of the valley includes a row of older homestead residences, some with renter cabins and two-family developments,

Table 3: Existing Land Use

Existing Land Use									
	Single Family	Two Family	Multi Family	Commercial	Industrial	Park/Open Space	Railroad/ Right of Way	Institutional	Vacant
Rainbow	159.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indian	107.31	7.00	2.90	20.92	1.16	0.00	0.00	2.37	121.50
Bird Creek	130.81	2.51	0.00	7.20	4.74	1037.17	0.00	0.00	41.79
Portage	312.36	0.00	0.00	113.03	0.00	0.00	1095.32	0.00	371.80
Total in Acres	709.87	9.50	2.90	141.16	5.90	1037.17	1095.32	2.37	535.10

Bird Creek developed much like Indian, dominated by larger lot rural type residential development, with some scattered commercial uses along the highway and even a few “cottage-type” commercial businesses within the residential area. A telecommunications facility is located along the highway and an automobile maintenance facility operates near the site’s east end. A sawmill operates within the residential lots as a permitted use.

Portage Valley, site of an original townsite prior to the 1964 earthquake, comprises a host of land use activities, including: large-lot, remote-style, homestead residences in the Twenty Mile River area and along the first half of the Portage Road; smaller-lot remote cabins along the Portage Road; a large-scale and growing non-profit wildlife park; a few existing or vacant commercial parcels on the highway; and existing ARRC transportation uses and lease parcels along the railroad tracks.

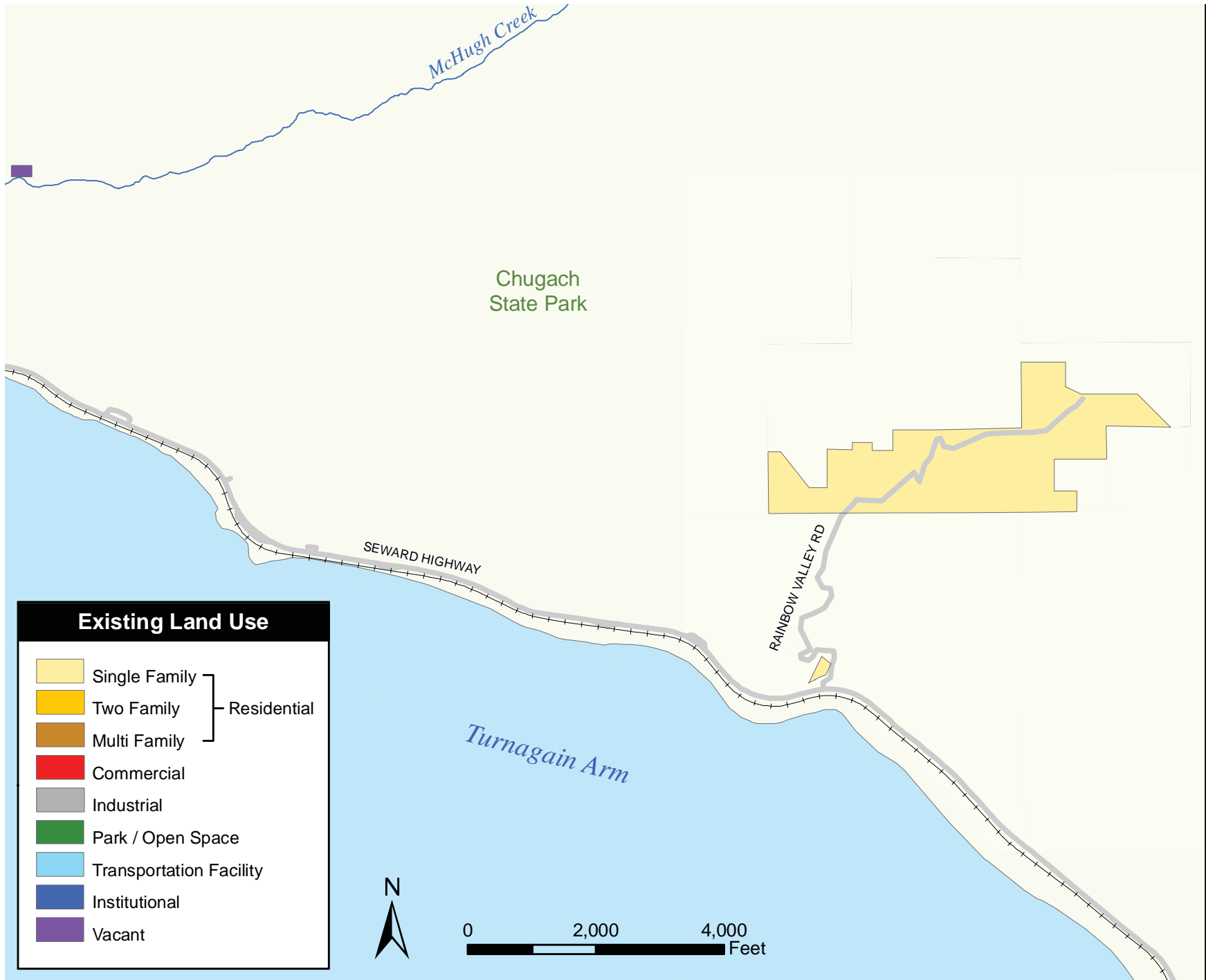
Vacant Land Suitability

A comprehensive plan typically includes a development suitability analysis that determines how projected future growth will be accommodated. This analysis involves mapping environmental data and determining whether

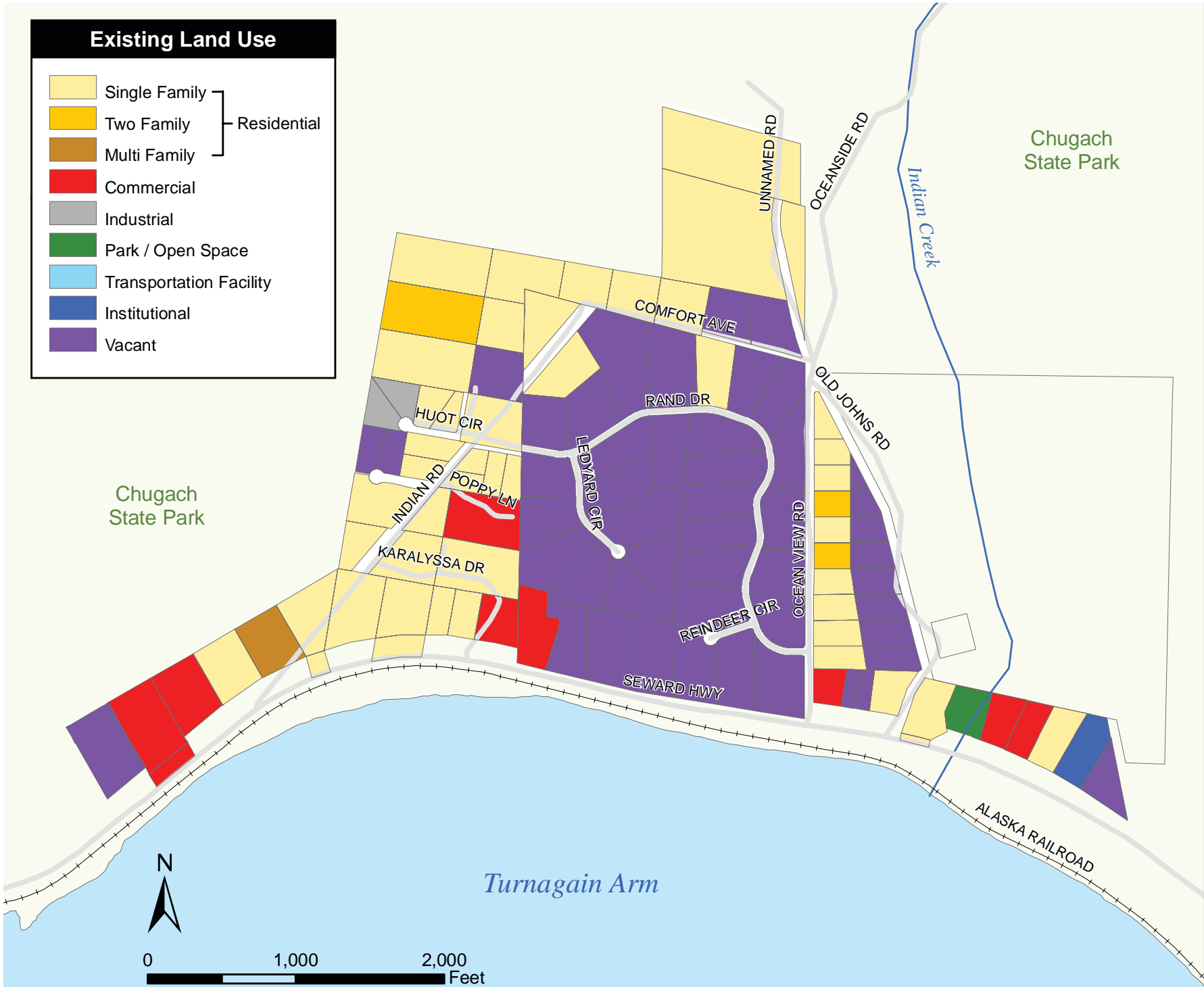
development can occur in the planning area. Generally, new development should be located in areas for which minimal cost will be associated with the development and where disturbance to sensitive features such as wetlands or floodplains would be minimal. A suitability analysis was not performed for the Turnagain Arm region because nearly all existing vacant land needed for future growth is already subdivided for development. The subdivision process provided a basic level of suitability, as directed by the Anchorage Municipal Code. All the remaining vacant land in Indian and Bird Creek is considered suitable based on this subdivision process. Rainbow does not have vacant land. Table 4 presents a general development suitability chart for Turnagain Arm. Suitability analyses will be included in the future land use studies for the new HLB land in Indian and Bird Creek.

The 1987 Plan did not include Portage, and the only development suitability analysis conducted for Portage in this Plan was a review of the basic suitability of the existing vacant parcels with the use of limited existing environmental data. There appears to be enough developable vacant land to accommodate projected future growth in Portage.

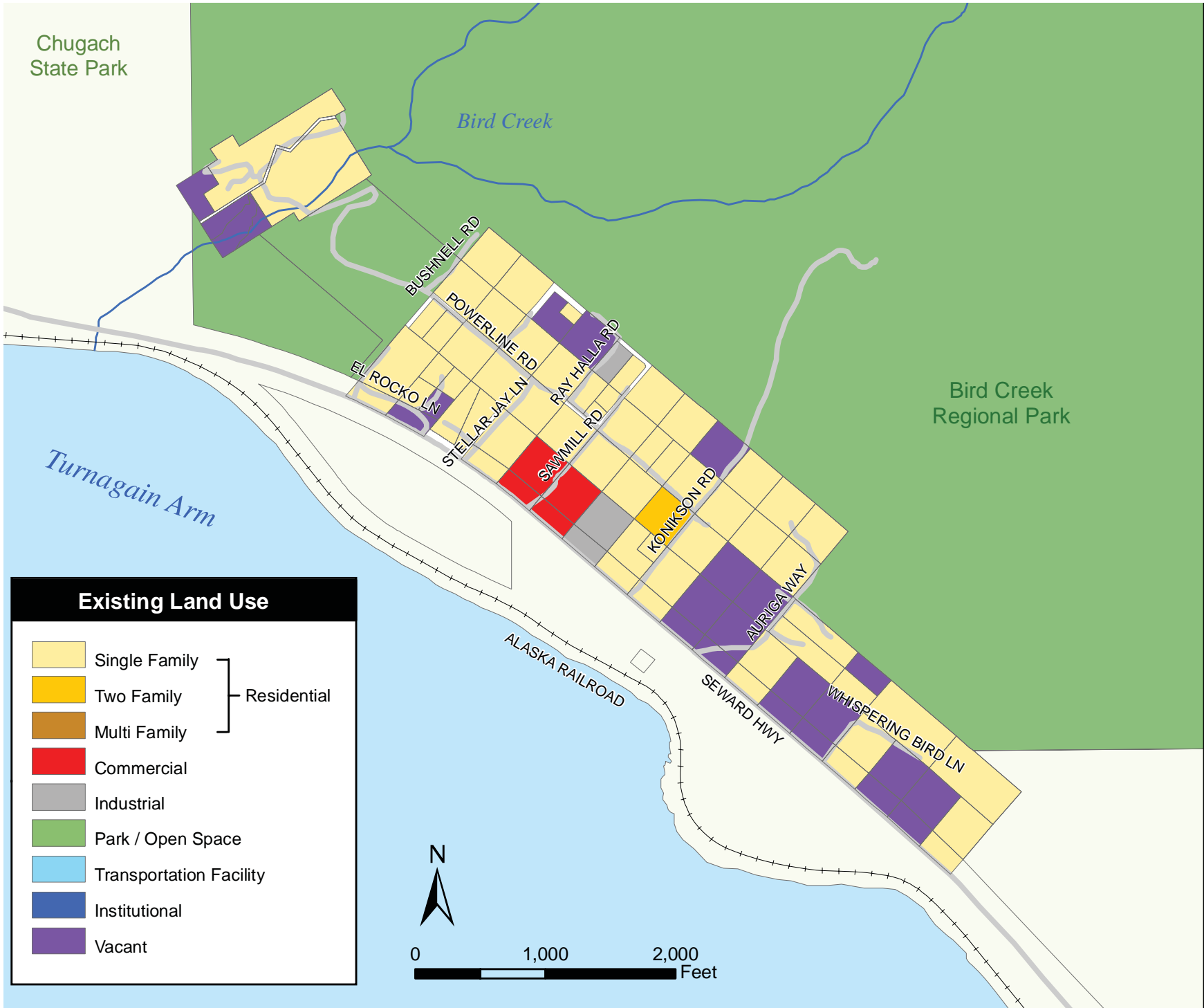
A broader suitability determination for projected future industrial, transportation, and commercial land uses was not conducted because of insufficient environmental data for those areas of Portage. Until such data is acquired, notably wetland delineations, creek channel locations, and floodplain mapping, the future development suitability cannot be fully determined. These data will be required as a condition of future new industrial or commercial development.



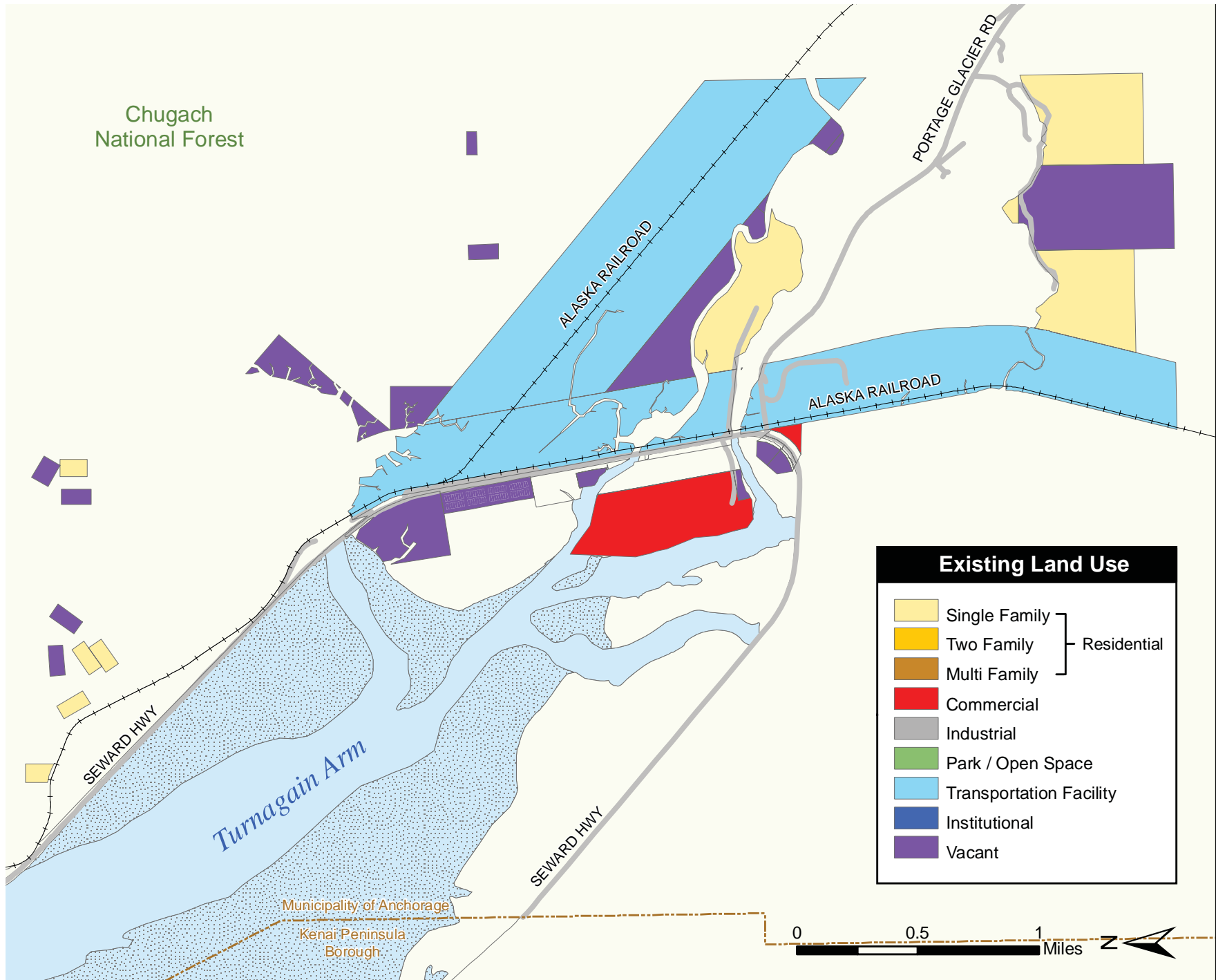
**Rainbow
Existing Land Use Map**



Indian Existing Land Use Map



**Bird Creek
Existing Land Use Map**



**Portage
Existing Land Use Map**

PUBLIC FACILITIES AND SERVICES

Schools

The Anchorage School District provides educational services for kindergarten through grade eight (K-8) for Turnagain Arm communities at the school in Girdwood. High school students attend South Anchorage High School. Approximately 24 school-aged children live in the Turnagain Arm region (not including Girdwood). Students have a choice of attending elementary and middle schools in either Girdwood or Anchorage. Currently, the majority (87.5%) of younger (K-8) students attends the Girdwood School and students in grades 9 through 12 attend South Anchorage High School but also have the option to attend a charter or private school. The Anchorage School District provides bus service for Turnagain Arm students to attend classes in South Anchorage, but students that choose to attend a charter or private school can do so if they arrange their own transportation.

It is unknown how many students are home-schooled, if any. The Anchorage School District anticipates that the current trend in school choices will continue in the future. The student population is projected to remain low. If the number of elementary school students increases in the future, the Girdwood K-8 school could be expanded to accommodate more students. Table 4 summarizes the distribution of all Turnagain Arm students, including Girdwood, across the schools in Girdwood and Anchorage.

The Four Valleys Community School in Girdwood provides supplemental private educational and recreational opportunities for adults and children in the Turnagain Arm region.

Transportation

Turnagain Arm is entirely outside of the Municipality’s road services area. The Alaska Department of Transportation and Public Facilities funds and maintains all paved roads and all the main thoroughfares in the region. Local roads, except those in a new subdivision in Indian, are required to be built and maintained to meet municipal standards (including drainage). This means that future subdivisions in Turnagain Arm will require subdivision agreements and new roadway construction will be supervised by the Municipality’s Private Development Division. Without a consistent means to raise funds that could be used to maintain local roads in the Turnagain Arm region, no changes to the existing conditions are foreseen.

Turnagain Arm residents are divided about the most desirable approach to local road management. During development of this Plan, the State was working to produce two projects for separate Seward Highway upgrades, both of which focused on highway safety and separation of local traffic

Table 4: Distribution and Projections of School Attendance

School Attending	Actual		Projection				
	2007	2008	2009	2010	2011	2012	2013
Girdwood K-8	152	137	134	130	131	128	137
South High	56	54	53	52	55	54	55
Other Elementary or Middle School	19	18	18	18	19	18	19
Other High School	5	5	5	5	5	5	5
Total School-Aged	232	214	210	205	210	205	216

from highway circulation. The Municipality supports these planning efforts with the caveat that proposed highway upgrades do not interfere with established or potential future land uses adjacent to the Seward Highway. The 1998 Seward Highway National Scenic Byway designation bestowed a national honor to this thoroughfare. The state and the federal government established a Seward Highway Corridor Partnership Plan that identified three management strategies for the road:

- The Seward Highway should provide a safe, aesthetic, and world-class driving experience.
- Effective visitor management is necessary to ensure long-term economic development through tourism.
- Haphazard development poses the greatest threat to the highway's ability to attract visitors and quality development.



Internal roads to new development such as this one in Indian provide access while keeping the character of the area.

This plan provides additional strategies and guidance so that future activities along the Seward Highway corridor are consistent with the above management guidelines. The Municipality has long recognized the intrinsic scenic values and significance of the Seward Highway corridor through the Turnagain Arm region. The planning and administration documents relative to the status of the Seward Highway as an All-American Road and an Alaska State Scenic Byway discuss those values and the significance of the corridor.

Emergency Services

Most emergency services and public safety functions in Turnagain Arm are provided by volunteer staff stationed in Girdwood. Because the region is out of the Municipality's police and fire services area, the Alaska State Troopers provide police functions, and a volunteer fire station provides firefighter service in Turnagain Arm. Alaska State Trooper staffing has increased since the late 1990s, and that coverage is generally considered adequate for the area. Municipal police occasionally respond to emergencies at the north end of the planning area. An evolving concern and potential safety issue in the south end of Turnagain Arm, where growing tourism activities are extending into the area from the Port of Whittier, surfaced during stakeholder interviews. Further opening of the Twenty Mile River and Portage areas to public access and motorized recreation is expected to continue and could stress the capacity of local emergency services. At this time, no forum exists in which to address this growing need. Several health facilities located in Girdwood Valley serve Turnagain Arm residents; no facilities are located elsewhere in Turnagain Arm.

Utilities

Currently Enstar Natural Gas Company provides natural gas service in Indian, Bird Creek and Girdwood. The Enstar system expands in response to requests by customers in the local area according to tariffs at the time of each request. Enstar is not planning major upgrades because the gas system is adequate to meet gas demand.

Turnagain Arm is traversed by a major electric transmission line serving power generation sources in Homer and major customer bases on the Kenai Peninsula and Anchorage. This transmission line provides local power to the planning area communities, and the available power is believed to be adequate for the long term. Although land-line telephone service is adequate for Turnagain Arm, geography and infrastructure shortcomings can limit Internet access and cellular service. These shortcomings are significant concerns for the area's residents.

All communities in the planning area are served by on-site wells and septic systems. There are no known contamination issues or failures associated with these systems. The commercial parcels and some of the two-family residential developments are served by state-authorized septic systems. The Municipality has oversight of all single-family septic systems.

Parks and Recreation

With Chugach State Park in the backyards of Rainbow, Indian, and Bird Creek residences, and the Glacier District of the Chugach National Forest surrounding Portage, Turnagain Arm residents will never lack recreation facilities and opportunities. These large recreation areas also provide opportunities to tap Alaska's expanding tourism. Three traditional sites in

Indian and several sites in Bird Creek provide local pedestrian access to Chugach State Park. Future pedestrian access points to this large outdoor recreational area should be considered in Indian and Bird Creek. Additional automobile-oriented access points to Chugach State Park are located on the Seward Highway at Mileposts 106, 108, and 112. The State's Chugach State Park Access Inventory identifies possible new public access locations.



Access to outdoor recreational areas is considered one of the most valued reasons people live in Turnagain Arm.

Formal public access to Chugach National Forest is provided in Girdwood Valley, at several Seward Highway points south of Girdwood, and off Portage Valley Road. New access sites for off-road vehicles are opening up along Twenty Mile River and Portage Creek, and the U.S. Forest Service has long-term plans to develop a trail system around the historic Iditarod Trail at the north end of Portage Valley.

The State maintains a large-scale fishing and creek access facility and a summer season campground in Bird Creek, and the U.S. Forest Service (USFS) maintains a Portage campground and other popular visitor facilities in that area. The Alaska Department of Fish and Game (ADF&G) is working with landowners and other agencies to address future sites for safe boat launching in Turnagain Arm mainly in the Portage area.

Few recreational facilities have been established to serve local Turnagain Arm neighborhoods. Because these communities are not associated with a park service area, funds for local parks and related facilities are not available. The Municipality has a management agreement with Chugach State Park for state management of two local park facilities, the ball fields in Indian and the Bird Creek Regional Park in Bird Creek. The Turnagain Arm volume of the Anchorage Park, Greenbelt and Recreation Facility Plan recommended the creation of neighborhood parks in Indian and Bird Creek. Although public land exists for each recommendation, neither park has

been established.



The Bird to Girdwood trail along the Seward Highway is a popular recreational trail for runners, cyclists and hikers.

Trails

Considerable planning and development for trails in the Turnagain Arm region followed release of the 1987 Plan. The Area-wide Trails Plan describes existing and planned trails in the planning area. The partially completed Seward Highway bike trail will

eventually extend along the road from Potter Marsh to the south boundary of the Municipality at Ingram Creek. New state highway projects generally consider plans to extend new sections of this trail corridor.

The Seward Highway bike trail provides access to coastal sections of Turnagain Arm for local and regional residents and for visitors. Other existing trails provide access to Chugach State Park and run parallel to

the main access roads into Indian and Bird Creek. The U.S. Forest Service maintains existing trails in the national forest, most of which are in the Girdwood Valley. Several popular trails also offer access to the Portage Valley section of the forest.

Aside from existing trails in the other Turnagain Arm communities, most of which are informal, unpaved paths, the Areawide Trails Plan identifies three new trail corridors in Indian and four new trails and an additional water trail in Bird Creek. Long-range plans have identified upgraded and new trails in the Chugach State Park section of Turnagain Arm, primarily consisting of trails from the established Seward Highway pull-offs and at the Indian and Bird Creek road entrances to the park.

FUTURE CONDITIONS and LAND USE NEEDS

Population & Employment

Because vacant land is limited and the 2000 Census information on demographic trends that shows population has not significantly changed in Turnagain Arm since the 1987 Plan, the regional population is not anticipated to grow at a significant rate. Based on the area’s average family size, vacant, developable land and current zoning would permit the addition of roughly 149 new residents to the population of Turnagain Arm at full build-out. Of these projected residents, 82 would be in Indian, 31 in Bird Creek, and 35 in the Portage/Twenty Mile River area. This projection assumes that developable vacant land will be used for residential development rather than for industrial or commercial applications. Table 5 summarizes the build-out analysis for Turnagain Arm under the 1987 land use designations.

Table 5: Build-Out Table & Population Projections

Community	Total Vacant Land (acres)	No. Private, Vacant Develop. lots	Multiplier (household size)	Total Number People at Full Build-out
Rainbow	0	0	1.97	0
Indian	109.36	41	1.97	81
Bird Creek	26.1	16	1.97	32
Portage & Twenty Mile River	317.89	18	1.97	36
Total				149

Considerable growth in tourism and recreation activities is occurring and is projected to continue for the planning area. These include active or sports-related recreation and more passive activities like wildlife viewing and photography. Without a formal economic development plan, such growth is not easily planned for in the context of this Plan. No hard figures or clear projections for future employment in the Turnagain Arm region are available.

Future Housing

Although the Turnagain Arm population is not projected to grow significantly in the next 20 years, the small growth will require new residential development. It is projected that 75 new housing units can be built in Turnagain Arm based on current zoning and minimum lot-size standards (mostly 5-acre lot minimums for Portage/Twenty Mile River and 2.5-acre minimum lot sizes for Indian and Bird) to accommodate additional residents. This amount of new housing will be sufficient to accommodate the future projected population growth. Table 6 illustrates the planning area’s development suitability at projected future build-out.

Residential growth in a recent subdivision in Indian is consistent with the 1987 Plan and the community’s desire for low-density rural residential development. Relatively little vacant land remains in the planning area, and most new growth will come from infill or redevelopment of vacant residential lots.

Growth patterns in Turnagain Arm have traditionally included rural, large-lot residential homes clustered close to the Seward Highway. Residents desire to see this growth occur in a manner similar to existing develop-

ment with an emphasis on preservation of viewsheds and the rural lifestyle. Residential development is being considered in the Portage Valley.

Table 6: General Development Suitability

Community	Vacant Land (acres)
Rainbow	0
Indian	109.36
Bird Creek	26.1
Portage & Twenty Mile	317.89
Total	453.35

Future Land Use

Since adoption of the 1987 Plan, few changes occurred in land use patterns or the supply and demand for parcels within each land use category. The opportunity for future growth can be met with existing land.

This Plan recognizes the evolving significance of the Seward Highway to both Turnagain Arm residents and the increasingly important tourism industry. Sites along the Seward Highway corridor that could support tourism-related services (food, gas, lodging, commercial recreation) have been identified during the Plan preparation. Policies and code changes to accommodate this land use must balance the support of tourism with preservation of the area’s rural and scenic character and the Seward Highway All-American Road designation.

ARRC is considering plans for near-term commercial and industrial development, mainly on its corridors and tracts along the Seward Highway

frontage lots.

Other Planning Issues

Although there is little representative data, tourism growth for Turnagain Arm is expected with the expansion of the Alaska Railroad services through its cooperative efforts with the U.S. Forest Service to establish the Whistle Stop Project. The increasing popularity of this railroad tourism use could affect the ability of local businesses along the Seward Highway to provide services to visitors. The Alaska Department of Transportation and Public Facilities (ADOT&PF) recognized the impact of increased tourism and made safety upgrades to sections of the Seward Highway in 2007 to help accommodate more travelers.

The 2002 Chugach State Park Inventory document describes 22 active and potential future public access points to the park in Turnagain Arm. The long-range recreation plan of the U.S. Forest Service identifies several new or upgradable access sites and trail projects meant to bring the public into the national forest in Portage Valley. This Plan offers a new land use category unique to Turnagain Arm (TMU or Turnagain mixed use), to provide for a broader range of services and facilities for this projected increase in visitors. (See discussion in Chapter 6.)

In addition to recommendations in the Chugach State Park and Chugach National Forest’s management plans, additional support services and facilities need to address the growing use of Turnagain Arm recreation resources. Relatively few services exist, especially in the Portage area, and this Plan acknowledges that shortcoming. The new land use designations offer a start to development of such services. Any future commercial or tour-

ism-related facilities in Portage will require analysis and permitting for marginal sites with environmental constraints. Environmental features such as floodplains, wetlands, and stream locations will need evaluation before new development and may limit the growth and the scale of new developments.

The lack of emergency services in the area is another concern related to the projected recreation usage, especially between Girdwood and Portage. Current emergency services do not adequately cover this section of the planning area, and distances that must be covered to respond to emergencies remain a serious shortcoming of services. These emergency services will be further stressed with increased expansion of recreation use.

Since the opening of the Portage-Whittier Tunnel, cargo transportation, services, and cruise ship tourism have expanded greatly in the planning area. The ARRC and trucking firms are considering alternative transport operations that can take advantage of industrial land in Portage Valley. For instance, cargo transported from ship operations in Whittier to points along the railbelt road system historically has been sorted and reloaded in Anchorage area sites; however, through some basic development, the ARRC could provide these services more efficiently in Portage. Cargo that is now redirected in Anchorage could instead move quickly to points south. During stakeholder interviews for preparation of this Plan, a new land use category of transportation facility was introduced in response to the ARRC's identification of possible cargo-handling opportunities.

A long-standing land use issue for Turnagain Arm focuses on upgrade plans and additions to the Seward Highway, specifically how the roadway might change to handle higher traffic volumes and address safety issues. ADOT&PF's Bird to Indian (MP 99-105) project proposes roadway up-

grades with frontage roads within the existing right-of-way in Indian and Bird Creek as well as potential full road realignments in new right-of-way toward Cook Inlet. Any roadway upgrade must address and balance environmental, landowner, and land use impacts.

During the public involvement process for this Plan revision, the lack of consistent code enforcement in Turnagain Arm surfaced several times as an issue. Some community members suggested that the Turnagain Arm communities be included in the Building Safety Services Area to ensure that new development and land use activities are consistent with Title 21 land use code.

The issue of municipal-selected state lands will provide future land use challenges and decisions. As part of ownership transfer from the State of Alaska under Municipal Entitlement, HLB is in the process of finalizing conveyance of a large (~91 acres), forested parcel on the east side of Indian Valley, and a 155-acre parcel on the east side of Bird Creek. Both parcels are under municipal (HLB) management. The Municipality will receive patent once the survey is completed for each.

The Municipality and the State need to address land ownership of the Seward Highway frontage lots in Indian and Bird Creek. Several of these lots are privately owned by the adjacent property owner; others are owned by the Alaska Department of Transportation and Public Facilities. Some of these private lots were conveyed by the federal government to original Portage lot owners after the 1964 earthquake. They are smaller than the minimum lot size required for development in Turnagain Arm and most were merged with the adjacent parcels.

Formal access to several large, privately owned parcels, mostly 5-acre sites and a 50-acre parcel, is an outstanding issue in Portage. The original Portage townsite, which was relocated after the earthquake, has since rebounded; and land ownership status remains to be resolved. Much of the tidal areas of Portage subsided during the 1964 earthquake but have risen considerably since then. These uplift areas are becoming increasingly drier and potentially more accessible to future development. The Portage flats still include the 100-year floodplains. The State owns most of the lots; several private property owners own the others. All these parcels present environmental challenges associated with development.

Land use designations and new development on suitable parcels described in this Plan should adequately address the area's future land use needs. A key to meeting projected needs is management and coordination of the area's public land and public services. Creation of a Turnagain Arm agency group that includes the U.S. Forest Service, the Alaska Department of Transportation & Public Facilities, the Alaska Railroad Corporation, the Municipality of Anchorage, and the State of Alaska Department of Natural Resources is recommended to coordinate administrative duties, planning, funding, and maintenance of existing facilities and services. This group would identify gaps or shortcomings in services and find systematic methods to resolve them.

In addition to the other planning issues outlined above, the Turnagain Arm community described other land use and planning concerns for the area during the plan revision process. Staff heard that there is a lack of temporary housing in Turnagain Arm, which has impacted the ability of land owners to expand or initiate new commercial activities. This lack of temporary

housing makes it difficult to attract seasonal workers. Several individuals noted that there has been inconsistent cell phone and internet coverage for subscribers in Turnagain Arm. Rainbow and Indian residents suggested federal grants that might provide resources to resolve this wireless coverage issue. Because the Turnagain Arm communities are part of the Municipality, they cannot qualify as independent rural areas to which these particular grants might apply.



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CHAPTER 3: Community Values and Goals



A comprehensive plan reflects the goals, visions, and objectives of the community. Stakeholder interviews, a community survey, and two community workshops were conducted during the public involvement process for the Plan to get a sense of the community's shared values.

The core values and goals identified during the public participation process helped define the goals used to develop the Plan. These core values and community goals are further discussed in Chapter 4, which also includes the recommended objectives, policies, and strategies.

Stakeholder interviews conducted in January and February 2007 began the identification of issues to be addressed in the Plan. Stakeholders included representatives from departments of the municipal, state, and federal agencies, consultant firms working on projects in Turnagain Arm, private landowners, community councils, and ARRC. (See Appendix A for a complete list of participants and summaries of the interviews.)



Turnagain Arm is evolving from rural enclaves along the Seward Highway to tourism destinations. Stakeholders expressed a need for more services because this area continues to be an attraction for visitors and new residents.

Stakeholders recognized that, as the area population grows, recreation tourism increases, and the population of the Anchorage Bowl increases, the Turnagain Arm communities will experience significant changes. Some major concerns voiced were public safety, maintaining public access to recreation areas, future development on vacant land, and impacts of Seward Highway improvements. These identified themes were echoed by many community members and stakeholders during the stakeholder interview process, the survey, and the two workshops.

The following summary of core values and goals synthesizes the stakeholder comments collected in January and February 2007.

Stakeholders' Core Values and Goals:

1. Enhance public safety;
2. Provide and preserve access for outdoor recreation and access to private property;
3. Reduce user conflicts in recreation areas;
4. Balance land use to accommodate new services;
5. Improve coordination between government entities;
6. Balance Seward Highway improvement projects with community priorities.



The community survey revealed concerns similar to those articulated during the stakeholder interviews. These included Seward Highway noise, safety improvements, preservation of access into Chugach State Park and other public land, uncertainty about new development, wildfire hazards, population growth, and overcrowding in recreational areas. Survey respondents also felt that more coordination was needed between the communities and the different levels of government.

Most Turnagain Arm survey respondents were long-time residents of the area and have a great affinity for the natural features and the scenic beauty. A majority of those surveyed felt strongly that the scenic beauty and the rural character of Turnagain Arm are its biggest assets. The Plan should reflect these values throughout.

The following core values and goals are based on a synthesis of survey responses collected in February and March 2007:

Core Values and Goals from the Survey:

1. Preserve the rural setting/character and lifestyle;
2. Preserve natural and scenic beauty of the area;
3. Maintain access to outdoor recreation and public lands;
4. Consider community goals and desires with Seward Highway improvement projects;
5. Guide growth to be compatible and consistent with community goals;
6. Mitigate the potential danger of wildfire hazards and other natural disasters through public education and preparedness outreach;
7. Coordinate between local, state and federal agencies on projects in Turnagain Arm.

During the two community workshops held early in the plan process, participants emphasized the value of the natural environment that surrounds them and how it has defined the quality of life for many Turnagain Arm residents. Small-town character, rural lifestyle, and remote location were listed as some of the best features of Turnagain Arm and the most important reasons why residents choose to live there. Close proximity to Chugach State Park and to natural, undeveloped land is very important to residents. Residents also valued the scenic beauty of the area including views of Turnagain Arm, unobstructed views of Aurora Borealis, and minimal light pollution.

While some growth is inevitable, the community aspires to guide that growth so that the positive assets are preserved and enhanced. The uncertainty of new development, especially on undeveloped Heritage Land Bank lands in Indian and the Seward Highway safety, noise and re-alignment project were two important themes discussed at length at the community workshops. Some of the other concerns brought forth include the lack of coordination between government agencies and land managers and the lack of public safety services including emergency response.

The following core values are based on a synthesis of ideas and goals from the two community workshops held in March 2007:

Core Values and Goals from the Community Workshops:

1. Retain rural, residential character of community;
2. Preserve access to outdoor recreation areas;
3. Preserve the independent nature of community;
4. Maintain elbow room;
5. Retain and encourage low density population with homes on large lots;
6. Protect the natural beauty of the area including the unique vegetation, diversity of wildlife and scenic views;
7. Provide more public safety services;
8. Retain natural, undeveloped areas for recreational use.

Overall, there is consensus from the community on the community's assets and some of its issues. The core values and vision for Turnagain Arm by area residents provides the basis for the overarching goals for the community and the Plan update.

Based on the public participation efforts during the Plan revision, the following list of Core Values and Goals provide the direction for the Turnagain Arm Comprehensive Plan:

1. Preserve the scenic quality, the natural environment, and open spaces;
2. Balance economic development with community character and rural quality of life;
3. Guide growth and land use to be compatible with community desires;
4. Maintain, preserve, and provide recreation opportunities;
5. Provide opportunities for community participation in transportation improvement projects;

6. Provide a safe and secure community for residents and visitors;
7. Provide opportunities for the community to participate in land management decisions;
8. Continue to provide quality public services.





CHAPTER 4: Community Growth Guidelines

The Goals, Strategies and Policies of this chapter will help to define the guidelines for future growth and development in the Turnagain Arm communities for the life of this Plan.

The Goals, Strategies and Policies reflect the core values and aspirations of the community extracted from the public participation efforts during this Plan process.

GOALS describe in general terms a desired future condition that is consistent with community ideals. Goals are timeless in that there is no specific date by which they must be achieved.

OBJECTIVES are specific statements of particular ends, expressed in measurable terms that respond to the goals.

POLICIES are statements of principle or guidelines to direct subsequent actions in pursuit of the goals.

STRATEGIES are specific means of accomplishing desired objectives.

CORE VALUES AND GOALS FOR TURNAGAIN ARM

- 1 Preserve the scenic quality, the natural environment, and open spaces;
- 2 Balance economic development with community character and rural quality of life;
- 3 Promote community growth that sustains and supports diverse land uses consistent with community values;
- 4 Maintain, preserve, and provide recreation opportunities;

- 5 Provide opportunities for community participation in transportation improvement projects;
- 6 Provide a safe and secure community for residents and visitors;
- 7 Provide opportunities for the community to participate in land management decisions;
- 8 Continue to provide quality public services.

Objectives:

- Protect, preserve, and enhance the diversity of existing natural vegetation, fish and wildlife habitats in the area including coastal areas.
- Protect and preserve salmon habitat.
- Through land use and other regulatory controls, protect or avoid environmentally important or sensitive areas, including stream corridors, steep slopes, wetlands, scenic views, tidelands, floodplains, and coastal areas.
- Protect the integrity and natural condition of the north shoreline of Turnagain Arm.



GOAL |

Preserve scenic quality,
the natural environment, and
open spaces.

Policies:

- Adequately address or offset impacts of development on the environment, scenic views, and local natural systems, including streams and forests.
- Limit disturbances on steep slopes to prevent soil erosion and drainage problems to the maximum extent possible.
- The following basic standards apply to discretionary reviews for Turnagain Arm projects:
 - Natural vegetation shall be retained on development sites to the extent practicable to provide screening, protection of native trees and to minimize runoff and erosion.
 - Projects shall be designed and sited to minimize off-site light impacts on residences, the night sky, and viewsheds.

Strategies:

- Revise Title 21, Land Use Planning Section of the Municipal Code, to include design standards and guidelines for landscaping requirements, retention of native plants and vegetative buffers to protect privacy and viewsheds, especially along the Seward Highway.
- Update existing and initiate new municipal stream and watercourse mapping, update forest health and fire safety conditions, and watershed characterizations for Turnagain Arm.
- Complete wetland delineations and update wetland maps for Turnagain Arm.
- Update floodplain studies and mapping prior to new development actions in Portage Valley.

Objectives:

- Promote growth and land uses that are compatible with the rural, low-density residential character of Turnagain Arm communities.
- Ensure a fair, equitable, and consistent enforcement of municipal regulations.
- Maintain and protect the unique character and rural lifestyle of each community.
- Protect access to the night sky by minimizing light impacts to residences.

Policies:

- Ensure that zoning and platting decisions in Turnagain Arm are guided by this Plan—specifically its maps and the identified goals, policies, objectives, and strategies.
- Manage tourism growth to match the local capabilities of communities to provide appropriate infrastructure for accommodating tourism.
- Ensure that tourist amenities are established at appropriate locations and at a scale that minimizes impacts on the local communities.
- Encourage home-based businesses to provide products and services that benefit the local communities and the Turnagain Arm economy as well as larger markets.
- Ensure that future regulatory changes and planning actions maintain and protect the unique character and rural lifestyles of Turnagain Arm communities. Unless

superseded by stricter standards in Title 21, the following shall apply to new developments:

- Wherever practical, mature trees shall be retained with existing ground cover and within clusters or within linear buffers of adequate width to retain root systems and reduce blow-down.
- Proposed development if signs and lights along the Seward Highway shall include viewshed analysis to minimize intrusion into scenic views. Sign size and illumination may be configured to balance the visibility of the information with the protection of scenic views and the unlit night sky.
- Protect watershed and groundwater recharge resources needed for well water systems.
- Ensure that new development does not impact the long term sustainability of the on-site well and septic systems.
- Until Title 21 includes formal lighting regulations, the following basic standards apply to Turnagain Arm discretionary reviews:

GOAL 2

**Balance economic development
with community character and
rural quality of life.**

- New commercial or industrial developments shall maximize screening buffers between these uses and residential areas to the extent practicable.
- New developments shall not be noxious, injurious, or hazardous, as defined in Title 21, or otherwise incompatible with established permanent uses on surrounding property or with the community’s goals in this Plan.
- Projects shall be designed and sited to minimize light impacts and light trespass on residences, the night sky, and area viewsheds. At a minimum:



- Directional light sources shall be shielded or limited to a maximum nighttime luminance of 800 candelas per square meter;
- Exterior exposed neon tube lighting is prohibited in residential areas;
- Building façade lights are permitted subject to the following restrictions:
 - Upward aimed building façade lighting shall not exceed 1800 lumens.
 - All upward aimed lights shall be fully shielded, fully confined from projecting into the night sky, and mounted flush to a wall as practicable.
 - Building façade lighting necessary to exceed 1800 lumens shall be fully shielded, aimed downward, and mounted flush to a wall as practicable.

Strategies:

- Include Turnagain Arm in the future Title 21 Lighting Regulations.
- Provide design standards and guidelines in Title 21 that address noise and light pollution, retention of native vegetation, and protection of privacy and viewsheds, especially along the Seward Highway.
- Minimize impacts from ARRC and USFS Whistle Stop program to the local community and the local environment by keeping the scale of tourism businesses in line with services available at the local level.
- Support moderately scaled tourism and highway-related services and facilities.
- Consider the future inclusion of Turnagain Arm in the Municipality of Anchorage’s Building Safety Service Area (BSSA) to promote building safe and sound residential and commercial buildings and emphasize consistent code enforcement.

GOAL 2
CONTINUED

Objectives:

- Ensure future development fits with each community's desire for small town, rural character and size.
- Ensure an efficient pattern of development that reflects the needs of the community and is consistent with community character and the natural environment.
- Encourage the construction of safe, sound housing.



GOAL 3

Promote community growth that sustains and supports diverse land uses consistent with community values.

Policies:

- Preserve existing large-lot rural residential development.
- Support a diversity of housing types including housing for temporary or service industry workers in the community.
- Promote only light-industrial land uses and insure that existing non-conforming industrial uses are fairly and equitably phased-out as ownership and local needs change.
- Ensure an adequate land supply in suitable locations for commercial and light-industrial developments that are compatible with community needs and resources.
- Apply locally appropriate design and rural architectural standards to new commercial development to limit impacts to local facilities, residences, and viewsheds. Orient parking and access at commercial sites to the highway and away from adjacent residential lots.
- Promote public-private partnerships for tourism and community development.
- Promote energy efficiency and independence.

- Consider the possibility of tourism/traveler-related themed activities in new commercial and mixed-use developments along the Seward Highway.

Strategies:

- Amend Title 21 Land Use Regulations to require that master plans be done for sites 50 acres or greater in the Portage area.
- Amend Title 21 Land Use Regulations to update the TA District to include new design standards for new land use designations identified in this Plan.
- Use this Plan's policies and maps to guide zoning and platting decisions.
- Promote on-site energy production consistent with protection of community values regarding noise, light, and scenic qualities.
- Rezone ten private parcels in Portage to conform to new land use designations of the 2009 Turnagain Arm Comprehensive Plan.

Objectives:

- Provide new and preserve existing recreational opportunities for area residents and visitors.
- Preserve and enhance public access to recreation areas.
- Provide natural undeveloped areas for recreation use



GOAL 4

Policies:

- Ensure that there is a range of recreation opportunities and access for local residents and visitors
- Provide safe, formal, public access to Turnagain Arm beaches, shorelines, and wildlife viewing opportunities across Alaska Railroad land in conjunction with the Alaska Railroad permit process.
- Locate and design public recreation access points to minimize impacts such as noise, local traffic, light pollution, and safety hazards to private property.

Strategies:

- Work with Alaska Department of Natural Resources-Chugach State Park (CSP), municipal Parks and Recreation and Heritage Land Bank, ARRC, ADOT&PF, and relevant private landowners to inventory, finalize details, and determine feasibility of dedicating future public access points to CSP and Turnagain Arm beaches and shoreline, via a public process.

- Work with Community Councils and residents to determine feasibility for establishing a Park District (as recommended in the Parks Plan; per MOA Charter, Section 9.01 or 9.02), to pay for park improvements and maintenance.
- Use Heritage Land Bank lands in Indian for public use and community needs as reflected in the 1987 Parks, Greenbelt, and Public Facility Plan and the 1987 Turnagain Arm Comprehensive Plan.
- Complete a land use study before Heritage Land Bank land is designated or disposed.
- Update the Turnagain Arm volume of the Anchorage Parks Plan to revisit standards and relative park needs, determine park priorities, and coordinate with other land managers to identify locations for safe access to the Turnagain Arm beaches and shoreline.
- Refer to Historic land uses on Twenty Mile River area as a guide to determining LAC (Limits of Acceptable Change) and locating future motorized activities.

Maintain, preserve and provide recreational opportunities.

Objectives:

- Provide consistent opportunities for community involvement and influence on the scoping and design of transportation improvement projects that may impact the lifestyle, character and the future goals of the community.



Policies:

- Ensure that transportation improvements are compatible with community core values, including protecting scenic views, minimizing noise in residential areas, minimizing light pollution, and providing access to local businesses.
- Ensure that public safety, environmental safeguards, and buffering from residential properties are incorporated into Seward Highway upgrade designs.
- Support safety upgrades to the Seward highway that include more rest stops and pullouts, noise mitigation and alleviate traffic volumes.
- Ensure that Seward Highway road projects do not adversely impact land values, public access, pedestrian safety, or commercial land uses in the area.
- Support future intermodal rail access to Turnagain Arm communities.

- Support grade-separated crossings of the Seward Highway and Alaska Railroad in Indian and Bird at locations that are suited for future passenger rail access.

Strategies:

- Promote a Seward Highway noise impacts study to determine noise contours from the roadway and create a mitigation scenario to minimize impacts at the four communities.
- Continue to implement safety improvements and recommendations from the Seward Highway Corridor Partnership Plan.
- Facilitate communication between the community, the Municipality, Alaska Department of Transportation and Public Facilities, and the Alaska Railroad on transportation issues and in particular the Seward Highway and Alaska Railroad changes.

GOAL 5

Encourage community participation in transportation improvement projects.

- Work with Community Councils, residents, and municipal Street Maintenance to determine feasibility and desirability for establishing an areawide LRSSA (Limited Road Services Area) (per MOA Charter Section 9.01 or 9.02), to pay for and provide local roads maintenance, etc.
- Continue support and participation in the Seward Highway All-American and Scenic Byway Partnerships.
- Work with ADOT&PF to mitigate and address Seward Highway upgrades in the Turnagain Arm communities with landscaping and/or other visual amenities wherever practical.
- Identify potential intermodal rail stop sites and connections across the Seward Highway, particularly in Indian and Bird, when major highway or railroad improvements are proposed.
- In particular, involve the community in defining the project purpose and need, scoping, and identification of alternatives to ensure that community needs and impacts are considered from the earliest stages onward and are not overlooked because of the regional importance of the highway and rail corridors.

GOAL 5 CONTINUED

Objectives:

- Support establishing and expanding emergency response and fire protection for Turnagain Arm.



Policies:

- Provide a safe environment that limits the threat of crime, injury, wildfire, avalanche, flooding, and other natural disasters in Turnagain Arm.
- Ensure that timely fire and emergency medical response is available in the Turnagain Arm area.

Strategies:

- Conduct a feasibility study for establishing a community center in Indian or Bird Creek that also houses emergency and public safety services in Turnagain Arm.
- Coordinate resident awareness and implementation of wildfire mitigation with municipal and state forestry services programs.
- Discourage the use of firearms discharge in areas that are hazardous to residents by increasing enforcement or regulatory presence.
- Increase public education to minimize hunting conflicts near residences.
- Coordinate with ADF&G (Alaska Department of Fish and Game) to minimize open target shooting.
- Work with ADF&G and USFS for consistent Turnagain Arm management policies and safety programs.

GOAL 6

Provide a safe and secure community for residents and visitors.

Objectives:

- Ensure that the community is involved, to the extent possible, in planning and land management decisions for Turnagain Arm.



Policies:

- Encourage and improve coordination of annual agency work programs, funding requests, major project reviews, and long-range plans for activities in the region.
- Use of community councils as a clearinghouse for information and planning efforts.

Strategies:

- Form a Turnagain Arm management working group that includes local, state, and federal agencies and community representatives to coordinate on long-range land management responsibilities and funding for the area.
- Create a set of measurable indicators for an annual progress review.
- Coordinate efforts on long-range planning and permit reviews through the use of Memorandums of Understanding (MOUs) between local, state and federal agencies and residents.
- Provide information by email and website to improve local residents' access and participation.

GOAL 7

Provide opportunities for the community to participate in land management decisions.

Objectives:

- Explore alternative methods and conditions for providing public services with other land management agencies.
- Ensure that adequate land and easements for public facilities are provided during development.



Policies:

- Ensure the proper design, installation, and inspection of on-site water and wastewater facilities in developing areas of Turnagain Arm and, in particular, Portage Valley.
- Evaluate the feasibility of a LRSA (Limited Road Service Area) or a similar program to provide local road service and road maintenance for the Portage Valley area.
- Encourage the underground placement of electric and telephone distribution lines where possible throughout the communities.

Strategies:

- Explore the possibility of rural preference exemptions for grants to provide optimal telecommunication service coverage in Turnagain Arm communities.
- Explore federal and state grant options for rural telecommunications facilities and services upgrades.
- Determine the feasibility of developing a LRSA (Limited Road Service Area) for Twenty Mile River and Portage to provide access and local road service through a tax and economic impact study and implement as necessary.
- Coordinate with Chugach Electric Association to place distribution lines underground as upgrades are done.
- Evaluate the possibility of expanding the Distribution Line Underground Ordinance (AMC 21.90) for Anchorage to Turnagain Arm.

GOAL 8

Improve community services to meet the needs of all residents.

SPECIFIC GROWTH GUIDELINES & STRATEGIES FOR EACH COMMUNITY

RAINBOW VALLEY & MCHUGH CREEK

- Continue formal recognition of unique Rainbow land use and ownership patterns.
- Support the communities' goals for optimal cellular phone and Internet service by working with providers to locate cell towers in more optimal locations that would more efficiently serve each community.
- Support and advocate for safety upgrades to the Seward Highway.

INDIAN

- Identify and coordinate redevelopment plans for lots that need to transition into conforming uses.
- Assist with a land use analysis of the large HLB-selected parcel and advocate the community's desire for a mix of park and community facilities, environmental reserve for wetlands, greenbelt, and avalanche area, and possibly some residential lots in appropriate areas. Access to existing lots, determination of other public needs, and impacts to existing lots must be included.
- Resolve and make permanent the location and proper designation of internal roads.
- Work with ADOT&PF on Seward Highway upgrade projects to mitigate negative impacts on the community.
- Resolve ownership of the Seward Highway right-of-way fragment lots.
- Evaluate feasibility and issues of designating Old John's Road as a primary public road access to Chugach State Park in the HLB land use study for the 91-acre parcel.

BIRD CREEK

- Complete the land transfer of HLB parcels to the Parks and Recreation Department and formalize Bird Creek Community Park.
- Coordinate management of Bird Creek Regional Park with the Parks and Recreation Department and the Alaska Department of Natural Resources.
- Resolve the location and proper designation of internal roads.
- Resolve ownership of the small fragment lots along the Seward Highway right-of-way.
- Mitigate Seward Highway project impacts on private properties and property values.
- Conduct a land use analysis of the 155-acre HLB parcel, including mapping of the environmental features, to determine the most appropriate land use designation.

PORTAGE & TWENTY MILE RIVER

- Promote Seward Highway upgrade projects that address highway and pedestrian safety while mitigating negative effects on property values and uses.
- Promote landowner and agency coordination to resolve access conflicts to remote parcels in ways that avoid land use or management conflicts for surrounding public lands.
- Encourage community participation in planning for features of future highway upgrade projects, including the locations of turnoffs, ARRC track crossings, and methods of construction for new access roads.
- Conduct an environmental analysis that includes wetland delineations and stream and floodplain mapping to determine development suitability and consistency with land use regulations in Portage Valley.
- Promote agency, landowner, and user group coordination to address existing and potential future land use conflicts.
- Require that landowners of large parcels complete master plans before future development.
- Resolve land ownership in the original Portage townsite.
- Ensure that development is integrated into and balanced with the scenic qualities of the National Scenic Highway corridor and the surrounding recreation land.



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CHAPTER 5: Land Use Plan



Relationship to Land Use Regulations and Zoning Map

The Turnagain Arm Comprehensive Plan is a policy document designed to guide future development decisions in the Turnagain Arm communities outside of Girdwood. It outlines general development and land use strategies. This Plan also presents strategies for the protection of significant and unique natural features and for the retention of the area's rural character.

The land use plan maps provide a visual representation of long-term policies. They are not detailed blueprints for specific future development. The maps and the community growth guidelines in Chapter 4 serve as policy guides and are the legal basis for future zoning changes and development decisions. Many of the land use categories depicted on the maps already exist. The maps reflect community needs and desires relative to future anticipated growth.

The Municipality's Title 21 regulates development. Future amendments to Title 21 regulations, zoning changes, and other land use decisions are intended to conform to this Plan and the land use plan maps.

Plan Amendments

The land use plan maps should be considered dynamic and can be amended and updated as changes occur in Turnagain Arm.

Proposed amendments to the land use plan maps may be reviewed concurrently with new development proposals. Such amendments require that conflicts between the proposal and the maps be resolved by using the goals, policies, and strategies in Chapter 4 of this Plan as guidance. Map changes are considered Plan amendments. A change must be demonstrated to be consistent with the Plan's goals and policies for locating future population and developments in a manner that will meet projected growth.

LAND USE DESCRIPTIONS

Introduction

The land use plan identifies general land use classifications, and the land use plan maps illustrate the location and extent of each land use category throughout Turnagain Arm. These classifications define the development intensity and density for each area. The following land use classifications include generalized descriptions of predominant uses, intensity of uses, and physical characteristics intended in the development. Some classifications include location criteria that provide a rationale for the recommended location of each land use. The classifications and location criteria apply in combination rather than separately. Some land use classifications have been added or updated since the 1987 Plan.

Turnagain Mixed Use (TMU)

This category provides for a range of land uses and activities as permitted primary uses, including commercial activities that are seasonal and related to visitor services. This land use benefits the community and visitors and should be designed to complement the scenic value of the Seward Highway with appropriate landscaping, buffering and screening. TMU replaces the commercial category used in the 1987 Plan. It allows for local and visitor uses on a scale compatible with each Turnagain Arm community. The TMU category is not intended for larger-scale, big-box or strip commercial retail structures. Commercial uses in Turnagain Arm have typically been small-scale, strip development. These are largely auto-oriented due to their highway frontage.

The TMU category also supports more traditional commercial uses similar

to existing uses such as convenience stores and service stations. Cottage craft uses such as light manufacturing or other low-impact manufacturing activities may be appropriate, especially if these activities support the local community and visitors. This new category applies mostly to larger parcels (bigger than 2 acres) that front the Seward Highway. Many existing commercial development along the Seward Highway include some residential structures.

Most TMU parcels are located along the Seward Highway and are generally less suitable for traditional residential uses. Because some residential homes already exist on these parcels and in order to maintain the intended flexibility of TMU land uses along the highway, residential land use is a permitted use in the TMU at one dwelling unit per 2.5 acres, as per the adjacent residential lots. Temporary housing for workers above commercial structures is also considered an appropriate use. Residential housing above or within commercial structures, including temporary housing for workers, is considered an appropriate land use in this designation.

TMU Location criteria:

- Areas already developed for commercial use or have a mix of commercial and residential.
- Areas with direct access to or uses dependent on the Seward Highway.
- Vacant land near existing commercial development that will not negatively affect neighborhoods if developed as commercial property.

The TMU category should provide for temporary housing for seasonal employees and other tourism-oriented activities while preserving the rural residential uses of remaining areas. The land use plan maps of the 1987

Plan did not accommodate or address temporary housing. As with other Turnagain Arm area developments, TMU land uses may include design standards that focus access at the highway, provide for safe highway ingress and egress, and limit impacts on the Turnagain Arm viewshed and adjacent residential structures.

Residential Land Use Classifications

Parcels classified as residential land use have already been developed for residences or deemed suitable to accommodate future residential growth. Most Turnagain Arm residential developments are on larger lots (more than 2.5 acres) and are served by on-site wells and wastewater systems. The historic pattern of large lot development resulted from a combination of preferred rural lifestyles, lack of public infrastructure, and environmental constraints. The Plan considers a home occupation business, as defined in Title 21, as a permitted activity or secondary use in the residential categories. All other uses are considered through the conditional use approval process. Proposals for non-residential activities must include a description of how that use affects adjacent lots and the community's capability to support future population projections.

Single-Family Residential – 1 Dwelling Unit per 2.5 acres

This category represents the majority of existing and future residential developments in the Turnagain Arm region. All single-family residential developments rely on on-site water and septic systems. The traditional development patterns have a rural character. Although there are some lots within this category that measure less than 2.5 acres, the Plan intends the smallest lots in this residential land use category to be 2.5 acres.

Single-Family Residential – 1 Dwelling Unit per 5 acres

This land use category applies to larger and unsubdivided parcels located mostly at the periphery of each Turnagain Arm community. This category also provides for single-family homes on lots with marginally suitable development conditions, especially in the Twenty Mile River and other sections of Portage, where wetlands, floodplains, and poor soils might limit buildable areas for new development. In other areas, this category also provides a transition zone of development at the interface between Chugach State Park and the established and developing sections of Bird Creek and Indian. Rental cabins are permitted as a conditional use in this category. Future subdivision of these lots requires a conditional use and possibly a master plan that must ensure new lots support septic and well systems and do not affect scenic views or adjacent parcels.

Locational Criteria for Single-Family Residential Land Uses:

- Areas already developed for residential use or that have a mix of residential and rental cabins.
- Areas with direct access to interior local roads in Rainbow, Indian, and Bird Creek.
- Vacant land near or in existing residential development that will not negatively affect neighborhoods or the area's rural character.

Rural Homestead

This category is assigned to five large, mostly unimproved tracts in Portage Valley that have been in family ownerships and were established under the federal Homestead Act. The existing and current long-term intent of these lands is maintenance of traditional homestead uses, which included some level of land clearing, agriculture type uses, site improvements, and

a residential home. Permitted land uses on these tracts include a single-family residential home and cultivation-type activities. Prohibited uses are those that are noxious, injurious, or hazardous as defined in Title 21 and any use or structure that is likely to be otherwise incompatible with the goals and objectives of this Plan. All land uses outside of those identified herein are subject to the Conditional Use approval process and other requirements of this Plan and Title 21. Current traditional land uses are nonconforming uses. Future subdivision of these homesteads into other land uses, including more traditional residential lots with roads and utilities requires a master plan, as required by this Plan and Title 21.

Locational Criteria for Rural Homestead Land Uses:

- Areas in Portage Valley with traditional federal or state homestead classification and/or parcels already considered as homesteads.
- Parcels in Portage Valley greater than 50 acres, intended to provide traditional homestead land uses with limited or no existing or planned amenities or infrastructure.

Industrial Use

The only areas that the Plan identifies for industrial use are existing single parcels. These industrial parcels include a meat processing plant in Indian and a sawmill and communications station in Bird Creek. Junkyard operations have evolved on some residential lots since the 1970s and are grandfathered as a nonconforming use. This Plan considers junkyard uses as incompatible with Turnagain Arm land uses; use of land as a junkyard should be phased out.

Locational Criteria for Industrial Areas:

- Areas with an established primarily industrial development use;
- Areas large enough to sufficiently buffer industrial activities from adjacent non-industrial uses and other important local features.

Park and Natural Resource Areas

This category represents sites that provide active and passive recreation and includes public lands dedicated to natural open space. The park and natural resource designation consists of trail and greenbelt corridors and other similar land uses typically included in the Public Lands and Institutions zoning district. In Turnagain Arm, parks and natural resource uses include neighborhood and regional parks. This category also applies to publicly owned or managed land with known future use as park or natural resource.

Locational Criteria for Parks and Natural Resource Areas:

- Areas designated or dedicated as park use or under management as park use.
- Areas designated by an adopted plan or plat as park or natural resource use.
- Municipal lands of significant natural value or that are environmentally sensitive and generally unsuitable for development.

Transportation Facility

This category encompasses areas where land uses revolve around or depend on linear transportation facilities and includes the Seward Highway and ARRC properties. Transportation facilities include areas where existing

or planned future public or quasi-public uses occur that are directly related to or dependent on the transportation corridors. For Turnagain Arm, secondary land uses, specifically commercial or industrial activities, are considered appropriate for this designation if they are dependent on or otherwise related to the transportation corridor. Such secondary uses are mostly found in Portage Valley along the Alaska Railroad corridor.

Locational Criteria for Transportation Facility Areas:

- Areas designated in a master plan or similar planning document;
- Areas intended for or expected to support transportation-related activities.
- Areas centered on or connected to the ARRC tracks.

Community Facility

The community facility designation applies to areas that are substantially developed for active or potential public and institutional uses or that are undeveloped with known future community uses. Community facilities include schools, community centers, fire stations, and public utility structures. In Turnagain Arm, community facilities might also include sites dominated by seasonal tourism activities. Areas identified for this use are along the Seward Highway.

Special Study Areas

This designation is more of a temporary or overlay category and not a true land use classification. Land uses for special study areas have not yet been determined because of land ownership issues or because further studies need to be completed before a suitable land use designation can be determined. In Turnagain Arm, special study area applies to the HLB's

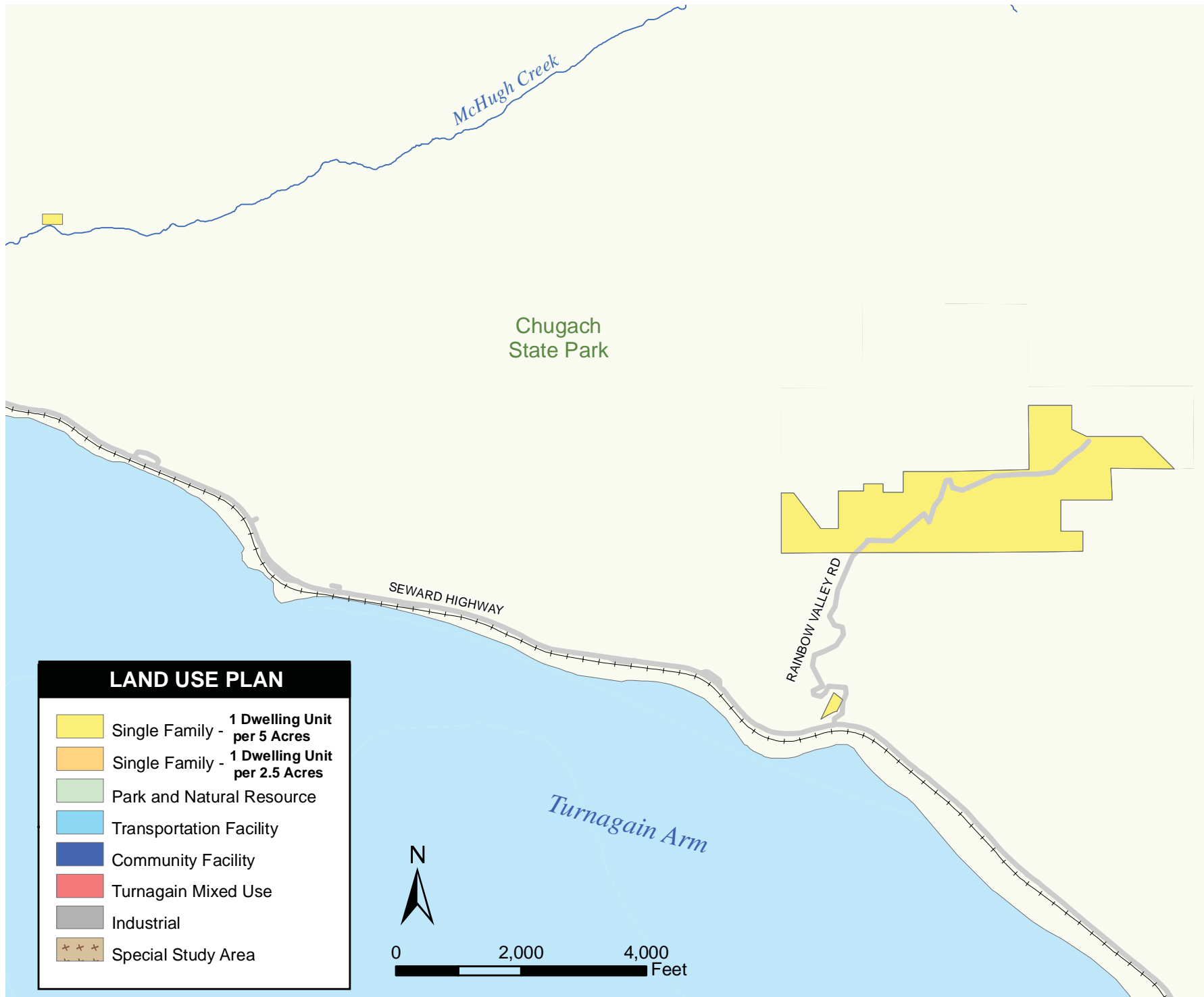
91-acre state-owned parcel in Indian, a 155-acre state-owned parcel in southeast Bird Creek, and the original Portage townsite in Portage, which has a block of small lots. Depending on the timing of future development needs, the existing landowners or a public agency might accomplish the various studies needed to determine the future uses at a special study site. These studies include delineation of environmental features and title research.

For special study areas and on parcels greater than 50 acres in Portage, the Plan recommends that new development include master plan approvals. As part of a master plan, land use boundaries within the large parcels and between lots would need to be delineated. The master plan approval of these boundaries would formally amend a parcel's land use classification.

RAINBOW and McHUGH CREEK LAND USE PLAN

The Plan recommends no changes to the 1987 Plan for the Rainbow community. All of Rainbow is designated for residential land use with a density of one dwelling unit per 5 acres. The area is essentially fully developed, with residential densities of approximately 5 or more acres per dwelling unit. Because of steep terrain and the community's border with Chugach State Park, little additional area is available for any new residential development.

The McHugh site is designated for one dwelling unit per 5 acres, low-density residential land use. Refer to the Rainbow Land Use Map.



**Rainbow
Land Use Plan Map**

INDIAN LAND USE PLAN

In Indian, very few land use changes have occurred since the 1987 Plan. Low-density residential development will continue to be the dominant land use.

The new TMU land use category allows a mix of commercial and residential uses along the Seward Highway frontage. Highway frontage lots that experience noise and have direct access from the Seward Highway are more appropriate for commercial than residential use. TMU does not preclude future residential developments on these frontage lots but encourages tourism-related businesses as demand for this type of land use increases with visitors to the area.

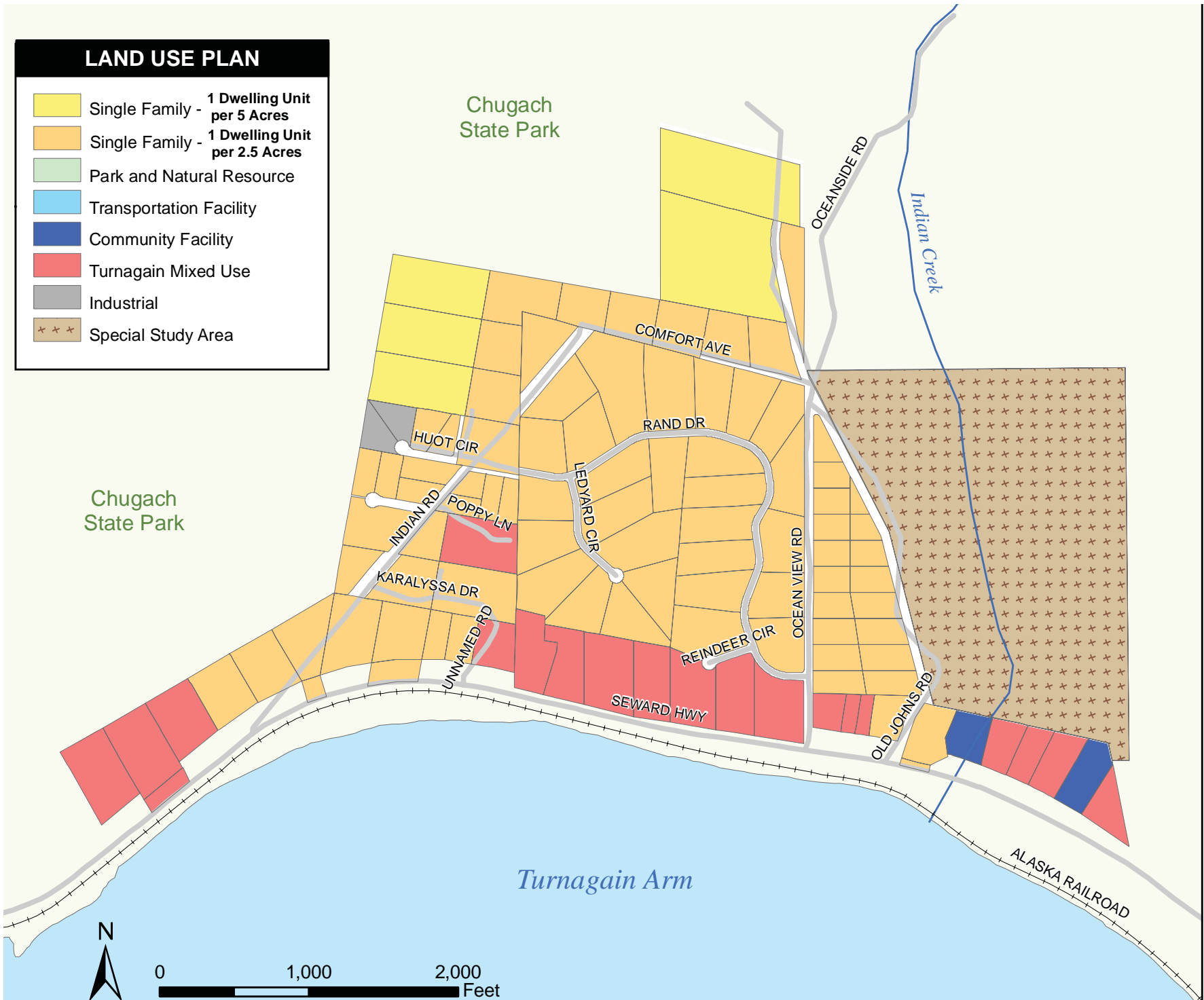
Anticipated population growth will be accommodated by the relatively new residential subdivision in the middle of Indian Valley and other smaller tracts on the perimeter of the valley. Densities remain low, with single-family residences on lots sizes between 2.5 and 5 acres. All areas are served by on-site water and wastewater systems and private wells. The designated industrial area at the meat processing facility is retained. Two parcels owned by the Municipality are listed for community facility land uses: a community church and a parcel that straddles Indian Creek, which is suited for a public greenbelt trailhead. The Turnagain Arm volume of the 1987 Parks Plan identified the latter parcel in Indian Valley's northeast edge as park and open space. The Turnagain Arm volume of the Parks Plan recommended future park uses for the parcel.

This Turnagain Arm Comprehensive Plan designates the adjacent 91 acres, which has been selected by the HLB, as a special study area, for which

future land use will be determined by a site-specific land use study. The Municipality is in the process of formalizing the land conveyance from the State of this parcel located in Indian Valley's northeast edge. An August 2007 survey identified locations of mining claim structures and a trespass cabin located near the creek in the northern half of the parcel. Indian Creek Way (Old John's Road), a rustic dirt road paralleling the creek, was found to meander out of its right-of-way. Development suitability will need further evaluation, but as of 2008, the parcel is known to be affected by avalanche slopes and runout zones, steep slopes (with grades of more than 25%), wetlands, and streams. One runout extends into the northeast corner of the parcel, and the edge of a high hazard area is mapped on a slope at the west side.

The special study designation places the site in a "holding" classification with the intent that a land use analysis be undertaken to make a best use determination for the acreage. The analysis will seek to balance the area's environmental suitability with the community's long term needs, which may include some additional residential classification.

The special study classification calls for additional suitability and community needs assessments before a final recommendation can be accomplished. This Turnagain Arm Comprehensive Plan affirms the intent of the 1987 Parks Plan that roughly 10 to 20 acres of this HLB parcel be dedicated for a neighborhood park. The 1987 Parks Plan noted that this park "should be extracted from the municipal land selection in this area." This Plan also affirms the 1987 Parks Plan intent to provide a greenbelt along Indian Creek and steep terrain on the hillside. Future community facility uses and needs, as expressed by the community, would likely be best located on the 2-acre HLB parcel located between this 91-acre lot and the Seward Highway. This site might include a future greenbelt corridor trailhead and public parking.



**Indain
Land Use Plan Map**

BIRD CREEK LAND USE PLAN

Few changes to Bird Creek land use designations are recommended. Most lots remain in residential, single-family designation at a one unit per 2.5 acres. The larger, more remote parcels near the creek remain designated as 5-acre minimum residential lots. An area originally designated industrial still contains an active sawmill. This activity is a permitted use and will continue so since the site has historically been designated for industrial use. An existing communication facility with Seward Highway frontage is designated as industrial use. As in Indian, the Plan calls for designating some areas along the highway as TMU to accommodate future needs for mixed uses. Four parcels identified in the 1987 Plan as HLB vacant land are designated for Park and Natural resource land uses to implement the Bird Creek Neighborhood Park recommendation in the 1985 Parks Plan.

The Municipality is in the process of receiving, through the Heritage Land Bank, a 155-acre parcel in the southeast corner of Bird Creek from the State of Alaska. This parcel is designated Special Study Area until a detailed land use study and suitability analysis determine land use designations. See Bird Creek Land Use Plan Map.

PORTAGE/TWENTY MILE RIVER LAND USE PLAN

The Plan's most significant changes since the 1987 Plan are found in Portage Valley. Several areas have land use designations for the first time, including all the private 5-acre parcels in the Twenty Mile River drainage. Although mostly remote parcels with no road access or utilities, they have the potential to be developed for single-family residential dwellings. The Plan designates this area for single-family uses at a density of one dwelling unit per 5 acres. Future development in the Twenty Mile River area requires landowners to submit environmental data such as wetland delineations and permits prior to filling for development to help determine each site's development suitability. Also essential to the suitability of these areas will be decisions about the location, construction, and management of any future road access. Any new road development in Portage will require formal approvals from ARRC, ADOT&PF, ADNOR, and USFS, in addition to subdivision agreements with the Municipality and the requirement that roads meet municipal standards.

Additional new land uses are designated seaward of the Seward Highway. A large 50-acre site is now designated TMU because it has potential to offer mixed-use development, which could occur only after the landowner analyzes environmental data and identifies access issues. Development suitability for the parcel will be determined by findings of the analysis, which must precede permitting and development. See the Portage/Twenty Mile River Land Use Plan Map.

Traditional residential development potential is limited and/or is not desired by current landowners at the five larger homestead parcels that straddle the Portage Glacier Access Road. These areas are intended to retain

traditional homestead land uses, which may or may not include future residential single-family homes.

ARRC land in the area consists of existing large tracts in the valley along the mainline, side tracks, and on a portion of the Seward Highway. The conversion of the Whittier tunnel to accommodate vehicles as well as railcars has increased the potential for Portage to play a significant role for transportation- and tourist-related land uses. ARRC projects a growing need for creating a shipping "hub" at Portage that would resort shipboard cargo bound for for railbelt communities.

Tourism is a rapidly growing industry in Portage Valley because of the number of growing visitors to Whittier and the Seward Highway corridor. Recreation activities are concentrated on Twenty Mile River, Portage Creek, and Placer River, and at the Alaska Wildlife Conservation Center. In addition, a partnership between the ARRC and the U.S. Forest Service to operate the new Whistle Stop Train Project is creating a potentially popular tourism attraction at Portage. The USFS has a Glacier District recreation plan, which includes a formal access site for a future developed section of the Iditarod Trail to eventually connect to upper Girdwood Valley. The Alaska Wildlife Conservation Center continues to expand, and its operators have identified several additional phases in a master development plan. This need for accommodating more tourism activity is addressed with the addition of TMU and community facility land use classifications in Portage.

Environmental issues and a complex pattern and history of land ownership are chief among a host of conditions that exist at the block of parcels known as the Old Portage Townsite. There are several private owners of record for some of these small lots, but after the 1964 earthquake, the bulk of these lots came under Bureau of Land Management jurisdiction. Future

use of these lots is restricted because of the tidal influences, high water table, and wetland conditions. Development at the Old Portage Townsite is also unlikely because of the non-conforming lot sizes and difficulty for on-site septic and well systems to be installed and to function adequately in this environment. This Plan recommends a special study designation for this area until ownership issues are reconciled and consolidated.

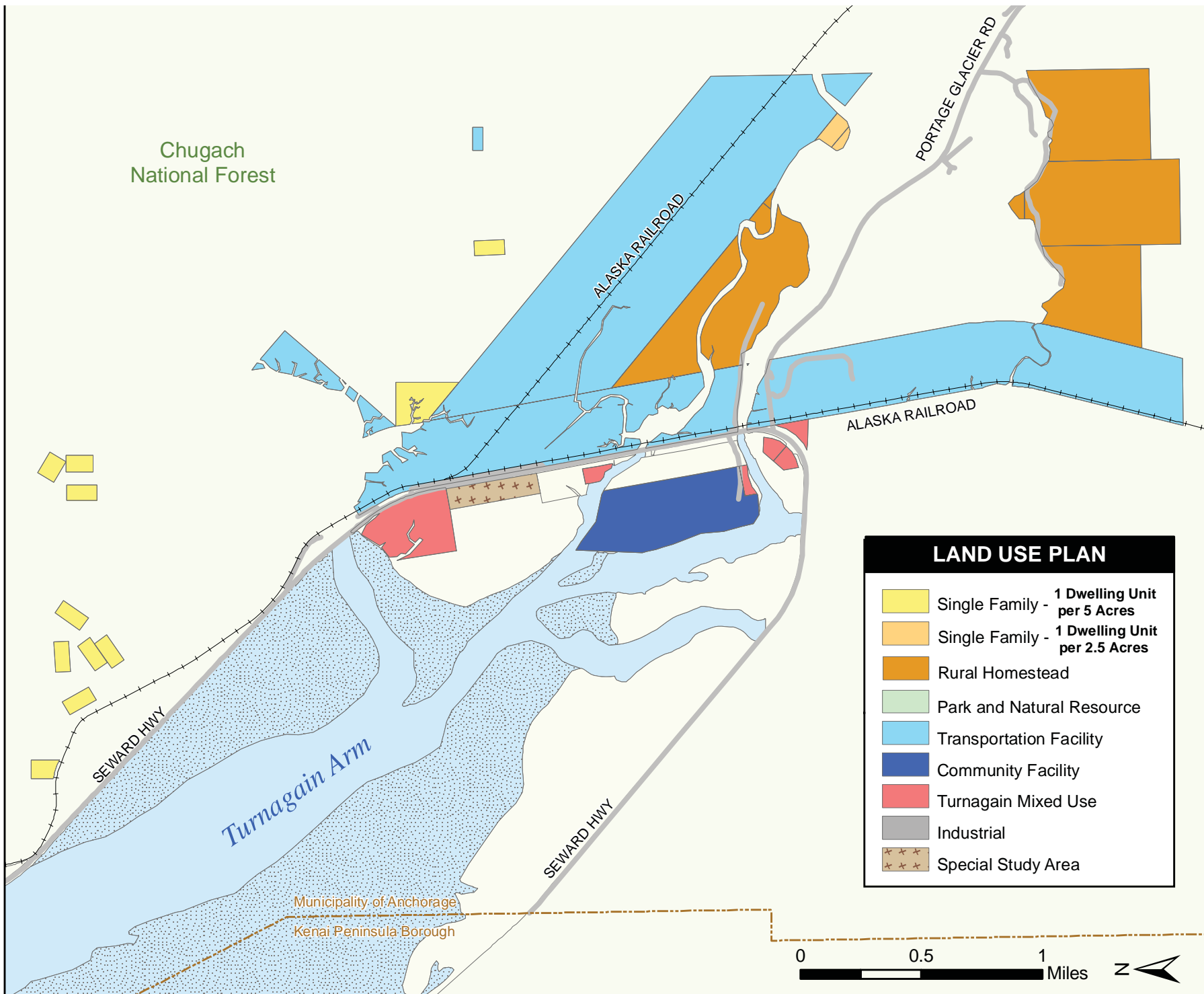
Currently, Portage is relatively undeveloped with little infrastructure. However, the growing interest in tourism, potential, commercial, and transportation developments could bring significant change to the community during the next 20 years. A coordinated, detailed master development plan for the Portage area is recommended to adequately address the future land use demands in Portage and Twenty Mile River.

Before major commercial or industrial development of ARRC land, including parking, rail yard development, or cargo storage or sorting, ARRC must present a master plan to help ensure compatibility with the recreation and residential uses of surrounding lands, and with the Seward Highway's national and State of Alaska scenic highway status.

The Plan recommends that the major landowners and agencies form a planning group to pursue a Portage area master plan. Short of a coordinated areawide planning effort, the Municipality requires the landowners of the larger parcels (more than 50 acres), notably ARRC, the USFS, and some private owners, address future development with individual master plans. This approach would ensure that the public, landowners, and local environment are all accounted for as development ensues.



**Bird Creek
Land Use Plan Map**



LAND USE PLAN

- Single Family - 1 Dwelling Unit per 5 Acres
- Single Family - 1 Dwelling Unit per 2.5 Acres
- Rural Homestead
- Park and Natural Resource
- Transportation Facility
- Community Facility
- Turnagain Mixed Use
- Industrial
- Special Study Area



Portage Land Use Plan Map



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CHAPTER 6: Plan Implementation



This Plan is the source for policies that will guide land use and development in Turnagain Arm for the next 20 years and beyond. It represents input, goals, and desires of the communities, landowners, and land managers. The Plan accounts for known plans, describes demographic changes, and provides a formal framework for potential future activities. It regulates where or how developments occur as implemented through municipal code.

Implementation mechanisms for the Plan include regulatory controls, such as zoning, platting, and development standards from Title 21 and functional plans (such as the Parks Plan).

To some extent, land uses are also guided or influenced by land managers and planning documents associated with Chugach State Park and the Chugach National Forest. Although these plans address areas that are typically beyond the Municipality's jurisdiction, the Plan advocates for more intra-agency coordination so that the Plan's basic tenets can be adhered to. The Plan constitutes the Municipality's policy towards relevant state and federal land management activities in Turnagain Arm. Whenever possible, state and federal plans should be consistent with this Plan.

In cases for which specific implementation measures are lacking or yet to be developed, the Plan's community growth guidelines (Chapter 4) are intended to guide development actions and municipal decisions.

IMPLEMENTATION STRATEGIES

I. Regulatory Controls - Zoning, Platting, Subdivision Standards

More so than for other areas of the Municipality, the land use regulations in Title 21 provide the most effective implementation measures for Turnagain Arm. These Title 21 components include zoning district and subdivision standards. The implementation sections of the 1987 Plan provided a new R-II zoning ordinance unique to Turnagain Arm. The R-II district provided for a breadth of land uses that reflected the goals, policies, and conditions specific to Turnagain Arm. Permitted uses were controlled by the 1987 Plan. This zoning classification provided flexibility in land development activities through the use of the conditional use approval. Because public services are minimally provided for in Turnagain Arm, aside from in Girdwood Valley, the R-II district reflected the uniformity of uses and appearances desired by residents. The conditional use approval process was applied to evaluate and mitigate community impacts from land uses outside the norm—uses that were larger in scale or intensity. Most land uses were permitted under this zoning as long as they reflected the land use plan maps of the 1987 Plan. The 1987 Plan focused on the conditional use process as the chief method to evaluate project designs and conformity to the 1987 Plan.



Residents desire design standards that minimize impacts to scenic views, environmental features, local utilities, and other public improvements in the Turnagain Arm region. In fall 2007, the Municipality had a pending update of the Title 21 Land Use Code, which contained a new TA zoning district. This new designation maintains much of the original intent and standards of the old R-II district. Land use plan maps and polices of this Plan govern land uses and residential densities in the Turnagain Arm region.

2. Design Criteria

New subdivisions are subject to municipal zoning, platting, and land use permit reviews and must be designed to meet applicable provisions of the Municipality's Design Criteria Manual and Drainage Design Guidelines. Land uses that do not conform to the standards of the TA zoning district or the land use plan maps must go through a conditional use review and possibly a Plan amendment. The aesthetics of community design and the unique scenic qualities are primary concerns of Turnagain Arm residents. For conditional use reviews, projects must at a minimum:

- Conform to the goals and policies of this Plan;
- Protect the unique scenic and environmental features of the area;
- Minimize impacts to adjacent properties, particularly adjacent property with a different land use designation;
- For lots with non-residential land uses, provide a 25-foot side yard and rear yard where these abut a residential parcel. These 25-foot side and rear yard areas shall be landscaped with buffer landscaping to include evergreen tree species, or shall retain native vegetation as a buffer to be supplemented with additional plantings as necessary to achieve visual separation from adjoining parcels;
- Prohibit junk disposal or removal and junk or salvage yards within 200 feet of the Seward Highway.

The Plan provides the essential elements to guide Platting Board and Planning and Zoning Commission decisions on future density patterns, location of land uses, and provision of public facilities and roads.

3. Capital Improvement Program (CIP)

This program is the Municipality's essential planning and budgeting instrument that identifies public facilities and capital improvements during a six-year cycle. The annual CIP provides a prioritization, cost and funding description, and timing scheme for such projects. Future CIP projects must comply with the elements of the Plan.

4. Functional Plans and Studies

A comprehensive plan typically addresses general land use patterns, densities, and general growth guidelines for a 20-year period. It does not address how, when, or where all of the various public facilities and services will be provided. Functional or step-down plans, such as transportation plans, parks and trails plans, and utility plans, are meant to provide additional levels of specificity and detail. The most relevant plans for Turnagain Arm are the 1985 Parks Plan, which will need updating in the future; the Chugach Electric Association Master Plan; and several plans that have been prepared by the Alaska Department of Natural Resources.



5. Federal and State Actions

Environmental attributes of the Turnagain Arm region often require that those planning new developments must seek federal and state permits prior to construction. In some cases, notably involving wetlands and floodplains, the developer/landowner may be required to map the boundaries of a particular environmental feature before submitting a development permit application. Wetland and floodplain permits might restrict development in the Portage/Twenty Mile River area where both are widespread. This Plan recommends the creation of a formal agency team to ensure that local, state, and federal agency plans for the Portage and Twenty Mile River area are coordinated.

6. Heritage Land Bank

The HLB manages considerable holdings in Girdwood Valley, but only eight lots in Indian and five lots in Bird Creek. The existing older lots in Indian likely can be reconfigured and a portion of these lots may be dedicated for a future Indian neighborhood park or similar community facility.

HLB is in the process of gaining jurisdiction of a 91-acre municipal selection of state land in Indian and another large parcel in Bird Creek. Section 25.40.025 of the Anchorage Municipal Code requires a land use study for HLB lots prior to their disposal. These studies must address:

- The need for future community facilities;
- Identification of historical and natural landmarks, hazards, and environmentally sensitive areas;
- Public utility needs;
- Potential future land uses;
- Land use compatibility with adjacent parcels;
- Consistency with comprehensive plan land use plan maps and zoning in the area.

This Plan intends that future disposals or use of HLB parcels follow the recommendations from the required land use analysis and the goals and policies identified in the Plan. Inclusion of the eight existing non-conforming lots of the HLB in Indian as part of the land use study for the 91-acre parcel by the Municipality is recommended. A land use analysis will help determine whether those lots should be re-subdivided into the conforming minimum lot size of 2.5 acres established in this Plan. The analysis must acknowledge the road alignment for Old John's Road and the right-of-way needs for a potential main park access road and trail.

TURNAGAIN ARM Comprehensive Plan IMPLEMENTATION ACTIONS & SCHEDULE

ACTION	TIME FRAME	RESPONSIBILITY
• Revise Title 21 to include development standards for TA District	Near Term	MOA (Planning)
• Revise Title 21 to include Master Plan requirements for Portage parcels 50 acres or greater	Near Term	MOA (Planning)
• Process the rezoning of ten private parcels in Portage to conform to new land use designations	Near Term	MOA (Planning)
• Update Municipal Stream, Watercourse and Watershed mapping	Near Term	MOA (PM&E)
• Update the Parks, Greenbelt and Recreation Facilities Plan	Near Term	MOA (Parks & Recreation)
• Update Wetlands Mapping for Turnagain Arm	Near Term	MOA (Planning)
• Update Floodplain Studies and Mapping for Portage	Near Term	MOA (PM&E)
• Develop MOUs for Local, State and Federal agencies	Near Term	MOA (Planning)
• Resolve Old Portage Townsite Issues	Near Term	MOA Prop Appraisal & State
• Formalize and Implement the 2002 Chugach State Park Access Inventory	Near Term	MOA (Parks and Recreation)
• Survey 155-acre Bird Creek parcel selection and complete conveyance	Near Term	MOA (HLB)
• Conduct Heritage Land Bank studies for Indian and Bird Creek Parcels	Near Term	MOA (HLB, Planning)
• Conduct a noise impact study for the Seward Highway	Undetermined	MOA (PM&E), ADOT&PF
• Inventory scenic viewsheds	Intermediate	MOA (PM&E, Planning & State)
• Conduct a feasibility study for establishing LRSA or other entity for local roads	Near Term	MOA (Street Maintenance), Community Councils (CC)
• Develop a public education program with AD&FG	Near Term	MOA, ADF&G, CC
• Conduct a feasibility study for including TA in the BSSA	Near Term	MOA (Planning), CC
• Establish a working group to coordinate projects with agencies	Near Term	MOA (Planning), CC
Definitions:		
Near Term	1 - 5 Years	
Intermediate Term	6 - 15 years	
Far Term	Beyond 15 years	
Undetermined	Pending further study	

NOTE: The time frames suggested in the Implementation Schedule are approximate and will be determined by available resources.

7. Plan Review Process

This Plan represents the general pattern for land development and management direction for the Turnagain Arm communities. It is based on a set of dynamic factors that can change with time, including demographics, availability of environmental data, and community goals and desires. Because these items change through time and additional factors that may affect land use periodically arise, it is necessary to regularly reevaluate the Plan. Comprehensive plan evaluations generally consider updated demographic and economic trends, changes in assumptions and projections that were the basis of this revision, changes in community goals, and progress in Plan implementation. The initial reevaluation will determine the extent of future plan revisions. Municipal code requires that comprehensive plans undergo a basic reevaluation with necessary updates every 10 years and a full revision in 20 years. The full plan revision ideally should follow completion of the U.S. Census.



APPENDICES

A: Public Participation

- Survey and Survey Results
- Stakeholder Interviews Summary
- Community Workshops Summary

B: Aerial Images

- Rainbow
- Indian
- Bird Creek
- Portage Valley/Twenty Mile River

C: Internet Resources

Appendix A: Public Participation Summary
Turnagain Arm Area Plan 2009

Turnagain Arm Community Survey 2007
Stakeholder Interviews Summary
Community Visioning/Core Values Workshop Summary
Community Issues/Opportunities Summary

TURNAGAIN ARM AREA PLAN COMMUNITY SURVEY 2007

RESIDENCY

Community	Number of Responses	%
Rainbow	2	3
Indian	29	43.3
Bird Creek	28	41.8
Portage	8	11.9
Total	67	100%

RESIDENCY TYPE

Residency Type	Number of Responses	%
Permanent	52	77.6
Seasonal	3	4.5
Part-time	5	7.5
Non-resident landowner	7	10.4
Total	67	100%

COMMUNITY RESIDENCY

Length of Residency	Number of Responses	%
1 - 5 years	7	10.4
5-10 years	7	10.4
10-15 years	4	6
15-20 years	7	10.4
More than 20 years	42	62.7
Total	67	100%

AK RESIDENCY

Length of Residency	Number of Responses	%
1- 5 years		
5-10 years		
10-15 years	2	3
15-20 years	11	16.4
More than 20 years	54	80.6
Total	67	100%

DWELLING TYPE

Dwelling Type	Number of Responses	%
Detached, single-family	55	82.1
Attached home (duplex, townhouse, etc.)		
Apartment or condo		
Mobile	4	6
Other (Cabin)	8	11.9
Total	67	100%

HOME OWNERSHIP

Resident Type	Number of Responses	%
Rent	1	1.5
Own	66	98.5
Total	67	100%

AGE

Age	Number of Responses	%
15-19		
20-24		
25-29	1	1.6
30-34	1	1.6
35-39	4	6
40-44	5	7.9
45-49	7	11.1
50-59	31	49.2
60-64	7	11.1
65+	11	17.5
Total	67	100%

GENDER

Gender	Number of Responses	%
Male	44	67.7
Female	21	32.3
Total	65	100%

ETHNICITY

Ethnicity	Number of Responses	%
White, non-Hispanic	58	89.2
Hispanic	1	1.5
AK Native/American Indian	4	6.2
Asian		
Hawaiian/Pacific Islander		
Other Race		
Multiple Race	2	3.1
Total	65	100%

EDUCATION

Level of Education	Number of Responses	%
Less than 9 th grade		
9 th – 12 th grade, no diploma	3	4.5
High school graduate	13	19.4
Some college, no degree	22	32.8
Associate degree	3	4.5
Bachelor's degree	10	14.9
Graduate or professional degree	15	22.4
Total	66	98.5

WORK LOCATION

Community	Number of Responses	%
Anchorage	26	38.8
Rainbow		
Indian	2	3
Bird Creek	4	6
Girdwood	4	6
Portage	2	3
Other (retired, out of state, other parts of Alaska)	29	43.2
Total	67	100%

HOME BASED BUSINESS

	Number of Responses	%
Yes	15	23.4
No	49	76.6
Total	64	100%

WORK FROM HOME

	Number of Responses	%
Yes	8	12.3
No	44	67.7
Occasionally	13	20
Total	65	100%

AGE OF HOUSING

Age	Number of Responses	%
0 - 5 years	7	10.8
5-10 years	1	1.5
10-15 years	8	12.3
15-20 years	6	9.2
More than 20 years	43	66.2
Total	65	100%

HOUSING NEEDS

Dwelling Type	Number of Responses	%
Seasonal rentals	2	3.4
Single-family homes	35	59.3
Apartments and other multi-family homes	1	1.7
None	21	35.6
Total	59	100%

POPULATION GROWTH

Dwelling Type	Number of Responses	%
Stay the same	32	49.2
Grow a little	19	29.2
Grow a lot	1	1.5
Decline	10	15.4
No Opinion	3	4.6
Total	65	100%

GENERAL COMMUNITY ISSUES

Rank	Issue	Number	%
1	Seward Highway traffic, safety & noise issues	62	92.5
2	Uncertainty of new development	45	67.2
3	Wildfire hazards	33	49.3
4	Population growth	32	47.8
5	Overcrowding in recreational areas	26	38.8
6	Lack of growth management	25	37.3
7	Lack of coordination between local, state & federal agencies	22	32.8
8	Lack of public services & utilities	14	20.8
9	Lack of local law enforcement	12	17.9
10	Lack of Turnagain Arm area jobs	8	11.9

NATURAL RESOURCE ISSUES

Rank	Issue	Number	%
1	Wildfire hazards	37	55.2
2	Groundwater & well water quality	33	49.3
3	Wildlife habitat loss	27	40.3
4	Septic	23	34.3
5	Drainage	15	22.4
6	Surface water/run-off quality	13	19.4
7	Wetlands loss	10	14.9
8	Flooding/flood control	7	10.4
9	Avalanche hazards	6	9
10	Soil erosion	4	6

LAND USE ISSUES

Rank	Issue	Number	%
1	Retaining undeveloped areas	49	73.1
2	Retaining access to Chugach State Park	47	70.1
3	Maintaining recreational access to rivers, lakes & mountainous areas	37	55.2
4	Retaining commercial areas	14	20.9
5	Allowing variety of housing types including more multi-family	8	11.9
6	Expanding commercial areas	7	10.4

SERVICES

Rank	Service	Number	%
1	Enhanced safety of Highway	48	71.6
2	Enhanced fire protection	31	46.3
3	More rest stops along Seward Highway	23	34.3
4	Enhanced police/public safety	14	20.9
4	No new services	14	20.9
5	Emergency response	10	14.9
6	More local-serving retail	6	9
7	More tourism-based services	3	4.5

Core Values

What we heard the Stakeholders say:

Maintain existing Chugach State Park access

Coordination between municipal, state and federal agencies important

Balancing motorized versus non-motorized recreation access on Twenty Mile River

Retain existing community parks

Seward Highway re-alignment from Indian to Bird & Portage to Ingram Creek

Wildlife and human encounters at Bird Creek

Providing emergency response with limited funding with increase in tourism and demand for services

Providing access across railroad tracks for residential and wildlife viewing along the Seward Highway

Highway safety and noise

Future land use activities and potential conflicts in the Portage area

Wildfire safety

Chugach State Park management needs and partnerships with the Municipality

A lack of basic road and services

Future location and design of the Seward Highway (ADOT has two projects for upgrades, from Indian to Bird and from 20-Mile River to Portage)

Each community's restrictions on obtaining grants as rural entities, for community projects or telecommunication upgrades

Problems with land ownership records

Needed public access to private parcels

Stakeholders:

Chugach State Park - Tim Harrison, Tom Crockett, Matt Wedeking

Department of Natural Resources - Bruce Phelps

US Forest Service - Jim Fincher

Girdwood Board of Supervisors Member and EMT - Eben Stone

Municipality of Anchorage:

Parks and Recreation - Holly Spoth-Torres

Heritage Land Bank - Art Eash & Robin Ward

On-site services - Dan Roth

Code Enforcement - Mike Billmaier

Office of the Mayor - Michael Fox Johnson

Indian Valley Meats - Doug Drum

Chugach View Estates - John Tichotsky and Mary Core

Alaska Railroad Corporation - Mike Fretwell and Patrick Kelly

Alaska Department of Transportation & Public Facilities - Jim Childers, Mark Parmalee, David Post, Scott Thomas, Meriam

DOWL Engineers - Kristen Hansen and Jennifer Payne

Portage Valley Community Council - Mike Miller

Rainbow Valley Homeowner's Association - John Pursely

Core Values

What we heard the Community say:

Unique rural character

small community
best-kept secret
church as community gathering place
caring & stable community
participatory & civic minded
artistic community
low crime

Living with wildlife

healthy salmon, bald eagles, song birds
diversity of wildlife
Bird Creek fishery
brown bears in yards

Independence

few regulations
businesses are local serving
low-maintenance rural roads have character
choices in education & transportation for children
independent & self-sufficient

Natural beauty

unique & beautiful vegetation
mild climate
scenic drive & beautiful view of Inlet
magnificent, unobstructed views of aurora
healthy forests & old growth trees
little light or noise pollution

Recreation opportunities

access to undeveloped recreation areas & trailheads
local recreation areas & community parks

Elbow room

private
quiet & peaceful
single-family homes on large lots
low population density

Issues & Opportunities Workshop

What we heard the Community say:

GROWTH

Local businesses (such as restaurants and other service industry businesses) need workers and housing for those workers

ARRC Whistle stops – uncertainty of stop locations and possible impacts of those stops on the local community

Lack of local infrastructure to accommodate tourism growth in the area (Bird to Portage)

Recognition that 20 Mile area is a residential area

OPPORTUNITIES

Look to Historic uses as guidance for LAC (limits of acceptable change)

MOUs (Memorandum of Understanding) needed between agencies

Use community councils as clearing house for information and plans

UNDEVELOPED PUBLIC LAND

Keep Heritage Land Bank lands in Indian undeveloped and preserved for public use

Make access to Chugach State Park through HLB land

Uncertainty of future status of HLB land

Land use study for HLB land

OPPORTUNITIES

Complete land use study before area is designated or disposed; study would go through a public process involving the community's input

Use the 1984 Park Plan as guidance for land use recommendations

RECREATION

Chugach State Park access – coordination for new access; minimize impacts to private land

Public access to beach and wildlife viewing across ARRC land needed – specific crossing sites need to be identified.

Increase in users at 20 Mile River including motorized use

OPPORTUNITIES

Open up more federal lands around the Anchorage Bowl to reduce pressure and recreation demand on Turnagain Arm communities

Project Manager: Thede Tobish • 343.7918 • tobishtg@muni.org

Public Involvement: Van Le • 343.7959 • levt@muni.org

Plan Website Address: <http://www.muni.org/Planning/TurnagainPlan.cfm>

Plan e-mail: TurnagainPlan@muni.org

INFRASTRUCTURE

Water and wastewater services needed for Portage/20 Mile River

Include 20 Mile River/Portage in service areas for road maintenance

OPPORTUNITIES

2005 AWWU Water Master Plan does not foresee service expansion into areas beyond Girdwood in the 20 year span of the Plan; on-site sewer and wells needed

LRSA (Local Road Service Area) can be formed by residents; entails residents paying an annual fee to contract for local road maintenance

PUBLIC SAFETY

Firearms discharge is dangerous and hazardous to residents

Hunting conflicts along corridor near residences

Target shooting

Enforcement by ADF&G is minimal

Lack of emergency response

Girdwood fire response time is very slow and system is not coordinated so call goes to Soldotna first then to Girdwood; Response times can be as long as 30 minutes

OPPORTUNITIES

Coordinate with ADF&G (Alaska Department of Fish and Game) to minimize open target shooting

Need a community center to house police/trooper/volunteer fire fighter sub-station

Increase enforcement or presence by ADF&G

SEWARD HIGHWAY

Noise impacts

Seward Highway realignment project: process, scope and alternatives limited

Community left out of process

Better communication with DOT & Railroad on the Seward Highway and Alaska Railroad changes

Process needs to remain open, transparent and involve the community

Transmission lines: visually unattractive

Lack of coordination between local, state, federal agencies (DOT, ARRC, FS, CSP, FHWA, State Troopers) and residents

OPPORTUNITIES

Need a study for sound/noise impacts on the community and a mitigation plan

Underground small lines and relocate big intertie away from community

ENVIRONMENTAL

Outdoor recreation facilities such as "outdoor toilets" may impact environmentally sensitive areas (Chugach National Forest in 20 Mile River area)

Wildfires and bark beetle killed spruce trees are a concern

Maintain salmon habitat on tidelands in 20 Mile River area

OPPORTUNITIES

Public education and awareness outreach by the Anchorage Fire Department Fire-wise program

Project Manager: Thede Tobish • 343.7918 • tobishtg@muni.org

Public Involvement: Van Le • 343.7959 • levt@muni.org

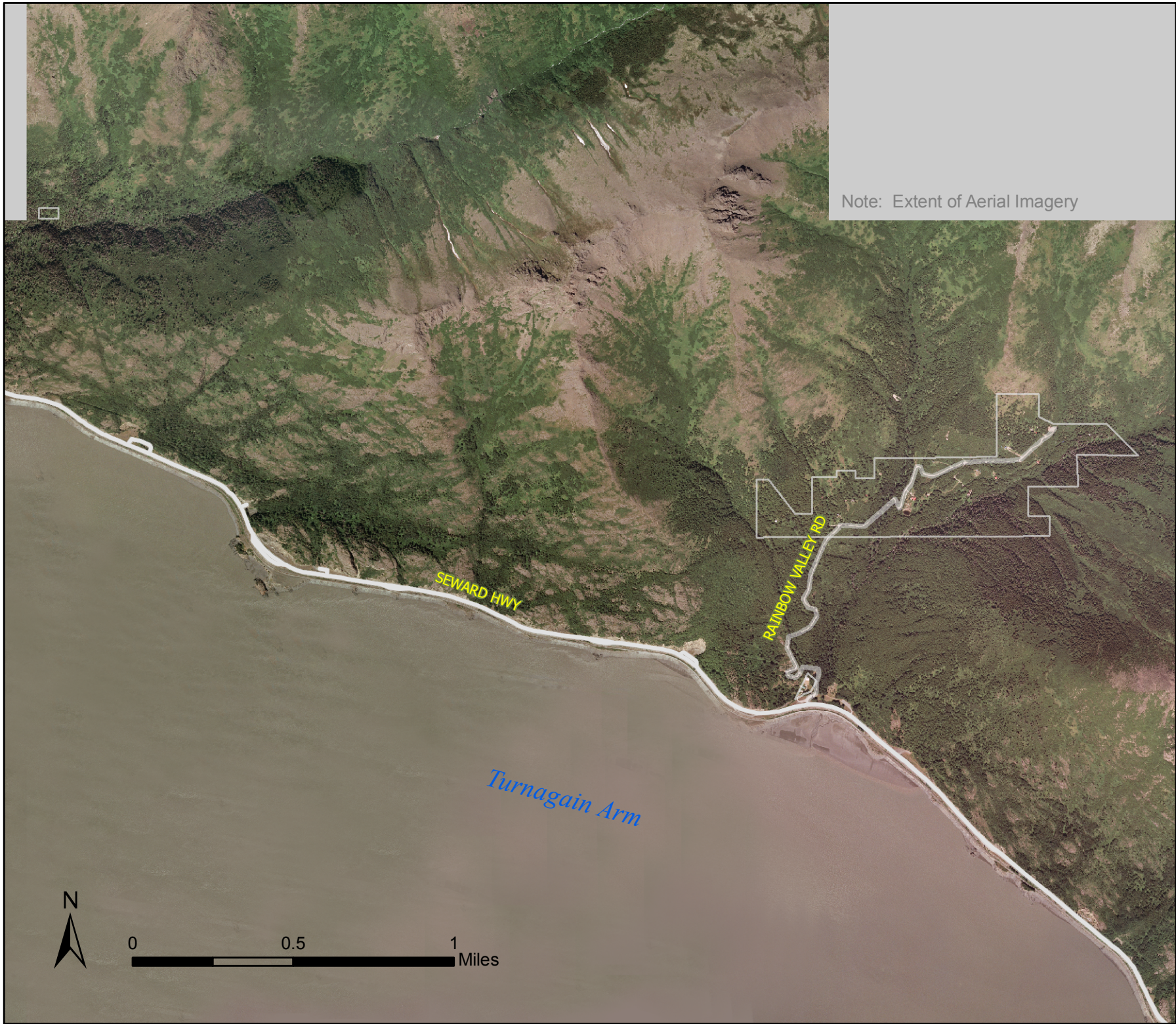
Plan Website Address: <http://www.muni.org/Planning/TurnagainPlan.cfm>

Plan e-mail: TurnagainPlan@muni.org

APPENDIX B

AERIAL MAPS

- Rainbow
- Indian
- Bird Creek
- Portage



**Rainbow
2006 Aerial Imagery**



**Indian
2006 Aerial Imagery**



**Bird Creek
2006 Aerial Imagery**



**Portage
2006 Aerial Imagery**

APPENDIX C

TURNAGAIN ARM INTERNET RESOURCES

State of Alaska Sites:

Department of Natural Resources

- Tidelands Mapping Tool - <http://tidelands.landrecords.info/>
- Chugach State Park - <http://www.dnr.state.ak.us/parks/units/chugach/index.htm>

Department of Fish and Game

- Fish Distribution Mapping Tool - http://www.sf.adfg.state.ak.us/SARR/FishDistrib/FDD_ims.cfm
- Stocked Lakes Map - <http://www.sf.adfg.state.ak.us/statewide/lakedata/index.cfm/FA/main.region/MgtAreaID/1>

Department of Transportation

- Whittier Tunnel Info - <http://dot.alaska.gov/creg/whittiertunnel/index.shtml>

- Seward Highway Road Conditions - http://511.alaska.gov/default.asp?area=TURNAGAIN_AK&display=all&date=
- Seward Highway State Scenic Byway & All American Road - <http://www.dot.state.ak.us/stwdplng/scenic/byways-seward.shtml>

U.S. Forest Service-Chugach National Forest, Glacier District:

- Main Information Page - <http://www.fs.fed.us/r10/chugach/>
- Iditarod Trail - http://www.fs.fed.us/r10/chugach/news_releases/iditarod.html
- USFS Seward Highway Scenic Byway - <http://www.byways.org/explore/byways/10390/>

Federation of Community Councils:

- Municipal-wide Community Council Map Areas - http://www.communitycouncils.org/servlet/content/council_maps.html
- Portage Valley Community Council - <http://www.communitycouncils.org/servlet/content/26.html>
- Turnagain Arm Community Council - <http://www.communitycouncils.org/servlet/content/38.html>

Municipality of Anchorage:

- Code Enforcement, Complaints - <http://www.muni.org/contents/1/codeviol.cfm>
- Municipal Home Page - <http://www.muni.org/homepage/index.cfm>
- Building Permits Homepage - <http://www.muni.org/BSD/Permitting.cfm>
- Heritage Land Bank - <http://www.muni.org/hlb/index.cfm>
- Property Appraisal - <http://www.muni.org/finance/paindex.cfm>
- Watershed Mgmt Services (streams) - <http://wms.geonorth.com/>
- Planning Department, Main - <http://www.muni.org/planning/index.cfm>
- Zoning and Platting - <http://www.muni.org/Zoning/index.cfm>

- Physical Planning - <http://www.muni.org/planning/CompPlanDivision.cfm>
- Addressing Section – <http://www.muni.org/addressing/>

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