

# ANCHORAGE COASTAL MANAGEMENT PLAN



AUGUST  
2007



MUNICIPALITY OF ANCHORAGE  
MARK BEGICH  
MAYOR

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# ANCHORAGE COASTAL MANAGEMENT PLAN

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Municipality of Anchorage  
Mark Begich, Mayor

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for the  
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## **Maps**

[Depicting the Anchorage coastal zone boundary and Recreation Use Designation]

Map A: Anchorage Bowl

Map B: Chugiak-Eagle River

Map C: Turnagain Arm



# 1.0 CHAPTER ONE INTRODUCTION

The original Municipality of Anchorage (MOA) Coastal Management Plan (CMP) was approved locally in 1979. It was forwarded to and then adopted by the State in the spring of 1980, followed by Assembly adoption in January 1981. The CMP was subsequently amended in June 1987. The CMP is a policy document that defines issues of local concern and guides the development needs of residents, businesses, and landowners within the Anchorage coastal zone boundary.

Changes in Alaska state law, enacted in 2004, required that the MOA amend its CMP. This 2007 Plan Amendment has been prepared to comply with the Alaska Coastal Management Act (ACMA), as amended by the Alaska State Legislature in 2003, and the Alaska Coastal Management Program (ACMP) regulations adopted in 2004. The CMP includes one designation based on historic coastal access and recreation patterns, plans, and scientific evidence that link natural features and geography with important habitat and coastal waters.

## 1.1 PLAN ORGANIZATION

This CMP revision includes the following chapters. Descriptions for abbreviations and acronyms used in this document are described in Appendix C-Abbreviations and Acronyms. The terms used in the CMP are defined in Appendix D-Definitions.

- Chapter One. Introduction and Organization of the CMP. This chapter introduces the plan and describes how it is organized.
- Chapter Two. MOA Coastal Zone Boundary and Designation. This includes a description of the MOA coastal zone boundary and the Recreation Use Area Designation.
- Chapter Three. Issues of Local Concern, Goals, and Objectives. This is a description of the issues of local concern, goals for balanced management of coastal resources, and objectives for how the management is to occur. This chapter is to be used to support enforceable policies applicable to the land and water uses subject to the MOA CMP.
- Chapter Four. Resource Inventory and Analysis. This is a description of Anchorage's coastal resources and an analysis of the impacts from uses and activities. Results from the Anchorage Sensitivity Index Decision Support System (ASIDESS) model of the *Anchorage Coastal Atlas* form the basis for the resource analysis and the Recreation Use Area Designation.
- Chapter Five. Enforceable Policies Applicable within the Designated Areas. This chapter describes the enforceable policies that are to be used to implement the goals and objectives, and provides standards for uses and activities within the designated area.
- Chapter Six. Implementation. This is a description of the land and water uses and activities subject to the MOA CMP and how the plan is implemented by local, state, and federal agencies.

- Appendices. The following appendices are provided:

Appendix A	Enforceable Policies
Appendix B	Enforceable Policy Cross-Reference Table
Appendix C	Abbreviations and Acronyms
Appendix D	Definitions
Appendix E	References
Appendix F	Description of ASIDESS Model
Appendix G	Table 2 of the <u>Anchorage Wetlands Management Plan</u>

- Maps depicting the coastal zone boundary and the Recreation Use Designation:

Map A: Anchorage Bowl

Map B: Chugiak-Eagle River

Map C: Turnagain Arm

## **2.0 CHAPTER TWO BOUNDARY AND DESIGNATION**

### **2.1 ANCHORAGE COASTAL ZONE BOUNDARY**

No official changes to the Anchorage coastal zone boundary, as of December 22, 2003, as described by the Alaska Department of Natural Resources (ADNR), are proposed.

The coastal zone boundary is described by ADNR as follows:

The inland coastal boundary of the Municipality of Anchorage along with the coast between the Matanuska-Susitna Borough and Potter Creek, includes all lands and waters within: (1) a zone extending 1,320 feet inland, measured horizontally, from the extent of the 100-year coastal flood; (2) the 100-year floodplain or 200 feet from the center (whichever is greater) of each river and stream intersected by the 1,320-foot zone up to the 1,000-foot elevation contour; and (3) other areas as delineated on the Coastal Zone Boundaries of Alaska, ACMP, June 1988 (Map #94). The inland boundary in watersheds of the upper Knik River and south of Potter Creek includes all lands and waters within the 1,000-foot elevation contour. Reference to 1:25,000 or 1:63,360 USGS topographic maps, Federal Emergency Management Agency (FEMA) Flood Insurance Rate maps (FIRM), or the Anchorage Coastal management Program, may be necessary to determine if the above criteria apply and whether the use or activity lie within the coastal zone (Coastal Zone Boundaries of Alaska, Alaska Coastal Zone Management Program, 1988).

#### **2.1.1 Boundary Clarification**

The original coastal zone boundary followed the 100-year floodplain of known and mapped streams in a parallel line to the 1,320-foot contour. The original coastal zone boundary creek delineations were made following U.S. Geological Survey (USGS) maps, and other sources, that depicted official stream channels. Since the original boundary was mapped, there have been a number of improvements in delineation of MOA streams mapping, augmented by field verifications and Global Positioning System (GPS) instrumentation. Several new stream sections, tributaries, and channels have been subsequently delineated and the Plan revision boundary reflects these technical adjustments.

Extensive development along, and channelization of, numerous creek corridors has occurred since the original mapping. As development has occurred, the MOA has also updated its mapping, parcel, and environmental features databases, which has resulted in a number of minor technical adjustments to the coastal zone boundary. The new CMP maps reflect these minor technical adjustments. The adjustments are linear and represent additions or extensions to the stream channels as mapped in the original plan.

#### **2.1.2 Designation**

The MOA has designated *Kincaid Park*, the *Tony Knowles Coastal Trail*, and the *Chester Creek Trail* as Recreation Use Areas. According to the Alaska Administrative Code (AAC), 11 AAC 114.250, the following subject areas can be established as “designated areas”: important habitat, recreational use, tourism use, natural hazards, major energy facilities, commercial fishing and seafood processing facilities, and history and archaeology.

There are resources within the designation that have important physical, biological, and cultural attributes upon which existing recreation uses and potential recreation uses depend.

Maps A, B, and C delineate the coastal zone boundary and the designated areas.

## **2.2 FEDERAL LANDS BOUNDARY DEFINITION**

Excluded from Alaska's coastal zone boundaries are "those lands owned, leased, held in trust or whose use is otherwise by law subject solely to the discretion of the federal government, its officers or agents...." (15 Code of Federal Regulations [CFR] 923.33)

In accordance with federal law, the MOA coastal zone excludes all federal lands and waters within its boundaries. However, the federal government is not exempt from the ACMP or the MOA CMP. Federal law requires "federal agencies, whenever legally permissible, to consider state management programs as supplemental requirements to be adhered to in addition to existing agency mandates" per 15 CFR 930.32(a).

All uses and activities on excluded federal lands that directly affect the coastal area must be consistent to the maximum extent practical with the ACMP and are subject to the consistency provisions of Section 307 of the Coastal Zone Management Act of 1972, as amended.

## **2.3 SEAWARD COASTAL ZONE BOUNDARY DEFINITION**

The statewide seaward coastal zone boundary is the "outer limit of the United States territorial sea" (15 CFR 923.32), which is the "three geographic mile line" (43 CFR 3301.1). The depicted statewide seaward coastal zone boundary was extracted from the Outer Continental Shelf Protraction Diagram map series (Bureau of Land Management).

## **2.4 AREAS MERITING SPECIAL ATTENTION**

The original MOA CMP included ten Areas Meriting Special Attention (AMSAs). The resource data and values for each AMSA are incorporated into the Resource Inventory and Analysis, Chapter Five. The locations of the AMSAs are depicted on the MOA's coastal resource maps.

- (1) Andesitic Dike at Potter Marsh on the Old Seward Highway
- (2) Bird Creek Regional Park
- (3) Eagle River Valley Lowlands
- (4) Fish Creek Estuary
- (5) Old Girdwood Townsite, south of the Seward Highway
- (6) Point Campbell Dunes and Delta
- (7) Point Campbell-Point Woronzof Coastal Wetlands
- (8) Point Woronzof Bluffs
- (9) Port of Anchorage
- (10) Seward Highway and Turnagain Arm scenic corridor

## 3.0 CHAPTER THREE ISSUES, GOALS, AND OBJECTIVES

### 3.1 INTRODUCTION

Uses and activities that may have the potential to affect the physical, biological, or cultural use of coastal resources upon which recreational uses depend, and that have the potential to have a direct and significant impact on habitats, are described below as issues of local concern. The issues are followed by a set of goals and objectives. The goals describe long-range purpose and intent and the objectives are more specific and shorter-term, measurable statements of intent.

Anchorage is Alaska's largest city and is a major gateway to recreational opportunities in the southcentral region as well as statewide. Public access to coastal resources, for both seasonal and year-round use, is critical to the Anchorage quality of life, local recreation, and the tourism economy. It has been an essential goal and element of the MOA CMP since the 1970s. The local recreation and tourism economy relies heavily on the natural features found in Anchorage's coastal zone, including the diverse fish and wildlife resources, scenic views, open spaces, natural resource areas, and clean air and water.

Acres of greenbelts and more than 120 miles of trails, provide access to the coast through the many parks and natural areas. The fish and wildlife resources of the Anchorage coastal zone draw upon the diverse habitat of the region, and these resources are important to local residents and visitors. There are areas of particular importance or sensitivity, such as fish spawning and rearing habitat, and bird habitat, where fish and wildlife use should be protected in a reasonable manner.

There is community-wide commitment to making Anchorage a safe and healthy place to live, with a high quality of life, a thriving, sustainable, broad-based economy that is built in harmony with the natural resources of the region and supported by efficient infrastructure.

This commitment is documented as a matter of local concern in a number of locally adopted plans, including: *Anchorage 2020*, the *2006 Anchorage Bowl Park, Natural Resource, and Recreation Facility Plan*, the *1997 Anchorage Areawide Trails Plan*, the *2005 Draft Long Range Transportation Plan*, the *1990 Utility Corridor Plan*, the *Girdwood Area Plan*, and the *Chugiak-Eagle River Comprehensive Plan*.

For example, according to the *APNRF*:

“Since the 1920s Anchorage residents have planned, protected and treasured parks, natural areas, and places of recreation and conservation.”

In addition, the Design and Environment section of *Anchorage 2020* is directly implemented through the MOA CMP.

#### 3.1.1 Issues of Local Concern

- (1) The natural features of the coastal zone are an important asset for attracting and retaining businesses like the growing information technology sectors. This business sector is very mobile and has a great degree of flexibility when locating new businesses. Quality of life in the community in which they locate is very important.

- (2) Natural resource areas and open spaces are valued by Anchorage residents for fish and wildlife, and plant habitats. The corresponding ecological functions and values of these habitats contribute significantly to create a livable, dynamic, and economically viable city.
- (3) The connection between the urban setting and the natural environment are important to residents, businesses, and visitors. This has been documented in a number of local plans.
- (4) There is a natural link between development activities in upland habitats and the effect these uses and activities can potentially have on riparian habitat and important wetlands located downstream.
- (5) Important habitat may be negatively and cumulatively impacted by poor-quality development and construction practices.
- (6) Encroachment into sensitive wetlands, into the upper reaches of the watersheds, improper development within floodplains, and inadequate construction setbacks from shorelines and stream banks can pose direct and significant cumulative and secondary impacts to the water quality of the marine waters, streams and lakes thereby negatively impacting habitats and recreation areas.
- (7) There are a number of creeks and streams of local concern that are valued for their recreation potential and important biological productivity. These include: Campbell Creek, Little Campbell Creek, Chester Creek, Fish Creek, Furrow Creek, Potter Creek/Potter Marsh, Rabbit Creek, Little Rabbit Creek, Ship Creek, Eagle River, and Glacier, California, Virgin, Peters, Fire, Carol, and Meadow Creeks.
- (8) All of the freshwater creeks and streams within the MOA coastal zone flow into the coastal waters of Cook Inlet.
- (9) Anchorage has experienced local water quality problems due, in part, to historical connections between non-point source runoff from construction sites and septic systems and the stream systems.
- (10) Natural colonization and importation of non-native and invasive species are beginning to appear and proliferate in the MOA. There are species with the potential to out-compete native species.
- (11) There are uses and activities that are economically or physically dependent on a waterfront location. These uses and activities must be given priority. These uses and activities are located primarily in the lower Ship Creek Valley and within the Port of Anchorage.
- (12) Of mid-sized cities, Anchorage is uniquely endowed with a spectacular and dramatic coastline to which public access to its recreation resources, including the scenic resources, is still possible.
- (13) Adequate, safe, and maintained access to the coastal land and water resources, upon which a number of activities and uses depend, is essential to sustaining and enhancing future economic growth and development.
- (14) Adequate, safe, and maintained access to coastal land and water resources is an important component of the quality of life valued by residents, businesses, and visitors.

- (15) There have been a number of public-initiated efforts to acquire and improve access to coastal resources such as the Fish Creek Estuary, Lake Otis, the Eagle River and Rabbit Creek Greenbelt trails that demonstrate local concern and commitment to both the recreational values and habitat values of resources in the MOA coastal zone.
- (16) Public access to streams, lakes, and the coast must be retained as land is subdivided or developed.
- (17) There is a need to address random and/or informal or unorganized public access via easements or undeveloped trails through, or adjacent to, coastal resources.
- (18) There is competition for the few, and quickly declining, remaining undeveloped or underdeveloped lands, which results in an increased pressure on marginally suitable and unsuitable lands.
- (19) Marginally suitable and unsuitable lands often include those areas with wetlands, intertidal and mudflat conditions, and seismic and avalanche hazard areas.
- (20) The Anchorage Coastal Wildlife Refuge (ACWR) is an important natural resource area and local natural feature of the Anchorage coastal zone. A large representation of wildlife species can be found in the ACWR and adjacent coastal sections, and in similar environments for both Chugiak-Eagle River, and Turnagain Arm, providing both opportunities for scientific study and education, as well as tourism.
- (21) Potter Marsh is a well-known section of the ACWR and is popular for bird viewing. Thousands of visitors stop to view wildlife at Potter Marsh and other accessible coastal sites, including Ship Creek, adjacent sections off the Tony Knowles Coastal Trail, and sections of Turnagain Arm.
- (22) Sport and resident fish species, essential to residents and visitors, rely upon continued stewardship of Anchorage's urban streams and lakes.
- (23) The half million-acre Chugach State Park, bordering the Anchorage Bowl, Eagle River, and Girdwood valley, provides hiking, climbing, mountain biking, skiing, snowmobiling, horseback riding, and wildlife viewing opportunities, but access opportunities need to be expanded and improved and wildlife corridors need to be maintained as hillside-to-coast connections.
- (24) Salmon rearing and spawning habitats are very susceptible to the addition of sediments to stream bottoms. The salmon streams within Anchorage's coastal zone may be vulnerable to cumulative impacts that can result from individually minor but collectively significant actions taking place over time. Many uses by themselves do not represent an intolerable change in the biologically productive streams and lakes, but when considered cumulatively could have an adverse effect to the local fisheries. Similar cumulative impact concerns exist due to the long-term filling of freshwater wetlands.
- (25) Alaska has experienced a rapid warming since the 1960s. Annual average temperatures have warmed up to 1.8°F (1°C) per decade over the last three decades, and winter warming has been as high as 3°F (2°C) per decade. This warming trend may adversely affect fish and wildlife habitats and biological productivity. The condition of waterways, watersheds, and coastal ecosystems affect the availability of clean water for not only habitats but for human consumption.

### 3.1.2 Goals and Objectives

**Goal 1 To encourage the protection of important fish and wildlife habitats, high value wetlands, and riparian zones.**

Objective A Identify and designate important habitat areas in the MOA coastal zone.

**Goal 2 To encourage development and construction practices that minimize adverse impacts to the recreation areas and habitats within the MOA coastal zone.**

Objective A Develop enforceable policies for those activities that have the potential to alter the hydrologic conditions, resulting in adverse impacts to the recreation areas.

Objective B Develop enforceable policies that address the cumulative impacts to fish and wildlife habitat that can result from the creation of additional impervious surfaces.

**Goal 3 To give high priority to, and preserve space for, water-dependent uses and activities requiring direct access to water.**

Objective A Develop enforceable policies where priority of use is given to water-dependent and water-related uses over other uses.

Objective B Develop enforceable policies for the siting and design of uses and activities located on or adjacent to streams, lakes, and marine waters.

**Goal 4 To promote and maintain access opportunities to coastal areas for purposes of recreation, tourism, coastal development, and transportation and utilities.**

Objective A Establish siting and design criteria for the location of uses or activities immediately adjacent to marine areas, streams, and lakes, so as not to preclude future public access to the resource.

Objective B Promote pedestrian-oriented waterfront activities, consistent with public safety and security.

Objective C Work with the State of Alaska, MOA, and landowners to develop access improvements at the Port and Ship Creek.

**Goal 5 To enhance and maintain public access to the coastal resources for recreation purposes and enjoyment of habitat resources.**

Objective A To plan for and retain access routes and points, including natural open spaces, that link neighborhoods, existing and planned greenbelts and parks, existing and planned trails, and open spaces to and within coastal waters, streams, and lakes.

**Goal 6 To encourage full participation by the citizenry, landowners, MOA departments, and state and federal agencies, in coastal land and water resource use and development decisions within the MOA coastal zone.**

Objective A Develop a coastal management program that addresses issues of local concern.

Objective B Coordinate the goals and objectives of the coastal management program with other land use, facility, and development plans of the MOA.

Objective C Merge policies in this plan amendment with MOA permit actions and/or Title 21 to ensure consistent plan implementation.



## 4.0 CHAPTER FOUR RESOURCE INVENTORY AND ANALYSIS

This chapter includes a description of the coastal resources within the MOA coastal zone boundary and includes subject uses and activities. An analysis of impacts from uses and activities under 11 AAC 114.230 and 11 AAC 114.250 follows the inventory.

### 4.1 RESOURCE INVENTORY

#### 4.1.1 Introduction

The MOA has prepared and adopted a number of local plans, based on extensive research and public involvement, that document historic use of the natural setting for recreation and document the link between the natural environment – streams, lakes, soils, water quality, air quality, fish and wildlife – and the quality of life important to residents, businesses, and visitors. Information from these plans and documents has been incorporated into the CMP resource inventory and analysis. The plans referenced include:

- *Anchorage 2020/Anchorage Bowl Comprehensive Plan (Anchorage 2020)*
- *Anchorage Bowl Park, Natural Resource, and Recreation Facility Plan (APNRF)*
- *Anchorage Area-wide Trails Plan*
- *Anchorage Long Range Transportation Plan (LRTP)*
- *Utility Corridor Plan (1990)*
- *Port of Anchorage Master Plan*
- *Anchorage Wetlands Management Plan*
- *Patterns of the Past*
- *Girdwood Area Plan*
- *Chugiak-Eagle River Comprehensive Plan*
- *Original Anchorage Coastal Management Plan*

There are a number of guiding principles in these plans that apply directly to the MOA CMP. These principles are:

- ✓ The community vision for Anchorage is “a safe and healthy place to live where daily life is enriched by a wealth of year-round recreational and educational opportunities”.
- ✓ Among the most important attributes of Anchorage are: the natural beauty and setting, trails/parks/greenbelts/open space, the outdoor and recreational opportunities, and the accessibility to the wilderness (*Anchorage 2020, Community Survey*).
- ✓ Parks and natural resource areas define neighborhoods, provide connections to the environment, and create a sense of place for residents. Recreation is an essential element to a balanced community.
- ✓ There is a network of natural resource areas throughout Anchorage that preserve and enhance scenic vistas, fish, wildlife, and plant habitats and their ecological functions and values.
- ✓ Anchorage residents value and care for public spaces and natural resources.

#### 4.1.2 Physical Setting

Anchorage is located in southcentral Alaska at the head of Cook Inlet. The terrain is varied and includes rugged mountainous areas, many streams and small lakes, numerous open spaces, wetlands, and wooded foothills. Anchorage has the most miles of coastline of any city in North America. Fourteen of the 46 permanent streams found in the city flow through the Anchorage Bowl to the coastal waters of Cook Inlet. Native vegetation consists of black spruce, white spruce, mountain hemlock, paper birch, balsam poplar, black cottonwood, willow, and alder.

The Anchorage Bowl occupies approximately 100 square miles, and is bounded by Chugach State Park, Turnagain and Knik Arm, and by Elmendorf Air Force Base and Fort Richardson Military Reservation (*Anchorage 2020*).

The Chugiak-Eagle River area is located along the upper portion of Knik Arm, midway between the Anchorage Bowl and the Palmer-Wasilla area. Most of this community is situated on narrow lowlands, approximately 65 square miles in area. The lowlands consist of forested uneven terrain bisected by four stream systems – Eklutna River, Peters Creek, Fire Creek, and Eagle River – which drain from the mountains to the inlet. The Fort Richardson Military Reservation separates the Anchorage Bowl from Chugiak-Eagle River. The community is bounded by Knik Arm and Cook Inlet to the north and west. To the east lie the Chugach Mountains.

There are five smaller communities along Turnagain Arm including Girdwood. Girdwood lies near the head of Turnagain Arm, about 42 miles southeast of Anchorage. Girdwood valley formed from glaciation and is broad, flat, and relatively short in length. The valley rises sharply to mountains peaks close to 6,000 feet. The area's landforms have played a primary role in shaping the land use patterns of today.

The average July temperature ranges from 58 degrees Fahrenheit (°F) to 65°F, with record high temperatures of 85°F. The average January temperature ranges from 6° to 13°F, with record low temperature of -45°F. Average rainfall is 15 inches and average snowfall is 69 inches (*Anchorage 2020*).

Alaska has experienced a rapid warming since the 1960s. Annual average temperatures have warmed up to 1.8°F (1°C) per decade over the last three decades, and winter warming has been as high as 3°F (2°C) per decade. According to a study of 67 glaciers, between the mid-1950s and mid-1990s the glaciers thinned by an average of about 1.6 feet (0.5 m) per year. Repeat measurements on 28 of those glaciers show that from the mid-1990s to 2000-2001 the rate of thinning had increased to nearly 6 feet (1.8 m) per year (Arendt, A.A., K.A. Echelmeyer, W.D. Harrison, C.S. Lingle, V.B. Valentine, 2002).

Within the MOA there are over 400 kilometers of hiking, walking, biking, and skiing trails; five species of salmon and fifty-two species of mammals, including wolf, lynx, moose, and bear; some 215 bird species, including nesting loons; and mountain views in all directions, including Mt. McKinley.

The unique natural features of Anchorage include its parks, natural open spaces, greenbelts, trails, viewsheds, and year-round access to thousand of acres of wilderness. These features, in turn, increase property values, provide a balance between urban development and nature, and contribute to the overall health of the community, both socially and economically.

### 4.1.3 Socioeconomic Setting

#### ***Population***

According to the United States (U.S.) Census, American Community Survey for 2003, the population of Anchorage was 264,134. Table 4.2.1 below describes some general population characteristics of Anchorage, as compared to the U.S. as a whole.

**Table 4-1      General Population Characteristics of Anchorage**

	<b>2003 Estimate for Anchorage</b>	<b>Percent of Population</b>	<b>U.S.</b>
Total Population	264,134	100.0	100.0%
Male	132,039	50.0	48.9%
Female	132,095	50.0	51.1%
Median Age (years)	33.2	(X)	36.0
Average Household Size	2.64	(X)	2.6

Source: U.S. Census, 2003 American Community Survey Data Profile

U.S. = United States

According to *Anchorage 2020*, Anchorage's population has tripled since statehood. The population is estimated to reach between 278,919 and 305,519 by 2020. Anchorage residents are young in comparison to the national average. Trends indicate that the number of school-age children will continue to increase and the senior adult population is expected to grow rapidly (*Anchorage 2020*).

The parks, greenbelts, and trail systems already existing will be challenged to keep up with projected population growth and community expansion.

#### ***Economy***

Anchorage is Alaska's primary transportation, communications, trade, service, and finance center and accounts for 47 percent of the State's employment. According to *Anchorage 2020*, the city's prosperity is tied to national and international markets for oil, gas, minerals, timber, and seafood. More than 70 percent of the State's legal, business, engineering, and management service employment is based in Anchorage. Government plays an important role with 8,300 state employees, compared to 5,300 in Juneau, the State's capital (*Anchorage 2020*). Anchorage jobs generally pay more than jobs elsewhere in Alaska. In 2003, 56.7 percent of the total wages earned from private enterprises in the State that year were from jobs in Anchorage (Alaska Department of Labor, 2004). See Table 4.2 for non-farm wage and salary by employment sector for Anchorage and the State.

**Table 4-2 Wage and Salary Employment by Sector  
Anchorage and Alaska 2003**

<b>Sector</b>	<b>State of Alaska</b>	<b>Municipality of Anchorage</b>
Total Non-farm Wage & Salary	299,517	144,642
Goods-producing	37,417	12,692
Natural Resources & Mining	10,058	2,500
Construction	16,242	8,283
Manufacturing	11,142	1,900
Service-providing	262,100	131,967
Trade, Transportation, Utilities	61,050	32,708
Financial Activities	13,875	8,450
Professional & Business Services	23,758	17,242
Educational & Health Services	31,975	17,242
Leisure & Hospitality	29,650	15,017
Government	82,150	30,525
Other Services	12,575	6,142

Source: 2005 Port of Anchorage Marine Terminal Redevelopment Environmental Assessment

Anchorage's economic assets include: a well-educated and skilled work force; an efficient air and marine transportation system; and a modern communications, and low-cost utility system in place with capacity for growth. Employers, residents, and visitors value Anchorage for its high quality of life. Attributes such as modern infrastructure, excellent health and educational services, competitive wages, low taxes, excellent environmental quality, natural setting, and access to the outdoors make Anchorage a good place to reside and do business.

### ***Recreation, the Economy, and Quality of Life***

According to the *2006 Anchorage Bowl Park, Natural Resource, and Recreation Facility Plan (APNRF)*, residents and visitors place a high premium on quality of the environment in Anchorage. Resources such as wetlands, streams, lakes, and forests, including the greenbelts in which these resources can be found, are considered some of the most important resources in Anchorage.

While recreation and tourism are not considered "industries" in the classical sense, they play an important part in a variety of economic sectors. According to the *APNRF*, of the estimated 1.5 million visitors traveling to Alaska in the summer 2003, and about 60 percent traveled to Anchorage. This is an annual increase of about 5 percent annually since 1990. There are a number of economic impacts of the tourism industry on Anchorage. These include the direct expenditures on the purchase of goods and services, such as hotel rooms and ground transportation, taxes and fees, and payroll.

There are direct positive impacts from direct employment by recreation- and tourism-related businesses, such as cruise companies and support businesses. There are direct out-of-pocket expenditures from tourists that are not part of tour packages. There are also indirect positive impacts from air transportation to and from Anchorage to other places within Alaska, and indirect impacts of earnings and employment related to this travel. According to the Alaska Travel Industry Association,

the tourism industry has a 78 percent hire rate. This is the highest of all key Alaska industries. Tourism is also Alaska's second largest private-sector employer, accounting for one in eight private-sector jobs.

Chugiak-Eagle River, located north of the Anchorage Bowl, is surrounded by natural areas and open space, including Chugach State Park. There are many opportunities for recreation and tourism development to complement the growing visitor industry in Chugiak-Eagle River and in the State of Alaska. The area has experienced very rapid growth over the past twenty years with the population almost doubling between 1980 and 1990, from 12,858 to 25,324 (Chugiak-Eagle River Chamber of Commerce, 2005). The 2000 population was 29,915, which was an 18 percent growth rate in the past decade. According to the Chugiak-Eagle River Chamber of Commerce website, the community supports economic development and economic diversity that complements the community oriented nature of this area. The business sector is largely service/retail businesses.

Girdwood, located south of the Anchorage Bowl, is considered a developing resort community, dominated by the recreation and tourism industry (*Girdwood Area Plan, 1995*). However, one-third of the work force is employed outside of the community. The current population is estimated at 1,500 (*Girdwood Commercial Areas and Transportation Master Plan, 2001*). Girdwood is a prime visitor spot with several million visitors traveling by bus and rail to and from the Anchorage International Airport, the cruise ship docks in Whittier and Seward to the south, and Denali National Park to the north. The community strives to promote continued growth, year-round recreational opportunities for residents and visitors, preserve the natural open spaces, and ensure that physical development blends with the natural environment.

#### **4.1.4 Land Use**

According to *Anchorage 2020*, most of the suitable land in the Anchorage Bowl is already developed, and the remaining vacant land faces some level of development constraints. The Planning Department (PD) conducted a municipal-wide land use inventory, with field surveys and mapping, in 2003. Inventory results indicated that three-quarters or 50,050 acres, of the 64,400 acres, in the Bowl were already in use. A land use map has been developed that presents a recent ground-truthed mapping of existing land uses throughout the MOA. Table 4.3 depicts the inventory results for occupied lands.

**Table 4-3 Land Use Inventory Results, Anchorage Bowl 1998**

<b>Land Use (occupied lands)</b>	<b>Acreage</b>	<b>Percent of Total Developed Land</b>
Residential	17,595	35%
Commercial	2,631	5%
Industrial	2,559	5%
Parks and Open Space	10,823	22%
Rights-of-way	9,454	19%
Transportation	3,224	6%
Institutional	3,773	8%
<b>Total</b>	<b>50,059</b>	<b>100%</b>

Source: Anchorage 2020 Comprehensive Plan, 1998

Land use in Girdwood consists primarily of recreation, natural areas/open space, residences, commercial uses, light industrial uses, and public lands. Recreation uses include alpine and cross-country skiing, golfing, camping, and trails. There is an extensive natural areas/reserve and open space system. Residential use is primarily single-family and multi-family. Commercial uses include highway-oriented commercial development and commercial development at the Girdwood Townsite and commercial recreation uses along the Alyeska Highway, at the townsite, and at the resort area. Industrial uses are primarily mining and storage and repair businesses. Chugiak-Eagle River has grown up as a primarily residential community, with a growing commercial center, and some light industrial uses.

### ***Vacant Lands***

According to the inventory conducted for *Anchorage 2020*, only 22 percent of the total land base, or about 14,300 acres, is vacant or undeveloped. This acreage was assessed to determine if site conditions, such as steep slopes, wetlands, poor soils, or seismic or other natural hazards, limited development potential. According to the inventory, about 6,200 acres were found to be fully suitable, while 5,000 acres were limited by one constraint and were considered marginally suitable for development. About 3,100 acres were limited by two or more constraints and were considered unsuitable for development. This means about 11,200 acres, or one-sixth of the total land area in the Bowl, is vacant and suitable, or marginally suitable, for future community expansion (*Anchorage 2020*). In addition, some parcels in use are developed well below their allowable intensity and are considered “under-developed.”

More intense development and infill, along with redevelopment and reuse of parcels, may result in a net increase in the available acreage for development. However, these processes of infill and redevelopment of parcels may not entirely remove the pressure for development on marginally suitable lands.

### ***Historic and Cultural Features***

An extensive inventory of historic and cultural features of Anchorage was completed in 1986. The report is called *Patterns of the Past: An Inventory of Anchorage's Historic Resources*. The inventory was compiled as a basic source of information about Native and prehistory resources, buildings, transportation facilities, mining, aviation, the military, and other resources that are visible reminders of

Anchorage's past. This detailed report provides significant documentation of historic and cultural features within the MOA coastal zone. These documented cultural resources comprise the cultural attributes upon which existing recreation and future recreation use depend.

#### **4.1.5 Transportation Routes and Facilities**

The need for a balanced, multi-modal transportation system is identified in a number of Anchorage plans, including the *Anchorage Long-Range Transportation Plan* (LRTP 2025) and *Anchorage 2020*. The vision statement in *Anchorage 2020* states: “balances growth with the retention of the city’s natural features and quality of life.” One of the goals in the LRTP is to “design and maintain a transportation system that respects the integrity of Anchorage’s natural and built environment, and protects Anchorage’s scenic vistas.” These goals are complementary to the MOA CMP, and supported by the enforceable policies in Chapter Five. The following section describes the Anchorage transportation system as it relates to the MOA CMP.

##### ***Roads***

According to *Anchorage 2020*, roads are a major land use. About 9,300 acres or almost 20 percent of developed land in the Anchorage Bowl is devoted to road rights-of-way. Traffic congestion and the need to coordinate transportation improvements with land use have been identified as key planning issues in Anchorage. Nineteen of 30 intersections evaluated in November 1999, operated at poor levels of service during that time, versus 12 during the morning peak and eight during the midday off-peak periods. Travel times are taking longer and average travel speeds are slower during these times of day. The most congested corridors are: C Street, northbound and southbound; DeBarr Road and 15<sup>th</sup> Avenue, eastbound and westbound; Lake Otis Parkway northbound; Muldoon Road, northbound and southbound; Tudor Road, eastbound and westbound; New Seward Highway, northbound and southbound; and Northern Lights Boulevard eastbound.

The *Girdwood Commercial Areas and Transportation Master Plan* describes Girdwood’s vision for a low-impact, environmentally based tourism industry with adequate roads, streets, trails, and pedestrian systems. The *Chugiak-Eagle River Comprehensive Plan* describes the local transportation system as facing a number of challenges because of the population growth and community expansion occurring in the community.

##### ***Trails***

Anchorage has a well-developed trail system, both in the Bowl and region wide. Because of the local geography and natural features, there are both land-based trail systems and water-based trail systems, linear greenbelts, and interpretive natural trails systems. In many places, these trail systems overlap and serve multi-purposes.

There are a number of water-based trail systems that have the potential to impact coastal waters. They include: Ship Creek, Chester Creek, Fish Creek, Campbell Creek, Little Campbell Creek, Furrow Creek, Rabbit Creek, Little Rabbit Creek, Potter Creek, Eagle River, Knik River, Placer River, Portage Creek, Eagle River, Eklutna River, and Twenty-Mile River.

These waterways are very important because they offer excellent recreational opportunities to residents and visitors alike and they provide important habitat for fish and wildlife. Water levels, water quality, riparian support, and access are key resource issues.

The 1997 *Anchorage Areawide Trails Plan* provides for trail linkages and trailheads, and addresses a diverse group of trail users and activities and does not duplicate efforts of state and federal

management agencies for the planning of state and federal lands within the MOA. The trail networks in Girdwood and Chugiak-Eagle River also support the recreational activity base critical to the local economy. Commercial recreation and major parks and greenway corridors can be found in Eagle River, Chugiak, and nearby Eklutna.

Trail systems relevant to the MOA CMP include sections of:

- Anchorage Coastal Wildlife Refuge
- Far North Bicentennial Park
- Goose Lake Park
- University Lake Park
- Winner Creek
- Bird Ridge/Bird Creek
- Girdwood Coastal Wetlands
- Cheney Lake Park
- Johns Park
- Russian Jack Springs Park
- Section 36 Park Lands
- Portage
- Girdwood Beaver Pond
- Eagle River Valley Watershed

A number of important trail issues that are directly relevant to the MOA CMP were identified in the *1997 Anchorage Areawide Trails Plan*. Relevant issues include:

- Protection of existing trail systems and linkages
- Access to trails and between trail systems
- Compatibility of trail use with adjacent uses and activities

## ***Rail***

There are major railroad facilities, including offices, maintenance yards, and a passenger depot, located in the Ship Creek area. The Alaska Railroad Corporation owns most of the lower Ship Creek Valley. They lease land for fuel storage and other industrial uses. The railroad runs from the Kenai Peninsula, with terminals in Seward and Whittier, north to Anchorage, and then to Nenana and Fairbanks, in the interior. The railroad is a state-owned corporation and its operations are self-supporting. The railroad was established in 1914, by the U.S. Congress, to boost economic development by providing a way to get gold and other minerals from the Interior to port for shipment south (ISER, Research Summary No. 63, 2005).

According to ISER, the Alaska Railroad supports nearly 1,900 jobs and \$83 million in payroll. Of the jobs, 42 percent are railroad jobs and 58 percent are in other Alaska businesses. Of the payroll, 53 percent goes to railroad employees and 47 percent to employees of the Alaska businesses. The jobs and payroll result from \$108 million the railroad spends annually to operate and build facilities. Railroad employees spend their dollars on goods and services in Anchorage and the railroad invests its money in supplies and services from Alaska businesses. The railroad creates certain economic opportunities for Anchorage, including providing a cheaper, more efficient way to transport heavy, bulk commodities such as sand and gravel, and coal; transporting jet fuel from the refinery near Fairbanks to Anchorage; and, offering the tourism industry an alternative transportation mode.



## ***Port of Anchorage***

The Port is the northernmost ice-free port in North America and has a tidal range of 38.9 feet, which is the second greatest tidal range in North America. The Port occupies 129 acres of uplands and 1,400 acres of tidelands. It is surrounded by military properties to the north, south, east, and by the Knik Arm of Upper Cook Inlet to the west. The Port site is also an AMSA under the 1987 MOA CMP. The AMSA gave priority to water-dependent uses where development of facilities is dependent upon the use of, or access to, coastal waters.

The Port serves 80 percent of Alaska's populated areas and is the gateway for 90 percent of all merchandise cargo consumed in Alaska. Cruise vessels and container, trailer, break-bulk, dry-bulk, and liquid-bulk cargos are accommodated. The Port stages 100 percent of the exports of refined petroleum products from the State's largest refinery in Fairbanks, in addition to staging petroleum deliveries from refiners on the Kenai Peninsula and in Valdez. The Port is the largest of the State's 95 ports and harbors and links railroad, road, and air cargo throughout the State (*2005 Port of Anchorage Marine Terminal Redevelopment Environmental Assessment*).

There are three major functional areas in the Port: the dock structure and berthing areas; storage areas; and the internal transportation network (roads, rail, and pipelines). The Port is self-supporting, receives no tax support from the MOA, and funds facility improvements through its revenues and grants. It is the largest of the State's 95 public ports and harbors, and accommodates cruise vessels and a full range of maritime commodities, including container, trailer, break-bulk, dry-bulk, and liquid-bulk cargos (*2005 Port of Anchorage Marine Terminal Redevelopment Environmental Assessment*).

The *1999 Port of Anchorage Master Plan* (VZM, 1999) identified two key findings about growth of port operations through 2025. First, the plan states that containerized cargo throughputs at the port are expected to grow at a compound annual rate of 2.5 percent, according to moderate forecasts. Second, market opportunities include growth in domestic and international container traffic, automobile and bulk cargos, and cruise activities.

The master plan identified a number of key needs:

- (1) Replace obsolete infrastructure;
- (2) Expand current and near-future cargo-handling capacity at maintainable, safe, and efficient levels;
- (3) Create additional berths for new customers;
- (4) Expand and upgrade facilities for offloading and more streamlined intermodal transportation;
- (5) Construct and implement security requirements under the new Maritime Security mandates of 2002; and,
- (6) Add space and improve berthing to support military rapid deployments.

The master plan makes implementation recommendations regarding facility improvements, access improvements, and strategic marketing. The facilities implementation recommendations include the development of a phased process that allows the Port to plan and construct new terminals and related infrastructure. Phases include existing facilities improvement, northern tidelands expansion, natural resources facility (land fill for dredged materials), and north access improvements program.

Implementation recommendations for improved access include the following: improve internal circulation and coordinate with other transportation planning efforts, including the *Anchorage Metropolitan Area Transportation Study Model*, *Ship Creek Transportation Study*, and other local and state road improvements efforts, such as Gambell Street and North Access. The strategic marketing implementation recommendations include continuing to be a major distribution center for the State of Alaska, and seeking new opportunities and approaches for increasing passenger travel.

Additional information from the *2003 Comprehensive Economic Development Strategy* (CEDS) for Anchorage indicates that Port expansion is considered to be the city's top priority. The Port contributed \$15.6 million in personal income annually through employment, and an estimated total of \$725 million to Alaska's Gross State Product.

## **Aviation**

There are three major aviation facilities: Merrill Field, the Ted Stevens Anchorage International Airport, and Lake Hood Airstrip and Seaplane Base. Merrill Field is municipal owned and occupies 436 acres in north Anchorage. The international airport is a state-owned facility located in west Anchorage and occupies 4,680 acres. Lake Hood Airstrip and Seaplane Base are located in west Anchorage near the international airport and is also a state-owned facility. Secondary airports include facilities in Birchwood and Girdwood with smaller airstrips scattered throughout the MOA.

### **4.1.6 Utility Routes and Facilities**

Utilities include electricity, gas, water, wastewater, and communication services. Anchorage Municipal Light and Power (ML&P) provides electricity to that portion of the Anchorage Bowl that coincides generally with the old city limit. Chugach Electric Association (CEA) serves the remainder of the area not served by ML&P. CEA also serves Girdwood. Matanuska Electric Association (MEA) serves the Eagle River area. The Alaska Power Administration, a federal agency, operates the Eklutna power plant and wholesales electricity to ML&P, CEA, and MEA. ENSTAR provides natural gas directly to customers and to electric companies for power generation. Service is provided to the Anchorage Bowl via transmission facilities from the Kenai Peninsula across Turnagain Arm to the Potter Valley, and serves Anchorage via Hillside Drive, Abbott Loop/Bragaw, and a line that follows the Alaska Railroad right-of-way. Eagle River natural gas service is via a smaller distribution-size gas line. Water and wastewater service is generally provided within the paved portion of the MOA street right-of-way. The majority of planned water and wastewater improvements do not coincide with other existing/proposed utility extensions. Telephone and cable television transmission occurs through facilities (cables) that are typically installed in conjunction with the placement of other utility systems, especially underground electric. The MOA *1990 Utility Corridor Plan* delineates and regulates major utility corridors and the process for additions and amendments.

### **4.1.7 Land Ownership and Management Responsibilities**

The lands and waters included in the coastal zone/designation are primarily in public ownership. The Designation boundary has been drawn to coincide with those lands and waters modeled as having highest sensitivity. The land within the designation is primarily public and is constrained by several environmental features. The area is comprised of streams, lakes; drainage ways and ravines; wetlands and lowlands; shorelines along waterways, lakes, and ponds; trail rights-of-way and easements; and, parks and greenbelts.

Management of the lands and waters inside the designation is the responsibility of the MOA, and state and federal resource agencies.

#### 4.1.8 Subject Uses, Activities, and Designations

In accordance with 11 AAC 114.250, Subject Uses, Activities, and Designations, the MOA CMP describes those land and water uses and activities that are subject to the plan. The uses and activities subject to the plan are limited to those included in 11 AAC 112.200–11 AAC 112.240, 11 AAC 112.260–11 AAC 112.280, and 11 AAC 114.250 (b)–(i) and include:

- Habitats – Important Habitat, 11 AAC 112.300(9)
- Coastal Development, 11 AAC 112.200
- Coastal Access, 11 AAC 112.220

The MOA has designated a subset of lands and waters within its coastal zone boundary as a Recreation Use Area. There are resources within the designation that have important physical, biological, and cultural attributes upon which existing recreation uses and potential recreation uses depend.

Within the Anchorage Coastal Boundary and the Designated Recreation Use Area, the District has identified important habitats, demonstrated to have a high sensitivity to development by the ASIDESS Model.

#### 4.1.9 Recreation Resources

Recreation resources features and values in the Anchorage coastal zone have been described in local and regional planning documents. See Section 4.1.1 Introduction for details on these plans. Similar resource values are promoted by other entities, such as the Anchorage Convention and Visitors Bureau, and the State Alaska Division of Tourism, and are described as key assets that contribute to the economic and social well being of the community and the State as a whole. Resources include the streams and lakes; intertidal areas, wetlands and marshes; parks and trails; and natural resource use areas of Anchorage.

The significance of Anchorage’s coastal boundary and the recreation functions provided therein are described and documented in the Conceptual Open Space Map in *Anchorage 2020*, the Anchorage Bowl Parks Plan (Map 6), the *Anchorage Wetlands Management Plan*, the *Areawide Trails Plan*, and in similar maps in the *Chugiak-Eagle River Comprehensive Plan*, the *Turnagain Arm Comprehensive Plan*, and the *Girdwood Area Plan*. Additional details of these recreation functions and uses are reflected in the public survey summary of the Technical Report on Significant Natural Open Space in the Anchorage Bowl, from the 2004 Parks Plan survey, and a 2005 municipal-wide recreation survey. These maps, documents, and survey findings represent considerable community need for parks, open space, and recreation facilities, and contribute to defining the existing and potential recreation uses.

The MOA has a history of established recreation and tourism uses within its coastal zone boundary, focused for years on the extensive trails network and park system. With over 200 miles of trails in the Anchorage Bowl alone, the MOA trail system networks throughout the coastal boundary. The MOA has a formal goal, with associated design standards, of providing pedestrian connectivity and, where appropriate, habitat connectivity between and among various land uses, subdivisions, schools, employment centers, and parks and open spaces. This connectivity standard is a driver in the Parks Plan implementation. MOA policy and design standards aim to achieve trail and park locations within walking distances (ideally ¼ mile) of residents. Since the MOA coastal boundary consists of numerous east-west-trending corridors, which parallel the riparian zones, the coastal boundary is the essential element of this goal. The MOA coastal zone provides most of the only remaining lands

where existing and potential future recreation uses and connections between homes and schools can occur. The Recreation Use Designation directly coincides with the MOA's long-term goal of providing coastal and public access to coastal resources and the public recreation functions that these provide.

While trails are the essential public access means into Anchorage's coastal boundary, recreation uses and potential uses associated with the adjacent lands continue to grow. Unlike other sections of Alaska, Anchorage supports higher residential and commercial development densities, which naturally generate higher parks and recreation needs. Along with our efficient access and well-developed trail system, residents and tourists have direct exposure to most MOA parks and these are used by large numbers and in all seasons. Recent trail counts from the Coastal and nearby Chester Creek Greenbelt Trails show summer season uses in excess of 1200 people per day. The existing use and potential for use of these parks has also been established thru demand analyses for organized sports fields, thru Alaska Tourism and Marketing surveys and trends analyses, by land use analyses, and by new levels-of-service standards in the Parks Plan.

Aside from the established and documented public use of recreation facilities (parks, picnic sites, ballfields, etc.) outlined in various District plans, passive recreation uses continue to expand in the MOA. Fishing, birding, and other tourism-related activities have been on the rise since the 1980s and exceed what the MOA had originally envisioned in its original coastal plan. For instance, at least 2-dozen commercial bird tour companies and hundreds of individual birders regularly visit parks and open space sites with native habitats in the Bowl, in the Eagle River Greenbelt, and in the Girdwood Valley each spring and summer. And the MOA has initiated a Pacific Salmon Restoration Program intended to enhance and/or restore salmon populations within the coastal boundary. This effort is in part aimed at drawing the community into the coastal zone for fishing and other passive recreation where such resources are concentrated.

Remaining undeveloped and public lands within the coastal boundary are recognized as a refuge for existing and potential future recreation resources and uses. This is particularly evident in the Anchorage Bowl, where little vacant land remains, and in both Turnagain Arm and Chugiak-Eagle River, where geography and federal and state conservation land units surround residential communities. Because the District's coastal boundary is a relatively small percentage of the MOA land mass, essentially all remaining undeveloped acreage provides an existing recreation function that is not, and can not be provided otherwise. At least in the Anchorage Bowl and the Turnagain Arm subareas, existing trails and riparian corridors lead to and concentrate public use at the immediate coastal fringe. Loss of existing or potential recreation areas to development in other sections of the Recreation Use Designation will have an immediate and significant negative impact on coastal access and coastal resources.

The following summarizes recreation use and potential for each of the MOA subareas:

Anchorage Bowl – Although open space and parks comprise 22% of the land use in the Bowl, most of this acreage is provided by only 4 large parks. In addition, state parkland dominates the land use to the east. Public access to open space is limited and/or informal in many sections of the Bowl. Through the policies of Anchorage 2020 and the Parks Plan, the MOA has established levels-of-service for community recreation needs based on population and housing densities. Based on these levels-of-service numbers, additional parks in four categories are needed in varying numbers in all sections of the Bowl. This needs assessment reflects the significance of existing and projected recreation sites and community uses. Geography, land ownership, and land use focuses recreation activities into the narrow riparian corridors and larger remaining open spaces in the Bowl. Nearly all of these existing or potential open space sites lie within the MOA coastal boundary in the Bowl.

*[NOTE—A new map could be added to the final plan that shows the park system with an overlay of the coastal boundary.]*

Chugiak-Eagle River – This section of the MOA is surrounded by military lands, Chugach State Park, and the Eagle River Greenbelt. It includes scattered large tracts of privately owned land, and numerous larger vacant areas. Access is limited as is public land and established park facilities. Because funding sources for park and facility developments are limited, public parcels, which conform strongly to the coastal boundary, are the most commonly used recreation sites. Existing recreation use and especially future potential will by necessity rely on the coastal areas, as these again provide continuity and connectivity between and among the residential developments and other public facilities. Most public use is concentrated in the Eagle River Greenbelt and adjacent public lands, where boating, fishing, and hiking are most common.

Turnagain Arm – All five communities in Turnagain Arm are surrounded by state and/or federal lands, and all border the *Seward Highway National Scenic Highway*. All communities depend on, and connect to, the Seward Highway recreation corridor, which includes formal and informal recreation areas, as well as public fishing access. Given the steep-sided geography and land ownership patterns in these communities, the coastal boundary is vital to public access and use of each area's coastal resources. Formal recreation facilities are lacking in this part of the Municipality and residents and tourists generally pursue nature-oriented activities (hiking, birding, fishing, hunting, climbing). Girdwood Valley, which is evolving as a resort community, and Portage Valley in the Chugach National Forest provide most recreation facilities and programs and attract thousands of visitors and residents in all seasons. All sections of the coastal boundary, but especially the public lands, correspond exactly with existing recreation uses, access and new recreation potential. These land uses and future recreation and open space needs of each community are documented in the Turnagain Arm Comprehensive Plan and the Girdwood Area Plan.

In addition, Anchorage is the primary jumping-off point for major recreation and tourism opportunities in the Matanuska-Susitna Valley, Denali National Park, Katmai National Park, Kenai Fjords, and Kodiak. Anchorage is also connected by road to the Kenai Peninsula via the Seward Highway, a National Scenic Highway, and the interior and rest of south central Alaska, via the Glenn and Parks Highways.

The recreation and tourism economy represents one of the fastest growing economic sectors in the Anchorage area. Anchorage has a steady, year-round employment base, with significant spikes in employment from recreation, tourism, and construction activities in the summer months.

## ***Parks, Trails, and Natural Resource Use Areas***

### **Parks**

Anchorage has a large park system with 53 acres of parkland per 1,000 population. Of those acres, 55 percent are found in three major parks, including 4,000 acres at Far North Bicentennial Park, 1,000 acres at Kincaid Park, and 600 acres at Ruth Arcand Park. Over 79 percent of parks, natural resource use areas, and recreation facilities in the Bowl are mostly used as natural resource areas with limited development. The remaining 21 percent of land is devoted to traditional neighborhood and community parks with a mix of facilities and natural features such as picnic areas, trails, and some parking lots (*APNRF*).

Local use of the Anchorage park system is significant. The system includes neighborhood use areas, community use areas, special use areas, natural resource use areas, and trails and connections. Neighborhood use areas include close-to-home recreation areas typically 5-10 acres in size.

Community use areas are parks larger in size at 10-50 acres, and serving a broader purpose than neighborhood parks, while also preserving the unique landscape or natural use areas. Special use areas are represented by single, specialized recreation use, and can include such things as equestrian centers, sports parks, and indoor facilities.

Parks provide economic enhancement by improving real property values, attracting workers to live and work in the community, and enticing retirees to stay. Parks and trails not only are enjoyed by residents, but also attract visitors to extend their stay and contribute to the local tourism market. As Anchorage's population and economy continues to grow, there will be challenges to provide for the future recreational needs of residents.

In addition to the parks systems described above, Anchorage is framed by the Chugach State Park. This park is the third largest state park in the nation with 485,000 acres, abuts the foothills of east Anchorage, and is readily accessible by a number of trailheads and trail links. The half-million acre park is full of recreation opportunities, with some of Alaska's most accessible hiking, camping, wildlife viewing, climbing, and skiing/snowshoeing. The mountains frame the Anchorage landscape with vistas, sunrises, and in the winter months, alpenglow.

A variety of wildlife resides in the park including eagles, moose, bears, wolf packs, and lynx. The terrain includes meadows and open areas with high alpine wildflowers, rugged mountain peaks, glacier-fed rivers, clear water streams, mature spruce forests, and more than 50 glaciers. Access to this park (and trail) system is linked to the trail and greenbelt network in the Anchorage Bowl, Chugiak-Eagle River, and Turnagain Arm areas.

## **Trails**

According to the 1997 *Anchorage Areawide Trails Plan*, there are more miles of trails in the State than roadways. Anchorage's extensive trail system has been described by *Bicycling Magazine* "as one of the best systems in the United States." The American Hiking Society named Anchorage second on a recent list of Top Trail Towns. The 120 miles (193 km) of paved trails and 300 miles (482 km) of unpaved and wilderness trails offer numerous opportunities for visitors to get out and enjoy Anchorage's natural areas.

The Anchorage Bowl trail system consists of dedicated trails within the area south of Fort Richardson and north of Muldoon Road to Cook Inlet, Chugach State Park, and Potter Section House. The Chugiak-Eagle River trail system covers the area from Muldoon Road, north to the Matanuska-Susitna Borough boundary, and from Knik Arm to Chugach State Park. The Girdwood-Turnagain Arm trail system includes those trails from the Potter Section House south to Girdwood, trails within the Girdwood community, and trails along Turnagain Arm (1997 *Anchorage Areawide Trails Plan*).

Trails include greenways and linear parks and provide the physical connection between residents, businesses, and the natural setting within which they are located. The 1997 *Anchorage Areawide Trails Plan* documents trail use and defines trail types to include: multi-use paved trails, multi-use unpaved trails, cross-country ski trails, snowmachine trails, skijoring trails, sled dog mushing trails, water trails, and natural trails.

The Anchorage District has delineated the Tony Knowles Coastal Trail, the Chester Creek Trail, and Kincaid Park as a Recreation Use Designation. Some of the top trail systems are listed below:

**Table 4-4 Designated Recreation Use Area - Trail System Resource Features**

Trail System	Length	Access and Route	Resource Features
Tony Knowles Coastal Trail	11 miles	From downtown and Westchester Lagoon or from Kincaid Park	Fish and wildlife habitat  Wildlife viewing Scenic vistas
Kincaid Park Trails and Park	43-mile network through 1,400 acres of parkland	From the coastal trail at either end	Scenic vistas – Mt. Susitna, Alaska Range
Kincaid Park is certified for international 5K, 10K, 15K, and 30K competition	Multiple length trails	From the coastal trail at Westchester Lagoon.	Forested natural areas
Chester Creek Trail	6 miles	Connects with Coastal Trail	Fish and wildlife habitat
<b>OTHER SIGNIFICANT TRAILS</b>			
Flattop	3 miles round trip	Trailhead in Chugach State Park	Wildlife viewing  Scenic vistas – Alaska Range, Cook Inlet
Williwaw Valley	14 miles round trip	Glen Alps or Prospect Heights	Wildlife habitat  Wildlife viewing Scenic vistas
Turnagain Arm Trails	9.4 miles one way	Varying routes accessible via Potter Creek, McHugh Creek, Rainbow, or Windy Corner	Fish and wildlife habitat  Wildlife viewing Scenic vistas

Source: *Anchorage Park, Natural Resource, and Recreation Facility Plan, April 2006*

### Natural Resource Use Areas

The term “natural resource use area” is used to describe those areas within the Anchorage Bowl Parks and Recreation System that are reserved primarily for their natural functions. Natural functions may include air and water quality, flood control, and the protection of wildlife values. These areas provide critical habitat for fish, and wildlife important to the quality of life in Anchorage. These lands can consist of individual sites exhibiting natural resources; lands that are unsuitable for development but offer natural resource potential such as steep slopes, drainage ways, and ravines, surface water management areas and utility easements; and protected lands, such as wetlands and lowlands, shorelines along waterways, lakes, and ponds. These natural landscapes and stream corridors also link neighborhoods, parks, and schools, and act as buffers between different land uses.

The term “natural resource use area” is used synonymously with natural open space, or open space, greenbelt, and habitat area, according to the *APNRF*. According to the plan, the natural resource use areas “help define the physical form of the city by contributing to its natural character and creating unique neighborhoods.” Table 4.4 describes trail system resource features.

### ***ACWR and Potter Marsh***

The ACWR extends from Point Woronzof southeast to Potter Creek. Potter Marsh, at the southern end of the ACWR, is one of the most accessible and scenic wildlife viewing areas in Alaska. Much of the rest of the refuge has only limited public access. Spruce, cottonwoods, and alders frame the north and east borders of the marsh. To the south, Turnagain Arm connects with Cook Inlet, and bald eagles, water birds, and spawning salmon can be found. A 1,550-foot boardwalk with interpretive signs provides access to the northern part of the marsh. A small highway pullout at the southern end of the marsh allows for viewing and photography from a vehicle.

The marsh hosts the greatest number of birds between late April and the end of May. Bald eagles, northern harriers, yellowlegs, Arctic terns, pintails, Canada geese, red-necked grebes, and Pacific loons stay through the summer. Muskrats and moose also frequent the marsh year-round; in May and June, they forage on the new green growth. From June through September, three species of salmon return to spawn in Rabbit Creek, which flows under the boardwalk. Fishing is prohibited. In winter, there are resident snowshoe hares, coyotes, beavers, weasels, mink, voles, and shrews. There are also piles of sedges pushed up on the marsh, and used by muskrats for winter food storage.

### ***Palmer Hay Flats State Game Refuge***

Palmer Hay Flats is designated as a State Game Refuge, and is managed by ADFG. It is a popular wildlife viewing and waterfowl hunting area. The refuge lies north of Anchorage, at the head of Knik Arm. Although outside the MOA coastal zone, the refuge is an important recreation and tourism destination directly abutting the MOA coastal zone boundary. Tens of thousands of dabbling ducks, primarily pintails, mallards, green-winged teal, and wigeon, and thousands of diving ducks, including canvasbacks, greater scaup, and common goldeneye, arrive on the flats each spring and fall during their annual migration. Tundra and trumpeter swans, sandhill cranes, and three species of geese: lesser Canada geese, white-fronted geese, and snow geese, also can be viewed on the refuge. The wet meadows and marshes of the refuge are interspersed with islands of spruce trees and serve as major calving and wintering grounds for the Matanuska Valley moose population. Muskrats, snowshoe hares, red-tailed hawks, and coyotes on the refuge, can also be found in the refuge. The best time to view migrating waterfowl is between late April and mid-May.

## **4.1.10 Important Habitats**

The coastal habitats occurring in the MOA coastal zone boundary/designated area, per 11 AAC 112.300(a) (2), (3), (4), (8), and (9), have been inventoried, analyzed, and described spatially in the maps (Map A, B, and C). This information has been used for the ASIDESS model and the designations. A brief narrative about each resource is included below.

### ***Aquatic Habitats***

#### **Marine**

The marine environment is presented as a biophysical zone that includes marine, near-shore waters and intertidal wetlands, estuaries, and inland to the local mean high water line. These are mainly waters classified as Section 10 waters under the Clean Water Act.



## **Wetlands**

Wetland resources include the adopted and updated municipal freshwater wetland boundaries, as delineated and designated (A, B, C) in the *Anchorage Wetlands Management Plan* (1996). Wetlands serve as critical points for the transport and transformation of essential nutrients from the terrestrial to the aquatic realm. Wetlands provide dissolved organic matter to surface waters and ultimately to marine coastal waters.

The extent of wetlands in the watershed directly affects the amount of nutrient concentrations available to surface waters. Levels of nutrients may be altered by development or loss of wetland hydrologic connections. Based on nutrient loading, wetlands are significantly and biologically productive habitats, and the uses and activities affecting wetlands can ultimately have a direct, and significant impact on marine coastal waters. There are a number of wetland types including coniferous woodland, deciduous woodland, mixed coniferous-deciduous woodland, mixed woodland, treeless bog, spruce bog, brackish marsh, tidal marsh, and wet deciduous woodlands.

## **Streams and Lakes**

Stream resources include field-delineated stream channels, some historic, USGS-mapped channels not yet field-verified, current (2004) official Alaska Department of Fish and Game (ADFG) anadromous stream coverage, and additional stream reaches identified by recent fish surveys. Stream locations are based on GIS mapping by the Municipal Watershed Management Services (MWMS) and the *Municipal Hydrologic Classification System* (MOA Document #WMP APg97002). Lake resources include those delineated by the MWMS formal lake and waterbody coverage. Floodplain resources include mapped floodways and the 100-year floodplain boundaries, as delineated on the National Flood Insurance Rate Maps (FIRM).

## ***Important Fish and Wildlife Habitats***

Most of these data were compiled through interviews with local experts and management professionals and taken from existing publications and literature or taken from existing municipal planning documents. Collectively, these data represent scientific evidence of the value of these significant resources to Anchorage.

## **Anadromous Fish**

The information on fish streams and anadromous fish distribution is based on current ADFG information including:

- (1) The *Atlas to the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes* (referred to as the "Atlas");
- (2) The *Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes* (referred to as the "Catalog");
- (3) Recent ADFG stream surveys; and
- (4) Information from ADFG on other known spawning, rearing, and overwinter habitats, and waterbodies stocked by ADFG.

Fish habitats and distribution information presented in the atlas includes delineation of known distribution of any of the five salmonids, spawning, rearing, and overwinter habitats, and ADFG fish-stocked waterbodies for the past 10 years. Minor tributaries are locally important for rearing and winter habitats. There is concern with cumulative riparian habitat losses and degradation, water

quality, and to some degree water quantity, loss of anadromous fish altogether in certain streams, fish passage obstruction issues, human use of stream banks and attendant erosion, and several very important anadromous fish concentration sites.

All of Cook Inlet is designated Essential Fish Habitat (EFH) for both juvenile and adult lifestages of Pacific cod, walleye pollock, and sculpins (NOAA Fisheries, 2003). Congress defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 USC 1802(10)). EFH guidelines under 50 CFR 600.10 further interpret the EFH definition as follows:

Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and 'spawning, breeding, feeding, or growth' to maturity covers a species’ full life cycle.

In addition, all streams, lakes, ponds, wetlands, and other water bodies that currently support or historically supported anadromous fish species (e.g., salmon) are considered freshwater EFH.

#### Key Scientific Interviews

- Stewart Seaberg, OHMP/ADNR
- Barry Stratton, ADFG

#### **Marine Fisheries and Marine Mammals**

Upper Cook Inlet marine fisheries include forage and groundfish species. Forage fish are important food for finfish, salmonids, marine mammals, and seabirds. Forage fish species include hooligan or candlefish, Bering Cisco, Pacific sandlance, capelin, saffron cod, longfin smelt, stickleback, and eulachon. Groundfish include Pacific halibut, walleye pollock, greenling, Pacific staghorn sculpin, clingfish, stickleback, skates, and the occasional shark (Port of Anchorage Marine Terminal Redevelopment Environmental Assessment, 2005). In addition, Upper Cook Inlet, as a fish migratory corridor, provides marine habitat to all five species of Alaska salmon.

Beluga whales occur seasonally throughout much of Alaska. Depending on the season, beluga whales can occur in both offshore and coastal waters. During the winter, belugas remain in Cook Inlet but they are more dispersed throughout Upper Cook Inlet. During the spring and summer, Upper Cook Inlet belugas are generally concentrated near the warmer waters of river mouths where prey is present. Belugas are often seen at the mouth of Ship Creek and offshore of the tidelands July to early October (Port of Anchorage Marine Terminal Redevelopment Environmental Assessment, 2005). Harbor seal are also commonly observed in Upper Cook Inlet (NOAA Fisheries, 2003). The closest identified harbor seal haulout site is approximately 25 miles at Chickaloon Bay in the southern portion of Turnagain Arm. In Upper Cook Inlet, harbor seal presence is seasonal along the Susitna River and other tributaries during eulachon and salmon migrations.

#### **Threatened and Endangered Species**

The NOAA lists seven species of whales found in Alaska waters as endangered. These include sperm, bowhead, humpback, fin, northern right, sei, and blue whales. The fin, sei, and humpback whales occur in the lower portion of Cook Inlet but are considered uncommon to rare in Upper Cook Inlet.

The remaining four species of whales are generally found in deeper offshore waters of the Gulf of Alaska, Bering Sea, and Beaufort Sea, and are not found in Upper Cook Inlet (NOAA Fisheries, 2003).

No stocks of Pacific salmon or steelhead originating from the freshwater habitats in Alaska are listed under the Endangered Species Act.

The endangered western populations of Steller sea lion, and the proposed threatened distinct population segment of northern sea otter, occur only in Lower Cook Inlet and are not known to occur in Upper Cook Inlet (NOAA Fisheries, 2003 and USFWS 2004).

### ***Bird Resources and Habitats***

Bird resources and habitat per 11 AAC 112.300(a) (2), (3), (4), (8), and (9), have been inventoried, analyzed, and mapped in the new coastal resource atlas. Data highlights and the results of interviews with experts are included below.

#### **Birds of Prey (Raptors)**

Raptor habitat resources include the nesting and roosting sites, and important migratory habitat for birds of prey. Raptors include bald eagles and diurnal hawks.

Raptor species groups were defined by habitat use in the MOA, including nesting communities, migration habitats and eagle roosts, perch sites, and winter use concentrations. Several species are rare and irregular in winter, at or near the edge of their known Alaska winter range, including merlins and sharp-shinned hawks. Variable numbers of both gyrfalcon and peregrine falcons move through the area and occasionally winter. Local raptor nesting numbers are declining in part due to cumulative habitat losses, disturbance, and prey declines.

#### Key Scientific Interviews

- Bob Dittrick, ADNR
- Brad Andres, U.S. Fish and Wildlife Service (USFWS)
- Rick Sinnott, Alaska Department of Fish and Game (ADFG).

#### **Songbird Habitats**

Songbird resource habitats include nesting and migratory habitat assemblages, and important plant communities for groupings of important species of songbird habitats. The highlights of known *Species of Concern*, as identified by the USGS/USFWS Neotropical Bird Working Group, Alaska, are described. With ensuing research and field surveys since the 1970s, the value and productivity of Anchorage's intertidal habitats has increased in importance. The area between the mouth of Ship Creek and Potter Marsh has been nominated as an Important Bird Area by the National Audubon Society. The nomination represents a formal recognition that significant percentages of certain species depend on this coastal fringe for staging habitat.

Typical Anchorage area important songbird assemblages were delineated in the following plant community types: white spruce/birch forests, black cottonwood forest, mixed forest with freshwater seeps and pools, wetlands, and shrub zones.

The following *Species of Special Concern*, as listed by the Alaska Region, Neotropical Migratory Bird Working Group, are described as significant components in Anchorage's songbird groups. Several of these forms are on National Watch Lists as species of concern also:

- Varied Thrush
- Blackpoll Warbler
- Northern Waterthrush
- Western Wood-Pewee
- Boreal Chickadee
- Townsend's Warbler
- Brown Creeper
- Olive-sided Flycatcher
- Golden-crowned Kinglet
- Rusty Blackbird

In general, key informants noted that parcel and plant community sizes, as well as plant community cumulative losses, are limiting factors in shaping songbird populations and habitat use. Buffer corridors next to new developments and maintenance of large remaining wooded parcels are important to songbird viability in the Municipality. Changes in songbird populations and species combinations, and losses to forest residents can occur as a result of future land clearing, and road and linear developments.

#### Key Scientific Interview

- Colleen Handel, U.S. Geological Service (USGS), Biological Resources Division, Alaska Biological Science Center.

#### **Waterfowl Habitats**

Waterfowl resource habitats are described in the inventory as those areas that provide regular and consistent waterfowl migration, molting, and nesting habitats, as well as areas that regularly support high waterfowl species diversity and consistent winter habitat or concentration sites.

Significant waterfowl use sites were delineated in intertidal pockets, larger waterbodies and know lakes, patterned ground wetlands, and within some greenbelt wetlands and slough areas. Critical winter habitats were identified in lower Ship Creek.

#### Key Scientific Interviews

- Karen Laing, USFWS
- Maureen deZeeuw, USFWS
- Brad Andres, USFWS

#### **Loon Habitats**

Loon resource habitats include Pacific loon nesting, potential nesting waterbodies, and surrounding sensitive zones. A summary coverage of the following areas is provided:

- Pacific loon nesting areas including waterbodies where these loons nest and a 100-foot buffer around each;
- Potential Pacific loon nesting areas of both historic nest sites and where potential future sites still exists, given the expressed knowledge of nest site requirements; and
- Sensitive areas where loon nesting and nursery activities occur that are especially sensitive to disturbances.

Loons are considered a significant species for Anchorage. Anchorage loons are found to be generally sensitive to local disturbances, especially during early stages of nest and pair bonding, and when the young first hatch. Anchorage's loon nesting population is small, dwindling, and threatened by increasing development and recreation activities on lakes. Most Anchorage lakes provided historic nest use for loons, and Anchorage is now one of the few cities in the country to support nesting loons.

#### Key Scientific Interview

- Nancy Tankersly-Fair, ADFG

#### **Shorebird Habitats**

Shorebird habitats were mapped in the following categories:

- Nesting and brood rearing areas
- Migration and staging areas
- High species diversity sites
- Estuarine concentration areas
- Brood movement corridors

Upper Cook Inlet is a major migration corridor for shorebirds in their spring (early April to mid-May) and fall (early July to mid-September) migrations. Most of the region's major shorebird concentration areas are along the western shores of Upper Cook Inlet, the Susitna and Little Susitna River flats, and Matanuska and Knik River flats. During the spring, summer, and fall, shorebirds, gulls, and waterfowl use the intertidal mudflats of Ship Creek and the tidelands to the north of Cairn Point. The area of coastal wetlands and intertidal mudflats south of the Port, from Ship Creek to Potter Marsh, including Westchester Lagoon, has been nominated by the Audubon Society as an "Important Bird Area," because of its high concentrations of migrating waterfowl and shorebirds. Significant numbers of several species of Cook Inlet waterfowl and shorebirds stage in these intertidal areas.

Coastal/intertidal pools and ponds, and freshwater deltas in the Anchorage Coastal Wildlife Refuge, and north around to Ship Creek, provide high migrant numbers, and diversities. Estuaries provide the most consistent concentrations sites, including areas with seeps and springs, as well as major stream channels. The majority of Cook Inlet populations of Hudsonian Godwit, Short-billed Dowitcher, and Semi-palmated Plovers stage in the Earthquake Park-Ship Creek zone each fall.

Shorebird brood movements have been impacted with new developments and linear construction projects (roads) between bog breeding areas and coast. Shorebirds are very site tenacious to breeding and even migratory habitats year-to-year. Most local breeders need a fairly large territory, which have and continue to be land development and subdivision. Hudsonian Godwit may no longer nest in the area, except for maybe 1-2 pairs in Turnagain Bog.

#### Key Scientific Interviews

- L. Tibbets and R.E. Gill, USGS, Biological Resources Division, Alaska Biological Science Center
- Municipality of Anchorage Planning Department Staff

## ***Terrestrial Resources and Habitats***

Terrestrial resources and habitats, per 11 AAC 112.300 (a) (2), (3), (4), (8), and (9), have been inventoried, analyzed, and are described spatially in the new atlas. Data highlights and the results of interviews with experts are included below.

### **Moose Habitat**

The ADFG considers the entire Anchorage Bowl important moose habitat.

### **Bear Habitat**

Bear resource habitat includes those areas identified on the ADFG black and brown bear habitat use maps, and also includes tracked bear sighting data from the past 10+ years.

There are typically 5-10 resident brown bears in the Anchorage Bowl, and another 10-20+ across the rest of the MOA. Habitat use is concentrated along the Chugach Front Range foothills, and down along the upper riparian corridors of the major salmon streams. Most habitats where brown bears roam are considered either critical or important to local populations. There are approximately 40-50 black bears in the Bowl and at least that many elsewhere. Important habitats focus across the sub-alpine and upper wooded fringes of the Chugach Front Range, and down into the larger wooded sections of the coastal plains, mainly along greenbelts and in the larger parks. Denning occurs in the upper stretches of this bear use zone.

### Key Scientific Interviews

- Rick Sinnott, ADFG

## **4.1.11 Areas Meriting Special Attention**

The following areas were classified as AMSAs under the original CMP. The areas described formerly in the 1984 CZM Plan as AMSAs are included in Chapter Four, Resource Inventory and Analysis, because of the important physical, biological, and cultural attributes of each area and because of the biological productivity of resources in specific AMSAs.

A description of each AMSA, its purpose and its value is described below.

### ***Fish Creek Estuary***

Fish Creek Estuary is a coastal wetland valued for its unique physical features and natural productivity in an urban environment, wetlands, scenic views, and recreation. The area is described as: (1) an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic importance; (2) an area of natural productivity or essential habitat for living resources, including fish, wildlife, and the various trophic levels in the food web critical to their well-being; and (3) an area needed to protect, maintain, or replenish coastal land or resources, including coastal flooding.

### ***Point Campbell Dunes and Delta***

The Point Campbell Dunes and Delta are valued for their scientific and educational importance and recreational and scenic qualities. The area offers the highest topographical vantage point in the Anchorage lowlands with a 360-degree view of the Alaska Range, Talkeetna Mountains, and Chugach-Kenai Range. Four types of glaciation can be seen: (1) the glacial profile of Mt. Susitna, (2) Caribou Hills and the truncated spurs of the Chugach Mountains, (3) Eklutna glaciation as high-level moraines on the Chugach Mountains, and (4) the Knik glaciation forming the lateral moraines upon

which Anchorage is built. The dunes are vulnerable to erosion from trampling and there is a lack of state and federal management of the resource. Dunes provide a natural buffer against the erosive forces of wind, water and waves. Sometimes it is necessary to stabilize or strengthen existing sand dunes or build new ones to protect oceanfront structures.

### ***Point Campbell-Point Woronzof Coastal Wetlands***

The Point Campbell-Point Woronzof coastal wetlands are valued for their biologically productive habitat, scenic importance, and recreational qualities. The coastal marsh supports numerous species of migratory waterbirds. The site offers scenic views across Cook Inlet and views of Fire Island. The site is located close to the urbanized portions of Anchorage, yet provides opportunities for recreation and wildlife viewing. The area can be described as: (1) an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic importance; (2) an area of natural productivity or essential habitat for living resources, including fish, wildlife, and the various trophic levels in the food web critical to their well-being; (3) an area of significant hazard, if developed, because of storms, slides, floods, erosion, and settlement; and (4) an area needed to protect, maintain, or replenish coastal land or resources, including coastal floodplains, beaches, and offshore sand deposits.

### ***Point Woronzof Bluffs***

The bluffs at Point Woronzof are valued for their scenic and open space qualities and their scientific and educational importance. The bluffs are important because they contain the only known fossil beds in the Anchorage area. The site also offers views of Mt. McKinley and the skyline of Anchorage. The area can be described as: (1) an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic importance; (2) an area of unique geologic or topographic significance, that is susceptible to industrial or commercial development; and (3) an area with special scientific values or opportunities, including those where ongoing research projects could be jeopardized by development or conflicting uses and activities.

### ***Port of Anchorage***

The area can be described as tidal flats within the coastal floodplain of Ship Creek. The Port of Anchorage is an important part of both the Anchorage and state economy. Most facilities located here are water-dependent, and require direct access to coastal waters. There are also supporting infrastructure and activities that are water-related. The Port has an adopted Master Plan that guides development. The port area is also home to a unique urban salmon fishery in Ship Creek. The area was classified as an AMSA in the original coastal management plan in order to preserve an area where development of facilities depends upon the use of, or access to, coastal waters.

### ***Andesitic Dike at Potter Marsh***

The Andesitic Dike at Potter Marsh is the only known igneous exposure in the Anchorage area. The dike is located just east of Potter Marsh, along the Old Seward Highway. The area can be described as: (1) an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic importance; (2) an area of unique geologic or topographic significance, that is susceptible to industrial or commercial development; and, (3) an area with special scientific values or opportunities, including those where ongoing research projects could be jeopardized by development or conflicting uses and activities.

### ***Seward Highway/Turnagain Arm Scenic Corridor***

The Seward Highway serves those portions of population concentrated south of the Anchorage Bowl, generally along the Seward Highway, and extending to Portage at the southern corporate boundary.

The corridor offers numerous scenic vistas, includes glacial valleys, glaciers, a variety of vegetation types, a change in ecosystems, and a variety of wildlife species. Several streams cross the highway and offer fishing opportunities.

The recreation, scenic, heritage, or wilderness significance of the area was first formally recognized by the U.S. Secretary of the Interior in 1958. In addition, many historical and archaeological sites are found adjacent to the Seward Highway. The area can be described as an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic importance.

### ***Bird Creek Regional Park***

The Bird Creek Regional Park is managed by the ANDR, Division of Parks. The park lies mostly on the valley floor of Bird and Penguin Creeks. It is valued for the conservation and protection of habitat, recreation opportunities, and scenic qualities. The area is described as an: (1) area of unique, scarce, fragile, or vulnerable natural habitat, physical features, historical significance, cultural value, and scenic importance; (2) an area of natural productivity of essential habitat for living resources, including fish, wildlife, and the various components of the food web critical to their well-being; and (3) an area of substantial recreational value and/or opportunity.

### ***Eagle River Valley Lowlands***

Eagle River is Anchorage's largest river, running approximately 41 miles from its source at Eagle Glacier to the coastal waters of Knik Arm. It is valued for recreation, flood control, open space, fish and wildlife habitat, and view sheds. The area is described as: (1) an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic qualities; (2) an area of substantial recreational value or opportunity; (3) an area of unique geologic or topographic significance, that is susceptible to industrial or commercial development; and (4) an area of significant hazard, due to storms, slides, floods, erosion, or settlement.

### ***Old Girdwood Townsite***

The Old Girdwood Townsite was built on the shores of Turnagain Arm. Subsidence following the Good Friday Earthquake of March 1964, inundated the original townsite with saltwater. The vegetation of the area has changed to a more saltwater-tolerant plant community. It is a flat and boggy area with grasses and sedges, and has been identified by the ADFG as a resting and habitat area for migratory waterfowl and other birds. The area can be described as: (1) an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic importance; (2) an area of unique geologic or topographic significance, that is susceptible to industrial or commercial development; and (3) an area of significant hazard, if developed, because of storms, slides, floods, and erosion.

## **4.2 COASTAL RESOURCE ANALYSIS**

Impacts to coastal resources do not necessarily result from any single factor, but rather from the interaction of various effects. Some individual resources may have greater value, as part of a system or complex of habitats, than as an isolated consideration.

The productivity of the important habitat in the Anchorage coastal zone and the physical, biological, and cultural attributes of the coastal resources upon which recreation use depends can be directly and significantly affected by a number of uses and activities.

This chapter presents the resource analysis methodology used to develop the maps and enforceable policies and discusses the uses and activities of concern in the coastal zone.



## 4.2.1 Analysis Methodology

### ***Original Resource Inventory and Mapping***

The original MOA CMP resource inventory focused on a mapping regime summarized in the four-volume *Anchorage Coastal Resource Atlas*. There were four sub-areas described: (1) Chugiak-Eagle River, (2) Turnagain Arm, (3) Anchorage Bowl, and (4) Fire Island. Each sub-area also had a set of coastal resource maps. The resource analysis grouped areas with similar environmental characteristics into Resource Policy Units (RPU). The RPUs became the fundamental planning elements of the original MOA CMP. Each RPU was evaluated for suitability for development and/or preservation. The RPUs were further aggregated into broad classification categories, based on development suitability and general environmental sensitivity. These broad classification categories were termed the Preservation, Conservation, and Utilization Environments (1987 MOA CMP, Chapter 3).

The original resource inventory was based on field investigations and mapping, aerial photography review and analysis, and assimilation of other biophysical data that existed at the time. These data were integrated using an overlay process and characteristics were compared and weighted based on levels of sensitivity, significance, constraints, and impacts potential. Impacts analysis was performed with a series of data matrices that matched potential development activities and associated impacts weighted against sensitivities of each resource unit. The matrix became a type of suitability index for estimating impacts to coastal resources in the Preservation, Conservation, and Utilization Environments.

Goals and enforceable policies were crafted for each of the RPUs and were used historically as conditions of approval when issuing permits. The goals and policies were also integrated into other regulatory tools, such as the Anchorage Land Use Code and other MOA planning documents. Special area plans were developed, and in some cases, adopted as elements of the CMP, to provide further detail and site-specific enforceable policies for certain RPUs. The two most well known plans are the *Anchorage Wetlands Management Plan* (1982 and 1996), and the three-volume *Anchorage Parks, Greenbelt, and Recreation Facility Plan* (1985).

### ***Updated Coastal Resource Data Maps***

For this CMP Amendment, the MOA undertook a full revision of the original three-volume *Anchorage Coastal Resource Atlas*. [The *Fire Island Atlas* has not been revised. Fire Island remains inside the Anchorage coastal boundary.] This information was used to create a sensitivity analysis model from which the designations were developed.

While attempting to remain true to the original content and format, revisions were based on, and included, an expanded and more diverse set of coastal resource data made up of a series of maps, some of which were combined and presented as conglomerate maps. A summary of terrain and vegetation mapping from a software analysis of aerial photography, which displays as a plant community map, has been created as a land cover layer.

The following resource data has been mapped for the entire MOA coastal zone, which includes the Anchorage Bowl, Chugiak-Eagle River, and Turnagain Arm:

- Coastal Resource Sensitivity (refer to ASIDESS model)
- Bear habitats
- Watersheds, floodplains, and freshwater wetlands
- Municipal parks and trails
- Land use
- Anadromous fish streams
- Soils, slope, and avalanche
- Landcover and plant communities

Additionally, bird habitats, surficial geology, and geotechnical data has been mapped for that portion of the coastal zone within the Anchorage Bowl, however, the data sets for these resources are currently missing or incomplete for Chugiak-Eagle River and Turnagain Arm. **These data sets will be added to the MOA CMP coverage and Coastal Resource Atlas as they are completed.**

Fish and wildlife elements are combined into the Wildlife Habitat Map for the Bowl. Most of these data were accumulated during a yearlong species and habitat inventory project, in which the MOA teamed with The Great Land Trust biology staff.

Scientific interviews with key informants and professionals in each technical field, and reviews of recent publications for each subject area were made during this process to update existing information and delineate new data on maps and aerial photography. These data resulted from a combination of professional knowledge and field experience of each key-informant in each subject area, as well as from existing or “in-press” scientific studies and reported results. These data were transferred to maps using a mylar overlay on 1” to 2400’ scale aerial orthophoto maps, and then later digitized into a Geographic Information System (GIS) database.

### ***Sensitivity Index Model***

A sensitivity index model was designed using the updated resource information to provide a data analytical tool for use in revising the *Anchorage Coastal Resource Atlas*. The model generates map products that represent the result of GIS layer assimilations of all the new coastal resources data. This analysis is based on an ESRI ArcGIS, Version 9.0, software-modeling program, also known as the *Anchorage Sensitivity Index Decision Support System* (ASIDESS).

The original *Anchorage Coastal Resource Atlas* was completely updated by the ASIDESS Model, and for the purposes of the MOA CMP Amendment, was replaced. The original atlas provided the important historical and scientific documentation for the model.

The ASIDESS Model enables the user to explore the sensitivity of areas to development. Sensitivity data sets are based on five topics: (1) aquatic resources, (2) coastal and public access, (3) geotechnical hazards, (4) habitat, and (5) human impacts.

### ***Geographic Information System***

In order to delineate specific sensitive areas within Anchorage’s coastal boundary, each GIS layer was assigned a series of weights based on the intrinsic habitat values, known sensitivities to disturbance, and importance to each species’ life cycle needs in the Anchorage area. Additional GIS layers were added to the model as important data modifiers and as refinements to the individual significance of sensitive areas. These layers include road rights-of-way and land use. The GIS coverage was assigned negative weights in order to correlate these “human” factors as impacts and modifiers of natural areas. For example, the land use categories were given various negative values, based on their “typical” development patterns, as these would impact sensitive environments. Negative land use values were used because they further modify the relative significance, rarity, and sensitivity of the habitat coverage.

In the designed default settings mode, the sensitivity model produces a discrete new GIS layer, which is called the sensitivity model layer. This layer represents the intersections of all the GIS layers. Along with the modeling technician’s and software manufacturer recommendations, MOA staff then created logical breaks within the progression of intersection points generated by running the model, based on the number of overlap locations of each layer. The range of overlap points varied from 1.0 to 12.5, and the breakdown represented the logic of best professional judgment on points for

distinguishing high overlap = high sensitivity, mid-overlap = moderate sensitivity, and lower overlap = lowest sensitivity. These data breaks also followed natural or logical data separations identified in the model program.

Every one of these GIS layers is based on data that represent important coastal resources. The locations and frequency of resource-overlap contributes progressively to an area's increasing level of significance and sensitivity. The results of the model are portrayed to represent the scientific basis for calling out the most important habitats and coastal resources, as required by 11 AAC 114.250 (h).

Specific areas of sensitivity form the rational basis for the developing the Designated Recreation Use Area and the Designated Important Habitat Area. Those areas within the coastal zone having a low to medium sensitivity to development correspond to the Designated Recreation Use Area. Those areas having a high sensitivity to development correspond to the Designated Important Habitat Area.

### **Metadata**

Metadata for this GIS model program are included as the scientific documentation for the weighting scheme that generated the sensitivity locations and the two designations. The sensitivity locations are produced with the software, and are intended to be scientific and objective delineations of sensitive and important coastal resources for the MOA. The model details are described in Appendix F. The detailed maps for the coastal resources will be included in Volume II Resource Maps in final plan amendment.

For Chugiak-Eagle River and Turnagain Arm, the MOA GIS database was used as the analytical tool to delineate sensitivity. The Designated Important Habitat Area coincides where two or more data layers overlapped and where layers overlapped anadromous fish streams out to a point 200-feet from each stream's centerline. Data layers include: anadromous fish, bears, wetlands, parks, trails, flood zone, lakes, streams, and avalanche. A weighting method for those data that were available was applied and is similar to the weighting method used in the Sensitivity Model. For instance, only "A" and "B" wetland coverage, only anadromous streams, and only the essential bear habitats were included in the basic set of data coverages, which mirrors the protocols set up in the Sensitivity Model.

## **4.2.2 Uses and Activities of Concern**

There are a number of uses and activities of concern that are related to community expansion that have the potential to create impacts on or adjacent to the streams, lakes, and wetlands within Anchorage's coastal zone. Uses and activities include (1) shoreline modifications, (2) stream channel alterations, (3) removal of shoreline vegetation and increases in impervious surfaces, (4) improper placement of drainage structures, (5) construction disturbances, (6) changes in surface hydrology, and (8) degradation of water quality.

These uses and activities have been documented in local studies and plans to have the potential to adversely impact the physical, biological, and cultural attributes upon which the recreation use of these resources depends. Certain uses and activities also have the potential to have a direct and significant impact on coastal waters and have been documented in the ASIDESS model to be biologically and significantly productive.

### ***Shoreline Modifications***

Shoreline modifications in Anchorage have historically been focused along Knik Arm, in an area between the west edge of downtown and the north end of the Port. Most modifications have included fill and bulkhead efforts that occur as part of port and harbor facilities, road, and utility expansion and

improvement projects. Most of these shoreline projects have been essential to Anchorage's, and the State's transportation, utility, and shipping links, and the bulk of these have occurred prior to the 1990s. Typical shoreline structures include: bulkheads, riprap, breakwaters, causeways, piers, docks, and bridges.

Poorly designed, or improperly placed, shoreline structures may destroy important aquatic or marine habitats, significantly disrupt sediment transport, induce erosion or accretion, or adversely alter tidal circulation patterns. Appropriate re-vegetation of disturbed areas, using native species, will be important to minimizing erosion.

Shoreline stabilization and the increasing modification of natural shorelines to prevent, or reduce the landward migration of the shoreline, which is a natural process, can often result in the loss of shallow water habitats, wetlands, reduced fish diversity and abundance, and changes in runoff patterns.

Although the individual impact to fish and wildlife habitats from a single shoreline modification project may not be significant, the cumulative effects of multiple projects need to be considered when evaluating the extent of impact to important marine habitats, fish and wildlife use areas, and recreation activities. These impacts are particularly significant to the Port of Anchorage and Ship Creek area, where land uses are regulated to assure water-dependent/water-related activities, because there are few such marine access sites within the MOA.

### ***Stream Channel Alterations***

Stream channel alterations include uses and activities such as channelization, diversions, channel widening or narrowing, changing gradients, and removing streamside vegetation. Meandering stream courses are often "straightened" to accommodate road and/or utility alignments, commercial or industrial fill areas, or residential developments.

Much of Anchorage's historic stream channelization activities occurred in the period between 1940 and the 1980s. Straightening has the effect of shortening the stream, which may intensify water velocity due to an increased stream gradient. The meanders in an undisturbed stream system absorb the stream's energy, and allow for the creation of pools and riffles. When a stream is channelized, a trough is created, and there are few opportunities for necessary aquatic habitats to form within the "trough" to replace those that have been lost. Some of the oldest known channelized reaches of Anchorage's streams are only now showing signs of a natural recreation of meanders.

Channelization not only affects the hydraulic equilibrium of a flowing water system, but also can have an adverse effect on stream biota, the distribution of streambed materials, stream temperature, and the upstream migration of spawning salmon. Narrowing a stream channel by making it deeper may increase stream bank erosion and decrease food organism productivity within the channel. Stream diversions involve moving stream flow to another channel, or precluding a stream from utilizing its entire floodplain.

Diversions of streams often are proposed where development activities, such as roadways, mining, cleared areas, or fill for pads, attempt to re-route a natural stream course around or away from the development area. Diversions may be temporary or permanent, but in either case, stream depth, gradient, and velocity are subject to change with attendant alterations to the characteristics of the fish habitat. Small, clear-water meandering streams are sensitive to channel modifications, although all streams are susceptible to adverse impacts from alteration of stream hydraulic characteristics. Although the individual impact to fish and wildlife habitats from a single stream channel modification may not be significant, the cumulative effects of multiple modifications need to be considered when

evaluating the extent of impact to important marine habitats, fish and wildlife use areas, and recreation activities.

### ***Removal of Shoreline Vegetation***

Removal of shoreline vegetation can result in excessive turbidity. Long-term excessive turbidity can adversely affect overall stream or marine environment productivity, primarily by reducing light penetration important to photosynthesis and by increasing stream temperature (Hall and McKay, 1983). Even where fish resources are not directly impacted by siltation, associated impacts of reduced photosynthesis, increased water temperature, and reduced dissolved oxygen may decrease the value of aquatic systems to fish (Bjornn et al., 1977). Eroded soil may also pose a water quality issue directly as a result of sedimentation and siltation, and indirectly from contaminants carried with or attached to soil particles that are carried into the water.

Sediment is commonly introduced into Anchorage streams as surface runoff from roadways and cleared areas, or runoff from construction sites. Sedimentation can cover the existing streambed and fill spaces between bottom materials. Sediment can smother fish food organisms, such as algae and invertebrates. Emergent vegetation in wetlands is adversely affected by increased sediment. Fine sediment (fines) that infiltrate into stream substrates can smother incubating salmonid eggs and young fry. Proper stormwater management is particularly important where high levels of precipitation are a common occurrence, and in parts of Anchorage where runoff volumes are artificially high, due to high percentages of impervious surface. Water quality impacts, mainly from occasional point sources, and from chronic non-point source runoff, have been documented in most of Anchorage's streams, in particular those within the central sections of the Anchorage Bowl.

Fish resources and habitats, and to some degree, public recreation activities can be negatively impacted when development results in the change in drainage patterns, negative water quality impacts, loss of habitat, and loss of wetlands. Although the individual impact to fish and wildlife habitats from an incidental removal of shoreline vegetation may not be significant, the cumulative effects of projects that remove shoreline vegetation need to be considered when evaluating the extent of impact to important marine habitats, fish and wildlife use areas, and recreation activities.

### ***Clearing and Excavation Activities & Loss of Vegetative Habitat***

Development activities that can create the loss of vegetative habitat include clearing and excavation; placement of fill for residential, commercial, industrial, and community facilities; road construction; utility placement; and harbor facility development. Changes that result in the loss of plant species and communities can, in turn, result in decreased habitat productivity and decreased water quality.

Considerable fish and wildlife habitat losses have accrued over the past three decades in Anchorage; and these losses are attributable to residential development, expansion of community infrastructure and public use facilities, and more recently because of industrial and large-scale commercial development. Most of this wildlife habitat and plant community change has occurred in the Anchorage Bowl, concentrated in the periods between 1950 and the mid-1990s. Within that time frame, nearly 10,000 acres of various wetland types were cleared, drained, and/or filled. This concentration of fill and subsequent habitat losses of various plant communities has led to diminished local breeding populations of several obligate and facultative wetland bird species.

Notable declines in nesting shorebirds and waterfowl have been documented and/or been accounted for with anecdotal information produced beginning in the 1980s. The greatest impacts, or those areas with the largest overall percentages of wetland acres lost, include the Chester Creek, Fish Creek, and Little Campbell Creek watersheds. Subsequent physical impacts associated with these cumulative

wetland losses include known or documented plant community changes, and plant diversity losses, introduction of exotics and less valuable plant species, increased long-term erosion runoff, and nutrient enrichment/contamination of lakes.

### ***Improper Placement of Drainage Structures***

Culverts are the most commonly used drainage structure and must be correctly installed to allow both adult and juvenile fish to move upstream and downstream, unimpeded. If the culvert is not properly set in the streambed, its outlet may be perched above the stream surface, creating a waterfall that impedes passage for many species and age classes of fish. Undersized culverts concentrate stream flow such that velocities through the pipe exceed the swimming capability of fish, especially younger age classes of coho and sockeye salmon. This situation constitutes a "velocity barrier" to fish passage. Where feasible, bridges are preferable to culverts, because they allow unobstructed flow of water and passage of fish. However, if bridge supports are placed within a narrow channel, they may also constrict flows, increase flow velocities, or accumulate debris, which creates a barrier to fish movements.

### ***Construction Activity & Disturbance to Fish and Wildlife***

During construction and operation of development sites and facilities, the physical presence of equipment, machinery, ships, motor vehicles, and human beings can discourage or preclude the use of specific sites or areas important to wildlife populations.

Although some acclimation to development activity can be expected, some marine mammal and shorebird species are generally more sensitive to activity disturbance because their use areas are discrete and substitute habitats are not readily available. Some marine mammals have been shown to be vulnerable to disruptions caused by development activities. Helicopters, low-flying aircraft, boat traffic, and human presence have been associated with pup mortality and declining use of some habitats by marine mammals. Development activities in flat terrain, or areas devoid of visual barriers, may be more disturbing to wildlife species than similar activities conducted where the topography or vegetative buffers obscures visibility.

Wildlife species most susceptible to activity disturbance are ducks, geese, shorebirds, songbirds and bears. Waterfowl and shorebirds are present in largest numbers during spring and fall migration. There are small numbers of wintering waterfowl, mostly along lower Ship Creek and in a few other creeks where open water persists. Moderate numbers of bald eagles winter in the immediate coastal sections, which is at the northern limits of their Alaska winter range in the State. The critically important resting and feeding activities that occur at these times could be adversely affected by development activity, if the disturbance is such that the birds are prevented from using feeding and resting areas. Migrant species are most vulnerable to disturbance during stopovers, because these times are critical to survival. Some waterfowl and shorebirds that nest and/or summer in the MOA coastal zone may acclimate to the sights and sounds around them, while others may remain sensitive to disturbance. This is important because much of the remaining native habitats in the area are fringed with development.

Wildlife may be also adversely affected by loud and unpredictable noise (startling sounds). Nesting waterfowl and seabirds are particularly vulnerable to startling noises that can result in direct mortality to eggs and young through destruction, abandonment, or increased susceptibility to predation during the absence of the parent bird. Egg mortality also can occur, when exposed eggs become overheated or chilled, after parents have been driven from the nest. Molting birds may be vulnerable to noise disturbance because they are already under considerable physiological stress during their flightless period. Birds on staging areas are actively feeding to replenish fat reserves lost during spring

migration (and prior to nesting) or preparing for extended migrations south in the fall. Loss of access to these important seasonal feeding and resting areas, due to noise disturbance, may seriously affect productivity and survival of adult birds.

Wildlife may be precluded from using undisturbed habitats adjacent to directly disturbed habitats, due to noise or activity that discourages wildlife presence. The alteration or loss of terrestrial habitats are most critical to wildlife populations if important feeding areas or seasonal use areas of limited availability are disturbed. Wildlife habitat may also be impacted, both from direct and indirect activities associated with development. Alteration, fragmentation, or destruction of wildlife habitat can result in the direct loss or displacement of species, and the ability of the ecosystem to support other biological resources, such as the plant communities upon which the wildlife relied for survival.

### ***Construction Activity & Changes in Water Quality***

As a result of historical and ongoing construction and development activities, certain portions of waterbodies and streams in Anchorage's coastal zone show varying degrees of water quality degradation. Although some sections and reaches of streams have been documented with heavy metal and other toxic contaminations, the predominant water quality problems are from turbidity and above-acceptable fecal coliform levels. At least 12 Anchorage waterbodies are included in the ADEC *Category 5/Section 303(d) Listed Waterbodies*, nearly all with fecal coliform issues.

In a broader sense, most of the MOA streams have periods of elevated turbidity levels and chronic low-levels of sediments, mainly associated with non-point source additions from construction sites and untreated, or under-maintained storm water runoff pipes. Runoff treatment and related storm drain systems in the MOA are now regulated by conditions of an EPA NPDES permit. These permit requirements specifically target management and treatment of construction activities and land use policies in ways that are intended to reduce chronic and storm-event levels of sediment loads.

Policies in this plan provide methods that address local concerns with water quality that are not within ADEC's jurisdiction. ADEC does not regulate water quality or quantity issues relative to residential development in Anchorage. The MOA, through its local land use code, building permit regulations, and watershed management program, continues to manage water-related issues associated with residential land uses. Several enforceable policies provide assistance with this discrete management of local water quality and quantity.

### ***Changes in Surface Hydrology & Loss of Aquatic Habitats***

Changes in surface hydrology and water quality can have adverse impacts on aquatic species, such as fish, plants, and microbes. Direct alteration of stream channels, and secondary and ephemeral drainage ways, including ditching of streams, culverts at numerous crossings, indiscriminate changes to the riparian corridor soils and vegetation, channelization of stream reaches, and continued creation of impervious surfaces adjacent to waterbodies, was a common development theme in the 1970s and 1980s. Along with a lack of control of runoff volumes, resulting from lack of stormwater runoff management, and the fact that essentially all storm drains "day-lighted" into Anchorage's creeks, a common impact was faster storm event volume increases, and reduced creek base flows. That meant that the main creek channels had lessened base flows, and increased stormwater runoff peak flows. Fish resources suffered from these creek flow volume alterations, and also from numerous fish passage blockages, resulting from new culverts, fills, and channelization activities. Fish passage has been all but blocked into the Chester Creek watershed, and into parts of the Little Campbell Creek tributaries.

Resident and anadromous fish populations have been variously reduced, and or nearly eliminated in several Anchorage Bowl streams, due to habitat alteration, water quality, and in-stream passage impacts. Except in those stream systems that continued to be enhanced with stocked fish, native salmonids are nearly extirpated from Chester and Fish Creeks, because of passage blockages near their mouths, while Little Campbell and Campbell Creek watersheds include numerous minor blockages from culverts and channelization actions. The Campbell Creek watershed anadromous fish populations are continuously impacted and threatened, mainly from chronic sediment loading, generated by construction and development activities, vegetation removal, and street maintenance operations. Most of the other anadromous streams remain in good health.

Studies from the 1980s led the State to identify several Anchorage streams as impaired waterbodies. The MOA has initiated several programs since the early 1980s to attempt to address and assert long-term controls on water quality problems, culminating with the issuance of a federal National Pollutant Discharge Elimination System Permit (NPDES) from the U.S. Environmental Protection Agency in 1992. Conditions of this federal permit added water quality, land use regulation, and management practices for stormwater management. Several of these items relate directly to, and serve as implementation measures to, enforceable policies from the original 1987 MOA CMP, notably for the River Floodplains and Class I, II, and III Waters Resource Policy Units, and to enforceable policies in this plan amendment. Today, the MOA Project Management and Engineering Department's Watershed Management Division (referred to as Watershed Management Services also - WMS) maintains a creek-by-creek analysis of impervious surface calculations. According to the WMS analysis, Anchorage creeks and streams are at or over the threshold where base flows are lowered and storm events are faster with higher volumes. This results in adverse impacts to fish habitat, water quality. Increased flow volumes affect fish overwintering and summer rearing habitats.

Increased pressures to develop the remaining vacant lands will continue to put pressure on shoreline alterations along the creek systems. Since the MOA consolidated public ownership of lands along many greenbelts, these areas are now the focus of considerable public recreation activity. These linear habitats along the creeks also provide increasingly important wildlife corridors, and they serve as connections for wildlife movements between the hillside forests and the coastal fringe.



## 5.0 CHAPTER FIVE ENFORCEABLE POLICIES

### 5.1 AUTHORIZATION FOR ENFORCEABLE POLICIES

The designation of a specific portion of the MOA coastal zone boundary (Kincaid Park, the Tony Knowles Coastal Trail, Chester Creek Trail) as Recreation Use Areas provides the MOA with the legal authority to address the prioritization of uses and activities within these areas.

### 5.2 DESIGNATION

The Recreation Use Designation has been developed in accord with the state requirements described in 11 AAC 114.250 (c) below. A designation for the purposes of coastal management does not imply that all areas within the Designation are in public ownership, or used for public recreational purposes. Rather, the Designation relates to, and encompasses actively used areas, those areas that have the potential to be used, and those areas that are setbacks or buffers needed to protect the adjacent recreational resource. A Designation is not a zoning district.

The designation is also described in Chapters One and Four and on *Maps A, B, and C*.

### 5.3 APPLICABILITY OF ENFORCEABLE POLICIES

Pursuant to the regulations for designating for recreation, the trail systems identified in Chapter 4 and in Table 4.4 lands defined as the Designated Recreation Use area, are currently used, and have the potential to be used, for recreational purposes. There are physical, biological, and cultural

**11 AAC 114.250. Subject uses, activities, and designations.** (c) A district shall consider and may designate areas of **recreational use**. Criteria for designation of areas of recreational use are

- (1) the area receives significant use by persons engaging in recreational pursuits; or
- (2) the area has potential for recreational use because of physical, biological, or cultural features.

(Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

features upon which recreational use depends. Recreation uses in the area designated includes existing and planned features for trails, organized sports, and for passive activities such as tourism and wildlife viewing.

### 5.4 PROPER AND IMPROPER USES

All land and water uses and activities are considered proper as long as they comply with the enforceable policies of the MOA CMP, ACMP standards, and applicable federal and state regulations, and municipal regulations.

A land or water use or activity will be considered improper if it is inconsistent with ACMP standards or the policies of the MOA CMP, or it does not comply with or cannot be made to comply with the applicable federal and state regulations. See Chapter Six, Implementation, for details.

## **5.5 ENFORCEABLE POLICIES**

This section includes the enforceable policies (EP) that apply throughout the Designated Recreation Use area.

### **5.5.1 Policies Applicable Throughout the Designated Recreation Use Area**

#### ***EP-1 Uses, Activities, and Setbacks***

*The following uses are allowed and considered appropriate in the Recreation Use Area: primary and secondary structures, utilities and transportation features, direct access to streams or waterbodies or to accommodate water-dependent and/or water-related uses, habitat enhancement or restoration projects, land clearing for approved developments, impervious surfaces, clearing of native or other vegetation, removal of dead or decaying trees that threaten public or private property or health and safety. These uses are permitted provided they meet the following required conditions [and relevant Municipal regulations]:*

- (a) A 50-foot setback from the Ordinary High Water (OH) of streams and/or waterbodies, as depicted on Maps 1, 2, & 3 unless there is no practicable alternative location for the use or activity.*
- (b) For streams or waterbodies with contiguous wetlands, setback distances shall follow those defined in Table 2 of the Anchorage Wetlands Management Plan (see Appendix), which vary from 25' to 200'.*

Note: This policy flows from the State Habitat Standard 11 AAC 112.300 (a) (2, 3, 8, and 9) and the Recreation Use Designation. Specific streams and waterbodies and the Recreation Designation are depicted on Maps 1, 2, & 3, referenced in the Anchorage Wetlands Management Plan Table 2., which is included as an Appendix, or available on supplemental maps or GIS coverages from the District's Watershed Management Section or Planning Department.

#### ***EP-2 Buffering and Screening***

- (a) For commercial, industrial, or institutional projects and associated activities within 200-feet of streams or waterbodies within the Recreation Use Area Designation, as shown on Maps 1, 2, & 3 or in Table 2. of the Anchorage Wetlands Management Plan (see Appendix), natural or landscaped vegetative buffers (with non-invasive species) or other screening measures shall be required specifically where the project site parallels or abuts, but lies outside, the stream or waterbody setbacks cited in EP-1.*
- (b) Requirements for the size and extent of buffers or screening measures: At a minimum, these site-specific buffers or screens shall be 10' wide if composed of vegetation.*

Note: This Recreation Use Designation policy flows from the State Utility Routes and Facilities Standard 11 AAC 112.240 and the Transportation Routes and Facilities Standard 11 AAC 112.280, and applies to the Municipality's Recreation Use Area Designation. It is intended to protect the unique, location-specific biological and recreation features of the Designation within the Anchorage Coastal Boundary. Screening and buffering are effective standards that can be added to development reviews and project designs to further minimize a project's primary and cumulative impacts to wildlife, native vegetation, public uses and access. Because each site includes a unique variety of existing features and/or site constraints, the width and type of

buffer and screening measures necessarily requires a case-by-case determination, which should occur during a consistency review, or in pre-application consultations.

### ***EP-3 Waterfront Development***

*In accordance with 11 AAC 112.200:*

- (a) Water-dependent Uses and Activities within the Municipality of Anchorage include: docks; boat ramps and launches; marinas, including wet-boat storage and boathouses, haul-out facilities, permanent or transient docking spaces and dry-storage; boat fueling facilities, piers, wharfs, and mooring pilings; fish processing facilities and hatcheries; water-based tourism facilities and accessory attached housing; and transportation-related structures dependent on water access.*
- (b) Water-related Uses and Activities within the Municipality of Anchorage include: retails stores and commercial activities such as hotels, restaurants, pedestrian-oriented access, and other similar uses that provide access to and/or views of the shoreline.*

Note: This policy flows from the Coastal Development Standard 11 AAC 112.200 and the Coastal Access Standard 11 AAC 112.220. Coastal access is a longstanding goal and element of the Municipality's Coastal Management Plan and Comprehensive Plan.

### ***EP-4 Coastal Access***

- (a) Development shall not interfere with existing legal public access to, or use of, the waterfront where such access or use has been established through acquisition, donation, dedication, or prescriptive easement.*
- (b) New subdivisions shall be designed to maintain or enhance public access to, from, and along coastal waters within the coastal zone where practicable.*

Note: This policy flows from the Coastal Development Standard 11 AAC 112.200 and the Coastal Access Standard 11 AAC 112.220. Coastal access is a longstanding goal and element of the Municipality's Coastal Management Plan and Comprehensive Plan.

### ***EP-5 Capital Improvements***

- (a) Capital improvements on non-federal, publicly owned property shall incorporate walkways, shelters, viewing platforms, and landscaping whenever practicable to enhance public access to coastal waters.*

Note: This policy flows from the Coastal Access Standard 11 AAC 112.220. Coastal access is a longstanding goal and element of the Municipality's Coastal Management Plan and Comprehensive Plan.

## **6.0 CHAPTER SIX IMPLEMENTATION**

### **6.1 INTRODUCTION**

### **6.2 COASTAL MANAGEMENT PROGRAM PARTICIPANT DUTIES AND RESPONSIBILITIES**

The MOA is a Unified Home Rule Municipality and is eligible to be a coastal district in accordance with state law at Alaska Statute (AS) 46.40.210(2)(B). As a home rule municipality, the MOA may exercise all legislative powers not otherwise prohibited by its Municipal Charter. According to MOA Title 21, Section 21.05.030, Comprehensive Plan, the coastal management plan is considered an element of the comprehensive plan, referenced in Title 21 at Section 21.05.030.

The Planning Department, through the CMP Coordinator implements the MOA CMP. The Planning Department has traditionally worked to integrate elements of its CMP into various sections of its Land Use Code, local permit reviews, and policies of other local planning documents. Integration of the CMP implementation measures into other local planning documents requires coordination and approval of the Planning and Zoning Commission and the Municipal Assembly. Consistency reviews are handled internally, and do not go to the Planning and Zoning Commission.

The point of contact for local consistency reviews, involving the MOA coastal zone is the Planning Director, who can be reached at:

Municipality of Anchorage  
Planning Department  
P.O. Box 196650  
Anchorage, AK 99519  
(907) 343-7921  
(907) 343-7927

### **6.3 GENERAL COASTAL CONSISTENCY INFORMATION**

#### **6.3.1 Consistency Review Definition**

According to AS 46.40.210 (5), definitions:

*consistency review” means the evaluation of a proposed project, the scope of which is determined under AS 46.40.094 and 46.40.096, against the state standards adopted under AS 46.40.040 for those evaluations and the enforceable policies in an applicable district coastal management plan approved under AS 46.40.060.*

#### **6.3.2 Subject Uses**

In accordance with 11 AAC 100.010, land and water uses and activities in the coastal zone, that are subject to consistency review and enforceable policies, include the following:

- Federal activities affecting coastal uses or resources;

- Land and water uses and activities requiring federal permits or authorizations (see 11 AAC 110.400); and
- Land and water uses and activities requiring state permits or authorizations.

In addition, outside of the state consistency review process, there may be a local consistency review for land and water uses in the MOA coastal zone for land and water uses and activities requiring local permits or authorizations.

### **6.3.3 Proper and Improper Uses**

In accordance with 11 AAC 114.260, the MOA CMP is required to identify uses and activities, including uses of state concern, that are considered proper and improper within the coastal zone.

The MOA has not identified any uses that are categorically prohibited within its coastal zone. Proper and improper uses are determined by their compliance with enforceable policy requirements.

All land or water uses or activities within the MOA are considered to be proper as long as they comply with the policies of MOA CMP, the ACMP standards under 11 AAC 112, and applicable municipal, state, and federal regulations. All other land or water uses or activities are considered to be improper if they are inconsistent with ACMP standards, or the policies of this CMP, or if they do not comply, or cannot be made to comply, with applicable federal and state regulations. Designated areas included in this CMP identify specific land or water uses and activities that will be allowed or not allowed.

### **6.3.4 Uses of State Concern**

Uses of state concern are uses and activities that are considered to be of state or national interest. The MOA cannot restrict or exclude uses of state concern unless they provide ample justification for the exclusion or restriction within the MOA CMP.

Uses of State Concern are defined in AS 46.40.210(12). In addition, the former Coastal Policy Council issued Resolution Number 13 that specifies more categories and criteria for uses of state concern. This resolution remains in effect until statutes or regulations replace it, or until it is formally rescinded by ADNRR.

## **6.4 COASTAL CONSISTENCY REVIEW PROCESS**

Because the State of Alaska has adopted the MOA CMP as an amendment to the ACMP, the MOA is one of several reviewers that concurs or objects to an applicant's consistency certification, or a federal agency's consistency determination to the coordinating agency during consistency review. Based on these comments, and on the policies and procedures of the ACMP, the coordinating agency issues a consistency finding.

### **6.4.1 How to Use the CZM Plan Maps and Model**

The MOA has designated Kincaid Park, the Tony Knowles Coastal Trail, and the Chester Creek Trail as Recreation Use Areas. There are resources within the designation that have important physical, biological, and cultural attributes upon which existing recreation uses and potential recreation uses depend.

Maps A, B, and C describe the coastal zone boundary and the designated area.

The MOA will upload the sensitivity map information to its interactive map applications website so that individuals can determine if their project falls within, or touches, the plan designation. Hard copies of the maps will be available at the Planning Department Public Counter. Ideally, the public will have the capability to use the MOA map application website to highlight a project site boundary on a parcel-level basis and compare that parcel on any scale to the coastal zone boundary and designation boundary. If a project site is within or touches the designation, then the project is subject to the plans enforceable policies.

#### **6.4.2 Two Types of Consistency Reviews**

The enforceable components of this CMP form the basis for a determination of consistency with the MOA CMP. There are two types of reviews: (1) state-coordinated consistency reviews, and (2) locally coordinated consistency reviews. When a project is proposed, State ACMP project reviewers determine which authorizations are needed. If the project is a federal activity, or needs state or federal authorization, the State of Alaska reviews the project for consistency with the ACMP. The MOA also participates in the state-coordinated review. If only local authorization is required (but not state or federal authorization), then the MOA itself reviews the project for consistency with the ACMP.

#### **6.4.3 Determination of Consistency in Connection with Other Permits and Approvals**

In addition to consistency, an applicant is required to obtain all other necessary permits and approvals required in connection with a proposed project. A determination of consistency does not guarantee, or presume, approval of any other federal, state, or local permit.

#### **6.4.4 ADEC Jurisdiction**

In accordance with AS 46.40.040(b), a district may not address a matter regulated by the Alaska Department of Environmental Conservation (ADEC) under AS 46.03, AS 46.04, and AS 46.14 and the regulations adopted under those statutes. ADEC air, land, and water quality standards are the exclusive standards of the ACMP for those purposes. Issuance of ADEC permits, certification, approvals, and authorizations establishes consistency with the ACMP program for those activities of a proposed project subject to those permits, certifications, approvals, or authorizations. A project that includes an activity subject to an ADEC authorization on the C List (see ABC List next) may require a coordinated review if the project includes a different activity that is not subject to an ADEC authorization, but is the subject of an enforceable policy or another C-listed authorization. However, the specific activities subject to ADEC authorization are not within the scope of those project activities to be reviewed.

In the case of an ADEC single agency review, the scope of review is limited to an activity that is the subject of an enforceable policy. ADEC Policy Guidance No. 2003-001, January 7, 2004, contains the actual procedure by which ADEC will participate and coordinate in ACMP consistency reviews. This document is titled, "DEC Single Agency Coastal Management Consistency Review Procedures," and sets forth the Uniform Procedures for Conducting a Coastal Management Consistency Review for Projects that Only Require a [ADEC] Permit or Contingency Plan Approval to Operate.

#### **6.4.5 "ABC" List**

The ABC List is a classification system of state and federal approvals that can streamline the consistency review portion of the state permitting process for a proposed project. The intent of the ABC List (specifically the "A" and "B" portions of the list) is to reduce the amount of time reviewers

must spend on reviewing routine individual projects. The ABC List allows them to concentrate on those projects requiring a more involved consistency review.

The ABC List actually breaks down into three lists:

- The "A" List represents categorically consistent determinations – approvals of activities requiring a resource agency authorization, when such activities have been determined to have minimal impact on coastal uses or resources;
- The "B" List has been broken into two sections: Section I of the "B" List represents generally consistent determinations – approvals for routine activities that require resource agency authorization(s), when such activities can be made consistent with the ACMP through the application of standard measures; and Section II of the "B" List includes nationwide permits and general permits that have been found to be consistent with the ACMP.
- The "C" List represents a comprehensive listing of those state permits that may trigger consistency review.

Projects do not always fit neatly into just one of the three lists ("A," "B," or "C"). Some projects need authorizations that fall under more than one list or include activities that are not found in the "B" List. For these projects, OPMP will determine how much review the project requires.

## 6.5 FEDERAL AUTHORITY AND CONSISTENCY DETERMINATION

In accordance with federal law, the MOA coastal zone excludes all federal lands and waters within its boundaries. Federal lands and waters are those lands and waters managed, owned, or held in trust by the federal government.

Federal law requires "federal agencies, whenever legally permissible, to consider State management programs as supplemental requirements to be adhered to in addition to existing agency mandates" per Code of Federal Regulations (CFR), 15 CFR 930.32(a). Federally licensed or permitted activities proposed within the coastal area and affecting coastal uses or resources must be **consistent** with the ACMP, including the MOA CMP (15 CFR 930.50). Federal license and permit activities described in detail in Outer Continental Shelf plans and affecting coastal uses or resources must be **consistent** with the ACMP, including the MOA CMP (15 CFR 930.70).

All **federally conducted or supported activities**, including **development projects** directly affecting the coastal zone, must be **consistent to the maximum extent practicable** with the ACMP, including the MOA CMP. Federal activities are "any functions performed by, or on behalf of, a federal agency in the exercise of its statutory responsibilities." This does not include the issuance of a federal license or permit. Federal development projects are those federal activities "involving the construction, modification, or removal of public works, facilities, or other structures, and the acquisition, utilization, or disposal of land or water resources" per 15 CFR 931.31. The phrase "consistent to the maximum extent practicable" means that such activities and projects must be "fully consistent with such programs unless compliance is prohibited based upon the requirements of existing law applicable to the federal agency's operations" per 15 CFR 930.32(a).

## **6.6 MOA PARTICIPATION IN STATE-COORDINATED CONSISTENCY REVIEW**

### **6.6.1 Procedures**

The point of contact for state and federal consistency reviews involving the MOA CMP is OPMP. OPMP addresses are:

Southcentral Regional Office  
550 West 7th Avenue, Suite 705  
Anchorage, Alaska 99501-3559  
Phone: (907) 269-7470  
Fax: (907) 269-3981

Central Office  
P. O. Box 111030  
Juneau, Alaska 99811-1030  
Phone: (907) 465-3562  
Fax: (907) 465-3075

The state-coordinated consistency review process is contained in state regulations at 11 AAC 110. The MOA seeks to work with applicants to initiate early communication and facilitate an expedient and informed consistency review.

### **6.6.2 Permit Pre-Application Meeting**

During a consistency review, the CMP Coordinator may contact the coordinating agency to request a meeting to resolve issues. The purpose of the meeting is to discuss the coastal management and permitting issues of the proposed activity, and to work toward resolution of issues of local concern and potential conflicts. Scheduling a permit pre-application meeting does not change the final consistency review deadline of 90 days as directed in 11 AAC 100.265.

### **6.6.3 Consistency Comments**

During the period allowed to review and consider the proposed use, the MOA will prepare written comments on the applicant's consistency certification. In preparing a consistency review comment, the MOA will comment on consistency with state standards. In order to be considered by the coordinating agency, MOA comments must be in writing and must:

- (1) State that the MOA concurs with the applicant's consistency certification and explain why, or
- (2) Identify that the MOA objects to the applicant's consistency certification.

If the MOA objects, then it must:

- (1) Identify and explain why the proposed project is inconsistent with specific state standards or the MOA CMP enforceable policies; and
- (2) Identify any alternative measure that, if adopted by the applicant, would achieve consistency with the specific state standard or MOA CMP enforceable policy.

Alternative measures are project conditions proposed by a state resource agency or the MOA that, if adopted by the applicant, would make the project consistent with either state standards or MOA CMP enforceable policies. If alternative measures are proposed, the MOA must explain how the alternative measure would achieve consistency with the specific enforceable policies in question.

When the consistency review is routine in nature and the Planning and Zoning Commission does not need to take action, the CMP Coordinator will issue the consistency comments on behalf of the MOA.



#### **6.6.4 Public Hearing During a State-Coordinated Consistency Review**

Any person or affected party may request that the coordinating agency hold a public hearing on a project or activity undergoing a consistency determination, by providing adequate justification for the request as specified in 11 AAC 110. During the initial consistency review, the CMP Coordinator, in consultation with the Planning Director and affected parties, may decide if the scope of a project will require a public hearing. If a public hearing is needed, the CMP Coordinator will submit a written request to the coordinating agency that a public hearing be held and outline the need for such a hearing. The coordinating agency will review the request to determine if it is based on concerns not already adequately addressed in the review. If a public hearing is held, the 90-day deadline in 11 AAC 110.265 for the completing the consistency review is unchanged. The coordinating agency should be consulted for the exact schedule.

#### **6.6.5 Changes in the Nature of a Permitted or Approved Activity**

Per 11 AAC 110.280, an applicant that proposes a modification to an activity, for which a final consistency has been issued, must submit a new coastal project questionnaire to the agency that coordinated the consistency review. The modification is subject to another consistency review if the modification will have significantly different effects than the existing use on the resources of the MOA coastal zone, and if a new authorization or change in authorization is required.

#### **6.6.6 Due Deference**

Due deference is a concept and practice within the consistency review process that affords the commenting review participants the opportunity to include, review, or refine the alternative measures or consistency concurrence if they have expertise in the resource, or the responsibility for managing the resource. The MOA and resource agencies are provided deference in interpretation of policies and standards in their area of expertise or area of responsibility. First, in order to be afforded due deference, the MOA must have an approved coastal management plan and have commented during the consistency review. Then, the MOA may be afforded due deference if no resource agency has specific authority or expertise, and if the MOA can demonstrate expertise in the field.

A district does not have to have a specific policy that applies to the proposed project under review. The MOA may comment on the consistency of the proposed project within the state standards.

If the coordinating agency rejects the MOA comments, or any alternative measures that the MOA might seek to have imposed on the application in connection with a consistency determination, the coordinating agency must provide a brief, written explanation stating the reasons for rejecting or modifying the alternative measure. *Note: this requirement only applies when the coordinating agency disagrees with the MOA on issues involving the interpretation and application of the MOA CMP.*

AS 46.40.090(b) requires coastal districts that have and exercise zoning or other land use controls to implement their plans. While there is no specific guidance in statute or regulations on how to implement the district plan, the preferred method is through the performance of local consistency review.

#### **6.6.7 Uses Subject to Local Consistency Review**

All uses that are proposed in the MOA coastal zone that do not require federal or state authorization, or that are not a federal activity, will require a determination of consistency from the MOA if they are land and water uses requiring a permit or approval in accordance with MOA Code, Title 21. When a

project does not require a state or federal permit or authorization, and only requires local approval, the MOA will determine how the policies will be applied to the proposed project.

### **6.6.8 Application Procedure and Time Line**

There is no separate application for a local consistency determination under the MOA CMP. Rather, the applicant desiring to undertake a subject use applies to the MOA (depending on where the use is to be located) for the required land-use permit or approval. Platting and zoning actions also undergo internal consistency reviews during their respective public process.

### **6.6.9 Local Consistency Determinations Inside the MOA**

The point of contact for local consistency reviews is the MOA CMP Coordinator, a staff position in the MOA Department of Planning. The address of the CMP Coordinator is:

Municipality of Anchorage  
Planning Department  
P.O. Box 196650  
Anchorage, AK 99519  
(907) 343-7921 (phone)  
(907) 343-7927 (fax)

The MOA Title 21 Regulations and land development ordinances detail the review process and schedule for each specific local permit or approval required. The MOA will conduct its consistency review concurrently with its permit or approval review process. Final permits will include conditions or changes as necessary for consistency with the MOA CMP.

Subject uses within the MOA that do not require a state or federal authorization, or that are not a federal activity, will have a local consistency determination made by the MOA. Rezoning, conditional uses, variances, and new subdivisions, are actions that require local consistency determinations by the MOA.

MOA zoning and subdivision ordinances are not part of the MOA CMP and are not subject to state review and approval. Therefore, amendments to the local zoning and subdivision ordinances will not require an amendment to the approved CMP. However, the local zoning and subdivision ordinances may not conflict with the MOA CMP. The Planning Department typically reviews changes to Title 21 and related zoning and platting ordinances for consistency with its CMP.

## **6.7 ELEVATION PROCESS AND APPEALS**

### **6.7.1 Elevation of State Consistency Determination**

Elevations of a consistency determination issued by a coordinating agency follow the procedures established under regulations at 11 AAC 110.600.

## **6.8 AMENDMENTS**

AS 11 AAC 365(b) requires that the MOA review and submit their plan to ADNR every 10 years for re-approval. The MOA may specify a shorter time frame to review its plan.

Every five years, the CMP Coordinator should initiate a local review of the approved coastal program. This formal review gives residents, developers, affected communities, and local landowners an opportunity to become familiar with the plan and its policies and to propose amendments. Changes can keep the CMP up-to-date and relevant. Some adjustments may be made to the MOA coastal zone boundaries or land-use districts based on new information. Policies may be further refined and standards adopted to facilitate the consistency review process. More detailed plans developed for special areas, such as AMSA plans, may be incorporated into the MOA CMP after state and federal approval.

In addition, after completing any regional planning efforts, the Planning and Zoning Commission may evaluate amending the MOA CMP to include pertinent policies, classifications, and resource data developed through the specific planning process. The MOA Assembly must approve all amendments to the MOA CMP. The Commissioner of ADNIR and the federal Office of Ocean and Coastal Resource Management must also approve any amendment to the MOA CMP. The process for amending the MOA CMP is provided in regulations at 11 AAC 114.

Two processes are available to the MOA for amending its CMP. The minor amendment process quickly incorporates minor changes. The significant amendment process provides a more thorough review for important changes. Examples of changes that are a significant amendment to the MOA CMP are:

- New policies or changes to existing policies,
- Alteration to the coastal zone boundaries,
- AMSA or ACMP special management areas, and
- Restrictions or exclusions of a use of state concern not previously restricted or excluded.

## **6.9 MONITORING AND ENFORCEMENT**

State resource agencies and municipalities attain their enforcement responsibility from AS 46.40.100. If an applicant fails to implement an adopted alternative measure, or if the applicant undertakes a project modification not incorporated into the final determination, and not reviewed under 11 AAC 110.800-820, it is a violation of the ACMP. The responsibility for enforcing alternative measures carried on state and federal permits rests with the permitting agency. The MOA strongly encourages the State to enforce alternative measures and bring violators into compliance.

Enforceable policies and ACMP standards are implemented at the state level through alternative measures incorporated into the project description. The ACMP does not issue a separate coastal permit, but relies on existing state authorities. Thus, state monitoring and enforcement of the ACMP occurs primarily through agency monitoring and enforcement of alternative measures on their permits. A district can assist in this process by monitoring projects and providing information to appropriate state agencies.

The CMP Coordinator and the Planning Department have first-hand knowledge of local concerns and issues related to development activities in the MOA coastal zone. The CMP Coordinator and the Planning Department may, within legal and logistical constraints, assist agencies and municipalities in their monitoring and compliance efforts. The intent is to ensure that alternative measures associated with the MOA CMP are carried out in the development process.

The CMP Coordinator will work with state and federal agencies in monitoring and enforcement, and provide responsible agencies with copies of local reports on noncompliance. This will include adherence to permit conditions, cooperative plans, and the policies of the CMP.

When a MOA permit or approval is required, the permit will include all conditions placed on the subject use during the consistency determination. The MOA shall do the same for subject uses, requiring a permit or approval from the MOA. In such instances, the permitting state and/or federal agency will share concurrent jurisdiction with the MOA, and either or both may seek to enforce the conditions placed on the subject use.

# **APPENDIX A**

## **Enforceable Policies**

### **INTRODUCTION**

This section includes the enforceable policies (EP) that apply throughout the Designated Recreation Use area.

#### ***EP-1 Uses and Activities and Setbacks***

The following uses are allowed and considered appropriate in the Recreation Use Area: primary and secondary structures, utilities and transportation features, direct access to streams or waterbodies or to accommodate water-dependent and/or water-related uses, habitat enhancement or restoration projects, land clearing for approved developments, impervious surfaces, clearing of native or other vegetation, removal of dead or decaying trees that threaten public or private property or health and safety. These uses are permitted provided they meet the following required conditions [and relevant Municipal regulations]:

- (a) A 50-foot setback from the Ordinary High Water (OH) of streams and/or waterbodies, as depicted on Maps 1, 2, & 3 unless there is no practicable alternative location for the use or activity.
- (b) For streams or waterbodies with contiguous wetlands, setback distances shall follow those defined in Table 2 of the Anchorage Wetlands Management Plan (see Appendix), which vary from 25' to 200'.

#### ***EP-2 Buffering and Screening***

- (A) For commercial, industrial, or institutional projects and associated activities within 200-feet of streams or waterbodies within the Recreation Use Area Designation, as shown on Maps 1, 2, & 3 or in Table 2. of the Anchorage Wetlands Management Plan (see Appendix), natural or landscaped vegetative buffers (with non-invasive species) or other screening measures shall be required specifically where the project site parallels or abuts, but lies outside, the stream or waterbody setbacks cited in EP-1.
- (B) Requirements for the size and extent of buffers or screening measures: At a minimum, these site-specific buffers or screens shall be 10' wide if composed of vegetation.

### ***EP-3 Waterfront Development***

In accordance with 11 AAC 112.200:

- (A) Water-dependent Uses and Activities within the Municipality of Anchorage include: docks; boat ramps and launches; marinas, including wet-boat storage and boathouses, haul-out facilities, permanent or transient docking spaces and dry-storage; boat fueling facilities, piers, wharfs, and mooring pilings; fish processing facilities and hatcheries; water-based tourism facilities and accessory attached housing; and transportation-related structures dependent on water access.
- (B) Water-related Uses and Activities within the Municipality of Anchorage include: retail stores and commercial activities such as hotels, restaurants, pedestrian-oriented access, and other similar uses that provide access to and/or views of the shoreline.

### ***EP-4 Coastal Access***

- (A) Development shall not interfere with existing legal public access to, or use of, the waterfront where such access or use has been established through acquisition, donation, dedication, or prescriptive easement.
- (B) New subdivisions shall be designed to maintain or enhance public access to, from, and along coastal waters within the coastal zone where practicable.

### ***EP-5 Capital Improvements***

- (A) Capital improvements on non-federal, publicly owned property shall incorporate walkways, shelters, viewing platforms, and landscaping whenever practicable to enhance public access to coastal waters.

# APPENDIX B

## Enforceable Policies Cross Reference Table

Enforceable Policy Name & Number	Resource Inventory & Analysis	Issues, Goals, and Objectives	Maps
Enforceable Policies Applicable Throughout the Coastal Zone/Designated Recreation Use Area			A, B, and C depict the designations for Anchorage Bowl, Chugiak-Eagle River, and Turnagain Arm
EP-1 Uses & Activities & Setbacks	pp. 16-19, 24, 26-31, 35-39	pp. 5-7	
EP-2 Buffering and Screening	pp. 16-19, 24, 26-31, 35-39	pp. 5-7	
EP-3 Waterfront Development	pp. 16-19, 24, 26-31, 35-39	pp. 5-7	
EP-4 Coastal Access	pp. 13-15, 26-29, 35-39	pp. 5-7	
EP-5 Capital Improvements	pp. 11, 13-15, 20-22, 24, 29-31, 35-39	pp. 5, 6	





## **APPENDIX C**

### **List of Abbreviations and Acronyms Used**

AAC	Alaska Administrative Code
ACMA	Alaska Coastal Management Act
ACMP	Alaska Coastal Management Program
ACWR	Anchorage Coastal Wildlife Refuge
ADFG	Alaska Department of Fish & Game
ADNR	Alaska Department of Natural Resources
AHRS	Alaska Historic Resources Survey
AMSA	Areas Meriting Special Attention
APNRF	Anchorage Bowl Park, Natural Resource, and Recreation Facility Plan
ASIDESS	Anchorage Sensitivity Index Decision Support System
BLM	Bureau of Land Management
CEA	Chugach Electric Association
CEDS	Comprehensive Economic Development Strategy
CFR	Code of Federal Regulations
CFR	Code of Federal Regulations
CMP	Coastal Management Plan
EFH	Essential Fish Habitat
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
GIS	Geographic Information System
gpm	Gallons per minute
GPS	Global Positioning System
HPA	Historic, Prehistoric, and Archaeologic Area
IHA	Important Habitat Area
ISER	Institute of Social and Economic Research
LRTP	Long-Range Transportation Plan

MEA	Matanuska Electric Association
ML&P	Municipal Light and Power
MOA	Municipality of Anchorage
MWMS	Municipal Watershed Management Services
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
P.L.	Public Law
PD	Municipality of Anchorage Planning Department
PME	Municipality of Anchorage Project Management and Engineering Department
Port	Port of Anchorage
RCA	Recreation and Coastal Access
RPU	Resource Policy Unit
TRF	Transportation Routes and Facilities
U.S.	United States
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service

## APPENDIX D

### Definitions

A number of the terms used in coastal management have specific regulatory or procedural meaning. To clarify the intent of the coastal management policies, the following definitions apply to language used in the plan policies.

**ACMP** is the Alaska Coastal Management Program.

**Active floodplain of watercourses** is the portion of a floodplain that is periodically inundated or encompassed by a mean annual flood ( $Q = 2.33$  flood frequency) and is characterized by active flowing channels, high water channels and adjacent unvegetated or sparsely vegetated bars.

**Adjacent** has the same meaning as in state law.

*11 AAC 112.990 (a) (2) "adjacent" means near but not necessarily touching; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

**AMSA** has the same meaning as in state law.

*AS 46.40.210 (1) "area which merits special attention" means a delineated geographic area within the coastal area which is sensitive to change or alteration and which, because of plans or commitments or because a claim on the resources within the area delineated would preclude subsequent use of the resources to a conflicting or incompatible use, warrants special management attention, or which, because of its value to the general public, should be identified for current or future planning, protection, or acquisition; these areas, subject to council definition of criteria for their identification, include:*

- (A) areas of unique, scarce, fragile or vulnerable natural habitat, cultural value, historical significance, or scenic importance;*
- (B) areas of high natural productivity or essential habitat for living resources;*
- (C) areas of substantial recreational value or opportunity;*
- (D) areas where development of facilities is dependent upon the utilization of, or access to, coastal water;*
- (E) areas of unique geologic or topographic significance which are susceptible to industrial or commercial development;*
- (F) areas of significant hazard due to storms, slides, floods, erosion, or settlement; and*
- (G) areas needed to protect, maintain, or replenish coastal land or resources, including coastal flood plains, aquifer recharge areas, beaches, and offshore sand deposits;*

**Avoid** has the same meaning as in state law.

**11 AAC 112.900. Sequencing process to avoid, minimize, or mitigate.** (a) As used in this chapter and for purposes of district enforceable policies developed under 11 AAC 114, "avoid, minimize, or mitigate" means a sequencing process of

- (1) avoiding adverse impacts to the maximum extent practicable; (2) where avoidance is not practicable, minimizing adverse impacts to the maximum extent practicable; or (3) if neither avoidance nor minimization is practicable, conducting mitigation to the extent appropriate and practicable; for purposes of this paragraph, "mitigation" means
- (A) on-site rehabilitation of project impacts to affected coastal resources during or at the end of the life of the project; or
- (B) to the extent on-site rehabilitation of project impacts is not practicable, substituting, if practicable, rehabilitation of or an improvement to affected coastal resources within the district, either on-site or off-site, for a coastal resource that is unavoidably impacted.
- (b) For a project that requires a federal authorization identified under 11 AAC 110.400, the coordinating agency shall consult with the authorizing federal agency during that federal agency's authorization review process to determine whether the mitigation requirements proposed by the federal agency for that federal authorization would satisfy the mitigation requirements of (a)(3) of this section. If the coordinating agency determines that the mitigation requirements proposed by the federal agency would not satisfy the mitigation requirements of (a)(3) of this section, the coordinating agency shall require appropriate mitigation in accordance with (a)(3) of this section.
- (c) For purposes of (a)(3) of this section, a determination of practicability includes the consideration of the following factors, as applicable: (1) the magnitude of the functional values lost by the impacted coastal resources;
- (2) the likelihood that the mitigation measure or improvement will succeed in actually rehabilitating the impacted coastal resources; and
- (3) the correlation between the functional values lost by the coastal resources impacted and the proposed mitigation measure or improvement.
- (d) To the extent feasible and not otherwise addressed by state or federal law, any requirements imposed under (a)(3) of this section for mitigation through on-site or off-site rehabilitation of project impacts shall be established by the coordinating agency at the time of the project's consistency review under 11 AAC 110.
- (e) In applying the mitigation process described in (a)(3) of this section, unless required by a federal agency issuing an authorization identified under 11 AAC 110.400 for the project, the coordinating agency may not require
- (1) that no net loss of impacted coastal resources occur; or
- (2) monetary compensation. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

**Base Flood** means the flood having one percent chance of being equaled or exceeded in any given year. Also referred to as the 100-year flood.

**Coastal Processes** are the collective results of physical, oceanographic, and meteorologic influences on the geographic landforms and nearshore waters of the Lake and Peninsula Borough. Coastal processes are also influenced by freshwater discharges from major river drainage systems and suspended sediments transported by rivers to coastal waters. Key features of coastal processes are shoreline erosion and accretion.

**Coastal Waters** has the same meaning as in state law.

*11 AAC 112.990. Definitions. (6) "coastal water" means those waters, adjacent to the shorelines, that contain a measurable quantity or percentage of sea water, including sounds, bays, lagoons, ponds, estuaries, and tidally influenced waters; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

**Consistency** means compliance with the standards of the ACMP, including the enforceable policies of this approved coastal plan.

**Consistent to the maximum extent practicable** means that federal government activities or uses, including development projects affecting the coastal zone of Alaska, are fully consistent with the standards of the ACMP unless compliance would violate another federal law (15 CFR 930.32.(a)).

**Cumulative Impacts** has the same meaning as in state law.

*11 AAC 110.990. Definitions. (a) (19) "cumulative impacts" means reasonably foreseeable effects on a coastal use or resource that result from the incremental impact of an individual project when viewed together with the impacts of past and currently authorized projects; (Eff. 7/1/2004, Register 170)*

**DEC** is the Alaska Department of Environmental Conservation.

**DF&G** is the Alaska Department of Fish and Game.

**Direct and significant impact** has the same meaning as in state law.

*11 AAC 114.990. Definitions. (13) "direct and significant impact" means an effect of a use, or an activity associated with the use, that will proximately contribute to a material change or alteration of the coastal waters, and in which*  
*(A) the use, or activity associated with the use, would have a net adverse effect on the quality of the resources;*  
*(B) the use, or activity associated with the use, would limit the range of alternative uses of the resources; or*  
*(C) the use would, of itself, constitute a tolerable change or alteration of the resources but which, cumulatively, would have an adverse effect; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

**Development** means any man-made change to improved or unimproved lands and coastal waters, including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling.

**DNR** is the Alaska Department of Natural Resources.

**Due deference** has the same meaning as in state law.

**11 AAC 110.990. Definitions. (a) (25) "due deference"** means that deference that is appropriate in the context of  
(A) the commentor's expertise or area of responsibility; and  
(B) all the evidence available to support any factual assertions of the commentor; (Eff. 7/1/2004, Register 170)

**Environmentally Responsible** means consistent with coastal resource protection and performance standards of this plan, and incorporating current best management practices with protection measures commensurate with the values of habitats affected.

**Eolian** mean applied to deposits arranged by the wind, as the sands and other loose materials along shores, etc.

**Estuary** has the same meaning as in state law.

**11 AAC 11.990 Definitions. (11) "estuary"** means a semiclosed coastal body of water that has a free connection with the sea and within which seawater is measurably diluted with freshwater derived from land drainage; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

**Facilities related to commercial fishing and seafood processing** has the same meaning as in state law.

**11 AAC 114.990. Definitions. (17) "facilities related to commercial fishing and seafood processing"** includes hatcheries and related facilities, seafood processing plants and support facilities, marine industrial and commercial facilities, and aquaculture facilities; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

**Feasible and prudent** means consistent with sound engineering practice and not causing environmental, social, or economic problems that outweigh the public benefit to be derived from compliance with the standard which is modified by the term "feasible and prudent".

**Floodway** means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height, usually one foot, at any point.

**Fluted ridge** means smooth, gutter-like channels, or deep smooth furrows worn in the face of ridges by glacial action.

**Fluvial** means of, found in, or produced by a river.

**Geomorphology** means the study of the formation of the earth's topographic features.

**Glaciolacustrine** means produced by or belonging to glacially formed lakes.

**Important fishing areas** are areas used consistently over time for commercial, sport, or subsistence fishing. Fishing includes harvesting marine invertebrates and plants.

**Important habitats** has the same meaning as in state law.

**11 AAC 112.300. Habitats.** (c) *For purposes of this section,*  
(1) **"important habitat"** means habitats listed in (a)(1) – (8) of this section and other habitats in the coastal area that are  
(A) designated under 11 AAC 114.250(h);  
(B) identified by the department as a habitat  
(i) the use of which has a direct and significant impact on coastal water; and  
(ii) that is shown by written scientific evidence to be significantly more productive than adjacent habitat; or  
(C) identified as state game refuges, state game sanctuaries, state range areas, or fish and game critical habitat areas under AS 16.20; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

**Lacustrine** means produced by or belonging to lakes.

**Local knowledge** has the same meaning given in state law except that “generally accepted by the local community” is that body of knowledge that is reflected in local plans, studies, policies and standards.

**11 AAC 114.990. Definitions.** (22) **"local knowledge"** means a body of knowledge or information about the coastal environment or the human use of that environment, including information passed down through generations, if that information is  
(A) derived from experience and observations; and  
(B) generally accepted by the local community; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

**Maintain** means to provide for continuation of current conditions and functions.

**Mariculture** is the captive cultivation of plants and animals in marine and estuarine waters for human consumption.

**Mean High Water** has the same meaning as in state law.

**11 AAC 53.900 (14) “mean high water”** means the tidal datum plane of the average of all the high tides, as would be established by the National Geodetic Survey, at any place subject to tidal influence; (Eff. 3/27/80, Register 73; am 7/5/2001, Register 159)

**Mean Higher High Water** is the average of all the daily higher high water recorded over a 19-year period or a computed equivalent period. It is usually associated with a tide exhibiting mixed characteristics.

**Mean Lower Low Water** has the same meaning as in state law.

*11 AAC 53.900 (17) “mean lower low water” means the tidal datum plane of the average of the lower of the two low waters of each day, as would be established by the National Geodetic Survey, at any place subject to tidal influence; (Eff. 3/27/80, Register 73; am 7/5/2001, Register 159)*

**Minimize** has the same meaning as in state law (see Avoid, Minimize and Mitigate).

**Mitigate** has the same meaning as in state law (see Avoid, minimize and Mitigate).

**Natural Hazard** is a condition created by a geological process, topography, water drainage, or unique weather condition that presents a significant hazard to life and property. See State Standard.

*11 AAC 112.990. Definitions. (15) “natural hazards”*

- (A) means the following natural processes or adverse conditions that present a threat to life or property in the coastal area: flooding, earthquakes, active faults, tsunamis, landslides, volcanoes, storm surges, ice formations, snow avalanches, erosion, and beach processes;*
- (B) includes other natural processes or adverse conditions designated by the department or by a district in a district plan; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

**One Hundred Year Flood** is a flood of a magnitude, which can be expected to occur on an average of once every 100 years. It is possible for this size flood to occur during any year, and possible in successive years. It would have a one percent chance of being equaled or exceeded in any year. Statistical analysis of available stream flow or storm records, or analysis of rainfall or runoff characteristics of the watershed, or topography and storm characteristics are used to determine the extent and depth of the 100-year flood.

**OPMP** is the Office of Project Management and Permitting with the Department of Natural Resources.

**Ordinary high water** has the same meaning as in state law.

*11 AAC 53.900 (23) “Ordinary high water” means the mark along the bank or shore up to which the presence and action of non-tidal water are so common and usual, and so long continued in all ordinary years, as to leave a natural line impressed on the bank or shore and indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics.; (Eff. 3/27/80, Register 73; am 7/5/2001, Register 159)*

**Paludal** means pertaining to swamps or marshes, and to deposits deposited in a swamp environment.



**Practicable** has the same meaning as in state law.

*11 AAC 112.990. Definitions. (18) "practicable" means feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the standard; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

**Proper and improper uses** are the can-do and can't-do uses for the area.

**Public need** has the same meaning as in state law except that “documented” includes those needs expressed in locally adopted plans, studies, policies and standards.

*11 AAC 114.990 (35) "public need" means a documented need of the general public and not that of a private person; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

**Resource agency** has the same meaning as in state law.

*Sec. 46.39.010. (2) "resource agency" means  
(A) the Department of Environmental Conservation;  
(B) the Department of Fish and Game; or  
(C) the Department of Natural Resources.*

**Saltwater wetlands** has the same meaning as in state law. (see also “wetlands”)

*11 AAC 112.990. Definitions. (25) "saltwater wetlands" means those coastal areas along sheltered shorelines characterized by halophilic hydrophytes and macroalgae extending from extreme low tide to an area above extreme high tide that is influenced by sea spray or tidally induced water table changes; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

**Shall** means mandatory; it requires a course of action or set of conditions to be achieved.

**Should** states intent for a course of action or set of conditions to be achieved. This implies that case-specific discretion may be applied for achieving the intent of the action.

**Significant adverse impact** means an impact as indicated in state law by “direct and significant impact”.

**Subject uses** is a description of the land and water uses and activities which are subject to the district plan.

**Subsidence** is a lowering in elevation of ground surface due to underground geologic or hydrologic change. It can be a common occurrence in areas susceptible to seismic activity and where excessive water table depletion occurs.

**Subsistence Use Areas** are coastal habitat areas, used traditionally or occasionally in response to seasonal or cyclic resource abundance, where subsistence harvests of fish, wildlife, and other biological resources are conducted.

**Subsistence uses** has the same meaning as in state law.

*AS 16.05.940 (33) "subsistence uses" means the noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption; in this paragraph, "family" means persons related by blood, marriage, or adoption, and a person living in the household on a permanent basis; (Eff. ///; Register )*

**Surface Waters** include streams, rivers, ponds, lakes, and contiguous open water wetlands.

**Tsunami** is a great sea wave produced by submarine earth movements or volcanic eruption.

**Uses of state concern** has the meaning as in state law.

*AS 46.40.210 (12) "uses of state concern" means those land and water uses that would significantly affect the long-term public interest; "uses of state concern" include*

- (A) uses of national interest, including the use of resources for the siting of ports and major facilities that contribute to meeting national energy needs, construction and maintenance of navigational facilities and systems, resource development of federal land, and national defense and related security facilities that are dependent upon coastal locations;*
- (B) uses of more than local concern, including those land and water uses that confer significant environmental, social, cultural, or economic benefits or burdens beyond a single coastal resource district;*
- (C) the siting of major energy facilities, activities pursuant to a state or federal oil and gas lease, or large-scale industrial or commercial development activities that are dependent on a coastal location and that, because of their magnitude or the magnitude of their effect on the economy of the state or the surrounding area, are reasonably likely to present issues of more than local significance;*
- (D) facilities serving statewide or interregional transportation and communication needs; and*
- (E) uses in areas established as state parks or recreational areas under AS 41.21 or as state game refuges, game sanctuaries, or critical habitat areas under AS 16.20.*

**Waterbody** means any area of surface water with a permanent minimum surface area of 2,500 square feet (see *Anchorage Wetlands Management Plan*).

**Water-Dependent** has the same meaning as in state law.

**11 AAC 112.990. Definitions. (31) "water-dependent"** means a use or activity that can be carried out only on, in, or adjacent to a water body because the use requires access to the water body;

**(32) "water-related"** means a use or activity that is not directly dependent upon access to a water body, but which provides goods or services that are directly associated with water-dependence and which, if not located adjacent to a water body, would result in a public loss of quality in the goods or services offered; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

**Waterfront** means the area along the coastline between mean higher high water and mean high sea level.

**Water-Related** has the same meaning in state law.

**Wetlands** has the same meaning as in state law.

**11 AAC 112.990. Definitions. (33) "wetlands"** means saltwater wetlands and those freshwater wetlands that have a direct drainage to coastal waters; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)



## APPENDIX E

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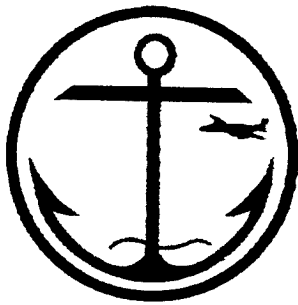
## **APPENDIX F**

### **Description of ASIDESS Model**

Anchorage Sensitivity Index Decision Support System ASIDESS User Guide

July 21, 2005, AeroMap U.S.





**Anchorage Sensitivity Index  
Decision Support System**

# **ASIDESS User Guide**



**July 21, 2005**

**AERO MAP U.S.**

YOUR GEOSPATIAL DATA SOLUTION  
AN AERO METRIC COMPANY

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# Introduction

The Anchorage Sensitivity Index Decision Support System (ASIDESS) is a Decision Support System (DSS) that enables the user to explore the sensitivity of areas within the Anchorage Bowl to development. The Sensitivity Index score for each pixel is derived from the cumulative results for each of four types of impacts to sensitivity based on 21 datasets. These data sets are grouped into five different topics: Aquatic, Coastal and Public Access, Geotechnical Hazards, Habitat and Human Impacts. Four of these classes contribute to the score. One, Coastal and Public Access, provides contextual information for the model users.

ASIDESS employs a standard weighting and rating methodology to derive the scores for each pixel. Each data set is converted to raster (if not already in raster format) and the resulting pixels are each assigned a value from 0-4 based on their attribute. The user may adjust these rates. These values are combined for each of the four contributing classes. Finally, the Aquatic, Geotechnical Hazards, Habitat and Human Impacts results are normalized and weights are applied based on user preferences. The resulting data set indicates each pixel's sensitivity to development based on the weights and rates used for the model run.

ASIDESS is built in ArcGIS using ModelBuilder and provides a simple interface and a repeatable procedure that allows for data updates and comparisons between different scenarios. The user may update data sets and change the class weights using this primary interface. Changes to the data set rates may be performed through the standard ModelBuilder interface.

ASIDESS consists of seven models and a custom interface. Detailed information about the components comprises the remainder of this document. The following documentation includes a graphic of each model and the Help files created during this project to assist the user with the custom interface and the ModelBuilder models.

Area of Interest boundaries may be set by keying in coordinates or by referring to a shapefile that contains a rectangle defining the AOI. The place to do this is in the Environment Settings window, reached by going to the MOA toolbar under the main menu. Look for a tool icon labeled "and cross Properties". In the Properties window choose the Environment tab. Under the Values button, click on the Environment Settings and click on the area that says "Sample AOI Center". Then type in the polygon name you want to use for the rectangle. Then browse to a shapefile that contains the data. The shapefile should contain a rectangle that defines the area of interest.

Untitled - ArcMap - ArcInfo

File Edit View Insert Selection Tools Window Help

1:915,297

Layer: marine polygon

Gegstatistical Analyst

Editor Task: Create

**Layers**

- marine polygon

**Layer Properties**

General | Source | Selection | Display | Symbology | Fields | Definition Query | Labels | J

Show:

**Features**

**Categories**

- Unique values
- Unique values, many to one
- Match to symbols in a layer

**Quantities**

**Charts**

**Multiple Attributes**

**Draw categories using unique values of one field.**

Value Field: TYPE

Color Scheme:

Symbol	Value	Label
<input checked="" type="checkbox"/>	<all other values>	<all other values>
	<Heading>	TYPE
	COASTLAND	COASTLAND
	ISLAND	ISLAND
	MARINE WATER	MARINE WATER
	MUDFLAT	MUDFLAT
	STREAM	STREAM

Add All Values Add Values... Remove Remove

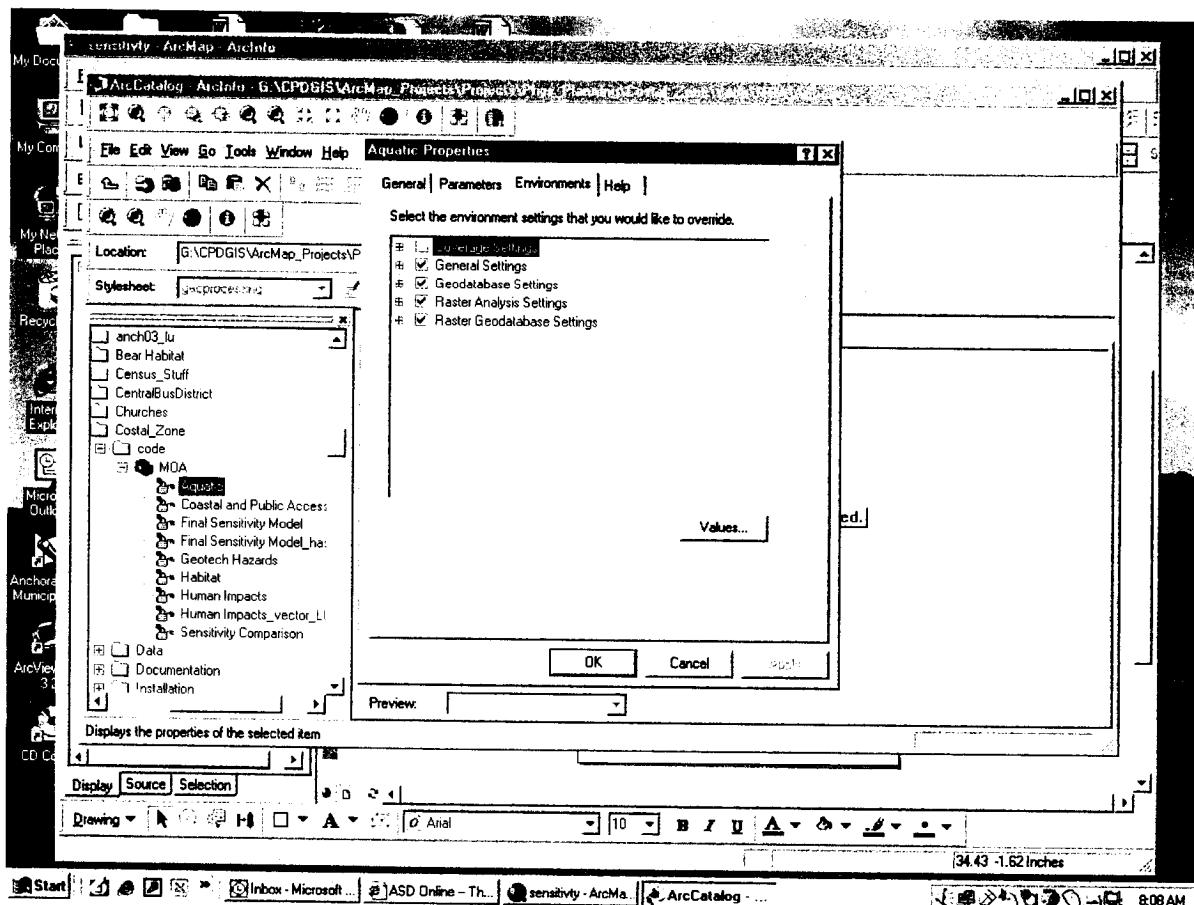
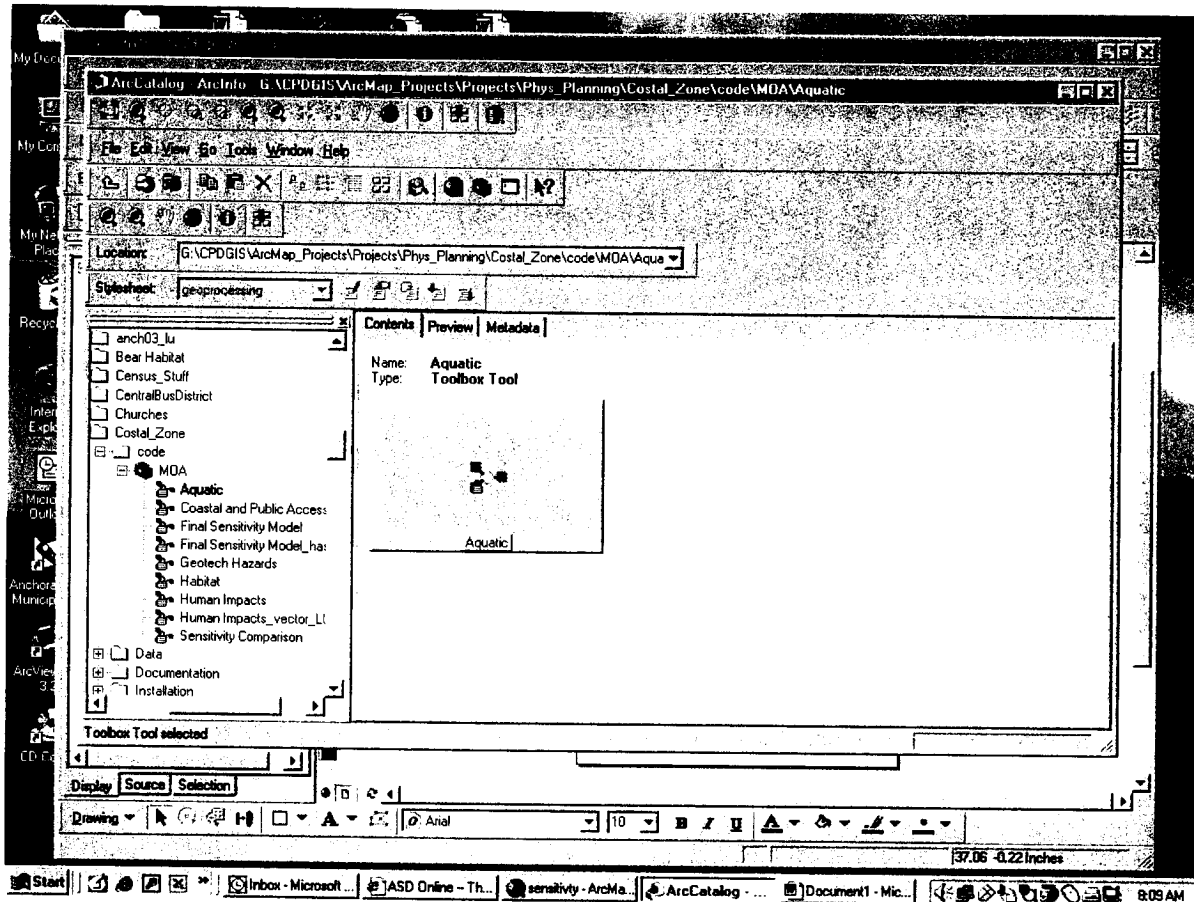
OK Cancel

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## Script Example

### ▼Model

#### Elements

Name	Explanation
Normalize Habitat	<p>Multiplication factor used to normalize the values of each of the topics. This adjusts the values of the final data set for each submodel so that they are on the same scale (0-20) and mitigates the effects of some models requiring more data sets than others.</p> <ul style="list-style-type: none"><li>Habitat = 0.55556</li></ul>
Habitats Weight	<p>Multiplies the normalized Habitat data by the weight assigned by the user.</p> <ul style="list-style-type: none"><li>Default = 30</li></ul>
Normalize Geotech	<p>Multiplication factor used to normalize the values of each of the topics. This adjusts the values of the final data set for each submodel so that they are on the same scale (0-20) and mitigates the effects of some models requiring more data sets than others.</p> <ul style="list-style-type: none"><li>Geotech = 1</li></ul>
Geotechnical Weight	<p>Multiplies the normalized Geotechnical data by the weight assigned by the user.</p> <ul style="list-style-type: none"><li>Default = 30</li></ul>
Normalize Aquatic Resources	<p>Multiplication factor used to normalize the values of each of the topics. This adjusts the values of the final data set for each submodel so that they are on the same scale (0-20) and mitigates the effects of some models requiring more data sets than others.</p> <ul style="list-style-type: none"><li>Aquatic Resources = 1</li></ul>
Aquatic Resources Weight	<p>Multiplies the normalized Aquatic Resources data by the weight assigned by the user.</p> <ul style="list-style-type: none"><li>Default = 30</li></ul>

Name	Explanation
Normalize Human Impacts	<p>Multiplication factor used to normalize the values of each of the topics. This adjusts the values of the final data set for each submodel so that they are on the same scale (0-20) and mitigates the effects of some models requiring more data sets than others.</p> <ul style="list-style-type: none"> <li>Human Impacts = 5</li> </ul>
Human Impact Weight	<p>Multiplies the normalized Human Impacts data by the weight assigned by the user.</p> <ul style="list-style-type: none"> <li>Default = 10</li> </ul>
Combine Weighted Inputs	<p>Calculates the sum of the normalized and weighted data from each topic.</p>

## Aquatic Model

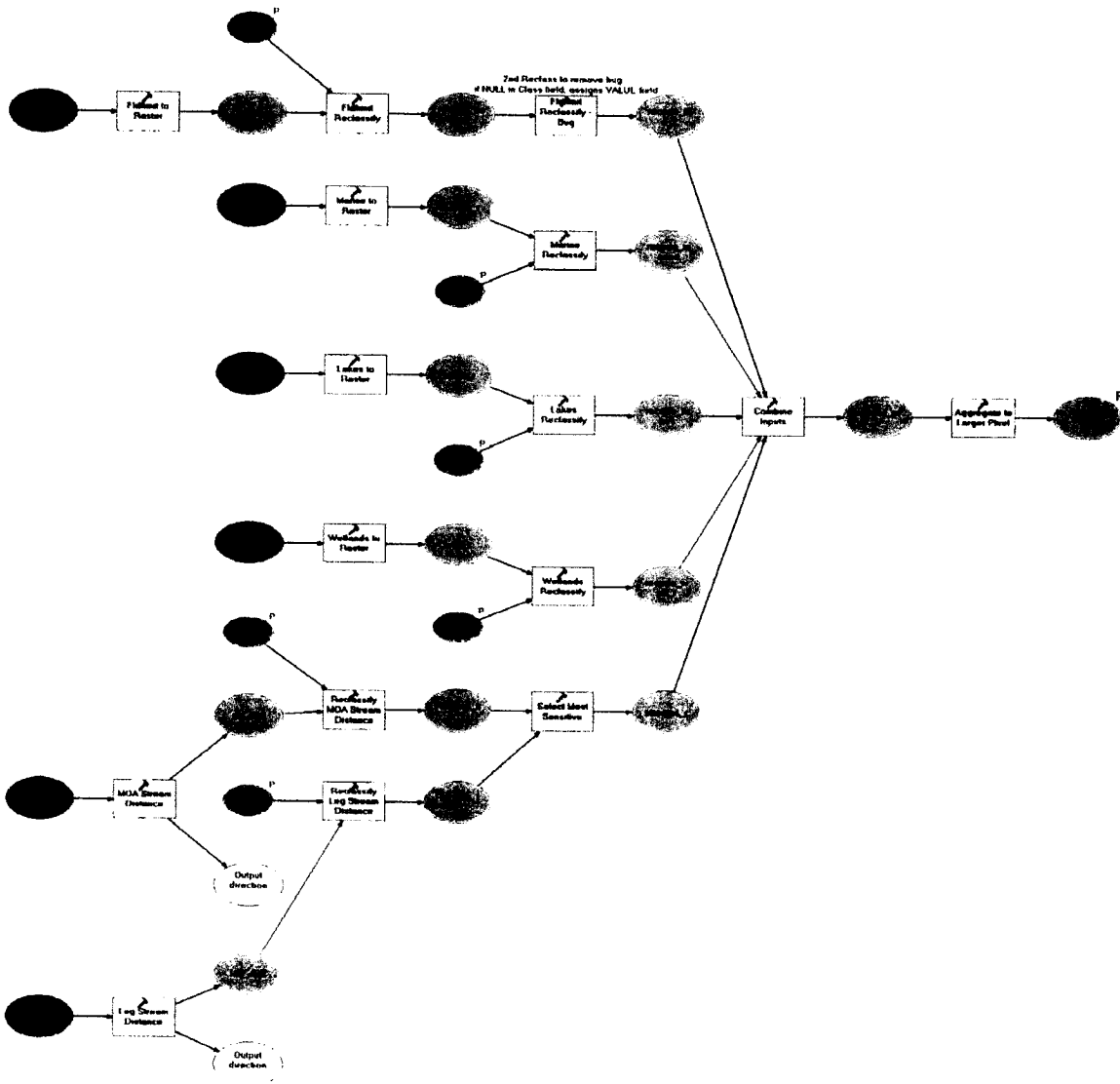


Figure 3: Aquatic Model

### Aquatic

collapse all

This tool is one component of the Anchorage Sensitivity Index Decision Support System (ASIDESS). ASIDESS is designed to assist in the assessment of development plans for areas in the Anchorage Bowl with regards to the Coastal Management Plan. Twenty-one different data sets grouped into four topics contribute to the output data set. The four topics are: Aquatic Resources, Habitat, Geotechnical Hazards and Human Impacts. A fifth topic, Coastal and Public Access is also a component of the model, but does not contribute to the output sensitivity data. Rather, it creates a data set that can inform the user as to the accessibility of areas within the coastal zone management area.

The Aquatic Resources model incorporates the streams, lakes, marine areas, wetlands, and flood zones of the Anchorage Bowl into the assessment model.

Each data set is converted to raster and then rated on a scale of 0 - 4 for sensitivity to development. 0 is not sensitive and 4 is most sensitive.

Note: The input data sets do not cover the same areas. Some areas, especially on the eastern edge of the study area, are not well covered. Areas covered by fewer data sets have a lower possible total score.

#### ▼ Usage Tips

The use of models enables a repeatable, flexible process that can incorporate updated data or even new data sets. Updates to the data are almost automatic, assuming the revised data set has the same name and is in the same location as the original data set.

If a data set has been updated, run the model to update the final output of the model, Aquatic.

To edit the rates assigned to any data set, open the model, select the reclassification function and change the rates to the desired values.

#### ▼ Command line syntax

Aquatic <aquatic> <Fldlimit\_Reclassification> <Marine\_Reclassification> <Lakes\_Reclassification> <Wetlands\_Reclassification> <MOA\_Streams\_Reclassification> <Leg\_Streams\_Reclassification>

Parameters

Expression	Explanation
<aquatic>	Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model. <ul style="list-style-type: none"><li>• Default is Aquatic</li></ul>
<Fldlimit_Reclassification>	Rating values for the Fldlimit data set

<b>Expression</b>	<b>Explanation</b>
<Marine_Reclassification>	Rating values for the Marine data set
<Lakes_Reclassification>	Rating values for the Lakes data set
<Wetlands_Reclassification>	Rating values for the Wetlands data set
<MOA_Streams_Reclassification>	Rating values for the MOA Streams data set
<Leg_Streams_Reclassification>	Rating values for the Leg Streams data set

#### **Command Line Example**

#### **▼Scripting syntax**

Aquatic (aquatic, Fldlimit\_Reclassification, Marine\_Reclassification, Lakes\_Reclassification, Wetlands\_Reclassification, MOA\_Streams\_Reclassification, Leg\_Streams\_Reclassification)

Parameters

<b>Expression</b>	<b>Explanation</b>
aquatic (Required)	<p>Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model.</p> <ul style="list-style-type: none"> <li>• Default is Aquatic</li> </ul>
Fldlimit Reclassification (Required)	Rating values for the Fldlimit data set
Marine Reclassification (Required)	Rating values for the Marine data set
Lakes Reclassification (Required)	Rating values for the Lakes data set
Wetlands Reclassification (Required)	Rating values for the Wetlands data set
MOA Streams Reclassification (Required)	Rating values for the MOA Streams data set
Leg Streams Reclassification (Required)	Rating values for the Leg Streams data set

## Script Example

### ▼Model

#### Elements

Name	Explanation
Leg Stream Distance	Calculates the distance a cell is from a Leg Stream. Cell size is 82.
MOA Stream Distance	Calculates the distance a cell is from an MOA Stream. Cell size is 82.
Marine to Raster	Converts Marine data to raster using the Type field.
Marine Reclassify	Reclassify the Marine Type data to numeric ratings.
Lakes to Raster	Converts Lakes data to raster using the Plot field.
Lakes Reclassify	Reclassify the Lakes Plot data to numeric ratings.
Fldlimit to Raster	Converts Fldlimit data to raster using the Class field.
Fldlimit Reclassify	Reclassify the Floodlimit Class data to numeric ratings.
Fldlimit Reclassify - Bug Workaround	This reclassify is a bug workaround. If a feature does not have a value in the Class field, the value from the Value field is inserted in the Class field. This function corrects this bug for the Fldlimit data only.
Reclassify Leg Stream Distance	Reclassify the Leg Stream distance data to numeric ratings.
Reclassify MOA Stream Distance	Reclassify the MOA Stream distance data to numeric ratings.
Select Most Sensitive	Using the Map Algebra function "Max", selects the most sensitive rating for a cell from the two stream distance data sets. The more sensitive (greater number) of the data sets is output to Streams_r

<b>Name</b>	<b>Explanation</b>
Wetlands to Raster	Converts Wetlands data to raster using the Designation field.
Wetlands Reclassify	Reclassify the Wetlands Designation data to numeric ratings.
Combine Inputs	Uses the Map Algebra "Sum" function to add the values from the input data sets to determine the sensitivity of a cell to development for Aquatic Resources.
Aggregate to Larger Pixel	Aggregates the combined data to 82 foot pixels from 20.5 foot pixels using the Maximum specification.

## Coastal and Public Access

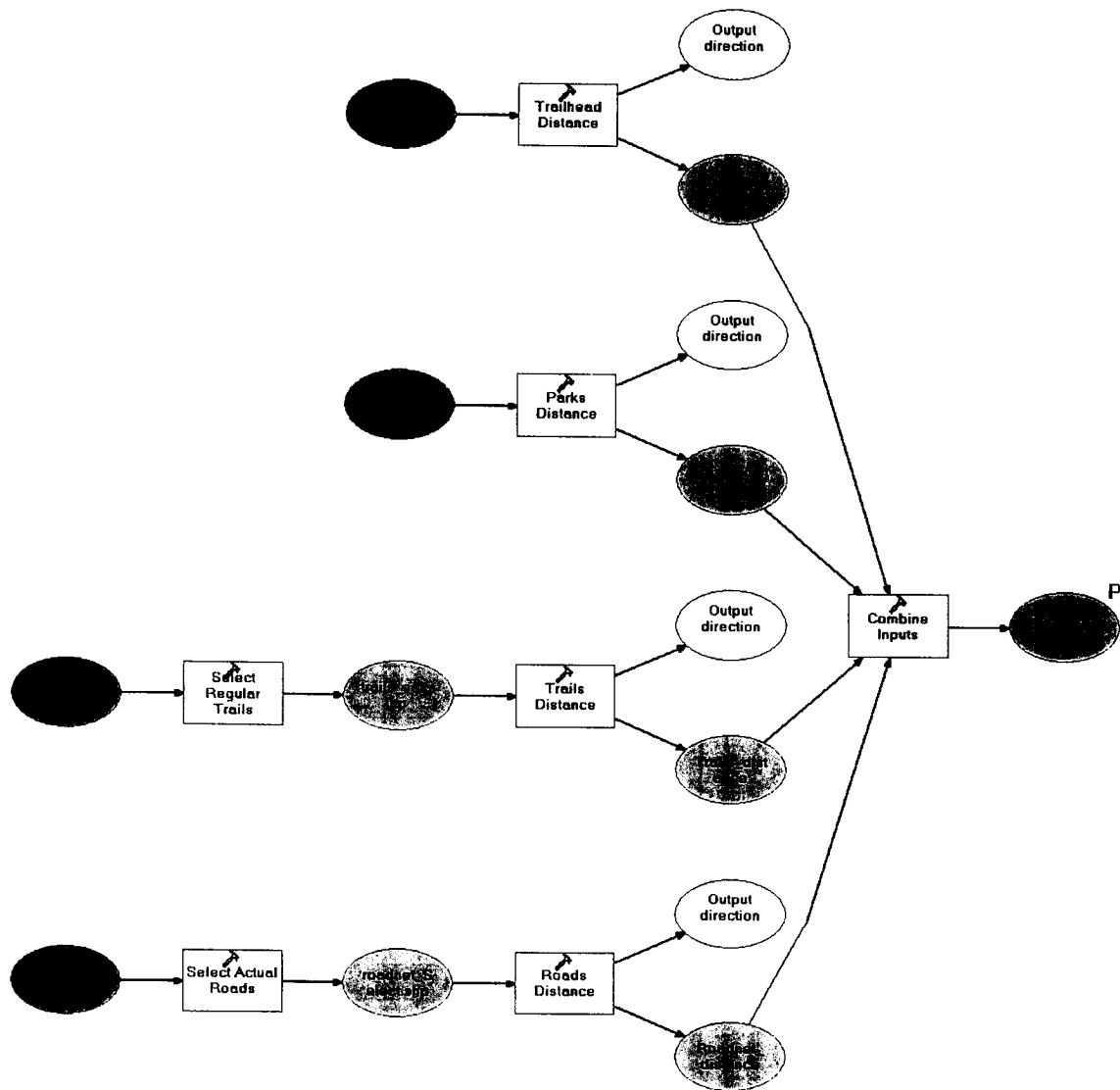


Figure 4: Coastal and Public Access Model



### Coastal and Public Access

**collapse all**

This tool is one component of the Anchorage Sensitivity Index Decision Support System (ASIDESS). ASIDESS is designed to assist in the assessment of development plans for areas in the Anchorage Bowl with regards to the Coastal Management Plan.

Coastal and Public Access is also a component of the model, but does not contribute to the output sensitivity data. Rather, it creates a data set that can inform the user as to the accessibility of areas within the coastal zone management area.

The Coastal and Public Access model calculates the distance cells are from Roads, Parks, Trails and Trailheads.

#### ▼Usage Tips

The use of models enables a repeatable, flexible process that can incorporate updated data or even new data sets. Updates to the data are almost automatic, assuming the revised data set has the same name and is in the same location as the original data set.

If a data set has been updated, run the model to update the final output of the model, Coastal and Public Access.

#### ▼Command line syntax

Coastal and Public Access <Coast\_access>

##### Parameters

Expression	Explanation
<Coast_access>	Name of the file to be output. <ul style="list-style-type: none"><li>• Default is Coast_access.</li></ul>

##### Command Line Example

#### ▼Scripting syntax

Coastal and Public Access (Coast\_access)

##### Parameters

Expression	Explanation
Coast_access (Required)	Name of the file to be output.

**Expression****Explanation**

- Default is Coast\_access.

**Script Example****▼Model****Elements****Name****Explanation**

Parks Distance

Calculates the distance a cell is from a Park. Cell size is 82.

Select Regular Trails

Trails Distance

Calculates the distance a cell is from a Trail. Cell size is 82.

Select Actual Roads

Roads Distance

Calculates the distance a cell is from an Road. Cell size is 82.

Trailhead Distance

Calculates the distance a cell is from a Trailhead. Cell size is 82.

Combine Inputs

Uses the Map Algebra "Min" function determine the minimum distance a cell is from a Trailhead, Park, Trail, or Raod.

## Geotechnical Hazards

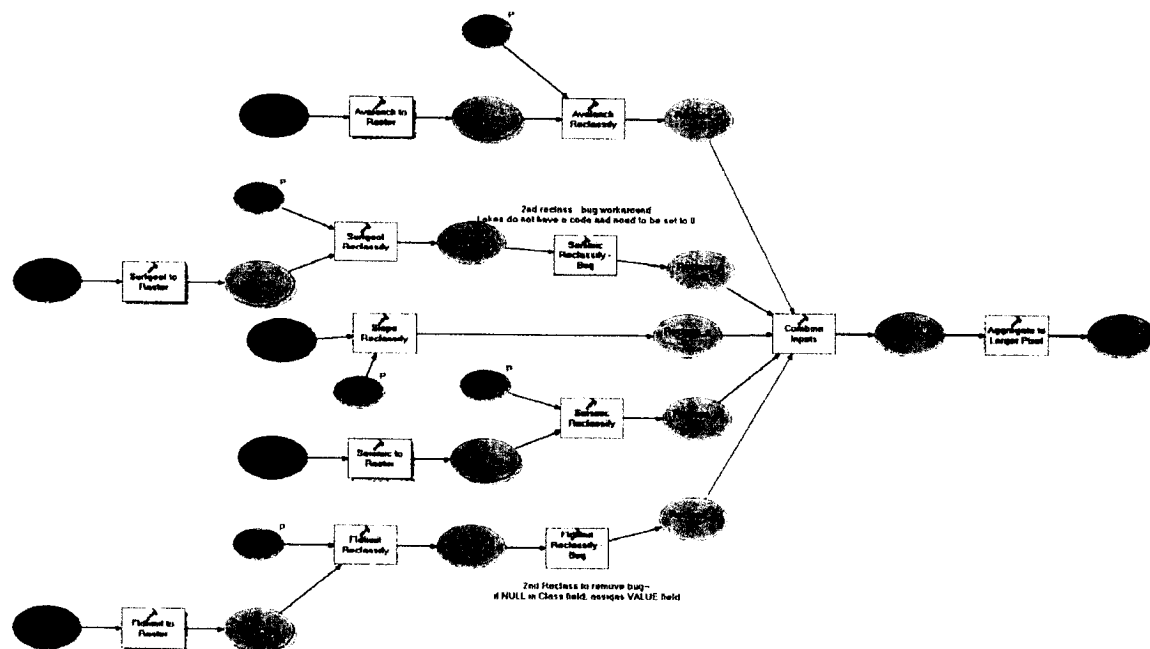


Figure 5: Geotechnical Hazards Model

### Geotech Hazards

[collapse all](#)

This tool is one component of the Anchorage Sensitivity Index Decision Support System (ASIDESS). ASIDESS is designed to assist in the assessment of development plans for areas in the Anchorage Bowl with regards to the Coastal Management Plan.

The Geotech Hazards model incorporates avalanche, surficial geology, seismic data, and flood zones of the Anchorage Bowl into the assessment model.

Each data set is converted to raster and then rated on a scale of 0 - 4 for sensitivity to development. 0 is not sensitive and 4 is most sensitive.

Note: The input data sets do not cover the same areas. Some areas, especially on the eastern edge of the study area, are not well covered. Areas covered by fewer data sets have a lower possible total score.

#### ▼Usage Tips

The use of models enables a repeatable, flexible process that can incorporate updated data or even new data sets. Updates to the data are almost automatic, assuming the revised data set has the same name and is in the same location as the original data set.

If a data set has been updated, run the model to update the final output of the model, Geotech.

To edit the rates assigned to any data set, open the model, select the reclassification function and change the rates to the desired values.

#### ▼Command line syntax

Geotech Hazards <Avalanch\_Reclassification> <Surfgeol\_Reclassification> <Seismic\_Reclassification> <Fldlimit\_Reclassification> <Slope\_Reclassification> <geotech>

#### Parameters

Expression	Explanation
<Avalanch_Reclassification>	Rating values for the Avalanch data set
<Surfgeol_Reclassification>	Rating values for the Surfgeol data set
<Seismic_Reclassification>	Rating values for the Seismic data set
<Fldlimit_Reclassification>	Rating values for the Fldlimit data set

**Expression****Explanation**

<Slope\_Reclassification>

Rating values for the Slope data set

<geotech>

Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model.

- Default is Geotech

**Command Line Example****▼Scripting syntax**

Geotech Hazards (Avalanch\_Reclassification, Surfgeol\_Reclassification, Seismic\_Reclassification, Fldlimit\_Reclassification, Slope\_Reclassification, geotech)

**Parameters****Expression****Explanation**

Avalanch Reclassification (Required)

Rating values for the Avalanch data set

Surfgeol Reclassification (Required)

Rating values for the Surfgeol data set

Seismic Reclassification (Required)

Rating values for the Seismic data set

Fldlimit Reclassification (Required)

Rating values for the Fldlimit data set

Slope Reclassification (Required)

Rating values for the Slope data set

geotech (Required)

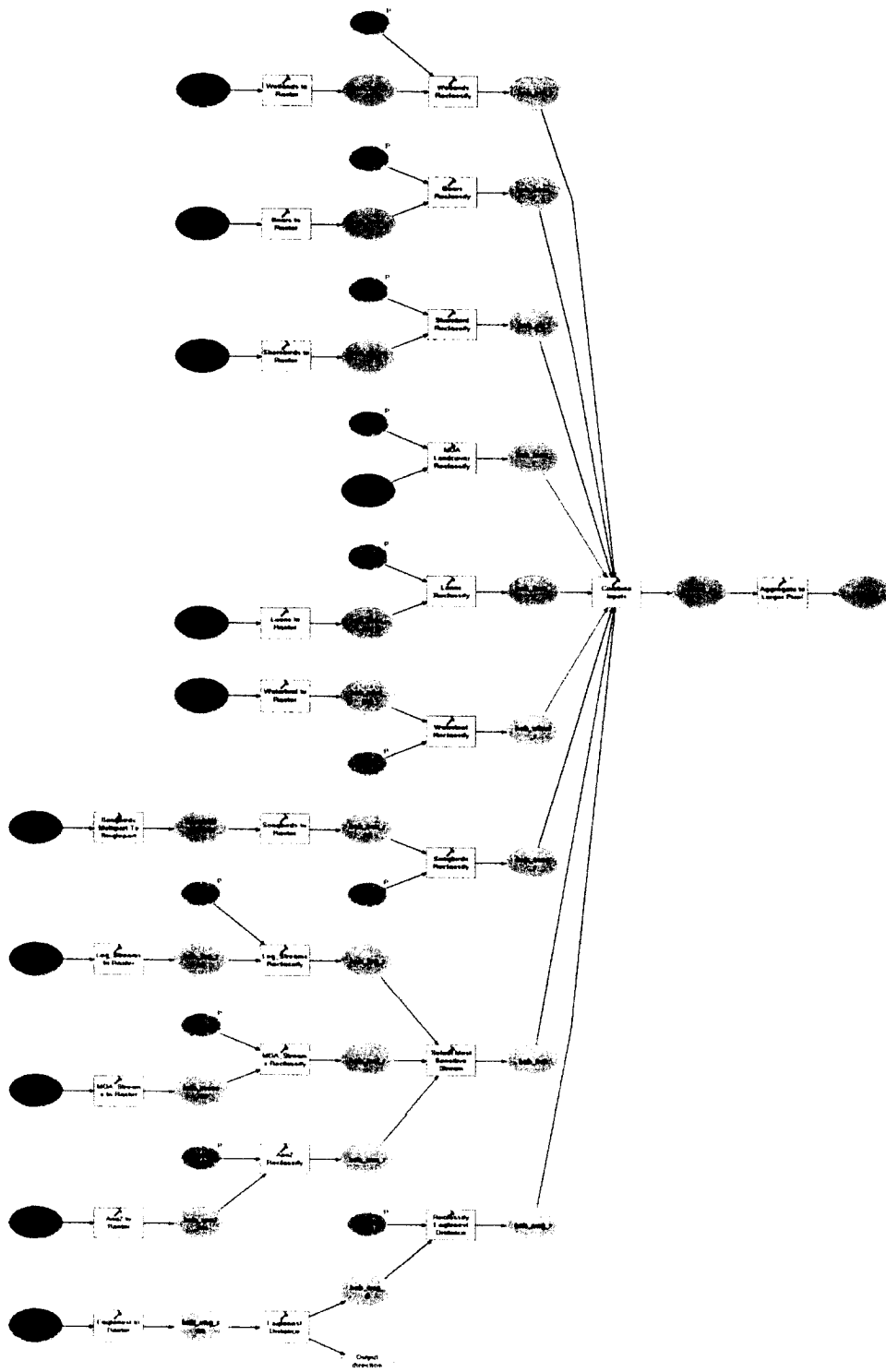
Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model.

- Default is Geotech

**▼Model****Elements****Name****Explanation**

<b>Name</b>	<b>Explanation</b>
Avalanch to Raster	Converts Avanch data to raster using the AVCODE field.
Avalanch Reclassify	Reclassify the Avalanch VALUE data to numeric ratings.
Seismic to Raster	Converts Seismic data to raster using the CODE field.
Seismic Reclassify	Reclassify the Seismic CODE data to numeric ratings.
Surfgeol to Raster	Converts Surfgeol data to raster using the UNIT_ABBV field.
Surfgeol Reclassify	Reclassify the Surfgeol UNIT_ABBV data to numeric ratings.
Seismic Reclassify - Bug	This reclassify is a bug workaround. If a feature does not have a value in the UNIT_ABBV field, the value from the Value field is inserted in the UNIT_ABBV field. This function corrects this bug for the Seismic data only.
Fldlimit to Raster	Converts Fldlimit data to raster using the Class field.
Fldlimit Reclassify	Reclassify the Floodlimit Class data to numeric ratings.
Fldlimit Reclassify - Bug Workaround	This reclassify is a bug workaround. If a feature does not have a value in the Class field, the value from the Value field is inserted in the Class field. This function corrects this bug for the Fldlimit data only.
Slope Reclassify	
Combine Inputs	Uses the Map Algebra "Sum" function to add the values from the input data sets to determine the sensitivity of a cell to development for Geotechnical Hazards.
Aggregate to Larger Pixel	Aggregates the combined data to 82 foot pixels from 20.5 foot pixels using the Maximum specification.

# Habitat



**Figure 6: Habitat Model**

## Habitat

[collapse all](#)

This tool is one component of the Anchorage Sensitivity Index Decision Support System (ASIDESS). ASIDESS is designed to assist in the assessment of development plans for areas in the Anchorage Bowl with regards to the Coastal Management Plan.

The Habitat model incorporates habitat data for bears, shorebirds, loons, waterfowl, songbirds, known eagle nests, wetlands, landcover, and fish habitat data for the Anchorage Bowl into the assessment model.

Each data set is converted to raster and then rated on a scale of 0 - 4 for sensitivity to development. 0 is not sensitive and 4 is most sensitive.

Note: The input data sets do not cover the same areas. Some areas, especially on the eastern edge of the study area, are not well covered. Areas covered by fewer data sets have a lower possible total score.

### ▼Usage Tips

The use of models enables a repeatable, flexible process that can incorporate updated data or even new data sets. Updates to the data are almost automatic, assuming the revised data set has the same name and is in the same location as the original data set.

If a data set has been updated, run the model to update the final output of the model, Habitat

To edit the rates assigned to any data set, open the model, select the reclassification function and change the rates to the desired values.

### ▼Command line syntax

```
Habitat <MOA_Landcover_Reclassification> <Wetlands_Reclassification> <Bears_Reclassification>
<Waterfowl_Reclassification> <Loons_Reclassification> <Shorebird_Reclassification>
<Eaglenest_Dist__Reclassification> <Leg_Streams_Reclassification>
<MOA_Streams_Reclassification> <Ana2_Reclassification> <Songbirds_Reclassification> <Habitat>
```

### Parameters

Expression	Explanation
<MOA_Landcover_Reclassification>	Rating values for the MOALandcover data set
<Wetlands_Reclassification>	Rating values for the E03MWetlands data set
<Bears_Reclassification>	Rating values for the Bears data set
<Waterfowl_Reclassification>	Rating values for the Watfowl data set



<b>Expression</b>	<b>Explanation</b>
<Loons_Reclassification>	Rating values for the Loonnest data set
<Shorebird_Reclassification>	Rating values for the Shbird data set
<Eaglenest_Dist__Reclassification>	Rating values for the Eaglenst data set
<Leg_Streams_Reclassification>	Rating values for the Leg_Streams data set
<MOA_Streams_Reclassification>	Rating values for the MOA_Streams data set
<Ana2_Reclassification>	Rating values for the Ana2 data set
<Songbirds_Reclassification>	Rating values for the Songbird data set
<Habitat>	<p>Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model.</p> <ul style="list-style-type: none"> <li>• Default is Habitat</li> </ul>

### **Command Line Example**

#### **▼Scripting syntax**

Habitat (MOA\_Landcover\_Reclassification, Wetlands\_Reclassification, Bears\_Reclassification, Waterfowl\_Reclassification, Loons\_Reclassification, Shorebird\_Reclassification, Eaglenest\_Dist\_\_Reclassification, Leg\_Streams\_Reclassification, MOA\_Streams\_Reclassification, Ana2\_Reclassification, Songbirds\_Reclassification, Habitat)

#### **Parameters**

<b>Expression</b>	<b>Explanation</b>
MOA Landcover Reclassification (Required)	Rating values for the MOALandcover data set
Wetlands Reclassification (Required)	Rating values for the E03MWetlands data set
Bears Reclassification (Required)	Rating values for the Bears data set

**Expression****Explanation**

Waterfowl Reclassification  
(Required)

Rating values for the Watfowl data set

Loons Reclassification (Required)

Rating values for the Loonnest data set

Shorebird Reclassification  
(Required)

Rating values for the Shbird data set

Eaglenest Dist. Reclassification  
(Required)

Rating values for the Eaglenst data set

Leg\_Streams Reclassification  
(Required)

Rating values for the Leg\_Streams data set

MOA\_Streams Reclassification  
(Required)

Rating values for the MOA\_Streams data set

Ana2 Reclassification (Required)

Rating values for the Ana2 data set

Songbirds Reclassification  
(Required)

Rating values for the Songbird data set

Habitat (Required)

Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model.

- Default is Habitat

**Script Example****▼Model****Elements****Name****Explanation**

Eaglenest to Raster

Converts Eaglenest data to raster by indicating each 20.5 ft cell an eaglesnest falls into.

Eaglenest Distance

Reclassify Eaglenest Distance

Reclassify the Eaglenest distance data to numeric ratings.

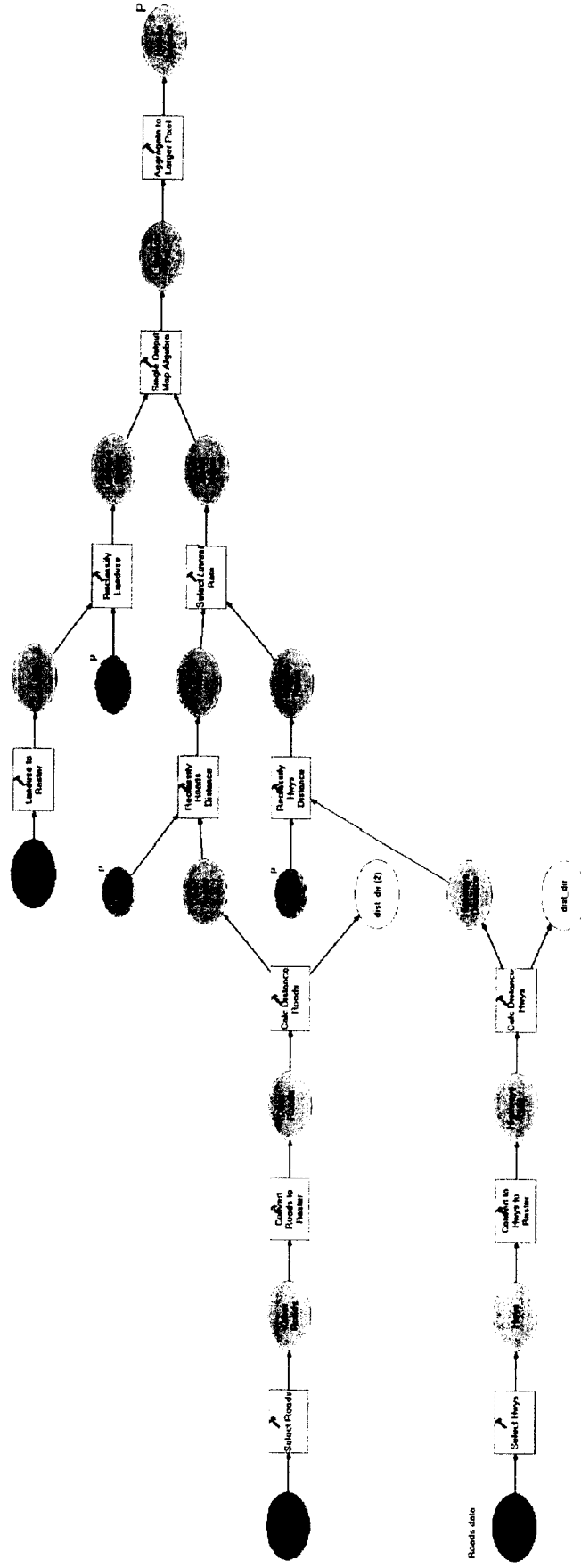
Wetlands to Raster

Converts Wetlands data to raster using the Designation

<b>Name</b>	<b>Explanation</b>
	field.
Wetlands Reclassify	Reclassify the Wetlands Designation data to numeric ratings.
Leg_Streams to Raster	Converts Leg_Streams data to raster by indicating each 20.5 ft cell a stream falls into.
Leg_Streams Reclassify	Reclassify the Leg_Streams data to numeric ratings.
MOA_Streams to Raster	Converts MOA_Streams data to raster by indicating each 20.5 ft cell a stream falls into.
MOA_Streams Reclassify	Reclassify the MOA_Streams data to numeric ratings.
Ana2 to Raster	Converts Ana2 data to raster by indicating each 20.5 ft cell a stream falls into.
Ana2 Reclassify	Reclassify the Ana2 (Anadramous Fish) streams data to numeric ratings.
Select Most Sensitive Stream	
Bears to Raster	Converts Bears data to raster using the ORIG_DATA field.
Bears Reclassify	Reclassify the Bears ORIG_DATA data to numeric ratings.
Shorebirds to Raster	Converts Shorebirds data to raster using the MIGRATION field.
Shorebird Reclassify	Reclassify the Shorebird MIGRATION data to numeric ratings.
Loons to Raster	Converts Loons data to raster.

<b>Name</b>	<b>Explanation</b>
Loons Reclassify	Reclassify the Loons data to numeric ratings.
Waterfowl to Raster	Converts Waterfowl data to raster using the WINTER field.
Waterfowl Reclassify	Reclassify the Waterfowl WINTER data to numeric ratings.
Songbirds Multipart To Singlepart	
Songbirds to Raster	Converts Songbirds data to raster using the NUMBER field.
Songbirds Reclassify	Reclassify the Songbirds data to numeric ratings.
MOA Landcover Reclassify	Reclassify the MOA Landcover CALC_CLASS data to numeric ratings.
Combine Inputs	Uses the Map Algebra "Sum" function to add the values from the input data sets to determine the sensitivity of a cell to development for Habitat.
Aggregate to Larger Pixel	Aggregates the combined data to 82 foot pixels from 20.5 foot pixels using the Maximum specification.

## Human Impacts



### Figure 7: Human Impacts Model

### Human Impacts

**collapse all**

This tool is one component of the Anchorage Sensitivity Index Decision Support System (ASIDESS). ASIDESS is designed to assist in the assessment of development plans for areas in the Anchorage Bowl with regards to the Coastal Management Plan.

The Human Impacts model includes Roads and Land Use data. It assesses the effects of existing Roads and Land Use codes on the current sensitivity of an area to development.

Each data set is converted to raster and then rated on a scale of 0 - 4 for sensitivity to development. 0 is not sensitive and 4 is most sensitive.

#### ▼ Usage Tips

The use of models enables a repeatable, flexible process that can incorporate updated data or even new data sets. Updates to the data are almost automatic, assuming the revised data set has the same name and is in the same location as the original data set.

If a data set has been updated, run the model to update the final output of the model, H\_impact\_g.

To edit the rates assigned to any data set, open the model, select the reclassification function and change the rates to the desired values.

WARNING: The Land Use data takes exceptionally long to translate to raster.

#### ▼ Command line syntax

Human Impacts2 <Land\_Use\_Reclassification> <Road\_Distance\_Reclassification>  
<Hwy\_Distance\_Reclassification> <Human\_Impacts>

#### Parameters

Expression	Explanation
<Land_Use_Reclassification>	Rating values for the Landuse data set
<Road_Distance_Reclassification>	Rating values for the Road_dist data set
<Hwy_Distance_Reclassification>	Rating values for the Hwy_dist data set
<Human_Impacts>	Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model. <ul style="list-style-type: none"><li>• Default is H_impact_g</li></ul>

### ▼Scripting syntax

Human Impacts2 (Land\_Use\_Reclassification, Road\_Distance\_Reclassification, Hwy\_Distance\_Reclassification, Human\_Impacts)

#### Parameters

Expression	Explanation
Land Use Reclassification (Required)	Rating values for the Landuse data set
Road Distance Reclassification (Required)	Rating values for the Road_dist data set
Hwy Distance Reclassification (Required)	Rating values for the Hwy_dist data set
Human Impacts (Required)	<p>Name of the file to be output. If this is changed, it might not be read by the Final Sensitivity Model.</p> <ul style="list-style-type: none"><li>• Default is H_impact_g</li></ul>

### ▼Model

#### Elements

Name	Explanation
Select Hwys	Selects only the Highways (CFCC=A10) from the Roadnet data.
Convert to Hwys to Raster	Translates the non-highway (CFCC<>A10) Roadnet data to raster format.
Calc Distance Hwys	Calculates the distance of each cell from a Highway.
Select Roads	Selects roads that are NOT highways from the Roadnet data.
Convert Roads to Raster	Translates the non-highway (CFCC<>A10) Roadnet data to raster format.
Calc Distance Roads	Calculates the distance of each cell from a Road

# Sensitivity Comparison

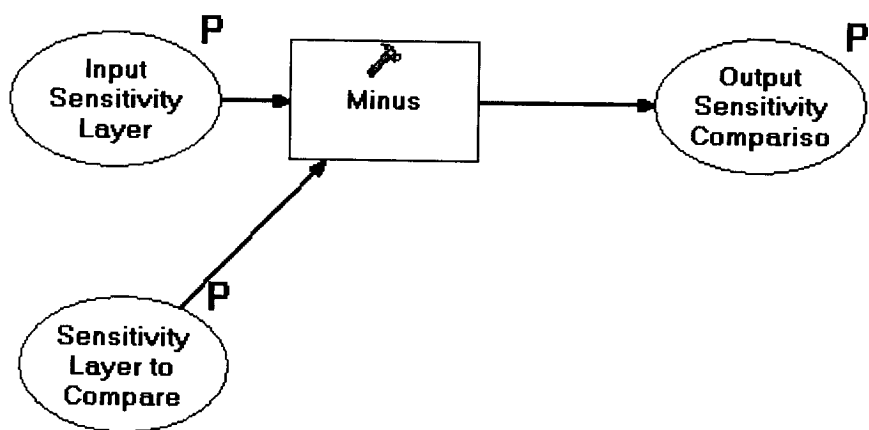


Figure 8: Sensitivity Comparison Model

## Sensitivity Comparison

**collapse all**

Compares the outputs of two selected model runs to indicate where there are differences and the magnitude of those differences.

Once the model has been run twice with different weights (or rates), the outputs can be compared if they have different names.

### ▼Usage Tips

Use this tool to determine if changes made to the weights (or rates) make significant differences in the output.

### ▼Command line syntax

Sensitivity Comparison <Input\_Sensitivity\_Layer> <Sensitivity\_Layer\_to\_Compare>  
<Output\_Sensitivity\_Comparison>

### Parameters

Expression	Explanation
<Input_Sensitivity_Layer>	One of the two data sets to be compared.
<Sensitivity_Layer_to_Compare>	One of the two data sets to be compared.
<Output_Sensitivity_Comparison>	Name of the output data set.



### Command Line Example

### ▼Scripting syntax

Sensitivity Comparison (Input\_Sensitivity\_Layer, Sensitivity\_Layer\_to\_Compare, Output\_Sensitivity\_Comparison)

#### Parameters

Expression	Explanation
Input Sensitivity Layer (Required)	One of the two data sets to be compared.
Sensitivity Layer to Compare (Required)	One of the two data sets to be compared.
Output Sensitivity Comparison (Required)	Name of the output data set.



# APPENDIX G

**Table 2**  
**of the**  
**Anchorage Wetlands Management Plan**

## Wetland Designations, Enforceable and Administrative Policies and Management Strategies

### NOTE:

1. Wetland numbers listed for the original 1982 Anchorage Wetlands Management Plan are for reference only. In many cases, 1982 wetland site numbers refer to sites which have been split or merged in the current revision.
2. All sections in *italics* represent Enforceable Policies of this plan.

### ANCHORAGE BOWL

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
1	None	1	#1 CATTAIL POND AT PORT (2.63 acres; Public & Private Ownership) (Scores: Hydrology = 100; Habitat = 73; Species Occurrence = 49; Social Function = 24) <i>Because the site provides migratory and limited nesting habitat for several species and performs water quality functions for an area with contaminated groundwater, the site shall be maintained to the maximum extent.</i>	Undesignated	B
1	None	1	#2 CATTAIL POND AT PORT (1 acre; Public & Private Ownership) (Scores: Hydrology = 60; Habitat = 44; Species Occurrence = 45; Social Function = 11) Site just south of Terminal Road classed as "C" wetlands. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent properties. A toxics evaluation shall be done if excavation is proposed, and it shall meet the acceptable standards of the Alaska Department of Environmental Conservation and the Municipal Department of Health and Human Services in order to prevent degradation of water quality in adjacent water bodies and wetlands.</i>	Undesignated	B/C
1	None	1	TRACTS A AND EE (18 acres; Public Ownership) (Scores: Hydrology = 88; Habitat = 125; Species Occurrence = 51; Social Function = 17) Federal U.S. Air Force lands behind the Port which are currently mostly permitted. <i>Any new management strategies shall be consistent with applicable Corps permits.</i>	Undesignated	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
2	58A	1, 2 and 9	SHIP CREEK FLOODPLAIN (above CEA dam) (1.8 acres; Public & Private Ownership) (Scores: Not Assessed) Wetlands important for water quality, flood storage. <i>Development in wetlands shall be subject to Alaska Department of Fish and Game timing stipulations to limit disturbance to anadromous fish movements.</i> Development designs should mirror information outlined in the <u>Ship Creek-Port Land Use Plan</u> . Executive Order (EO) 11990 will be used to protect the Creek on military land	Undesignated Preservation	A
2	58A	1, 2 and 9	SHIP CREEK BEAVER POND (0.75 acres; Public & Private Ownership) (Scores: Hydrology = 118; Habitat = 68; Species Occurrence = 68; Social Function = 24) <i>Flood control and habitat functions shall be preserved by fill avoidance.</i>	Undesignated	A
3	58A	3	SHIP CREEK: NW REEVE/VIKING (3.2 acres; Public Ownership) (Scores: Hydrology = 74; Habitat = 80; Species Occurrence = 63; Social Function = 76) Values for flood control, water quality and habitat. Site is an old slough of Ship Creek. <i>Fill within slough shall be avoided.</i>	Undesignated Preservation	A
4	None	3	NORTH OF RAILROAD TRACKS, INTERSECTION OF REEVE/POST ROAD (4 acres; Public Ownership) (Scores: Hydrology = 111; Habitat = 73; Species Occurrence = 35; Social Function = 25) <i>Because the pond and adjacent wetlands provide habitat for several species and an important filter area for local snow dump, the drainage and pond areas shall be maintained and avoided to the maximum extent. The site's filtering values shall be protected, since the pond drains directly into Ship Creek. Snowmelt should be treated although it is recognized that this may be impractical.</i>	Undesignated	B
5	None	11	MOUNTAIN VIEW DRIVE/GLENN HIGHWAY INTERSECTION (8 acres; Public & Private Ownership) (Scores: Hydrology = 86; Habitat = 47; Species Occurrence = 18; Social Function = 59) Most of area is MOA-HLB land. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works and Alaska Department of Transportation/ Public Facilities to assure that the Glenn Highway and sites to the east shall not be more than minimally adversely impacted.</i>	Undesignated	C
6	None	14	TURPIN PARK (1.8 acres; Public Ownership) (Scores: Hydrology = 70; Habitat = 34; Species Occurrence = 18; Social Function = 60) Municipal park land. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands.</i>	Undesignated	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
6	56	13	SOUTHWEST AND SOUTHEAST INTERSECTION OF TURPIN/GLENN HIGHWAY (47 acres; Public Ownership) (Scores: Hydrology = 87; Habitat = 57; Species Occurrence = 18; Social Function = 50) Isolated site; minimal hydrology values; no obvious drainageways. (Note: size of site and drainage basin inflated score).	Developable	C
6	57	13	SOUTHEAST INTERSECTION OF 4 <sup>TH</sup> AVENUE/BONIFACE PARKWAY (2.8 acres; Private Ownership) (Scores: Hydrology = 78; Habitat = 27; Species Occurrence = 16; Social Function = 27) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain both surface and subsurface cross drainage and prevent drainage of adjacent wetlands. Drainageways shall be avoided. A written plan shall be presented to the Municipal Department of Community Planning and Development to determine if alternatives exist that would allow avoidance of alteration of drainage of the site.</i>	Developable	C
7	57	12	NORTH RUSSIAN JACK PARK (53.4 acres; Public Ownership) (Scores: Hydrology = 102; Habitat = 60; Species Occurrence = 18; Social Function = 75) <i>A hydrologic analysis shall be done and meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain both surface and subsurface cross drainage and prevent drainage of adjacent wetlands. Park amenities shall be permitted beyond 25 feet of drainageways and/or open water. Relatively low value site; information on hydrology shall precede permitting for identification of drainage problems or retention areas. This site does not have any streams or ponds; the intent is to protect the springs and to maintain onsite drainage.</i>	Preservation	C
8	51	36	BROOKRIDGE SUBDIVISION (10.5 acres; Private Ownership) (Scores: Hydrology = 124; Habitat = 95; Species Occurrence = 75; Social Function = 38) Remaining undeveloped wetlands at Chester Creek classed as "A". <i>Setback from creek shall be maintained as platted (see Permit #B-517). No runoff shall enter into setback area unless treated.</i>	Developable	A
9	51	25	MULDOON: Chester CK/FOOTHILLS SUBDIVISION NEAR TURF CT. (2.25+ acres; Public/Private Ownership) (Scores: Hydrology = 104; Habitat = 89; Species Occurrence = 71; Social Function = 71) Area currently permitted for storm drain detention system. Provides flood retention, water quality, habitat. <i>Unfilled areas shall be retained.</i>	Developable	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
10	51	25 and 36	HIDEAWAY HILLS, TRACT A (33.9 acres; Private Ownership) (Scores: Hydrology = 104; Habitat = 71; Species Occurrence = 60; Social Function = 50) Enhancement potential possible in northerly site. Development could occur in westernmost one-third; <i>hydrology/flood storage connection to Chester Creek and adjacent wetlands shall be retained at the east end by setbacks, avoidance and minimization of fills.</i> Ditches should be filled and area can serve for stormwater retention. Remnant, highly disturbed wetland extending south of the main site provides possible water quality and flood control, but is generally low value and remains "C". <i>Northern portion of this site, at the ditch, shall be retained or replaced with a storm drain system for water quality purposes.</i>	Developable	B/C
10A	53	36	<u>NORTH AND SOUTH OF 36<sup>TH</sup></u> , WILLIWA/PUSSYWILLOW STREET (3.66 acres; Private Ownership) (Scores: Hydrology = 74; Habitat = 48; Species Occurrence = 18; Social Function = 40) Minimal values.	Undesignated	C
11	None	25	SUSITNA SCHOOL POND (0.5 acres; Public Ownership) (Scores: Not Assessed) <i>The pond and wetland shall be retained as a stormwater detention/treatment site unless the site is needed for school expansion, in which case, a new stormwater detention/treatment site must be identified in the area to replace these hydrologic/water quality functions and values. Cleanout and maintenance of the pond shall be allowed only from August 15 to May 1. Such activities shall not be permitted during the spring and summer (i.e., May 1 to August 15) due to the need to protect nesting waterfowl.</i>	Undesignated	C
11	None	25	<u>20<sup>TH</sup>/CHANDALAR</u> (0.5 acres; Private Ownership) (Scores: Not Assessed) <i>Developer shall submit a drainage impact analysis to address drainage in relation to neighboring homes.</i>	Undesignated	C
11	50	25	<u>NORTHWEST INTERSECTION OF NORTHERN LIGHTS/MULDOON</u> (two sites) (6 acres; Private Ownership) (Scores: Hydrology = 69; Habitat = 50; Species Occurrence = 17; Social Function = 55) Southern, center section of easterly site above Post Office provides higher habitat values; could be used for enhancement. <i>A written plan shall be submitted to the Municipal Department of Community Planning and Development for review and approval describing efforts to avoid impacts to the habitat values of the southern and central sections of the easterly tract, such as timing windows, additional setbacks, vegetative screening, reduction of fill and onsite enhancement.</i>	Developable	C
12	44	36	<u>MULDOON PARK: NORTHERN LIGHTS BOULEVARD AND MULDOON ROAD</u> (10.6 acres; Public Ownership) (Scores: Hydrology = 69; Habitat = 53; Species Occurrence = 22; Social Function = 50) Isolated site has relatively low values. <i>Drainages shall be maintained to prevent flooding, maintain both surface and subsurface cross drainage and prevent drainage of adjacent wetlands. Park amenities shall only be permitted beyond 85 feet of drainageways and open water.</i>	Preservation	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
13	44	35	SOUTHWEST INTERSECTION OF NORTHERN LIGHTS/PATTERSON (4.75 acres; Private Ownership) (Scores: Hydrology = 105; Habitat = 61; Species Occurrence = 18; Social Function = 47) <i>A hydrologic analysis shall be done and meet the acceptable standards of the Municipal Department of Public Works and the Municipal Department of Community Planning and Development in order to ascertain possible connections to Chester Creek and Baxter Bog and to ensure the maintenance of flows to Chester Creek and Baxter Bog.</i>	Developable	C
14	None	24	<u>CHENEY LAKE</u> (26 acres; Public Ownership) (Scores: Hydrology = 117; Habitat = 108; Species Occurrence = 97; Social Function = 95) Primary importance for habitat values; some water quality values. Provides waterbird nesting and staging habitat and active recreation. <i>A 65-foot minimum setback shall be maintained for park improvements.</i>	Undesignated	A/Open Water
14A	44	24	<u>VUETER SUBDIVISION</u> (7 acres; Private Ownership) (Scores: Hydrology = 71; Habitat = 41; Species Occurrence = 18; Social Function = 74) <i>A hydrologic analysis shall be done and meet the acceptable standards of the Municipal Department of Public Works in order to ascertain possible connections to Chester Creek and to ensure the maintenance of flows to Chester Creek. A 65-foot setback shall apply along all drainageways to Chester Creek. A 100-foot setback shall be maintained adjacent to Chester Creek due to its anadromous fish resources.</i>	Developable	C
15	44	35	<u>BAXTER LAKE</u> (42 acres; Public & Private Ownership) (Scores: Hydrology = 131; Habitat = 122; Species Occurrence = 81; Social Function = 75) <i>Any development shall require a hydrology/drainage survey. Impervious structures shall be required at borders to minimize any dewatering of "A" and "B" wetland areas. Critical hydrological connections exist in "B" wetland areas which shall be avoided and protected..</i>	Developable Conservation Preservation	A/B
16	45	35	<u>NORTH OF REFLECTION LAKE</u> (2.5 acres; Private Ownership) (Scores: Not Assessed) Most of site already permitted/developed. Minimal values, marginal wetland.	Developable	C
17	46	23	<u>NORTHERN LIGHTS/WESLEYAN &amp; RUSSIAN JACK PARK</u> (45 acres approx.; Public & Private Ownership) ("A" wetland scores: Hydrology = 94; Habitat = 84; Species Occurrence = 85; Social Function = 72. "B" wetland scores: Hydrology = 95; Habitat = 70; Species Occurrence = 53, Social Function = 58) Black spruce forested edges/southern rim is classed as "C" wetlands. <i>A 15-foot transitional buffer shall be maintained between fill permitted under General Permits and "B" wetland..</i> Remainder classed as "B" wetlands due to higher habitat, flood control and water quality values. Connection to fork of Chester Creek at the north. Russian Jack Park is "A" wetland area; most of the park area is important to Chester Creek.	Developable Conservation Preservation	A/B/C
17A	46	23	<u>NORTH OF NORTHERN LIGHTS BOULEVARD AND WESLEYAN</u> (3 acres; Private Ownership) (Scores: Hydrology = 91; Habitat = 55; Species Occurrence = 54; Social Function = 60) Partially disturbed area and old gravel pit; minimum values.	Developable	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
18	48	22, 23 and 33	GOOSE LAKE (36 acres; Public Ownership) (Scores: Hydrology = 88; Habitat = 120; Species Occurrence = 122; Social Function = 97) Documented high values for habitat, water quality and recreation. <i>Minor park amenities could be permitted but shall be concentrated at north end only.</i>	Special Study	A
18	48	23, 33 and 34	GOOSE LAKE (22.5 acres; Public Ownership) (Scores: Hydrology = 68; Habitat = 83; Species Occurrence = 15; Social Function = 74) Includes upper Mosquito Lake drainage. Important as feeder area for Mosquito Lake. <i>Fringes could be developed but key drainage sections shall be avoided.</i>	Special Study	B
18	48	22, 23 and 33	SOUTH SIDE OF NORTHERN LIGHTS/BRAGAW, EAST OF GOOSE LAKE (35 acres; Public Ownership) (Scores: Hydrology = 76; Habitat = 75; Species Occurrence = 17; Social Function = 74) All "C" wetland sites surrounding "B" wetlands. Revised wetland boundary. <i>Drainage into B areas shall be avoided, i.e., maintained in present condition. A 15-foot transitional buffer shall be maintained between fill authorized under these GPs and adjacent "B" wetlands. A 25-foot transitional buffer shall be maintained between fill authorized under these GPs and adjacent "A" wetlands to the west. A 65-foot setback shall be maintained as a minimum along all drainageways. No development shall be authorized by the GPs east of the trail where the interface between areas designated B and C is closest to the trail. No fill shall be allowed to be placed under the GPs from April through June within 200 feet of the A-designated wetlands and within 50 feet of B-designated wetlands due to concern for nesting. If no damage would result to private property, treated, local storm water shall be directed into the wetland.</i>	Special Study	C
18A	48	33	MOSQUITO LAKE (14 acres; Public Ownership) (Scores: Hydrology = 85; Habitat = 88; Species Occurrence = 67; Social Function = 76) <i>Lake proper and northerly "A" wetlands shall be preserved without disturbance. Isolated lobes south of lake and bike trail less valuable and could be filled for recreation or road expansions. A 25-foot transitional buffer shall be maintained between fill authorized under these GPs and adjacent "A" wetlands. A 65-foot waterbody setback shall be maintained as a minimum around Mosquito Lake. No fill shall be allowed from April through July in this unit under the GPs to protect nesting near Mosquito Lake.</i>	Special Study	A/C
18B	48	33 and 34	NORTH SIDE PROVIDENCE, ALONG BRAGAW RIGHT-OF-WAY (21 acres; Public Ownership) (Scores: Hydrology = 58; Habitat = 73; Species Occurrence = 12; Social Function = 64) <i>Although identified and justified as developable in Goose Lake Plan; this site provides waterbird habitat in flooded westerly areas which shall be maintained. Site filters runoff from easterly sections to Mosquito Lake complex. Key wetland areas lie in westerly portions and easterly transitional areas could be developed. Runoff drainageways into flooded Mosquito Lake complex shall be maintained.</i>	Special Study	B



Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
18C	47	33	CHESTER CREEK CORRIDOR: NORTHERN LIGHTS TO SOUTH OF PROVIDENCE HOSPITAL (19.2 acres; Public & Private Ownership) (Scores: Hydrology = 95; Habitat = 86; Species Occurrence = 79; Social Function = 82) Direct connection to Chester Creek: provides flood storage, water quality functions and wildlife habitat. <i>Providence Hospital improvements shall be located outside the wetland corridor. Other development shall be avoided except for minor recreation amenities.</i>	Preservation Special Study	A
18D	49	33	WEST SIDE PROVIDENCE, NORTH OF 36 <sup>TH</sup> , BETWEEN CHESTER CREEK & PROVIDENCE DRIVE, SOUTH OF MALLARD (1.6 acres; Public Ownership) (Scores: Hydrology = 76; Habitat = 50; Species Occurrence = 48; Social Function = 41) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology. A 25-foot transitional buffer shall be maintained between fill authorized under the GPs and adjacent "A" wetlands to the west.</i>	Special Study	C
18E	47	33	SOUTH OF CHESTER CREEK CORRIDOR NEAR PROVIDENCE HOSPITAL, NORTH OF EAST 40 <sup>TH</sup> AVENUE (1.5 acres; Public Ownership) (Scores: Hydrology = 95; Habitat = 79; Species Occurrence = 48; Social Function = 41) <i>Minimum 25-foot buffer shall be required from greenbelt/"A" wetlands. Drainage connections, or low areas adjacent to Chester Creek corridor and "A" wetland shall be maintained.</i>	Special Study	B
19	48	22	NORTHWEST CORNER OF NORTHERN LIGHTS/BRAGAW (6.6 acres; Public Ownership) (Scores: Hydrology = 87; Habitat = 49; Species Occurrence = 24; Social Function = 67) <i>Fragmented; partially developed. A 100' setback shall be maintained adjacent to Chester Creek due to its anadromous fish resources.</i>	Special Study	C
20	49	22	CHESTER CREEK PARK: NORTH OF NORTHERN LIGHTS BOULEVARD (76.2 acres; Public Ownership) (Scores: Hydrology = 134; Habitat = 97; Species Occurrence = 61; Social Function = 80) Portions are within Chester Creek greenbelt. Importance for water quality, recharge, flood storage, open space and habitat. <i>Drainage connections to the creek shall be maintained via avoidance or fill setbacks.</i> Wetlands east of Goose Lake Drive and Tikishla Park are "B" outside of greenbelt. "B" wetland area runs from East 20 <sup>th</sup> Avenue southward for approximately 225 feet. Development should be limited to northern and eastern portions of site. <i>Drainage channel which crosses Northern Lights and runs across the southern portion of Heritage Land Bank parcel #3-019 shall be retained with a 25-foot buffer.</i> This area, east of Goose Lake Drive, was designated "Conservation" in the Goose Lake Plan (1983.) The site's highest values are within the Chester Creek floodplain. <i>North-south channel in ditch shall include a 65-foot setback.</i>	Preservation	A/B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
21	15	21	CHESTER CREEK GREENBELT/SITKA STREET (85 acres; Public Ownership) (Scores: Hydrology = 142; Habitat = 120; Species Occurrence = 106; Social Function = 89) Importance for water quality and recharge of Chester Creek. <i>Park development shall be placed on wetlands fringes. Run-off from snow dump site east of Sitka Street shall be treated before entering creek/wetlands.</i> The Municipality should ultimately move the North Fork of Chester Creek out of the roadside ditch into the wetlands proper. The Department of Public Works should provide engineering feasibility analyses and cost estimates and incorporate them into future Capital Improvement Programs.	Preservation	A
21A	15	21	ORCA STREET (3 acres; Public Ownership) (Scores: Hydrology = 87; Habitat = 53; Species Occurrence = 18; Social Function = 54) Importance for water quality filtering of Merrill Field area and flood control as part of larger "A" wetland. Municipal ownership. <i>Site shall be undisturbed to the maximum extent.</i>	Developable	B
21B	15	21	SOUTHWEST CORNER OF DEBARR & LAKE OTIS INTERSECTION (4 acres; Private Ownership) (Scores: Not Assessed) Classified as "C" wetland. New channel of the North Fork of Chester Creek has been daylighted on-site. <i>A 65-foot setback shall be maintained along the North Fork of Chester Creek.</i>	Developable	C
22	14	20	D STREET TO A STREET, 17 <sup>TH</sup> TO 18 <sup>TH</sup> & ALONG CHESTER CREEK GREENBELT (16 acres; Public & Private Ownership) (Scores: Hydrology = 70; Habitat = 50; Species Occurrence = 18; Social Function = 48) (South side "A" area = Not Assessed) Minimal values. <i>A 25-foot transitional buffer shall be maintained on outside margin of greenbelt. Drainage shall be treated by development (in filled areas) prior to its release into adjacent water bodies and wetlands. A 100-foot setback shall be maintained adjacent to Chester Creek due to its anadromous fish resources. "A" wetland along bike trail below Mulcahy, south of creek, shall be preserved.</i>	Preservation Developable	A/C
23	14	19	WESTCHESTER LAGOON (27 acres; Public Ownership) (Scores: Hydrology = 118; Habitat = 112; Species Occurrence = 147; Social Function = 103) Includes western Chester Creek greenbelt. Documented high habitat, recreation and water quality values. <i>Minor recreation amenities shall be permitted only if no other practicable alternatives exist on-site.</i>	Preservation	A
24	5A	18+	FISH CREEK CORRIDOR (2.6 acres—Public Ownership; 10.10 acres—Private Ownership) (Scores: Hydrology = 89; Habitat = 79; Species Occurrence = 61; Social Function = 48) <i>Previous fill permit areas with protected setbacks shall be treated as "A" wetlands.</i> Road crossings, trails and channel improvements should be permitted if no upland alternatives are available. Important to Fish Creek flood control and water quality.	Developable	A
24A	5A	41	NORTHWOOD PARK (10 acres; Public Ownership) (Scores: Hydrology = 113; Habitat = 111; Species Occurrence = 97; Social Function = 86) "A" wetlands within park lands; significant water quality recharge and flood storage values. <i>All park developments shall be consistent with the locally adopted park plan.</i>	Conservation	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
25	5	29	<p>MILKY WAY/BROADMOOR ESTATES COMPLEX (Private Ownership)</p> <p>a) Main section = 75 acres (Scores: Hydrology = 96; Habitat = 57, Species Occurrence = 47; Social Function = 51), north spur = 17 acres (not assessed). Higher value habitat and wetter areas located at the west side at "A" wetland edge and at the south portion of southern tract. The westerly 300' around Aero Drive extended (~11 acres) and the southerly 1.9 acres in a 10 acre parcel south of W. 40<sup>th</sup> are classed as "B" wetlands. Identified school site located at east end. Isolated site north of park has been disturbed and drained and is of low value. <i>Cross drainage shall be maintained to "A" wetlands towards the west. A 25-foot transitional buffer shall be maintained between fill authorized under the GPs and adjacent "B" wetlands. No work shall be done within 100-foot of the adjacent "B" wetlands under the GPs between April and July. If no damage would result to private property, treated, local storm water shall be directed into the unfilled wetland. Aero Drive shall be permitted but cross-drainage to "A" wetlands shall be retained and insured in design.</i> Southern end of 10 acre parcel south of W. 40<sup>th</sup> ("B" area) could be enhanced and linked to isolated "B" site to south for habitat.</p> <p>b) Southern spur = <u>2.8</u> acres (Scores: Hydrology = 75; Habitat = 52; Species Occurrence = 42; Social Function = 44) Designated "B" and owned by church to east. <i>If to be permitted, shall retain northern undisturbed portion to maximum extent, as hydrologic and habitat link to main wetlands.</i></p> <p>SOUTHWEST CORNER OF NORTHERN LIGHTS/POSTMARK DRIVE (8.5 acres; Public Ownership) (Scores: Hydrology = 75; Habitat = 68; Species Occurrence = 62; Social Function = 55) <i>Drainage shall be maintained throughout site. Most of site is being developed at time of Plan revision.</i></p> <p>SOUTH SIDE NORTHERN LIGHTS: POSTMARK DRIVE TO EARTHQUAKE PARK (0.7 acres; Public Ownership) (Scores: Hydrology = 57; Habitat = 80; Species Occurrence = 18; Social Function = 39) <i>Drainageway area serves as outflow from main bog. Drainageway from bog shall be retained or replaced. Limited habitat values.</i></p>	Developable Undesignated	B/C
26	5	16 and 27	<p>SOUTHWEST CORNER OF NORTHERN LIGHTS/POSTMARK DRIVE (8.5 acres; Public Ownership) (Scores: Hydrology = 75; Habitat = 68; Species Occurrence = 62; Social Function = 55) <i>Drainage shall be maintained throughout site. Most of site is being developed at time of Plan revision.</i></p>	Developable	C
26A	5	17	<p>SOUTH SIDE NORTHERN LIGHTS: POSTMARK DRIVE TO EARTHQUAKE PARK (0.7 acres; Public Ownership) (Scores: Hydrology = 57; Habitat = 80; Species Occurrence = 18; Social Function = 39) <i>Drainageway area serves as outflow from main bog. Drainageway from bog shall be retained or replaced. Limited habitat values.</i></p>	Undesignated	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
26A and 26B	5	16 17 27 and 28	<p>TURNAGAIN BOG PROPER (435 acres; Public Ownership) (Scores: Hydrology = 149; Habitat = 190; Species Occurrence = 113; Social Function = 65)</p> <p>Fill permit applications should be consistent with the land use designations and the alternatives analysis contained in the Anchorage International Airport (AIA) Master Plan. Priority should be given to airport location-dependent enterprises. Fill permit requirements should fully consider other Municipal plans such as trails, roads, and drainage planning for the airport area. The following apply to "C" sites:</p> <p><i>A written plan shall be submitted to the Municipal Department of Community Planning and Development for review and approval describing efforts to minimize and avoid impacts to the habitat values to the higher value wetlands at the northern end of the "C" area, such as timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancements.</i></p> <p><i>In #26A, a 65-foot transitional buffer shall be maintained between fill authorized in the GPs and adjacent "A" sites. This is to provide an adequate buffer for nesting around the water body in the adjacent "A" wetland. An impervious barrier shall be placed at the margins of any fill authorized by these GPs, to the bottom of the peat layer, or to a minimum of one foot below the bottom of gravel fill, to preclude groundwater outmigration from as adjacent wetland. Only land uses designated in the AIA Master Plan should be considered for coverage under the GPs.</i></p> <p><i>A mitigation plan shall be developed in consultation with a Special Mitigation Committee (composed of State and Federal resource agencies and the Municipality) during the environmental analysis, engineering, design, and construction of the project. A report reflecting this consultation and final approval by the Corps shall be submitted with the request for a GP. A 65-foot setback shall be maintained from all waterbodies.</i></p> <p>The following apply to "A" and "B" sites:</p> <p>AIA strategic development plan will establish appropriate types and levels of compensatory mitigation for airport wetland fills in "A" and "B" sites, and will be developed in conjunction with the resource agencies. Projects that address airport safety issues and neighborhood-airport conflicts (e.g. noise impacts, clear-zone requirements), including minor road, trail, utility lines, taxiway and runway projects, should be permitted with no or reduced mitigation requirements. The other areas of the main Turnagain Bog core, particularly at the northwest, central west, and southeast fringes are transition zones where wetlands grade out into adjacent upland woods, and are of lower value than the main patterned ground core.</p>	Special Study; Developable; Preservation	A/B/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
26C	5	17	EARTHQUAKE PARK (84 acres; Public Ownership—"A" Wetlands; Private Ownership—"C" Wetlands) (Scores: Hydrology = 106; Habitat = 105; Species Occurrence = 64; Social Function = 69) Platted portion at east end contains lower value wetlands—classified as "C" wetlands. Remainder of wetlands contains pools and ponds, mixed habitat; higher values of site. Conveys storm drain system from Northern Lights Boulevard. Public parkland areas remain protected as "A" wetlands. <i>Minor recreation amenities and trails could be placed in "A" wetlands, but shall be at least 50 feet away from waterbodies.</i> Jones Creek corridor east of the main 26C site is "A" wetland; <i>requires wetland delineation prior to permitting.</i>	Preservation	A/C
26C	None	16	COASTAL TRAIL NORTHEAST OF POSTMARK DRIVE/NORTHERN LIGHTS INTERSECTION (1.6 acres; Public Ownership) (Scores: Hydrology = 47; Habitat = 41; Species Occurrence = 15; Social Function = 64) No known wetland function; some drainage values. <i>Any fill projects shall maintain drainage through site.</i>	Undesignated	C
26D	5	27	POSTMARK DRIVE WEST (78 acres; Public Ownership) (Scores: Hydrology = 128; Habitat = 87; Species Occurrence = 67; Social Function = 73) Corps requires mitigation plan approval prior to permit issuance. Significant site due to both migratory and nesting habitat values. Proximity to runways requires off-site mitigation. <i>All fill and excavation work in this wetland shall be conducted and scheduled in a manner to minimize disturbance to migratory birds to the maximum extent.</i>	Developable	A
26E	None	41	LAKE SPENARD (Approximately 4 acres; Public Ownership) (Scores: Not Assessed) <i>Wetlands fringe shall be maintained with adequate setbacks from the lake. Provides important filtering function for the lake's water quality control.</i>	Undesignated	A/Open Water
27	None	26	ALONG BLUFF/COASTAL TRAIL, SOUTH OF POINT WORONZOF (11.7 acres; Public Ownership) (Scores: Hydrology = 71; Habitat = 60; Species Occurrence = 23; Social Function = 33) Limited habitat values. <i>Two primary drainageways shall be maintained. Full wetland delineation required prior to permitting.</i>	Special Study	C
28	1	50	LITTLE CAMPBELL LAKE (16.1 acres; Public Ownership) (Scores: Hydrology = 83; Habitat = 95; Species Occurrence = 89; Social Function = 74) Wetlands important for habitat and open space. <i>Park amenity development shall occur outside wetlands to the maximum extent.</i>	Preservation	A
29	4A	52	SOUTH AIRPARK LAKE (2 acres approx.; Public Ownership) (Scores: Not Assessed) <i>Lake and fringe wetlands shall be preserved. Provides waterbird habitat and water quality functions.</i>	Preservation	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
29A	None	52	NORTHEAST AIR GUARD/RASPBERRY ROAD (0.62 acres; Private Ownership) (Scores: Hydrology = 65; Habitat = 55; Species Occurrence = 18; Social Function = 18) Seasonal pond with possible connection to DeLong Lake; <i>storm drainage and lake connection shall be maintained or adequately handled in development design.</i> Conveys drainage across Raspberry Road.	Undesignated	C
29A	None	52	NORTHWEST AIR GUARD/RASPBERRY ROAD (0.67 acres; Public Ownership) (Scores: Hydrology = 52; Habitat = 47; Species Occurrence = 18; Social Function = 18) Isolated; seasonal flooding which drains east and across Air Guard Road to DeLong Lake drainage. No known species use. <i>Drainage functions to lake shall be maintained or replaced.</i>	Undesignated	C
30	4	40, 41 and 52	DELONG LAKE/MEADOW LAKE (46 acres; Public & Private Ownership) (Scores: Hydrology = 119; Habitat = 122; Species Occurrence = 133; Social Function = 73) This lake system has important waterbird and fish habitat as recognized by the Alaska Department of Fish and Game. <i>Preservation of the north side wetlands on Meadow Lake shall be identified in the Anchorage International Airport Master Plan. Airport expansions shall remain buffered from Meadow Lake and adjacent wetlands. An 85-foot setback in "C" areas shall be maintained around the lake to maintain the habitat and hydrologic values of the southeast corner of DeLong Lake. The easterly 35-foot of Lot 1 Block 2, Alderwood Subdivision shall remain undisturbed. Either trees shall be planted or a fence shall be constructed at the east edge of fill authorized under the GPs (on Lot 1) to visually screen development from adjacent wetlands. The active drainage in the north side of Lot 1, Block 2 Alderwood Subdivision shall remain undisturbed. Homeowner recreational amenities in "A" areas shall be limited to pile-supported structures. Most of the south side wetlands are common areas or park reserve tracts. Ideally, Lots 35A and B at the lake's east shore should be merged with "A" wetland (currently designated as "C") under fee simple acquisition.</i>	Preservation Developable	A/C
31	6	41	BENTZEN LAKE (6.1 acres; Public Ownership) (Scores: Hydrology = 91; Habitat = 91; Species Occurrence = 73; Social Function = 64) <i>Wetlands within park land shall be preserved; importance for habitat, flood control.</i>	Preservation	A
31A	6	41 and 42	NORTHWEST OF MINNESOTA/INTERNATIONAL: NORTHWOOD/VAN BUREN (three sites) (6 acres; Public and Private Ownership) (Scores: Hydrology = 69; Habitat = 43; Species Occurrence = 22; Social Function = 48) Sites mostly disturbed; northern half has a higher potential for enhancement. Site south of International Airport Road is isolated from rest of Connors Bog and has low values.	Developable/Preservation	C
32	6	42	DELANEY LAKE (3.5 acres; Public Ownership) (Scores: Hydrology = 116; Habitat = 89; Species Occurrence = 46; Social Function = 47) Moderate migratory bird habitat/some nesting. May provide flood attenuation/water quality control for Fish Creek. <i>The lake and, to the maximum extent, most of fringe on the north side of the railroad tracks, shall be preserved.</i>	Developable	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
33	6	42	<p>SOUTHEAST INTERSECTION OF MINNESOTA/INTERNATIONAL (9.7 acres; Public Ownership) (Scores: Hydrology = 114; Habitat = 81; Species Occurrence = 24; Social Function = 48)</p> <p>Provides moderate open water habitat; actual nesting use limited; currently permitted for roadway improvements; remainder of site could be used for storm drainage retention/treatment. <i>Sufficient area shall be retained at west edge for storm drain storage and filtration.</i></p>	Developable	B
34 and 34B	6	41, 42 and 53	<p>CONNORS-STRAWBERRY BOG (310 acres; Public &amp; Private Ownership) (Scores: Assessed in two parts: Hydrology = 114, 98; Habitat = 138, 131; Species Occurrence = 98, 113; Social Function = 80, 49)</p> <p>“A” wetlands designation for all public wetlands and portions of privately-owned parcels #012-051-75 and 012-053-01. A significant waterbird migratory and nesting habitat complex. The DRAFT Connors-Strawberry Bog Master Plan should serve as the basis for the management and restoration of the Connors-Strawberry Bog System. <i>Municipally-leased airport lands in the northwest corner of the bog shall be managed to retain wetland functions and other values covered in lease terms restrictions. Municipal lands within Connors-Strawberry bog shall be managed for open space, wildlife habitat, and wetlands functions. A DRAFT Connors-Strawberry Bog Master Plan outlines recreation development limited to passive and interpretive uses. Trails in wetlands shall be built on piles to the maximum extent. Required Raspberry and Minnesota road and interchange expansions are recognized as in the best public interest, and should be permitted with minimal encroachment. Measures shall be taken to maintain natural drainage patterns and enhance or restore disturbed areas. Road design should be consistent with Master Plan recommendations for intended discharge of treated road drainage into public lands in Connors Lake recharge areas. Portions of parcels #012-071-14 and 012-051-75 within the Connors Lake recharge zone have significant habitat functions which shall be preserved; recommend fee simple acquisition of these sites.</i></p>	Preservation	A/Open Water
34A	6	54	<p>EAST OF INTERSTATE CIRCLE (1.92 acres; Private Ownership) (Scores: Hydrology = 48; Habitat = 35; Species Occurrence = 24; Social Function = 33)</p> <p><i>A formal wetland delineation shall be required with development plans. Site is a low value transitional wetland.</i></p>	Undesignated	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
34A	6	42 and 54	<p>BLUEBERRY LAKE, INCLUDING AREAS TO THE NORTH AND SOUTH (three sites) (Blueberry Lake: approx. 9.5 acres; Private Ownership; Scores: Hydrology = 99; Habitat = 98; Species Occurrence = 41; Social Function = 32). (Areas North and South of Lake: 33.18 acres; Public and Private Ownership; Scores: Hydrology = 83; Habitat = 53; Species Occurrence = 17; Social Function = 53)</p> <p>Blueberry Lake proper and adjacent 100-foot fringe setback is designated "A". This area was platted with a 65-foot setback which was expanded in the 1982 plan to 100 feet for additional protection. <i>This area is currently under a U.S. Department of Justice/EPA court-imposed judgment and future fills shall require compliance with this federal action.</i> The narrow wetland to the north of Dowling Road extended is mostly filled and remains "C". Wetlands south of Dowling Road right-of-way, and outside the lake "A" zone, are "B". <i>A hydrologic analysis shall be required in future actions to determine the extent of recharge zones to the lake. A 15-foot buffer shall be required at the border of "C" areas with the "B" zone.</i></p>	Preservation Developable	A/B/C
34C	6	54	<p>SOUTHEAST INTERSECTION OF MINNESOTA/RASPBERRY (20.20 acres; Public Ownership) (Scores: Hydrology = 79; Habitat = 47; Species Occurrence = 18; Social Function = 63)</p> <p>Site developable but has great potential for habitat enhancement/flood storage/mitigation site. <i>A hydrologic analysis shall be done for any fill proposed on the west side, and this shall meet the acceptable standards of the Municipal Department of Public Works in order to ensure that adjacent homes will not be adversely affected by the proposed fill. Any road expansion on the west side shall address drainage impacts on adjacent homes prior to permit.</i></p>	Developable	C
34D	6	53	<p>IRIS SUBDIVISION (Raspberry Road/Connors Bog) (3.5 acres; Private Ownership) (Scores: Assessed with Site #34)</p> <p><i>Cluster development and minimal fill shall be used in development designs; fill shall be limited to the roadside and westerly portions of the lot or to higher portions of the site. If permitted: runoff shall be treated before entering bog, landscape screening shall be required between development and bog; any development shall include habitat enhancement in bog. Intent: majority of site should be retained; development to occur in Corps process.</i></p>	Preservation	A



Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
34E	6	53	NORTHWOOD/RASPBERRY (2.75 acres; Public Ownership) (Scores: Hydrology = 83; Habitat = 59; Species Occurrence = 57; Social Function = 59) High enhancement/mitigation potential. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology and prevent flooding of the road and adjacent subdivision. The semi-permanent barrier shall be placed at the central/south end shall be avoided with a 65-foot setback. An impervious barrier shall be placed at the margins of any fill authorized by the GPs to the bottom of the peat or a minimum of one foot below the bottom of gravel fill to preclude groundwater outmigration from an adjacent wetland. New fill shall be visually buffered from the ponds. If no damage would result to private property, treated local storm water shall be directed into the wetland. No fill shall be allowed under the GPs from April to July to protect nesting habitat. Recommend site remain undeveloped in Heritage Land Bank inventory</i>	Developable	C
34F	6	66 and 67	SOUTH CONNORS BOG: BOTH SIDES OF STRAWBERRY ROAD (48+ acres; Private Ownership) (Scores: Hydrology = 106; Habitat = 95; Species Occurrence = 50; Social Function = 49) First 100 feet from Strawberry Lake to be classed as "A" wetland. High waterbird and recharge values. Additional 200 feet south of "A" wetland and irregular area further west to be classed as "B" wetlands. Remainder outward area classed as "C" wetlands. <i>A 25-foot transitional buffer shall be maintained from "B" wetlands. Storm water shall be treated before entering adjacent wetlands from fill permitted under GP. A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology and help establish appropriate setbacks from drainages and water bodies. If fill is authorized by GPs, then the two ditches shall be filled in the adjacent undeveloped areas. An impervious barrier shall be placed at the margins of any fill authorized in the GPs to the bottom of the peat layer or a minimum of one foot below the bottom of gravel fill to preclude groundwater outmigration from an adjacent wetlands. If no damage would result to private property, treated local storm water shall be directed to the bog from fill authorized in the GPs. Hydrologic analysis of "B" wetlands shall indicate importance and role of 200-foot setback to hydrology/habitat of Strawberry Lake and important areas to be avoided to the west. Southerly area may serve as spillover/drainage site between Connors/Strawberry Bog and Campbell Creek. Drainage zones shall be identified and protected.</i>	Preservation Developable	A/B/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
34G	6	53	CONNORS BOG/64 <sup>TH</sup> AVENUE, TRACT A (9.7 acres; Private Ownership) (Scores: Hydrology = 88; Habitat = 75; Species Occurrence = 55; Social Function = 47) Southern portion of lower value where topography grades up and plant communities change. Northerly portion similar to flooded areas in main Connors Bog immediately to north of site. <i>A visual buffer shall be established at the edge of any future fill and remaining unfilled sections to north and east. If no damage to private property, on-site treated storm water shall be directed into the Connors Bog wetlands.</i>	Developable	B
35	6	53	RASPBERRY TO STRAWBERRY/NORTHWOOD TO JEWEL LAKE (Four sites) (15 acres; Private Ownership) (Scores: Hydrology = 87; Habitat = 62; Species Occurrence = 41; Social Function = 35) <i>Shady Birch Terrace Subdivision, a large unplatted area south of 7<sup>th</sup> Avenue, contains a pond and fringe habitat which shall be retained via a 65-foot setback. This area of Shady Birch is designated "B". Isolated small parcels are "C" wetlands.</i>	Developable	B/C
35A	6	53	73 <sup>RD</sup> AND JEWEL LAKE (2.4 acres; Private Ownership) (Scores: Hydrology = 87; Habitat = 72; Species Occurrence = 53; Social Function = 40) Portions previously permitted by Corps Individual Permit; setbacks from pond previously required under Individual Permits. High bird use and habitat diversity. Significant run-off and water quality control for Sand Lake. <i>Pond habitat, water quality and drainage values shall be maintained via avoidance.</i>	Developable	B
36	6	66	HATHOR SUBDIVISION (27.12 acres; Public & Private Ownership) (Scores: Hydrology = 103; Habitat = 104; Species Occurrence = 29; Social Function = 42) Main sections nearly developed: south of Kronos Drive to be classed as "C" wetlands. Northernmost half of Block 2 and West 80 <sup>th</sup> right-of-way to the ponds to be classed as "A" wetlands (Hathor Park); <i>shall be retained due to habitat, water quality, flood control and recreation values. A 25-foot buffer shall be maintained between any fill permitted under the GPs and adjacent "A" wetlands.</i>	Developable	A/C
36A	None	66	BLACKBERRY/DIMOND (2.5 acres; Private Ownership) (Scores: Hydrology = 55; Habitat = 75; Species Occurrence = 18; Social Function = 39) Provides flood storage and water quality functions: connection between Sand Lake wetlands and Campbell Lake. <i>The drainageway shall be maintained between Sand Lake wetlands and Campbell Lake. no fill shall be allowed within 25-foot of the main channel in order to protect the area's flood storage and water quality functions. Silt fences shall be used in association with placement of any fill. Fill slopes shall be vegetated to minimize erosion and reduce turbidity.</i>	Undesignated	C
36B	6	66	BIRCH LAKE (5.7 acres; Public & Private Ownership) (Scores: Hydrology = 80; Habitat = 93; Species Occurrence = 56; Social Function = 74) High hydrology and habitat values. <i>Minor recreation amenities may be considered but shall be built on piles or at the fringes only.</i>	Developable	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
37	2	52	SAND LAKE FRINGE WETLANDS (20.25 acres approx. = Public Ownership; 2.75 acres = Private Ownership) (Scores: Hydrology = 138; Habitat = 170; Species Occurrence = 143, Social Function = 89) Includes fringe wetlands on north side of Sand Lake, park land at east end of lake, and isolated pond and drainage area south of West 72 <sup>nd</sup> Avenue. <i>Lakeside wetlands shall be avoided via appropriate setbacks throughout. Isolated pond and drainage way below West 72<sup>nd</sup> Avenue shall be preserved. (Assessment included lake acreage).</i>	Preservation	A
37A	2	65	<u>SAND, SUNDI, JEWEL LAKES</u> (62 acres; Public & Private Ownership) (Scores: Hydrology = 86; Habitat = 92; Species Occurrence = 110; Social Function = 45) “A” wetlands designation for those lakeside wetlands around Sand, Sundi and the unnamed lake immediately east of Sundi Lake, and the wetland complex that connects these waterbodies. Municipally-owned park lands are also classified as “A” wetlands and are connected to the lake setback preservation zone at a common boundary near Sundi Lake. Fringe wetlands exist around Jewel Lake. <i>Prior to any development of the Jewel Lake edge, a wetland delineation and Corps approval shall be required.</i>  These wetlands are vital to water quality, water level maintenance and flood storage, as well as the habitat and open space functions of the lakes and canals. <i>The functions shall be maintained and preserved by adherence to the policies below.</i> “A” wetland designated within the lake setbacks could be used in subdivision design as a platted open space area, with development restrictions consistent with a “Preservation” classification. <i>At the time of application, hydrological analysis of the entire site by the applicant/developer shall provide the relationship of the wetlands to water quality, recharge and flood storage to the four area lakes. Field records and surveys show very high habitat and hydrological values. Thus, prior to future permitting, additional information on habitat values shall be provided by an applicant. Analysis of potential fill impacts on habitat and hydrology functions shall be required by the applicant. Fill projects shall not threaten viability of the lakes and adjacent habitat. Development potential exists but the Corps standards shall be met.</i> <u>SOUTH SIDE SAND LAKE: CHARLOTTE CIRCLE, VICTORIA SUBDIVISION</u> (3.83 acres; Private Ownership) (Scores: Hydrology = 48; Habitat = 52; Species Occurrence = 11; Social Function = 48) Realign wetland boundary to the vegetation break (eastward) of the original. <i>A 25-foot transitional buffer shall be maintained from adjacent “A” wetlands. An impervious barrier shall be placed at the margins of new fill authorized by the GPs adjacent to the “A” wetlands to the bottom of the peat layer or a minimum of one foot below the bottom of the gravel fill to preclude groundwater outmigration from the adjacent wetland. If no damage would result to private property, treated local storm water shall be directed into the bog from wetlands to the east.</i>	Preservation	A
37B	2	65		Developable	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
37C	2	65	ST. BENEDICT'S (5.4 acres; Private Ownership) (Scores: Hydrology = 75; Habitat = 59; Species Occurrence = 68; Social Function = 44) Westernmost 150 feet includes key habitat and hydrology areas, with connection to "A" wetland. Ponded in spring; nesting use, significant species present. <i>A 200-foot transitional buffer shall be maintained from the "A" wetlands to protect habitat values of the "A" wetlands and at the west end of this site. New fill shall be visually screened from the setback along the "A" wetlands. If no damage would result to private property, treated, local stormwater shall be directed into the bog. No work shall be done on this site under the GPs between April and July. An impervious barrier shall be placed at the margins of fill authorized in the GPs adjacent to the "A" wetlands to the bottom of the peat layer or a minimum of one foot below the bottom of gravel fill to preclude groundwater outmigration from adjacent wetlands.</i>	Developable	C
37D	2	65	WEST OF JEWEL LAKE ROAD: 84 <sup>TH</sup> TO 86 <sup>TH</sup> (8.2 acres; Private Ownership) (Scores: Hydrology = 87; Habitat = 67; Species Occurrence = 35; Social Function = 45) Significant disturbance already. <i>A 200-foot transitional buffer shall be maintained from "A" wetlands to protect the nesting habitat in "A" wetlands. An impervious barrier shall be placed at the margins of any fill authorized in the GPs adjacent to "A" wetlands to the bottom of peat layer or a minimum of one foot below the bottom of gravel fill to preclude groundwater outmigration from adjacent wetlands.</i>	Developable	C
37E	None	52	WEST 72 <sup>ND</sup> AVENUE (1.75 acres; Public Ownership) (Three sites) (Scores: Hydrology = 49; Habitat = 40; Species Occurrence = 18; Social Function = 47) Three previously Undesignated sites. Northerly and eastern areas are isolated sinkholes = "C" wetland. <i>Southerly site's drainage function shall be retained or replaced. May have hydrologic connection to lake to the south. A hydrological analysis shall be done and shall meet the acceptable standards of the Municipal Public Works Department in order to prevent flooding, maintain both surface and subsurface cross drainage, and prevent drainage from adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology and replace drainage functions.. Additional small wetland pools and depressions are scattered in this parcel and they shall be delineated prior to development. Any additional wet areas are very small and can be covered under the General Permit.</i>	Undesignated	C
38	12	43+	CAMPBELL CREEK GREENBELT (165+ acres = Greenbelt areas; Public Ownership) (Scores: Hydrology = 140; Habitat = 112; Species Occurrence = 102; Social Function = 54) "A" wetlands designation applies to those areas within the greenbelt which are protected under Municipal park ownership and stream protection ordinance. Important to fish habitat, flood control and recreation. <i>Permits for public use trails, additions and changes shall be placed as far from creek as possible and shall avoid wetlands to the maximum extent.</i>	Preservation	A
38	None	68	TAKU LAKE (14.5 acres; Public Ownership) (Scores: Not Assessed) Park amenities allowed but must maintain drainageway at south end of lake; <i>minimum setbacks of 65 feet shall be required from lake shore. Provides flood storage, habitat.</i>	Undesignated	A/Open Water

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
38A	12	44	INTERNATIONAL: CAMPBELL CREEK, EAST AND WEST OF HIGHWAY (11.3 acres; Private Ownership) (Scores assessed in two parts: Hydrology = 86, 63; Habitat = 50, 34; Species Occurrence = 18, 18; Social Function = 45, 46) <i>A 25-foot non-disturbance buffer shall be maintained from "A" wetlands. Run-off from any new development shall be treated before entering the creek.</i>	Developable	C
38B	12	55	OLD SEWARD HIGHWAY/64 <sup>TH</sup> AVENUE (12.4 acres; Private Ownership) (Scores: Hydrology = 80; Habitat = 63; Species Occurrence = 26; Social Function = 35) Although disturbed, considerable habitat values exist where ponded. Potential for habitat enhancement. <i>Eastern one-third of site and ponds shall be retained and enhanced with 65-foot setbacks.</i> Cluster development could occur on western and southern fringes with buffering from ponds. Ponded sites east of foot trail require Individual Permit.	Developable	C
38B	12	55	NEAR TAKU ELEMENTARY (7.5 acres; Private Ownership) (Scores: Hydrology = 81; Habitat = 66; Species Occurrence = 24; Social Function = 59) Marginal wetlands on east side of creek. <i>A 25-foot buffer shall be maintained from "A" wetland/greenbelt. On-site drainage shall be treated before entering creek.</i>	Developable	C
38C	12	55	ALONG C STREET: DOWLING TO 76 <sup>TH</sup> AVENUE (14.01 acres; Public & Private Ownership) (Scores: Hydrology = 85; Habitat = 88; Species Occurrence = 28; Social Function = 49) Artificially created ponds: road decreases habitat values; nesting ducks present. Area has drainage problems. <i>A written plan shall be submitted to the Municipal Department of Community Planning and Development describing how proposed fill would minimize impacts to nesting habitat, such as timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancement. A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology. In Tract 3B, the seasonal drainage pattern (west to east toward Campbell Creek) shall be maintained via fill avoidance of seasonal surface flow low points. The water body at the south end of tract within the C Street right-of-way, south of Raspberry Road, and a 25-foot setback around the water body shall be treated as an "A" wetland. No work shall be done in this setback under the GPs from April through July. Area has permanent and seasonal ponds. "B" area includes parcel at SE Hart/72d intersection.</i>	Developable	B/C
38D	None	75	EAST SIDE OF CAMPBELL LAKE, AT VICTOR ROAD (1.6 acres; Public & Private Ownership) (Scores: Hydrology = 98; Habitat = 77; Species Occurrence = 78; Social Function = 41) Includes lakeshore wetlands. Good species use, i.e. salmon, and stormwater filtering values; <i>area shall be preserved.</i>	Undesignated	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
39	12A	43 and 55	TINA LAKE (10 acres; Public & Private Ownership) (Scores: Hydrology = 135; Habitat = 93; Species Occurrence = 73; Social Function = 36) Values for water retention/filtering and significant species use. Remaining wetlands have direct connection to lake's hydrology values. Assumed that outer fringes of wetland could be filled. <i>Additional projects shall not occur during waterfowl breeding season (April-July). Fill edges shall include visual landscaped buffer. If Dowling Road is to be developed, any mitigation that may be required shall be off-site.</i>	Developable	A
40	13	43	BUSINESS PARK (Public Ownership—"A" wetland site; & Private Ownership) a) West Side of Business Park Boulevard. (8.38 acres) (Scores: Hydrology = 112; Habitat = 67; Species Occurrence = 94; Social Function = 65) Municipal and Business Park Coalition-owned land classed as "A" wetlands due to high hydrology, habitat values, enhancement/mitigation potentials identified; local snow dump nearby. Small privately owned parcel west of road remains as a "C" wetland. A 25-foot transitional buffer shall be maintained between fill authorized under the GPs and the "A" wetland. No work shall be done on this site under the GPs from April through July. An impervious barrier shall be placed at the margins of any fill authorized by these GPs adjacent to the "A" wetlands to the bottom of the peat layer or a minimum of one foot below the bottom of the gravel fill to preclude groundwater outmigration from an adjacent wetland.	Developable	A/C
40A	13		b) East Side of Business Park Boulevard (approximately 8 acres) (Scores: Hydrology = 94; Habitat = 59; Species Occurrence = 71; Social Function = 49) (Area has a semi-permanent pond) Lower values due to disturbance; recommend Municipal support to the Coalition to acquire Tracts 2, 3, and 4. Enhancement potential, species use. A written plan shall be submitted in the permit process describing how fill will minimize impacts on nesting habitats. This shall include avoidance and/or cluster design.	Developable	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
40B	13	43	<p>SOUTHEAST INTERSECTION OF TUDOR/C STREET (South of EXXON gravel pit pond) (34 acres; Private Ownership) (Scores: Hydrology = 86; Habitat = 50; Species Occurrence = 18; Social Function = 40)</p> <p>Mixed woods. A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology, particularly with movement of runoff from snow dumps. A 100-foot setback shall be required from the EXXON gravel pit pond. A written plan shall be submitted to the Municipal Department of Community Planning and Development for review and approval describing efforts to avoid and minimize impacts to the tract's habitat values, particularly avoidance of construction in Site 40B during waterfowl nesting and migration peaks. Additional examples of possible measures to avoid and minimize impacts to habitat include additional setbacks, vegetative screening, reduction of fill, and onsite enhancement. No work shall be done on this site under the GPs from April through July.</p>	Developable	C
40B	13	43	<p>SOUTHWEST INTERSECTION OF INTERNATIONAL/C STREET (4 acres; Private Ownership) (Scores: Hydrology = 71; Habitat = 43; Species Occurrence = 18; Social Function = 33)</p> <p>Minimal values; could be used for storm drain treatment.</p>	Developable	C
40B	13	43	<p>SOUTHEAST INTERSECTION OF INTERNATIONAL/C STREET (1.1 acres; Private Ownership) (Scores: Hydrology = 72; Habitat = 42; Species Occurrence = 18; Social Function = 50)</p> <p>Minimal values; could be used for storm drain treatment.</p>	Developable	C
41	13	31	<p>A STREET TO C STREET/36<sup>TH</sup> TO 40<sup>TH</sup> (3.4 acres; Public Ownership) (Scores: Hydrology = 68; Habitat = 36; Species Occurrence = 18; Social Function = 46)</p> <p>Fragmented and already partially developed. Development associated with fill authorized under the GPs shall include a means of water quality treatment of stormwater to prevent further degradation of the water quality of Fish Creek; any method proposed shall be approved by the Municipal Public Works Department. Local storm drains lead directly to Fish Creek.</p>	Developable	C
41	13	31	<p>WETLANDS SOUTH OF LOUSSAC LIBRARY (4 acres; Public Ownership) (Scores: Hydrology = 79; Habitat = 63; Species Occurrence = 54; Social Function = 60)</p> <p>Significant disturbance but has moderate waterfowl use/nesting. Poned areas artificially created and water levels may be supplemented. Development shall avoid all ponded areas in this Tract. A 65' setback shall apply around the permanent pond. Development associated with fill authorized under the GPs shall include a means of water quality treatment of stormwater to prevent further degradation of the water quality of Fish Creek; any method proposed shall be approved by the Municipal Public Works Department. No work shall be done in this site under the GPs from April through July.</p>	Developable	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
41	13	31	A STREET TO FAIRBANKS: 40 <sup>th</sup> TO TUDOR ROAD (47.5 acres; Private Ownership) (Scores: Hydrology = 99; Habitat = 70; Species Occurrence = 60; Social Function = 40) Portions developed. Could serve as storm drain treatment/collection site. <i>Development shall direct storm water through appropriate treatment prior to entrance into storm drain as it leads directly into Fish Creek.</i>	Developable	C
42	13A	32	NE NEW SEWARD HIGHWAY/TUDOR ROAD (13 acres; Private Ownership) (Scores: Hydrology = 105; Habitat = 85; Species Occurrence = 28; Social Function = 54) Ponds provide high species use and habitat diversity. <i>Ponds or species use and habitat diversity shall be maintained with a minimum 65-foot setback.</i> Outlet ditch could be filled to retain wetland characteristics. Pond area could be tracted out. Performs storm drain filter function. Cluster housing recommended for eastern edge of site. (Unplatted areas zoned Residential.)	Developable	B
43	16	32	LAKE OTIS (9 acres; Public & Private Ownership) (Scores: Hydrology = 109; Habitat = 96; Species Occurrence = 96; Social Function = 80) Wetland fringe important for lake water quality, wildlife habitat and open space values. <i>Park improvements shall be developed at wetland fringes and on pilings whenever practicable. Future modifications to the lake water level control structure shall be reviewed under the Individual Permit review process to preclude any dewatering impacts on wetlands. A minimum 65-foot setback shall be maintained from lake for all new structures. Minor accessory structures may be built on piles.</i>	Preservation	A
44	17	32	MACINNES STREET/TUDOR ROAD, ALONG FISH CREEK (3 acres; Private Ownership) (Scores: Hydrology = 93; Habitat = 98; Species Occurrence = 52; Social Function = 78) Importance for habitat, water quality values. Wetland was retained as on-site mitigation for a previously permitted project. Area extends as narrow, wet drainageway north and east to East 40 <sup>th</sup> Avenue right-of-way.	Conservation	A
45	17	44	WALDRON DRIVE WETLANDS (13.8 acres; Private Ownership) (Scores: Hydrology = 110; Habitat = 85; Species Occurrence = 61; Social Function = 53) <i>A minimum 85-foot setback shall be maintained from creek (headwaters of Fish Creek) in any future permitting.</i> Southern fringe could be developed without mitigation and appropriate buffering. <i>On-site drainage treatment shall be included in any new development.</i>	Conservation	B
46	18	43	WEST SIDE OLD SEWARD HIGHWAY: EAST 57 <sup>th</sup> DOWLING (2.5 acres; Private Ownership) (Scores: Hydrology = 63; Habitat = 34; Species Occurrence = 18; Social Function = 46) Minimal values; could be used in storm drain treatment.	Developable	C



Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
46	18	44	55 <sup>TH</sup> TO DOWLING: SEWARD HIGHWAY TO LAKE OTIS (24 acres; Private Ownership) (Scores: Hydrology = 87; Habitat = 52; Species Occurrence = 42; Social Function = 12) Minimal values; could be used for storm drain treatment. All but west end disturbed and that is isolated by fills and roads and is too small to provide habitat. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Public Works Department in order to determine if a pond is present and a setback is required.</i>	Developable	C
46	18	44	NORTHWEST INTERSECTION OF DOWLING/SEWARD HIGHWAY (17 acres; Private Ownership) (Scores: Hydrology = 106; Habitat = 50; Species Occurrence = 18; Social Function = 39) Minimal values; could be used for storm drain treatment/habitat enhancement.	Developable	C
46	18	56	SOUTHWEST INTERSECTION: DOWLING/SEWARD HIGHWAY (1.45 acres; Private Ownership) (Scores: Hydrology = 85; Habitat = 33; Species Occurrence = 18; Social Function = 46) Minimal values.	Developable	C
47	19	45	TUDOR DOG TRACK AND SITE BEHIND DEPT. OF PUBLIC WORKS (4.8 acres; Public Ownership) (Scores: Not Assessed) <i>A 25-foot transitional buffer shall be maintained between any fill permitted under the GPs and adjacent "A" wetlands.</i>	Developable	C
47	19	45	EAST SIDE OF LAKE OTIS AT 52 <sup>ND</sup> AVENUE AND NORTH OF DOWLING (21 acres; Private Ownership) (Scores assessed in two parts: Hydrology = 80, 47; Habitat = 64, 30; Species Occurrence = 18, 18; Social Function = 53, 54) Northern section currently drains south to north at Folker Street right-of-way. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, particularly of the developed infrastructure and homes in Simonian Subdivision; to maintain both surface and subsurface cross drainage; and to prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology, particularly with movement of water to Campbell Creek. A 50-foot transitional buffer shall be maintained between any fill permitted under these GPs along the eastern and southern boundaries of Lot 72 and adjacent "A" wetlands. A 25-foot transitional buffer shall be maintained between any fill permitted under these GPs and adjacent "A" wetlands.</i>	Developable	C
48	41	45+	CAMPBELL TRACT (1400 acres; Public Ownership) (Scores: Hydrology = 126; Habitat = 156; Species Occurrence = 137; Social Function = 52) Portions have a direct link to Campbell Creek hydrologic regime. <i>Basher Lake wetlands shall be preserved because of high hydrology and habitat values. Park development allowed if consistent with Bicentennial Park Master Plan. Any activity shall avoid/minimize disturbance to surface water connections to Campbell Creek, its tributaries and Basher Lake. Trails in wetlands shall be set back at least 100 feet from Campbell Creek/tributaries. Utilities and roads shall be placed in the least sensitive areas.</i>	Preservation	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
48	37	71 to 73	NORTH OF SERVICE HIGH SCHOOL: SOUTHERNMOST CAMPBELL CREEK (269.4 acres; Public Ownership) (Scores: Hydrology = 117; Habitat = 150; Species Occurrence = 48; Social Function = 69) <i>Wetlands within Bicentennial Park shall be preserved with minor park/recreational improvements allowed, but limited to non-fill activities if practicable. Best Management Practices shall be used during construction, but drainage and surface run-off connections shall be preserved.</i>	Preservation	A
48	43	48	SOUTH SIDE OF TUDOR/MULDOON CURVE (68 acres; Public Ownership) (Scores: Hydrology = 113; Habitat = 99; Species Occurrence = 24; Social Function = 59) <i>High habitat/hydrology (drainage/recharge) functions shall be preserved: headwaters of branch of Campbell Creek. Impervious dikes shall be placed at the margins of any fill to the bottom of the peat layer or a minimum of one foot below the new fill to separate and isolate fills from "A" wetland. Utilities, minor park amenities, and Foothills Park, as previously outlined in Utility Corridor and Anchorage Bowl park plans, could be developed without compensatory mitigation in the northerly disturbed areas.</i>	Special Study	A
48	19	58	ALONG ABBOTT LOOP ROAD: NORTHWEST END OF BLM TRACT (80 acres; Public Ownership) (Scores: Hydrology = 84; Habitat = 124; Species Occurrence = 29; Social Function = 59) Headwaters for forks of Little Campbell Creek. Values for water quality, storage, recharge and habitat. Minor utility, park development possible on eastern fringes; a 100-foot setback shall be maintained from waterbodies and all cross-drainage shall be protected.	Special Study	A
48	None	72	EAST OF SERVICE HIGH SCHOOL TO HILLSIDE PARK (2 acres; Public Ownership) (Scores: Hydrology = 78; Habitat = 65; Species Occurrence = 28; Social Function = 56) <i>Drainage to the "A" wetlands shall be maintained.</i>	Undesignated	B
48A	37	71	ZODIAK MANOR SUBDIVISION (3.2 acres; Public Ownership) (Scores: Hydrology = 73; Habitat = 54; Species Occurrence = 17; Social Function = 55) Northern edges at "A" wetland are wetter. A 25-foot setback shall be maintained along the drainage conveyance (southeast to northwest) from Service High School. A 50-foot transitional buffer shall be maintained between fill permitted under the GPs and the "A" wetlands.	Developable	C
48B	None	48	SOUTHEAST MULDOON-TUDOR-KLUTINA DRIVE (3 acres; Private Ownership) (Scores: Hydrology = 61; Habitat = 47; Species Occurrence = 18; Social Function = 44) Isolated site. Minimum values.	Undesignated	C
49 East	42	46	SOUTH SIDE OF TUDOR ROAD: ARMORY TO ADOT/PF (7.5 acres; Public Ownership) (Scores: Hydrology = 66; Habitat = 57; Species Occurrence = 24; Social Function = 42) May serve to filter run-off before entering Campbell Creek; local drainage shall be maintained. Reference Tudor Road PLI Plan for recommended use. A 25-foot buffer shall be maintained from "A" wetland to the south. Small isolated area south of ADOT/PF building is of minimal value and is classed as "C".	Special Study	B/C

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49 West	42	46	SOUTH SIDE OF TUDOR ROAD: EAST OF POLICE DEPARTMENT (81 acres; Public Ownership) (Scores: Hydrology = 90; Habitat = 70; Species Occurrence = 24; Social Function = 56) Much of these wetlands designated as good/excellent suitability zones in Tudor Road PLI Plan. <i>Developer shall provide hydrology/habitat evaluations necessary to delineate fill areas/setbacks in "B" area. All fills shall include a 100-foot setback from the north bank of Campbell Creek.</i> "C" wetland west of upland forest, which bisects this area, is isolated, of lower value, and could be filled under a General Permit. Southern portions of this wetland require additional delineation, especially south of East 45 <sup>th</sup> Avenue and the Animal Control facility.	Special Study	B/C
49A	None	36	TUDOR/MULDOON CURVE (10 acres; Public & Private Ownership) (Scores: Hydrology = 100; Habitat = 94; Species Occurrence = 49; Social Function = 38) <i>High habitat/hydrology functions shall be maintained. Adjacent surrounding transition area could be used for additional stormwater detention. Important for local roadway drainage/water quality.</i>	Undesignated	B
50	62	61	STUCKAGAIN: END OF MIDDEN WAY (2.9 acres; Private Ownership) (Scores: Hydrology = 73; Habitat = 77; Species Occurrence = 22; Social Function = 21) Pond is stream headwaters; good potential fish habitat. <i>Retain pond as open space; drainageway shall be tracted out in platting. A minimum 85-foot setback shall be maintained from pond and creek (where wetlands adjacent).</i>	Developable	B
50	None	61	STUCKAGAIN: MIDDEN WAY (0.4 acres; Private Ownership) (Scores: Hydrology = 64; Habitat = 45; Species Occurrence = 18; Social Function = 29) Unique local site. No known species use. <i>Lot development shall be consistent with large lot zoning to preclude extensive fill coverage. Local drainage patterns shall be maintained around the sinkhole.</i>	Undesignated	C
51	19	57 and 70	STREAMSIDE SITES, 68 <sup>TH</sup> AVENUE TO 80 <sup>TH</sup> LAKE OTIS TO ABBOTT LOOP (81.4 acres; Private Ownership) (Scores: Hydrology = 127; Habitat = 107; Species Occurrence = 69; Social Function = 50) <i>A 100-foot setback shall be maintained along Little Campbell Creek to maintain its anadromous fish resources and its flood storage/hydrology functions. Setback areas shall be treated as "A" wetlands. Most areas scored high in the assessments, but the high value sites are concentrated at the stream corridors and these are to be protected via the setbacks.</i>	Developable	C
51A	None	70	CANDYWINE CIRCLE (4.7 acres; Private Ownership) (Scores: Hydrology = 102; Habitat = 88; Species Occurrence = 49; Social Function = 40) Includes north branch, south fork of Little Campbell Creek. Important for flood storage, water quality maintenance; possible fish use. <i>Entire floodplain area shall be included in setback; additional setbacks/requirements to be determined in permit process, with minimum of 100 feet of setback required.</i>	Undesignated	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
52	19	57 and 70	#19A ISOLATED SITES: LAKE OTIS TO ABBOTT LOOP/68 <sup>TH</sup> TO ABBOTT (45 acres; Private Ownership) (Scores: Hydrology = 118; Habitat = 63; Species Occurrence = 44; Social Function = 40) Mostly isolated, partially disturbed, low value areas. Minimal impacts foreseen if filled. <i>A 100-foot setback shall be maintained along all forks of Little Campbell Creek due to anadromous fish resources. A hydrologic analysis shall be done for work proposed in the northern portion of 72<sup>nd</sup> and Abbott Loop to prevent flooding of existing and future homes and roadways at the northern end of Travis Street. A field delineation shall be done to determine the northerly extent of the wetland northeast of intersection of 80<sup>th</sup> and Snow View Drive. If a hydrologic connection to Little Campbell Creek is observed, a 65-foot waterbody setback shall be required along it. Setback areas shall be treated as "A" wetlands.</i>	Developable	C
53	19	57	TIFFANY TERRACE TO BABY BEAR DRIVE/64 <sup>TH</sup> TO 68 <sup>TH</sup> (16.2 acres; Private Ownership) (Scores: Hydrology = 87; Habitat = 80; Species Occurrence = 48; Social Function = 43) Pebblebrook Subdivision site was issued General Permit; "A" designation applies to remaining wetland setback after development and the narrow remaining strip along the creek to the west parallel with 66 <sup>th</sup> Avenue. <i>A 100-foot setback shall be maintained along channels of Little Campbell Creek. A 25-foot transitional buffer shall be maintained between fill authorized under the GPs and adjacent "A" wetlands. (See permit #C-521.) Remaining wetlands to the north are "C" wetlands with a setback as per plats.</i>	Developable	A/C
54	19	56 and 57	64 <sup>TH</sup> AND DOWLING/LAKE OTIS TO NEWT DRIVE (18.7 acres; Private Ownership) (Scores: Hydrology = 66; Habitat = 58; Species Occurrence = 18; Social Function = 49) Isolated site; possible use for storm drain treatment.	Developable	C
55, 56 and 57	19	56	DOWLING TO LORE ROAD/SEWARD HIGHWAY TO LAKE OTIS (71.41 acres; Private Ownership) (Scores: Hydrology = 117; Habitat = 86; Species Occurrence = 24; Social Function = 54) Sites located south of 68 <sup>th</sup> Avenue classed as "C" wetlands. Creekside sites at O'Brian Street and on lots to the east classed as "B" wetlands due to direct hydrologic connection to creek with water quality, flood storage values; development could occur on outer fringes. Galatea Estates Subdivision classed as a "C". <i>A 100-foot setback shall be maintained along channels of Little Campbell Creek in order to maintain anadromous fish resources as well as water quality and flood storage functions.</i>	Developable	B/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
58	19	69	LORE ROAD TO 82 <sup>ND</sup> AVENUE: SEWARD HIGHWAY TO LAKE OTIS (18.88 acres; Private Ownership) (Scores: Hydrology = 76; Habitat = 65; Species Occurrence = 37; Social Function = 21) All sites isolated except for a 13.2 acre site adjacent to the creek. Possible for a sedimentation basin site. <i>A 100-foot setback shall be maintained along Little Campbell Creek due to its anadromous fish resources. All drainage corridors shall be maintained to the creek. The southerly ponded parcel southeast of the soccer field is designated "B" and shall be maintained with a 65-foot setback.</i>	Developable	B/C
58A	None	69	HARTZELL/DIMOND INTERSECTION (1.06 acres; Private Ownership) (Scores: Hydrology = 97; Habitat = 80; Species Occurrence = 38; Social Function = 36) Direct connection to south fork of Little Campbell Creek. Flow from springs/pond within floodplain; flood storage/recharge functions; fish rearing habitat. <i>Portions of site which may be filled shall be determined during project review. Integrity of springs/tributary shall be retained with minimum 85-foot setback.</i>	Undesignated	B
58B	None	69	SOUTHEAST INTERSECTION: DIMOND/SEWARD HIGHWAY (0.88 acres; Private Ownership) (Scores: Hydrology = 70; Habitat = 56; Species Occurrence = 28; Social Function = 44) Site could be used for stormwater detention/treatment—connects via pipe directly to Little Campbell Creek. <i>A 65-foot setback shall be maintained along the northwest corner. Area where fill shall be avoided includes 400 feet running south along Dimond exit ramp and for at least 125 feet to the east, e.g. the low corner. Important for flood control and water quality.</i>	Undesignated	C
58C	None	69	LITTLE CAMPBELL CREEK FLOODPLAIN AT OLD SEWARD HIGHWAY (0.1 acres approx.; Private Ownership) (Scores: Not Assessed) This site includes an old channel, associated floodplain and several remnant pools of Little Campbell Creek. <i>Any new development shall have a minimum 100-foot (in wetlands) setback from the new channel at the east end of the parcel.</i> The setback could be reduced in the permit process along the north border since the creek was moved to a ditch.	Undesignated	B
59	9	68	SOUTH OF DIMOND CENTER MALL/WEST OF OLD SEWARD HIGHWAY (8.5 acres; Private Ownership) (Scores: Hydrology = 79; Habitat = 79; Species Occurrence = 45; Social Function = 5) No connection to ponds to the west; minimal values. Large permanent pond provides bird nesting and migratory habitat functions. <i>A 100-foot setback shall be maintained around the pond. The conveyance of industrial area runoff to Campbell Creek shall be maintained. Remainder of "C" area low value and highly disturbed.</i>	Developable Undesignated	C/Open Water

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
59	9	68	KING STREET: SOUTH OF DIMOND (52 acres; Private Ownership) (Scores: Hydrology = 88; Habitat = 75; Species Occurrence = 30; Social Function = 32) Serves as local industrial area drainage; likely feeds into Campbell Creek, conveying industrial run-off; attenuates flows to Campbell Creek. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Public Works Department to assure retention of a sufficient corridor through low point of wetlands to convey storm flows to Campbell Creek, attenuate flows, and convey industrial runoff. It shall be used in determining the placement of fill that would minimize interference with the local hydrology, particularly with movement of water to Campbell Creek. Cluster development techniques shall be utilized to the maximum extent if developed.</i>	Developable	C
59	9	77	WEST OF OLD SEWARD HIGHWAY, EAST OF RAILROAD, NORTH OF 100 <sup>TH</sup> AVENUE (11.9 acres; Private Ownership) (Scores: Hydrology = 81; Habitat = 59; Species Occurrence = 17; Social Function = 27) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Public Works Department in order to prevent flooding of adjacent property, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology, particularly with movement of water to Campbell Creek.</i>	Developable Undesignated	C
60	9	76	NORTH OF 100 <sup>TH</sup> WEST OF MINNESOTA (33 acres) (Private Ownership) (Scores: Assessed with Site No. 60 North) Site is marginal, disturbed and drying wetlands. <i>Additional wetland delineation shall be required before permit is issued. No known surface water sites or drainage patterns.</i>	Developable	C
60	9	77	OLD SEWARD HIGHWAY TO C STREET TO NORTH SIDE OF O'MALLEY: SOUTH OF 104 <sup>TH</sup> AVENUE (16.9 acres; Private Ownership) (Scores: Hydrology = 88; Habitat = 55; Species Occurrence = 42; Social Function = 31) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent road and property, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with local hydrology, particularly with movement of water to Campbell Creek.</i>	Developable	C
60 North	9	76 and 77	EAST OF MINNESOTA DRIVE/NORTH OF WEST 100 <sup>TH</sup> AVENUE TO C STREET RIGHT-OF-WAY (167.1 acres; Public & Private Ownership) (Scores: Hydrology = 131; Habitat = 101; Species Occurrence = 46; Social Function = 39) This area has known drainage problems and moderate to high migratory habitat. The site has enhancement possibilities, i.e. diversify plant community, create open water for more habitat. <i>Hydrology, habitat, and drainage information shall be required in the permit and plating process. Fill avoidance zones may be required. Scores skewed slightly by the size of the site. Site is extremely disturbed, drained and ditched and is typically dry after May.</i>	Developable	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
60 South	9	76 and 77	INSIDE MINNESOTA/O'MALLEY CURVE (162 acres; Public & Private Ownership) (Scores: Hydrology = 106; Habitat = 98; Species Occurrence = 68; Social Function = 47) <i>Groundwater, recharge/flood storage, and habitat information (relating to the Klatt Bog core) shall be required through the permit process. Fill is better suited for the northwest corner (i.e. park amenities.) Area treats snowmelt and run-off from industrial areas. Most habitat occurs at the fringes. Future site developments should require determination of how storm drain systems either fit the South Anchorage Drainage Master Plan or how the Plan will be modified.</i>	Developable	B
60	None	77	<u>NORTH OF 104<sup>TH</sup>/C STREET</u> (10.6 acres; Private Ownership) (Scores: Hydrology = 95; Habitat = 78; Species Occurrence = 65; Social Function = 13) This area has known drainage problems. Values for filtering, water supply into Klatt Bog system. Moderate bird use concentrated around ponds. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands, in particular with regard to Klatt Bog. It shall be used in determining the placement of fill that would minimize interference with the local hydrology. A written plan shall be submitted to the Municipal Department of Community Development describing how proposed fill would minimize impacts to nesting habitat. Examples of possible measures include timing windows, additional setbacks, vegetative screening, reduction of fill and onsite enhancement. A 100-foot setback shall be maintained around the two existing ponds or new ponds would be constructed near the outflow to maintain the water filtering and storm drainage collection functions of the existing ponds. If no damage would result to private property, treated local, storm water shall be directed to Klatt Bog. No work shall be done on this site under the GPs from April through July. The pond edge shall be delineated by Planning staff or the Corps of Engineers prior to permitting.</i>	Developable	C
60A	9	76	<u>PATRICIA SUBDIVISION</u> (61 acres; Private Ownership) (Scores: Hydrology = 96; Habitat = 107; Species Occurrence = 79; Social Function = 47) Portions of the core area are recognized by the U.S. Fish and Wildlife Service and the Anchorage Coastal Management Program as critical wildlife habitat. Individual ownership of lots compounds the difficulty of future permitting: Municipal and individual lot owners should coordinate a solution before permitting. <i>Olympic Drive shall be permitted as a secondary access (previously a plat requirement). Methods shall be utilized to maintain habitat and hydrology connections and to limit the dewatering of core areas.</i>	Conservation	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
60B	None	77	C STREET/O'MALLEY: TEMPORARY SEDIMENTATION PONDS (5.5 acres; Public Ownership) (Scores: Hydrology = 97; Habitat = 83; Species Occurrence = 66; Social Function = 52) <i>No fill shall be permitted in the ponds under the GPs unless the water quality and flow regulation functions into Klatt Bog ditch are replaced. A written plan shall be submitted to the Municipal Department of Community Planning and Development for review and approval describing efforts to avoid and minimize impacts to the tract's habitat values, such as timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancement. Important for water quality/regulation of flow in Klatt Bog ditch; good species use.</i>	Undesignated	C
60C	None	78	O'MALLEY/SEWARD HIGHWAY SNOW DUMP AREA (2.0 acres approx.; Public Ownership) (Scores: Not Assessed) Site has been created from snow dump and trail and road fills. Moderate habitat and run-off storage. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works. The study shall be used in determining the placement of fill that would minimize interference with the local hydrology. Ponds shall be avoided to the maximum extent. No work shall be done on this site under the GPs from April through July.</i>	Undesignated	C
61	7	74	RESOLUTION POINT SUBDIVISION (10.1 acres; Private Ownership) (Scores: Hydrology = 74; Habitat = 41; Species Occurrence = 26; Social Function = 35) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Public Works Department to enable delineation and protection of drainage corridors to the bluff. The study shall be used in determining the placement of fill that would minimize interference with local hydrology.</i>	Developable	C
62	8	75 and 83	BAYSHORE DRIVE (26.3 acres; Private Ownership) (Scores: Hydrology = 83, Habitat = 87; Species Occurrence = 61; Social Function = 59) Elongated section to the east is "A" wetland and conveys subsurface water from Klatt Bog to Bayshore Lake; westerly section is "A" wetland which is important to the Bayshore Lake floodplain. Southerly "C" area is marginal black spruce forest wetlands and appears unconnected to Bayshore Creek. <i>A 25-foot transitional buffer shall be maintained between fill authorized under the GPs and "A" wetlands. A 25-foot setback from the top of the bluff along Bayshore Creek shall be maintained.</i>	Preservation Conservation Developable	A/C
62	8	75 and 83	BAYSHORE LAKE (9 acres; Public & Private Ownership) (Scores: Hydrology = 91; Habitat = 96; Species Occurrence = 85; Social Function = 75) Documented high habitat, recreation and water quality values. <i>Shall be preserved.</i>	Preservation	A



Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
63	9	75 76 83 and 84	<p>MAIN KLATT BOG CORE (520 acres; Public &amp; Private Ownership) (Scores: Hydrology = 86; Habitat = 123; Species Occurrence = 88; Social Function = 53)</p> <p>a) "A" wetlands: Set aside mitigation area of Concord Hills subdivision, and east edge of Southport PUD behind dike.</p> <p>b) "B" wetlands: Southwest portions, mostly south and west of O'Malley Road. Central sections of the southwest wetlands (Simpson Tracts B and parts of C, especially Bureau of Land Management lands south of O'Malley) are recognized by the U.S. Fish and Wildlife Service as critical wildlife habitats. Cumulative impacts from development and infrastructure have altered the bog's fringes and hydrologic regime. <i>The permit review process shall require information necessary to identify or substantiate the local drainage regime, water table depths and critical wildlife zones.</i> Development may occur selectively on portions of this area following the permit review process. <i>Methods shall be utilized to maintain the critical habitat and hydrological connections important to the critical habitat zones and areawide drainage. Subdivision design and Best Management Practices, including cluster housing, shall be used to avoid dewatering of critical areas and drainageways.</i> Scores for Habitat and Species Occurrence are high and correspond with the U.S. Fish and Wildlife Service's critical habitat identification, although hydrologic changes may have reduced bird usage. The bog may serve as important storm drain collection treatment site as it now conveys storm drain output from industrial sites to the east. Area could also be used for habitat enhancement/mitigation site for other projects in Anchorage. Ideal scenario would call for public ownership of remaining critical and undevelopable sections of the bog's core.</p> <p>c) "C" wetlands: Four isolated and disturbed sites south of Klatt Road (see Maps 83 and 84) and additional sites in the Southport PUD, west of Southport Boulevard. It is recognized that portions of the Southport PUD, specifically the dense black spruce woods north of Ensign Drive and west of Southport Boulevard, and other wooded wetlands between Southport Boulevard and Bayshore Drive south of Ensign Drive, are lower value sites compared to the Klatt Bog core. These areas are designated "C." Since the Southport PUD area is under Corps jurisdiction covered by a long-term Individual 404 Permit, the Corps will continue to administer all wetland fill aspects of the Southport PUD.</p>	Conservation/ Developable	A/B/C
64	11	91 and 92	<p>JOHN'S PARK NORTH/BOTANICAL GARDEN SUBDIVISION (15 acres; Public &amp; Private Ownership) (Scores: Hydrology = 84; Habitat = 77; Species Occurrence = 39; Social Function = 42)</p> <p>A stream corridor setback of 25 feet shall be retained from "A" wetland. Large portions (Tracts B and C) already permitted by Corps.</p>	Undesignated	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
64	10	84 and 85	SOUTH OF KLATT ROAD: WEST OF MARY STREET TO TIMBERLANE DRIVE (8.3 acres; Public & Private Ownership) (Scores: Hydrology = 91; Habitat = 41; Species Occurrence = 18; Social Function = 75) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works to enable delineation and protection of drainage conveyance corridors, especially on the west side. The study shall be used in determining the placement of fill that would minimize interference with the local hydrology. Site could be used for drainage treatment (Tract A). Fill shall minimize any local drainage. The drainage ditch and catch basin should be cleaned regularly to avoid local flooding problems with adjacent homes.</i>	Developable	C
64	11	92	SOUTHEAST INTERSECTION OF JOHNS ROAD AND HUFFMAN ROAD (2.7 acres; Private Ownership) (Scores: Hydrology = 66; Habitat = 35; Species Occurrence = 18; Social Function = 59) Minimal values.	Developable	C
65	11	92	JOHN'S PARK/FURROW CREEK CORRIDOR (8 acres; Public Ownership) (Scores: Not Assessed) <i>Shall be completely preserved. Trail crossings of creek are permissible but must follow 404 process.</i>	Preservation	A
66	26	86	MOOSE MEADOWS (Huffman/Seward Highway) (70 acres; Public & Private Ownership) (Scores: Hydrology = 112; Habitat = 110; Species Occurrence = 65; Social Function = 57) Scores equivalent to those of "A" wetland values but functions focused in central sections . Development possible on fringes with central portion retained for water quality/flood control. <i>Water levels and headwaters of the north fork of Furrow Creek functions shall be maintained. Cluster development suitable at south end. Landscaped screening shall be required between development and central area. Central portions may be enhanced. Could be used as collection basin for Lake Otis storm drain system.</i>	Conservation	B
67	22	78	NORTH OF O'MALLEY ALONG INDEPENDENCE DRIVE (10.7 acres; Private Ownership) (Scores: Hydrology = 90; Habitat = 70; Species Occurrence = 50; Social Function = 37) Conveys minor tributary of Furrow Creek; drainage and high groundwater table problems. West side of Independence Drive may remain as "C" wetland; <i>creekside sites and drainage functions shall be retained via a 65-foot setback from the tributary of Furrow Creek. A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain both surface and subsurface cross drainage, and prevent drainage of adjacent wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology, particularly with movement of water to Furrow Creek. Although scores were moderately high, the site is highly disturbed . Key stream area is located and protected in site #67A.</i>	Developable	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
67	22	78	INDEPENDENCE PARK: VANGUARD DRIVE AND SENTRY DRIVE (11.5 acres; Private Ownership) (Scores: Hydrology = 73; Habitat = 58; Species Occurrence = 36; Social Function = 55) Vanguard Drive conveys general drainage which eventually reaches Little Campbell Creek. <i>Drainage functions shall be retained.</i>	Developable	C
67A	None	78	CREEK: LAKE OTIS TO O'MALLEY (1.9 acres; Private Ownership) (Scores: Hydrology = 68; Habitat = 68; Species Occurrence = 18; Social Function = 42) 65-foot minimum setback precludes lower designation. <i>Shall be platted as undisturbed stream corridor.</i> Importance for conveyance of original fork of Furrow Creek, flood control and water quality. <i>Since flows are only occasionally confined in a defined channel, the entire site shall be retained to the maximum extent.</i>	Undesignated	A
68	21	70	84 <sup>TH</sup> TO ABBOTT/SPRUCE STREET RIGHT-OF-WAY (42.1 acres; Private Ownership) (Scores: Merged with Sites #51 and #52) <i>A 100-foot setback shall be maintained along the channels of Little Campbell Creek to maintain its anadromous fish resources as well as flood storage and hydrologic functions. A 65-foot setback shall be maintained from the small tributary in the wetland at Lake Otis and Abbott. A written plan shall be submitted to the Municipal Department of Community Planning and Development for review and approval describing efforts to avoid and minimize impacts to the tract's habitat values, such as timing windows, additional setbacks, vegetative screening, reduction of fill and onsite enhancement. No change shall be allowed in the bottom or invert elevation of the culvert under Abbott Road in the westerly parcel or other modification of this drainage which would increase drainage flow rate or volume: this is to prevent lowering of the water table in wetland # 69. Setbacks shall treat as an "A" wetlands area. Acquisition and enhancement possible. Scores merged with Sites #51 and #52.</i>	Developable	C
69	21	79	RUTH ARCAND PARK, SOUTHEAST OF LAKE OTIS/ABBOTT (184.1 acres; Public Ownership) (Scores: Hydrology = 146; Habitat = 145; Species Occurrence = 54; Social Function = 80) Municipal park lands: manage under adopted park plans. Conveys forks of Little Campbell Creek and Furrow Creek. Limited active recreation fill construction permitted in peripheral wetlands as outlined in the park plan. Sedimentation basins are allowed as part of water quality control.	Preservation	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
70	21	80	<p>BIRCH/104<sup>th</sup> (51 acres; Private Ownership) (Scores: Hydrology = 102; Habitat = 99; Species Occurrence = 65; Social Function = 44)</p> <p>a) East of Springhill Drive. North of E 90<sup>th</sup>; Classified as "B" wetlands due to unplatted area and headwaters functions. Headwaters of fork of Little Campbell Creek; <i>if permitted, shall retain minimum 85 foot setback</i>. South of E 90<sup>th</sup>; Also classed as "B" wetlands. <i>Hydrology connection to "B" wetland areas to north shall be retained.</i></p> <p>b) West of Springhill Drive. Classed as "C" wetland; <i>A 100-foot setback shall be maintained along Little Campbell Creek to maintain its andromous fish resources as well as its flood storage functions. Fill shall be limited to the minimum necessary for a single-lane access driveway, utilities, accessory structure, and house pad. Fill for yards is not authorized in this unit under the GPs.</i></p> <p>c) HLB Parcels (Lots 89, 90, 91 and 97) adjacent to creek, just east of Abbott Loop are "A"; as required in Furrow Creek 2 mitigation terms. Trails are permitted here.</p>	Developable	A/B/C
70	21	80	<p>SOUTH FORK, LITTLE CAMPBELL CREEK (3.3 acres; Private Ownership) (Scores: Hydrology = 84; Habitat = 68; Species Occurrence = 44; Social Function = 34)</p> <p>100-foot minimum setback precludes lower designation. Importance for conveyance, water quality, flood control, fish habitat. <i>Stream corridor has pockets of wetlands which shall remain undisturbed (using 100-foot setbacks or avoidance).</i> Assumed would not be filled for residential development. Utility corridors, driveways should be permitted if no practical alternatives exist.</p>	Undesignated	A
71	None	81	<p>CRAIG CREEK CT/BIRCH (9.1 acres; Private Ownership) (Scores: Hydrology = 91; Habitat = 83; Species Occurrence = 50; Social Function = 47)</p> <p>Importance for flood storage, water quality, recharge. Unique local habitat. <i>Development possible on fringes but shall preserve integrity and functions of the site. Hydrology and stream information shall be required in permit process.</i> Stream may be seasonal.</p>	Undesignated	B
71A	None	82	<p>EAST OF HILLSIDE DRIVE: NORTH END OF HAMPTON DRIVE AND EAST OF SCHUSS DRIVE (1.5 acres; Private Ownership) (Scores: Not Assessed)</p> <p>Two sites. <i>Additional information required on hydrology and drainage functions before permitting. Fill shall avoid permanent ponds and emergent vegetation low points where seasonal pools develop.</i></p>	Undesignated	B/Open Water
72	None	89	<p>LAKE-O-THE-HILLS (7.5 acres; Private Ownership) (Scores: Hydrology = 99; Habitat = 98; Species Occurrence = 44; Social Function = 51)</p> <p>Associated wetlands along the lake fringe. <i>Site shall be retained via 65-foot non-disturbance setback for wetland fringes.</i></p>	Undesignated	A/Open Water

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
72A	None	89	<u>115<sup>TH</sup> AVENUE/HILLSIDE DRIVE</u> (6.4 acres; Private Ownership) (Scores: Hydrology = 93; Habitat = 87; Species Occurrence = 24; Social Function = 32) Site has known drainage problems. Serves for recharge, flood storage of Little Campbell Creek. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage of Little Campbell Creek, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill that would minimize interference with local hydrology. A 100-foot setback shall be maintained along Little Campbell Creek to maintain its anadromous fish resources. A 65-foot setback shall be maintained from drainageways and seeps.</i>	Undesignated	C
72A	None	89	<u>WEST OF HILLSIDE DRIVE, ALONG CREEK</u> (14.13 acres; Private Ownership) (Scores: Hydrology = 106; Habitat = 95; Species Occurrence = 28; Social Function = 50) Values for flood storage, recharge, water quality and fish habitat. <i>A 100-foot setback from Little Campbell Creek and an 85-foot setback from local springs shall be maintained to preserve fish habitat, flood storage, recharge, and water quality functions. Additional delineation required before permitting.</i>	Undesignated	C
72B	None	90	<u>115<sup>TH</sup> AVENUE/COBRA AVENUE</u> (11 acres; Private Ownership) (Scores: Hydrology = 81; Habitat = 63; Species Occurrence = 14; Social Function = 27) Headwaters for Craig Creek—poorly defined channel. <i>An 85-foot setback shall be maintained from Craig Creek unless a hydrologic analysis indicates that a reduced setback in Sly Fox Subdivision, Lot 2, would not adversely affect Craig Creek. Fill shall be limited to the minimum necessary for a single-lane access driveway, utilities, house pad, and accessory structure. Fill for yards is not authorized in this unit in the GPs. Additional wetland delineation shall be required before permitting in Boulder Springs Subdivision between Vosikof Place and Boulder Circle. Septic systems shall be located as far from creek as possible.</i>	Undesignated	C
72B	None	90	<u>SOUTH FORK, LITTLE CAMPBELL CREEK</u> (18.3 acres; Private Ownership) (Scores: Hydrology = 85; Habitat = 81; Species Occurrence = 34; Social Function = 25) <i>A 100-foot setback shall be maintained along Little Campbell Creek to maintain its anadromous fish resources. Fill shall be limited to the minimum necessary for a single-lane access driveway, utilities, house pad, and accessory structure. Fill for yards is not authorized in this unit in the GPs.</i>	Undesignated	C
72C	34	89	<u>NORTHEAST OF LAKE-O-THE HILLS</u> (Craig Creek) (3 acres; Private Ownership) (Scores: Site scored with Site #72F) <i>A 100-foot setback shall be maintained from Craig Creek to maintain flood storage/water quality functions and values. Fill shall be limited to the minimum necessary for a single-lane access driveway, utilities, house pad, and accessory structure. Fill for yards is not authorized in this unit in the GPs.</i>	Developable	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
72D	34	90	SOUTH OF HIDEAWAY LAKE (7.2 acres; Private Ownership) (Scores: Hydrology = 88; Habitat = 98; Species Occurrence = 44; Social Function = 40) Contains springs/channels to Hideaway Lake; Craig Creek headwaters area; ponds have flood storage capacity values. Site serves as a drainage basin and flood storage area. <i>Detailed drainage analyses shall be required before permitting. Common drainage connections to lake and springs shall be retained via avoidance.</i>	Developable	B
72E	34	82 and 90	HIDEAWAY LAKE (7.8 acres; Private Ownership) (Scores: Hydrology = 83; Habitat = 86; Species Occurrence = 43; Social Function = 40) <i>Wetlands adjacent to lake and feeder creek shall be preserved.</i>	Developable	A/Open Water
72F	32	88 and 89	FORSYTHE PARK AREA (25 acres; Public & Private Ownership) (Scores: Hydrology = 94; Habitat = 92; Species Occurrence = 33; Social Function = 37) <i>A 100-foot setback shall be maintained along Little Campbell Creek to maintain its anadromous fish resources. Fill shall be limited to the minimum necessary for a single-lane access driveway, utilities, and pads for a house and accessory structure. Fill for yards is not authorized in this unit under the GPs. The narrow strip along Little Campbell Creek upstream of the park is designated "A". Homes shall be placed as far from setback as practicable.</i>	Mixed Developable	A/C
73	31	89 and 96	DOWNEY FINCH TO DEARMOUN ROAD (49.4 acres; Private Ownership) (Scores: Hydrology = 98; Habitat = 111; Species Occurrence = 18; Social Function = 47) No wetlands north of Downey Finch; small sites north of Huffman right-of-way classed "C" wetlands. Larger site to the south to be classed as "B" wetlands, due to high groundwater, ponds and poor drainage. Development possible on southern fringes. <i>Fill shall be limited to the minimum necessary for a single-lane access driveway, utilities, accessory structure, and house pad. Fill for yards is not authorized in this unit in the GPs. A 65-foot minimum setback shall be maintained around the pond. Small creek and wetland at Trappers Trail Road and Birch Road shall be retained as "A"—requires better delineation and may extend south of Trappers Trail Road.</i>	Developable/Undesignated	A/B/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
74	24	87	CANGE STREET ALONG CLEO RIGHT-OF-WAY (10.6 acres; Private Ownership) (Scores: Hydrology = 70; Habitat = 68; Species Occurrence = 18; Social Function = 42) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage of the north fork of Furrow Creek, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology and maintain an adequate drainage corridor. The topographic drainage (i.e., the low point) shall be retained in its undisturbed state without a setback. A 65-foot setback shall be retained along the creek. The creek shall be retained in an open channel. A limited pre-discharge notification procedure shall be instituted by the Corps. The Corps will FAX copies of the application and of the hydrologic analysis to EPA, USFWS, NMFS, ADFG, ADGC, and ADEC after being provided these by the Municipality. Any concerns specifically related to the hydrologic analysis shall be raised within five working days of the FAX and conditions proposed to resolve concerns within 15 calendar days of the FAX. The Corps will determine if these conditions are appropriate for inclusion on the GP authorization.</i>	Developable	C
75	23	87	BOTH SIDES OF LAKE OTIS, NORTH OF ALDERWOOD LOOP (18.23 acres; Private Ownership) (Scores: Hydrology = 73; Habitat = 62; Species Occurrence = 18; Social Function = 43) <i>The drainageway function at north end of site across Lake Otis shall be maintained.</i>	Developable	C
75	25	86	NORTH SIDE OF HUFFMAN ROAD: GREGORY ROAD TO ALDERWOOD LOOP (17.52 acres; Private Ownership) (Scores: Hydrology = 82; Habitat = 80; Species Occurrence = 28; Social Function = 38) <i>A 65-foot setback from the creek shall be maintained in the northwest corner of the tract. A 65-foot setback shall be maintained around the spring. A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage of the north fork of Furrow Creek, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology and maintain an adequate drainage corridor.</i>	Developable	C
76	26	93	TANAGA TERRACE AND HUFFMAN HILLS SUBDIVISIONS (16.8 acres; Private Ownership) (Scores: Hydrology = 110; Habitat = 86; Species Occurrence = 64; Social Function = 43) Currently Corps permitted. Site contains main fork and north fork of Furrow Creek; high hydrology values. <i>Eastern one-third of Tanaga Terrace has key habitat and flood storage zone and shall be retained as per current permit and plat. Setback shall be designated "A" as per permit.</i> Tract 1 of Huffman Hills North Addition #2 is preserved as per conditions of 404 permit.	Conservation Developable	A/B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
77	25	94	SOUTHEAST MERGANSER TO LAKE OTIS (4.2 acres; Private Ownership) (Scores: Hydrology = 58; Habitat = 39; Species Occurrence = 18; Social Function = 41) Minimal values.	Developable	C
78	None	100	ELMORE CREEK, WEST OF ELMORE DRIVE (2.2 acres; Private Ownership) (Scores: Hydrology = 93; Habitat = 65; Species Occurrence = 48; Social Function = 28) Southern portion along creek classed as "A" wetlands. Northern spur without creek classed as "C" wetlands. <i>A 25-foot transitional buffer shall be maintained between fill permitted under the GPs and the adjacent "A" wetland. Fill shall be limited to the minimum necessary for utilities, an accessory structure, a single-lane access driveway and house pad. Fill for yards is not authorized in this unit in the GPs.</i>	Undesignated	A/C
78	27	101	ELMORE STREET TO MANYTELL AVENUE (Timberlux Subdivision) (10.8 acres; Private Ownership) (Scores: Hydrology = 107; Habitat = 106; Species Occurrence = 48; Social Function = 35) Elmore Creek flows through site providing open water habitat, hydrology values. <i>Any drainage areas connected by culverts to the "B" wetlands located north of Manytell Avenue shall remain undisturbed. Fill shall be limited to the minimum necessary for utilities, an accessory structure, a single-lane access driveway and house pad. Fill for yards is not authorized in this unit under the GPs. Fill shall avoid topographic low points. A 65-foot setback shall be maintained around the pond.</i>	Developable	B/C
79	29	101	PARK HILLS TO EVERGREEN STREET (6.8 acres; Private Ownership) (Scores: Hydrology = 62; Habitat = 43; Species Occurrence = 18; Social Function = 39) Provides local area storm water retention and serves as headwaters of Gold Creek. <i>Future development shall include fill avoidance to retain storm water functions. Creek corridor and drainage areas shall be delineated and avoided via 65-foot setbacks.</i>	Developable	B
79A	None	101	EAST OF BUFFALO STREET, SOUTH OF 104 <sup>TH</sup> AVENUE (4.75 acres; Private Ownership) (Scores: Hydrology = 57; Habitat = 34; Species Occurrence = 18; Social Function = 29) Isolated site with minimum values. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage of the Little Rabbit Creek, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill that would minimize interference with the local hydrology.</i>	Undesignated	C



Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
80	30	102	NORTH OF RABBIT CREEK ROAD/ANDOVER (10 acres; Private Ownership) (Scores: Hydrology = 87; Habitat = 79; Species Occurrence = 18; Social Function = 40) Partial headwaters for Elmore Creek; moderate habitat diversity, flood control, water quality values. Lots, as platted, could avoid fill in wetlands by placing structures next to road. <i>A 65-foot setback shall be maintained along the creek channel and ponds. Fill shall not be placed in the pond and drainage outlet at the northwest corner of the unsubdivided area north of Fernwood Avenue extended. Fill shall be limited to the minimum necessary for a single-lane access driveway, utilities, and pads for a house and an accessory structure. Fill for yards is not authorized in this unit under the GPs.</i> This area is used by moose as a calving area and is also a high use corridor for large animal movements.	Developable	C
80	30	102	PICKETT STREET/142 <sup>ND</sup> AVENUE (9.6 acres; Private Ownership) (Scores: Hydrology = 66; Habitat = 79; Species Occurrence = 18; Social Function = 35) <i>Pond and adjacent wetlands shall be retained as open space in future subdivision plans. (Note headwaters of Gold Creek). "A" wetland designation conforms with open space reserve and drainage easements in Equestrian Heights Subdivision. Future fill in Kijik Subdivision shall avoid wetlands to the maximum extent and, if required, shall be limited to single lane access and primary structures.</i>	Developable	A/Open Water
81	60	102 and 103	SECTION 36 (118.30 acres; Public Ownership) (Scores: Hydrology = 132; Habitat = 132; Species Occurrence = 31; Social Function = 62) <i>Development shall be concentrated at upland edges wherever practicable and as per Section 36 Land Use Plan. Wetlands shall be preserved for flood control and water quality. Headwaters of Rabbit Creek.</i>	Preservation	A
81	60	102 and 103	CLARK'S ROAD TO BEAR VALLEY, LITTLE RABBIT CREEK (5.07 acres; Public Ownership) (Scores: Hydrology = 79; Habitat = 67; Species Occurrence = 48; Social Function = 52) <i>Within the floodplain; provides for flood storage, water quality, some habitat values. Site is within Section 36 and shall be preserved.</i>	Undesignated	A
82	60	102	BEAR VALLEY SCHOOL—NORTH (27.5 acres; Public Ownership) (Scores: Hydrology = 80; Habitat = 89; Species Occurrence = 18; Social Function = 55) On Municipal land; water present due to back-up from fill. North of 149 <sup>th</sup> Avenue to be classed as "B" wetland to protect pond habitat and flows to the northwest. South of 149 <sup>th</sup> Avenue to be classed as "C" wetland. <i>A 25-foot transitional buffer shall be maintained between fill authorized by the GPs and both "A" and "B" wetlands. In addition, a visual buffer of trees or a fence shall be placed at the edge of the fill authorized under the GPs to reduce the impacts to wildlife use in adjacent wetlands. A 25-foot water body setback shall be maintained along any drainage corridor and channels. Fill shall be limited to the minimum necessary for utilities, a single-lane access driveway, an accessory structure, and house pad. Fill for yards is not authorized in this unit under the GPs. Drainage flows in channel across Clarks Road to Rabbit Creek.</i>	Developable	B/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
83	60	108	<p>BEAR VALLEY: CARL/JAMIE STREETS (70.12 acres; Private Ownership) (Scores: Hydrology = 109; Habitat = 105; Species Occurrence = 28; Social Function = 50)</p> <p><i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage of the Little Rabbit Creek, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirement for 100-foot setbacks along drainageways that would minimize interference with the local hydrology. A 100-foot setback shall be maintained along all identified creeks to protect anadromous fish resources. Fill shall be limited to the minimum necessary for utilities, a single-lane access driveway and house and accessory structure pads. Fill for yards is not authorized in this unit under the GPs. A written plan shall be submitted to the Municipal Department of Community Planning and Development for review and approval describing efforts to avoid and minimize impacts to the tract's habitat values for large mammals, especially bear. Linear fills crossing this area shall be minimized or confined to avoid disrupting migratory movement. Examples include timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancement.</i></p> <p>Because of past development including ditches, road, driveway and house fills, utility lines, etc., the local hydrology in Bear Valley, especially between Jamie Street, Diane Drive, and Nickleen Street, may have changed to the point that sites previously identified as wetlands may no longer be wet. In addition, it should be understood that the wetlands mapping for the Bear Valley area may be generalized and additional delineations may be necessary to clarify actual wetland boundaries.</p>	Developable	C
84	61	102 through 108	<p>VANTAGE POINTE SUBDIVISION (36.06 acres; Private Ownership) (Scores: Hydrology = 80; Habitat = 112; Species Occurrence = 54; Social Function = 40)</p> <p><i>Future fill projects shall adhere to EPA action on previous violation. A 100-foot setback shall be maintained from stream channels and waterbodies to retain water quality, flood control values of pond and creeks during permit process. Area is source for drinking water downstream. A hydrologic and drainage impacts study shall be submitted prior to permitting.</i></p> <p>Partial headwaters of Little Rabbit Creek and contains two small tributaries.</p>	Developable	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
84	60	108	BEAR VALLEY (2 sites) (28.7 acres; Private Ownership) (Scores: Hydrology = 96; Habitat = 77; Species Occurrence = 28; Social Function = 50) <i>A comprehensive hydrologic analysis of surface flows shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property; maintain groundwater recharge and flood storage of the Little Rabbit Creek, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that would minimize interference with the local hydrology. Fill shall be limited to the minimum necessary for utilities, a single-lane access driveway and a house and accessory structure pads. Fill for yards is not authorized in this unit under the GPs. A minimum setback of 100 feet shall be maintained from any creek or drainageways identified in the hydrologic analysis. Southerly site appears isolated, without inflows or outflows.</i>	Developable	C
85	28	106	<sup>164TH</sup> STONERIDGE (12.5 acres; Private Ownership) (Scores: Hydrology = 113; Habitat = 86; Species Occurrence = 70; Social Function = 45) <i>An 85-foot setback shall be maintained from creek for flood control, water quality. This site requires an accurate wetland boundary determination. Large lot zoning allows for adequate setbacks and avoidance of flood control areas. A full watershed analysis of Little Survival Creek should be developed and should include identification of all feeder springs and drainageways, and the main channel to its source. Minimum setbacks from any permanent channel shall be 85 feet and 25 feet from ephemeral drainageways.</i>	Developable	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
85	28	106	<p>RICKY ROAD TO 164<sup>TH</sup> AVENUE—OFF GOLDENVIEW DRIVE (58.7 acres; Private Ownership) (Scores: Hydrology = 114; Habitat = 95; Species Occurrence = 30; Social Function = 46)</p> <p>Site with creek in northern half towards Ricky Road (tributary of Little Rabbit Creek) conveys surface run-off from east and south; shall be classed as "B" wetlands. Southern site shall be classed as "C" wetlands (162<sup>nd</sup> to 164<sup>th</sup> Avenues). A hydrologic analysis of surface flows shall be done for any projects in either wetland area, and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage of the Little Rabbit and Little Survival Creeks, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that would allow maintenance of existing surface drainage for southern site (162<sup>nd</sup> to 164<sup>th</sup> Avenues) and whether there is a connection to Little Rabbit Creek in the area west of St. James Street right-of-way. A 65-foot setback shall be required from all drainages identified in the hydrologic analysis. A limited pre-discharge notification procedure shall be instituted by the Corps. The Corps will FAX copies of the application and of the hydrologic analysis to EPA, USFWS, NMFS, ADFG, ADGC, and ADEC after being provided these by the Municipality. Any concerns specifically related to the hydrologic analysis shall be raised within five working days of the FAX and conditions proposed to resolve concerns within 15 calendar days of the FAX. The Corps will determine if these conditions are appropriate for inclusion on the GP authorization. Fill shall be limited to the minimum necessary for utilities, a single-lane access driveway and house and accessory structure pads. Fill for yards is not authorized in this unit under the GPs.</p>	Developable	B/C
85A	None	106	<p>VIRGO AVENUE (6.07 acres; Private Ownership) (Scores: Hydrology = 77; Habitat = 48; Species Occurrence = 18; Social Function = 33)</p> <p>A hydrologic analysis of surface flows shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways and the ephemeral pond at the southern end of the tract that would allow maintenance of existing surface drainage. Additional wetlands and ephemeral drainageways may be located in low lying areas of parcels south of Virgo Avenue and above the bluff east of the Old Seward Highway. Additional field delineation and hydrologic information shall be required prior to any future plat or development activities, particularly in HLB parcels 2-127 through 2-136.</p>	Undesignated	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
86	None	105 and 110	POTTER MARSH (425.56+ acres; Public & Private Ownership) (Scores: Not Assessed) <i>These critical habitat wetlands shall be preserved under the refuge management jurisdiction of the Alaska Department of Fish and Game. Any use proposals shall be presented to that Department and shall be consistent with refuge goals and policies. Portions of these wetlands are within the State right-of-way for Seward Highway. It is recognized that future highway expansions may require fill activities. These are permissible, given the public need and associated benefits. If necessary, mitigation requirements shall be determined at the time of permitting.</i>	Preservation	A
86A	None	110	POTTER CREEK MOUTH (3.5 acres approx.; Public Ownership) (Scores: Not Assessed) Area includes partly intertidal wetlands at mouth of Potter Creek, east of the Seward Highway, but included here because it is primarily freshwater influenced. <i>High habitat and water quality site shall be preserved in its entirety. Minor Alaska Railroad track and bridge projects should be permitted with minimal review.</i>	Undesignated	A

#### EAGLE RIVER-EKLUKNA

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
101	131	2 through 6	EKLUKNA FLATS (176.5 acres; Public & Private Ownership) (Scores: Hydrology = 104; Habitat = 143; Species Occurrence = 60; Social Function = 26) High habitat values; could be enhanced by enlarging ponds. <i>Hydrology connections, cross-drainage and ponds shall be preserved to the maximum extent. Minor highway improvements should be permitted.</i>	Special Study	A
102	131	12 and 13	EKLUKNA RIVER AND THUNDERBIRD CREEK CORRIDOR AND ONE ISOLATED SITE UPSTREAM (10.5 acres; Public & Private Ownership) (Scores: Hydrology = 72; Habitat = 88; Species Occurrence = 43; Social Function = 25) <i>A precise wetland delineation shall be required prior to permitting. A 65-foot setback shall be maintained along waterways/drainages. Isolated site can be filled with a General Permit.</i>	Developable	A/C
102A	None	None	BARBARA LAKE/EKLUKNA VALLEY WETLANDS (Private Ownership) (Scores: Not Assessed) A large wetland basin exists within Sections 34/35 of Township 16N, Range 1E, south of Eklutna Lake Road and west of Barbara Lake. These areas were not delineated or evaluated for this revision. <i>Any development here shall require Corps notification and/or approval.</i> Individual 404 permits are recommended in this area as it includes several springs and ephemeral creeks, which shall be identified in permit and plat process.	Undesignated	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
103	122	12	THUNDERBIRD HEIGHTS SUBDIVISION (11.2 acres; Private Ownership) (Scores: Hydrology = 81; Habitat = 74; Species Occurrence = 15; Social Function = 21) A 65-foot setback shall be maintained along the drainage in southern site. Tract C near Sandpiper classed as "C" wetland due to minimum values. Highest values concentrated at drainage way.	Developable	C
103A Pond	121	12	THUNDERBIRD HEIGHTS (1 acre; Private Ownership) (Scores: Hydrology = 79; Habitat = 64; Species Occurrence = 23; Social Function = 21) Pond at Old Glenn Highway classed as "B" wetland; flood storage, drainage functions shall be maintained. Additional information on inflow/storage shall be required during permit process. Inflow identified as creek shall be maintained with 65-foot setback.	Undesignated	B
104	None	16	THUNDERBIRD FALLS SUBDIVISION: AT CREEK (11.6 acres; Private Ownership) (Scores: Hydrology = 75; Habitat = 53; Species Occurrence = 23; Social Function = 28) Substantial streamflow; has flood storage values. Habitat values not fully known. A 65-foot setback shall be maintained along the creek to maintain flood storage values. Fill shall be limited to the minimum necessary for utilities, a single-lane access driveway and house and accessory structure pads. Fill for yards is not authorized in this unit under the GPs. Large lot zoning should allow for minimum fill to retain drainages.	Undesignated	C
104	121	16 and 17	BETWEEN GLENN HIGHWAY AND PARADIS LANE, NORTH OF EDMONDS LAKE (9.5 acres; Public & Private Ownership) (Scores: Hydrology = 86; Habitat = 82; Species Occurrence = 30; Social Function = 26) Wetlands adjacent to the tributary channel shall be retained by a 65-foot setback.	Preservation Undesignated	C
104	121	17	NORTH OF EDMONDS LAKE/EAST OF GLENN HIGHWAY (7.8 acres; Private Ownership) (Scores: Hydrology = 76; Habitat = 50; Species Occurrence = 17; Social Function = 22) A 25-foot transitional buffer shall be maintained between areas covered under the GPs and "A" wetlands.	Developable	C
104	131	11	EKLUTNA FLATS (18.5 acres; Private Ownership) (Scores: Not Assessed) Drainage way/outlet stream west of Glenn Highway shall be preserved with 65-foot setback. Shall include drainage analysis and location of channel on permits.	Special Study	B
105	119	17	WEST OF GLENN HIGHWAY - WEST OF EDMONDS LAKE (46.3 acres; Private Ownership) (Scores: Hydrology = 96; Habitat = 96; Species Occurrence = 56; Social Function = 50) Creek channel shall be maintained undisturbed. A master development plan shall be required, including a hydrology analysis and shall include a 65-foot setbacks from creeks. Drainage way and ephemeral flows shall be maintained. Other setbacks and fill restrictions may be required during the platting process.	Special Study	B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
106	118	17 and 18	MIRROR LAKE OUTLET (8.6 acres; Private Ownership) (Scores: Hydrology = 70; Habitat = 76; Species Occurrence = 48; Social Function = 35) <i>Fish present in stream which shall be maintained with a minimum 65-foot setback. Creek crossings shall require bridges or arched culverts to protect habitat. A master development plan shall be required, including a hydrology analysis which shall include design to retain drainage and ephemeral flows. Other setbacks and fill restrictions may be required in permit and plat process.</i>	Undesignated /Special Study	B
106	125	19	NORTH OF RANKIN ROAD (55 acres; Private Ownership) (Scores: Hydrology = 80; Habitat = 53; Species Occurrence = 21; Social Function = 28) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that would allow maintenance of existing surface drainage. Large site size pushed scores higher than expected. Site is isolated basin with minimal values.</i>	Undesignated /Special Study	C
107	118	17	WEST OF GLENN HIGHWAY - SOUTH OF EDMONDS LAKE (11.9 acres; Private Ownership) (Scores: Hydrology = 59; Habitat = 41; Species Occurrence = 23; Social Function = 47) <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways and ephemeral flows that would allow maintenance of existing surface drainage. A 65-foot setback shall be maintained along creeks. A master development plan is recommended. Other setbacks and fill restrictions may be required. Isolated sites are "C" wetlands.</i>	Special Study	B/C
108	117	17	OUTLET OF EDMONDS LAKE (18.1 acres; Public & Private Ownership) (Scores: Hydrology = 86; Habitat = 88; Species Occurrence = 48; Social Function = 57) <i>Possible fish habitat; important hydrological conveyance. All disturbance shall be avoided to the maximum extent.</i>	Preservation	A
108A	116	16	EAST SIDE OF EDMONDS LAKE (2.8 acres; Private Ownership) (Scores: Hydrology = 87; Habitat = 73; Species Occurrence = 29; Social Function = 49) <i>Minimal fringe wetlands present on lakeshore. Minor road maintenance/expansion fills could be permitted via Nationwide Permit. Fringe areas shall otherwise be preserved.</i>	Developable	Open Water/ A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
109	113	17 and 26	MIRROR LAKE AND FRINGE WETLANDS (92.9 acres; Public & Private Ownership) (Scores: Hydrology = 116; Habitat = 150; Species Occurrence = 123; Social Function = 82) Fringe wetlands and open water of Mirror Lake assessed together. <i>Minimum setback of 75 feet shall be required where wetlands are contiguous with the lake or, if less than 75 feet of wetlands, the setback shall be the width of those wet areas. Minor fills for lake access are permitted but shall be limited to lake access dock structures whenever practicable.</i>	Undesignated	A
109	113	26	MIRROR LAKE, SOUTH SIDE (63.15 acres; Private Ownership) (Scores: Hydrology = 113; Habitat = 101; Species Occurrence = 18; Social Function = 34) <i>Fill shall be the minimum necessary for utilities, pads for a house and an accessory structure and single lane access driveway. Fill for roads is not authorized in this unit under the GPs. A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that would allow maintenance of existing surface drainage. A minimum of a 65-foot setback shall be maintained along the creek and pond south of Lakeshore Drive. A 75-foot setback from ordinary high water shall be maintained along Mirror Lake; lakefront structures on piles may be permitted under the GPs in the 75-foot setback. No work shall be done within 200 feet of Mirror Lake from April through July.</i>	Developable	C
109A	113	26	SOUTHEAST OF ANTHEM AND LAKESHORE DRIVE (2 acres; Private Ownership) (Scores: Hydrology = 86; Habitat = 67; Species Occurrence = 18; Social Function = 34) <i>A 65-foot setback shall be maintained around the seasonal pond and drainage area into site.</i>	Developable	C
110	115A	17	MIRROR LAKE TO EDMONDS LAKE (40.2 acres; Public Ownership) (Scores: Hydrology = 99; Habitat = 89; Species Occurrence = 91; Social Function = 80) A master park plan for the area should be developed which identifies allowed uses and appropriate activities. <i>Any major park amenity development shall avoid drainage patterns and open water areas.</i> The master park plan should also identify those wetland areas to be protected for water quality maintenance.	Preservation	A
111	113A	27	MEADOW LAKE (27.27 acres; Private Ownership) (Scores: Hydrology = 113; Habitat = 103; Species Occurrence = 44; Social Function = 62) Wetlands fringe around the lake is not wide enough for development as a "C" site with a setback. Therefore, the entire site is designated as "A" wetland. Minor lake access structures are permitted.	Developable	A



Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
112	None	27	PETERS GATE SUBDIVISION: THREE SITES (46.84 acres; Private Ownership) (Scores: Hydrology = 93; Habitat = 93; Species Occurrence = 18; Social Function = 36) Provides water quality, detention for Peters Creek. <i>A 65-foot setback shall be maintained along secondary drainageways and creek. A written plan shall be submitted to the Municipal Department of Community Planning and Development for review and approval describing efforts to avoid and minimize impacts to the tract's habitat, water quality, and hydrologic values. Examples of possible measures to consider include timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancement. Cross-drainage shall be maintained. Fill shall be the minimum necessary for utilities, pads for a house and an accessory structure and a single-lane access driveway. Fill for yards is not authorized under the GPs.</i>	Undesignated	C
113	115	25	MIRROR DRIVE (7.6 acres; Private Ownership) (Scores: Hydrology = 78; Habitat = 47; Species Occurrence = 27; Social Function = 39) Use of cluster development should be incorporated in plats to protect seasonal pond and to identify drainages. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways and the seasonal pond that would allow maintenance of existing surface drainage.</i>	Preservation	C
114	126	24	TWO ISOLATED SITES: NORTH OF OBERG ROAD (8.5 acres; Private Ownership) (Scores: Hydrology = 61; Habitat = 35; Species Occurrence = 18; Social Function = 20) <i>Drainage shall be maintained through sites.</i>	Special Study	C
114	115	18 and 25	NORTH OF DEER PARK, WEST OF WATER LINE (14.7 acres; Private Ownership) (Scores: Hydrology = 66; Habitat = 67; Species Occurrence = 22; Social Function = 20) Topographic low point conveys storm drain flows through site. <i>Storm drainage through site shall be maintained. A 100-foot setback shall be maintained along tributary channel.</i>	Preservation	C
115	115	23 and 28 and 29	PETERS CREEK CORRIDOR AND ADJACENT DRAINAGE (5 acres approx.; Public & Private Ownership) (Scores: Not Assessed) Includes wetlands along creek. <i>Work adjacent to creek or other connecting drainages shall require wetland delineation and Corps approval. Riparian wetlands shall be preserved.</i>	Preservation	A
116	130	31 and 32 and 35	LOWER FIRE CREEK AND BEACH LAKE COMPLEX (300 acres approx.; Public & Private Ownership) (Scores: Not Assessed) Municipal parkland shall be preserved. Minor park and trail amenities and road access are permissible. Private lands at creek mouth controlled by the 1979 Agreement of Compromise and Settlement between the Municipality and Eklutna, Inc. Under this agreement, the 100-year floodplain is to be preserved except for trails. <i>Areas outside the floodplain shall require an Individual Permit and an additional 25-foot setback from "A" wetland areas.</i>	Preservation	A/B

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
117	108	35 and 36	MINK CREEK: WERE/JERRY (85+ acres; Public & Private Ownership) (Scores: Hydrology = 118; Habitat = 93; Species Occurrence = 36; Social Function = 42) "A" wetland designation for Creek corridor (150-feet wide at creek forks, and includes the lake feeding Mink Creek.) <i>A 25-foot buffer shall be maintained between any fills and the "A" wetland sites.</i> "C" wetland designation for area north of the lake. "B" wetland designation for remainder of site. Area is generally valuable to Mink Creek flood control, water quality and wildlife habitat. <i>Drainage and flood control functions shall be maintained. Any fill authorized under the GPs shall be a minimum of 200 feet from the edge of Mink Lake. Fill shall be the minimum necessary for utilities, pads for a house and an accessory structure and a single-lane access driveway. Fill for yards is not authorized in this unit under the GPs. An impervious barrier shall be placed at the margins of any fill authorized by these GPs to the bottom of the peat layer or a minimum of one foot below the bottom of the gravel fill to preclude groundwater outmigration from an adjacent wetland.</i>	Developable	A/B/C
117	110	30	SOUTH BIRCHWOOD/TOFSON STREET (86 acres; Private Ownership) (Scores: Hydrology = 110; Habitat = 151; Species Occurrence = 54; Social Function = 40) <i>Ponded areas and drainage corridor out of Tojson Street lobe, which drains into Mink Creek shall be retained; contributes as headwaters. Fringes could be developed with appropriate setbacks to drainage zones, which shall be determined in the platting and permitting processes. Northerly lobe (approximately 12 acres) is "C" wetland and shall include a 25-foot buffer to "A" wetland areas.</i>	Preservation	B
117A	110A	30 and 31	OFF BIRCHWOOD—JAYHAWK RIGHT-OF-WAY (10.11 acres; Private Ownership) (Scores: Hydrology = 90; Habitat = 66; Species Occurrence = 18; Social Function = 37) <i>Poorly defined stream channel. A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks (minimum of 65 feet) along drainageways that would allow maintenance of existing surface drainage.</i>	Undesignated	C
117A	107	35	BEVERLY/SOUTH BIRCHWOOD (4 acres; Private Ownership) (Scores: Hydrology = 74; Habitat = 48; Species Occurrence = 18; Social Function = 36) Minimal values.	Developable	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
118	107	39	<p>OLD GLENN HIGHWAY: NORTH SIDE OF PARKS CREEK (12.7 acres; Private Ownership) (Scores: Hydrology = 66; Habitat = 45; Species Occurrence = 18; Social Function = 30)</p> <p>Isolated site. <i>A hydrologic analysis shall be done and shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that would allow maintenance of the south end connection to Parks Creek such that existing surface drainage will be maintained.</i></p>	Developable	C
119	128	37 and 38	<p>OLD GLENN HIGHWAY: CANYON (13.62 acres; Public &amp; Private Ownership) (Scores: Hydrology = 89; Habitat = 89; Species Occurrence = 24; Social Function = 51)</p> <p>Canyon labeled Open Water and creek channel. <i>A hydrologic analysis shall be done if the drainages or Parks Creek would be affected, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that would allow maintenance of the drainage conveyance to Parks Creek such that existing surface drainage will be maintained.</i> Isolated site on north side of Old Glenn Highway remains as "C" wetland.</p>	Conservation	A/C/Open Water
120	128	39 and 40	<p>PARKS CREEK - EAST SIDE OF HIGHWAY (45.5 acres; Private Ownership) (Scores: Hydrology = 95; Habitat = 89; Species Occurrence = 18; Social Function = 34)</p> <p>Setbacks encompass most of wetland. <i>Riparian sites are classed "A" and shall remain undisturbed to the maximum extent for flood values/water quality and probable fish habitat.</i></p> <p>Non-connected spur wetlands away from creek floodplain is "C" wetlands.</p>	Developable	A/C
121	111	40	<p>BEAVER POND: PARKS CREEK (North of Chugiak High School) (38.56 acres; Public &amp; Private Ownership) (Scores: Hydrology = 104; Habitat = 123; Species Occurrence = 42; Social Function = 50)</p> <p>Southern areas to remain as "C" wetlands; remainder of site, including pond/creek to be classed as "A" wetlands due to hydrology/habitat values. Flood control and high habitat value site. <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that such that existing surface drainage will be maintained.</i> A 100-foot setback shall be maintained along Parks Creek to protect anadromous fish resources. A 65-foot setback shall be maintained along the tributary of Parks Creek in the southern lobe.</p>	Developable	A/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
122	100	34 and 41 and 46	FIRE CREEK COMPLEX DOWNSTREAM OF THE ALASKA RAILROAD (230 acres approx.; Public Ownership) (Partial Area Assessment Scores: Hydrology = 109; Species Occurrence = 78; Social Function = 41) Public land, including part of Beach Lake park. <i>Site shall be preserved as indicated.</i> Minor trails, park amenities, road access and utility placement to be permitted where no practicable upland alternatives exist. <i>Any fills shall be set back a minimum of 85 feet from the creek.</i>	Preservation	A
123	112	34 and 41	PSALM LAKE COMPLEX (24 acres; Public Ownership) (Scores: Not Assessed) Includes the open water and wetland fringe of Psalm Lake. <i>Site shall be preserved.</i>	Preservation	A
124	97 and 98	33 and 42 and 43	MILITARY LANDS (5.8 acres; Public Ownership) (Scores: Not Assessed) <i>Shall be preserved and managed via EO #11990 for military lands.</i>	Preservation	A
125	None	46	PIONEER DRIVE: TWO SITES (7.5 acres; Private Ownership) (Scores: Hydrology = 61; Habitat = 36; Species Occurrence = 18; Social Function = 48) Minimal values. <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways that such existing surface drainage will be maintained.</i>	Undesignated	C
125	102	46	HILLCREST/WATERLINE (35.5 acres; Private Ownership) (Scores: Hydrology = 88; Habitat = 69; Species Occurrence = 18; Social Function = 41) <i>A 100-foot setback shall be maintained around the ephemeral pond at the northern end of the site and the drainage into and out of the pond, as well as along the stream in wetlands that exists wetland toward the northeast at See-Saw right-of-way. Could be used as open space in cluster zone/PUD.</i>	Developable	C
126	106	47	NORTHEAST INTERSECTION OF SOUTH BIRCHWOOD/GLENN HIGHWAY (21.27 acres; Public & Private Ownership) (Scores: Hydrology = 96; Habitat = 79; Species Occurrence = 32; Social Function = 39) “C” wetlands designation for isolated southern site. “B” wetlands designation for remainder of site; <i>requirement for permit shall include hydrology analysis to identify stream channels and functions.</i>	Preservation	B/C
127	103	47	DRAINAGE INTO LOWER FIRE LAKE (8.76 acres; Private Ownership) (Scores: Hydrology = 93; Habitat = 88; Species Occurrence = 24; Social Function = 61) Pond to be designated as “Open Water; revise wetland boundary. <i>Drainage through northern unconnected site shall be identified and maintained.</i>	Developable	A/Open Water

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
127	103	47	DARBY ROAD (9.65 acres; Private Ownership) (Scores: Hydrology = 76; Habitat = 64; Species Occurrence = 18; Social Function = 59) <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks along drainageways and creek such that existing surface drainage will be maintained. Platting process shall provide hydrology information.</i>	Developable	C
128	105	46 and 49	LOWER FIRE LAKE (including Fire Creek) (68 acres; Public & Private Ownership) (Scores: Hydrology = 130; Habitat = 145; Species Occurrence = 117; Social Function = 64) High value habitat, flood control and water quality values. <i>Where wetlands fringe is on the lake edge, setbacks shall be a minimum of 65 feet. Fills into the lake and creek shall be avoided.</i> Septic setback requirements for new lots should be handled by variance rather than by allowing fill into the lake. The Department of Health and Human Services should review variance requests for this unusual area.	Preservation	A
129	104	47 and 48	UPPER FIRE LAKE/CREEK (29.35 acres approx.; Public & Private Ownership) (Scores: Hydrology = 112; Habitat = 84; Species Occurrence = 29; Social Function = 37) Includes lake fringe and inlet creek wetland corridors. Important to fish habitat, water quality, flood control of Fire Creek and lake complex. <i>Fills shall be separated from waterbodies via 100-foot minimum setbacks.</i>	Mixed Developable	A
130	103	45 49 and 50	MIDDLE FIRE CREEK COMPLEX (Seward Highway to Alaska Railroad) (175 acres approx.; Private Ownership) (Scores: Hydrology = 87; Habitat = 112; Species Occurrence = 90; Social Function = 40) "A" wetlands to include major portions of 100-year floodplain via a 100-foot setback on each side of creek. Remaining parallel wetlands designated "C". <i>Beaver ponds at the Alaska Railroad shall be preserved. Area where Site #136 connects to Fire Creek corridor (Map 50) is "B"; the hydrologic connection shall be delineated and retained. A setback of at least 100 feet shall be maintained along the creek due to its anachronous fish resources. A 25-foot transitional buffer shall be maintained between fill authorized under the GPs and "A" wetlands; a 15-foot transitional buffer shall be maintained between fill authorized under the GPs and "B" wetlands</i>	Preservation/ Developable	A/B/C
131	77 through 83	44 and 51	CLUNIE LAKE COMPLEX (372 acres; Public and Private Ownership) (Scores: Hydrology = 127; Habitat = 177; Species Occurrence = 127; Social Function = 48) <i>Military lands shall be preserved and managed via EO #11990. Private lands at east end could be developed under cluster housing or PC zoning. Any design shall include building and fill setbacks of 100 feet or more from waterbodies and local drainages.</i>	Preservation	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
132 and 133	76	50	WEST FIRE CREEK COMPLEX (24 acres approx.; Public & Private Ownership) (Scores: Not Assessed) Outer wetland of Fire Creek complex, west of creek corridor. <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill such that existing surface drainage will be maintained. A 100-foot setback shall be maintained around the pond and any channel with above-ground flow. A 65-foot setback shall be maintained along subsurface drainage corridors.</i>	Developable	C
134	100	49	FIRE CREEK: PRIOR TO HIGHWAY CROSSING (18.2 acres; Private Ownership) (Scores: Hydrology = 85; Habitat = 90; Species Occurrence = 48; Social Function = 47) <i>A 25-foot transitional buffer shall be maintained between "A" and "C" sites, and a 100-foot setback shall be maintained along Fire Creek due to its anadromous fish resources.</i>	Preservation	A/C
135	None	49	UPPER CAROL CREEK (29.6 acres approx.; Public Ownership) (Scores: Hydrology = 97; Habitat = 90; Species Occurrence = 33; Social Function = 68) Contains main channel and numerous feeder springs and tributaries. Provides flood control and water quality values. <i>Developer shall provide wetland determination for the site above the Old Glenn Highway. Four feeder springs are present and shall be avoided.</i>	Developable	B
135	Part 76	49	LOWER CAROL CREEK (8.35 acres; Private Ownership) (Scores: Hydrology = 102; Habitat = 82; Species Occurrence = 48; Social Function = 51) Provides fish habitat. <i>Area within floodplain and tributary of creek shall be preserved.</i>	Preservation	A
136	76	53	SOUTHEAST END OF POWDER RESERVE COMPLEX (75 acres approx.; Public & Private Ownership) (Scores: Not Assessed) Includes main corridor of wetlands to Fire Creek. <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill such that existing surface drainage will be maintained. A written plan shall be submitted to the Municipal Department of Community Planning and Development describing how the proposed fill would minimize impacts to habitat. Examples of possible measures to consider include timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancement. Developer shall submit hydrologic and habitat information for projects in the "B" site during an Individual Section 404 permit review and plat processing for determination of future additional setbacks and avoidance zones.</i>	Preservation Developable	B/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
137	None	54	SCHROEDER SUBDIVISION PONDS (3.7 acres; Private Ownership) (Scores: Hydrology = 72; Habitat = 57; Species Occurrence = 18; Social Function = 52) <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks around the pond and along drainageways such that drainage into the site is maintained. "B" wetlands designation for pond and fringe on north side of Schroeder Road. Pond shall be preserved.</i>	Preservation	B/C
137A	75	53	SOUTH REGENCY DRIVE (1.4 acres; Private Ownership) (Not Assessed) Site is highly disturbed, remnant wetland. <i>A hydrologic analysis shall be done and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property and to maintain surface and subsurface cross drainage.</i>	Developable	C
138	None	54	SPRINGBROOK LOOP (3.66 acres; Private Ownership) (Scores: Hydrology = 82; Habitat = 79; Species Occurrence = 18; Social Function = 49) Site has considerable run-off, drainage problems. <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained.</i>	Undesignated	C
138	None	54	LUGENE AND SPRINGBROOK (1.03 acres; Private Ownership) (Scores: Hydrology = 58; Habitat = 36; Species Occurrence = 18; Social Function = 33) Minimal values; <i>drainageways shall be maintained through the site.</i>	Developable	C
139	63 through 75	53 and 58	MILITARY LANDS (60 acres; Public Ownership) (Scores: Not Assessed) <i>Shall be preserved and managed via EO #11990.</i>	Preservation	A
140	63 through 75	58	MILITARY LANDS (Acreage unknown; Public Ownership) (Scores: Not Assessed) <i>Shall be preserved and managed via EO #11990.</i>	Preservation	A
141	85	58	MOUTH OF MEADOW CREEK (1.67 acres; Public & Private Ownership) (Scores: Hydrology = 94; Habitat = 77; Species Occurrence = 48; Social Function = 61) Provides for fish habitat. <i>Wetlands shall be maintained in an undisturbed state.</i>	Preservation	A
142	70	58 and 61	MILITARY LAND (Public Ownership) (Scores: Not Assessed) <i>Shall be preserved and managed via EO #11990.</i>	Preservation	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
143	90	62 through 86	EAGLE RIVER GREENBELT (Public Ownership) (Scores: Not Assessed) <i>Entire wetland complex shall be preserved to the maximum extent. Minor trail and park amenities, and access roads permissible if no other practicable location possible. Very high habitat, flood control and recreation values. Further field delineation of wetlands shall be required prior to permitting in the greenbelt.</i>	Preservation Conservation Developable	A
143A	91	69 70 78 and 84	LOWER EAGLE RIVER VALLEY. LANDS OUTSIDE THE EAGLE RIVER GREENBELT (25 acres approx.; Public & Private Ownership) (Scores: Not Assessed) The upstream areas on maps 69/70 are transitional between the river floodplain and the old river terraces and are "B" wetlands; <i>drainageways, channels, and ponds shall be identified and preserved. The downstream sites are generally within the floodplain and are "A" wetlands and shall be avoided to the maximum extent.</i>	Preservation Conservation	A/B
144 and 144A	90 and 91	62	SOUTH SIDE OF EAGLE RIVER (Greenbelt = Public Ownership; 8 acres = Private Ownership) (Scores: Not Assessed) "B" wetlands: located west of the North Eagle River bridge (outside the greenbelt). "C" wetlands: Dena'Ina Estates Subdivision. If platted, wetlands above greenbelt on upper shelf are developable. These are isolated and low value. <i>A 25-foot transitional buffer shall be maintained between "A" wetlands and any fill authorized under the GPs.</i>	Conservation	B/C
145	90	72	HILAND ROAD/STONEHILL (39 acres; Private Ownership) (Scores: Hydrology = 90; Habitat = 92; Species Occurrence = 18; Social Function = 43) <i>A jurisdictional determination shall be done for the previously undesignated areas. A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property; maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks (minimum 65 feet) such that surface drainage patterns are maintained. Fill shall be the minimum necessary for utilities, pads for a house and an accessory structure and a single-lane access driveway. Fill for yards is not authorized in this unit under the GPs. Cluster development should be used to preserve streams and surface drainage corridors in "B" areas. Small isolated sites are "C".</i>	Developable	B/C
146	87+	63	EAST OF PARKVIEW TERRACE (14 acres approx.; Private Ownership) (Scores: Hydrology = 83; Habitat = 56; Species Occurrence = 18; Social Function = 42) Minimal values. Assessment mostly applied to "C" wetland areas. Easterly site adjacent to river and floodplain is "B" wetland. <i>Cluster design shall be applied to avoid floodplain and higher value sites near river.</i> Recent delineation identified less wetland area on bluff; three isolated pockets are low value. Large area on east side drains into higher value sedge ponds. <i>A 25-foot transitional buffer shall be maintained between "A" wetlands and any fill authorized under the GPs.</i>	Conservation Developable	B/C



Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
147	89	63 and 64	DRAINAGEWAY BELOW RAVENWOOD SCHOOL (13.9 acres; Private Ownership) (Scores: Hydrology = 105; Habitat = 84; Species Occurrence = 48; Social Function = 45) Conveys drainage from subdivisions above and natural seeps into Eagle River via small channels in gullies. <i>Shall be preserved.</i>	Preservation	A
148	84	71	SOUTH SIDE OF EAGLE RIVER/HILAND ROAD (5.7 acres; Private Ownership) (Scores: Hydrology = 73; Habitat = 78; Species Occurrence = 48; Social Function = 34) Includes spurs not located within the greenbelt. <i>Habitat areas and hydrologic connections to the greenbelt and Eagle River shall be preserved and buffered.</i>	Conservation	B
149	92	64 through 69	LARGE "MIXED DEVELOPMENT" SITE SOUTH OF EAGLE RIVER ROAD (420.2 acres; Private Ownership) (Scores: Hydrology = 131; Habitat = 114; Species Occurrence = 80; Social Function = 35) Provides direct hydrological connection to Eagle River. <i>Stream channels, ponds and surface flows shall be maintained with setbacks as open space, i.e. PC or cluster development techniques. Identification of permanent channels and general hydrology shall precede the plat and permit processes. Northern spur into Sunny Valley Subdivision needs a wetland determination. Road crossings shall be minimized and non-dewatering techniques shall be incorporated into design in the area. Intent of the designation is to maintain significant hydrology values and connections to Eagle River. Includes "B" sites between greenbelt/floodplain and upper river terraces north of the river.</i>	Conservation Developable	B
150	94	79 and 80	STREAM CORRIDOR/WETLANDS ADJACENT TO THE GREENBELT OUT EAGLE RIVER ROAD, NORTH OF THE RIVER (18 acres approx.; Public & Private Ownership) (Scores: Not Assessed) Includes old slough, ponds and tributary of Eagle River. <i>High habitat and flood control functions shall be preserved.</i>	Conservation	A

# TURNAGAIN ARM

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
161	None	5	<u>SOUTH INDIAN</u> (16.4 acres; Private Ownership) (Scores: Hydrology = 78; Habitat = 76; Species Occurrence = 50; Social Function = 64) <i>Creeks shall be maintained with 65-foot setbacks. Remainder of site could be developed; center of wetland is a possible enhancement area.</i>	Undesignated	B
170	None	6	<u>BIRD CREEK FLOODPLAIN</u> (24.9 acres; Public Ownership) (Scores: Hydrology = 85; Habitat = 95; Species Occurrence = 96; Social Function = 57) <i>Significant hydrology, fisheries values which shall be preserved in its entirety.</i>	Undesignated	A
171	None	7	<u>BIRD CREEK VALLEY</u> (5.1 acres; Public & Private Ownership) (Scores: Hydrology = 71; Habitat = 68; Species Occurrence = 28; Social Function = 45) <i>Small isolated sites with creek connections; maintain function as headwaters for local creeks. A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained and headwaters are protected. The parcel north of and adjacent to the highways is designated B"; streams shall be identified and avoided via 65-foot setbacks.</i>	Undesignated	B/C
172	None	8 and 9	<u>SOUTH OF BIRD—ROADSIDE</u> (16.3 acres; Public Ownership) (Scores: Hydrology = 77; Habitat = 77; Species Occurrence = 37; Social Function = 44) <i>Possible fish-rearing habitat in ponds; a fish survey shall be done before permitting to evaluate the presence and use of fish in the area. A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained. Cross-drainage shall be maintained. Map 8 sites classed as "C" wetlands; map 9 sites classed as "B" wetlands and fill could be placed at fringes, away from key hydrologic zones.</i>	Undesignated	B/C
173	None	10 and 12	<u>SMALL SITES—ROADSIDE</u> (5.5 acres; Public Ownership) (Scores: Hydrology = 67; Habitat = 53; Species Occurrence = 33; Social Function = 40) <i>Isolated sites; drainageways shall be maintained through the sites via avoidance.</i>	Undesignated	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
174	None	12	LARGE POND—BIRD POINT (9 acres; Public Ownership) (Scores: Hydrology = 83; Habitat = 82; Species Occurrence = 65; Social Function = 32) High bird use, water quality, retention values. Unique site; one of few open freshwater sites between Anchorage and Girdwood. <i>Minor transportation/utility-related fills could occur but shall avoid open water and drainages.</i>	Undesignated	B
180	None	42	PORTAGE CAFE (5.6 acres; Private Ownership) (Scores: Hydrology = 58; Habitat = 65; Species Occurrence = 61; Social Function = 27) <i>Habitat values shall be retained by minimizing fills. A written plan shall be provided to the Municipal Department of Community Planning and Development for review; it shall describe the efforts to avoid and minimize impacts to habitat by reduction in fill and design. Examples of possible measures to consider include timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancement. A 25-foot transitional buffer shall be maintained between this tract and adjacent coastal wetlands. All drainage must be treated on-site before being released to adjacent wetlands.</i>	Undesignated	C
201	160	24 and 25	TIDEWATER SLOUGH (25.4 acres; Public Ownership) (Scores: Hydrology = 97; Habitat = 106; Species Occurrence = 85; Social Function = 50) Downstream portion, below Railroad tracks, is within intertidal wetlands. Upstream portion provides high fish/wildlife habitat; could be used for a habitat enhancement site. <i>Limited trails, utility development may be possible but shall be limited to existing easements or at fringes.</i>	Preservation	A
202	None	25	NORTHEAST CORNER HIGHWAY/GIRDWOOD ACCESS ROAD (29.2 acres; Public Ownership) (Scores: Hydrology = 94; Habitat = 108; Species Occurrence = 42; Social Function = 57) Site mostly non-tidal, has freshwater influence; limited habitat, water quality, open space values. Habitat enhancement possible by developing interconnected ponds. Ephemeral drainageway in Northwest corner shall be retained for recharge, run-off. Northeast corner (approximately 3-5 acres) is a lower value transitional wetland and classed "C". <i>A pre-discharge notification procedure shall be used the Corps shall FAX the application to EPA, USFWS, NMFS, ADFG, ADEC, and ADFG; the agencies shall respond within five working days if they have a problem with the proposal: within fifteen calendar days of the FAX the agencies shall provide substantive comments if they have noted a problem earlier. If no resolution can be reached at that time, the Corps shall proceed with the application as an individual permit application. A 25-foot transitional buffer shall be maintained between "A" wetlands and any fill authorized under the GPs. This site is one of very few potential transportation facility zones within the Girdwood area and the Draft GIRDWOOD AREA PLAN (Spring 1994) further identifies this wetland for Commercial Land Use. Encroachment of fill into "A" wetland zone is permissible for commercial uses and/or public facilities but drainage and habitat functions shall be avoided and retained or replaced in the same general area—shall be assessed and determined in the Individual 404 process.</i>	Undesignated	A/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
203	None	25	OLD GIRDWOOD TOWNSITE (3.8 acres; Private Ownership) (Scores: Not Assessed) Area is highly disturbed. <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained.</i>	Undesignated	C
204	None	25	SOUTH OF GOLD AVENUE, WEST OF GLACIER CREEK (3.8 acres; Private Ownership) (Scores: Hydrology = 69; Habitat = 73; Species Occurrence = 28; Social Function = 56) Conveys flows out of old townsite; may provide fish habitat; higher fringes could be developed; <i>the large meadow adjacent to the highway shall be preserved.</i>	Undesignated	B
205	None	25 and 27	EAST OF GLACIER CREEK/NORTH TO VIRGIN CREEK (93.8 acres; Public Ownership) (Scores: Hydrology = 77; Habitat = 126; Species Occurrence = 82; Social Function = 58) High values for bird and fish habitat; conveys middle and lower Virgin Creek system. Could be used for habitat enhancement. This side of the valley is the only location for an alternate road and utility access for upper Girdwood Valley which may in the future require placement through wetlands. <i>Minor fills for railroad/highway improvements and utilities should be permitted but these shall avoid channels and floodplain to the maximum extent. Assessment refers only to area between the Alaska Railroad and the Seward Highway.</i>	Undesignated	A
206	152	25 and 26	ISOLATED SITES NORTHEAST OF SITE #205 (15 acres approx.; Public Ownership) (Scores: Not Assessed) In floodplain of Virgin and Glacier Creeks. <i>Provides flood storage and fish habitat functions which shall be preserved.</i>	Preservation	A
207	148 and 157	25	NEW INDUSTRIAL SUBDIVISION AND AREAS BETWEEN CALIFORNIA AND GLACIER CREEKS (30 acres; Public Ownership) (Scores: Not Assessed) Southern wetland contains confluence zone of California and Glacier Creeks; important fish habitat = "A" wetland. Northern site is mostly developed. Remaining wetlands restricted in previous Corps permit.	Preservation Undesignated	A
208	159	23 and 25	ABOVE GIRDWOOD ACCESS ROAD, IN LOWER VALLEY (5.5 acres; Private Ownership) (Scores: Hydrology = 73; Habitat = 42; Species Occurrence = 17; Social Function = 43) Minimal values. <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained.</i>	Developable	C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
209	148	22 and 23	"SQUIRREL CAGE" (88.2 acres; Public & Private Ownership) (Scores: Hydrology = 110; Habitat = 130; Species Occurrence = 85; Social Function = 56) Located within the floodplain of California Creek. Provides diverse, high value fish/wildlife habitat functions; breeding area for several significant species. <i>Recreation amenities could be permitted but shall be located at the fringes where wetland transitions to upland, to the maximum extent.</i>	Preservation	A
210	155	23	ISOLATED SITE ABOVE ALYESKA HIGHWAY/CROW CREEK ROAD (5 acres; Public Ownership) (Scores: Not Assessed) <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained. A 100-foot setback shall be maintained along creeks and drainageways.</i>	Preservation	C
211	145	22	SOUTHWEST OF ALYESKA SUBDIVISION (14 acres approx.; Public Ownership) (Scores: Not Assessed) Lower areas of Municipal Heritage Land Bank land adjacent to Glacier Creek. <i>The Official Streets and Highways Plan identifies a future right-of-way which could be permitted but shall be located in less valuable wetland fringes, along with minor park and trail amenities. Located in only suitable area for such transportation and recreation corridors.</i>	Preservation	A

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
212, 213	144 through 147	21 and 22	<p>ALYESKA SUBDIVISION (56.18 acres; Public Ownership—"A" wetlands; Private Ownership—"C" wetlands) (Scores: Hydrology = 112; Habitat = 96; Species Occurrence = 60; Social Function = 47)</p> <p><i>Permit and platting process shall require identification of recharge, flood storage and habitat areas throughout Sites 212 and 213. Municipal lands in Site 212 mostly classed as "A" wetlands.. Park plan identifies active development; OS&amp;HP identifies collector road in portions of Site 212. These developments shall be permitted in less valuable portions . Site 213 is the largest and only area of private land suitable for residential expansion in the Girdwood Valley.. A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained. Fill shall be limited to the minimum necessary for utilities, pads for a house and accessory structure, and single-lane access driveway. Fill for yards is not authorized in this unit under the GPs. Cross-drainage shall be maintained. A 100-foot setback from creeks shall be maintained to protect anadromous fish resources. A written plan shall be submitted to the Municipal Department of Community Planning and Development describing how the proposed fill would minimize impacts to fish and wildlife habitat. Examples of possible measures to consider include timing windows, additional setbacks, vegetative screening, reduction of fill, and onsite enhancement. A limited pre-discharge notification procedure shall be instituted by the Corps. The Corps will FAX copies of the application and of the hydrologic analysis and habitat review to EPA, USFWS, NMFS, ADFG, ADGC, and ADEC after being provided these by the Municipality. Any concerns specifically related to the hydrologic analysis shall be raised within five working days of the FAX and conditions proposed to resolve concerns within 15 calendar days of the FAX.</i></p> <p><i>The Corps will determine if these conditions are appropriate for inclusion on the GP authorization. For the wetlands area west of Timberline and North of Alpina, a full pre-discharge notification procedure shall be instituted by the Corps if work is proposed under the GPs. The Corps will FAX copies of the application and of the hydrologic analysis and habitat review to EPA, USFWS, NMFS, ADFG, ADGC, and ADEC after being provided these by the Municipality. Any concerns shall be raised within five working days of the FAX and conditions proposed to resolve concerns within 15 calendar days of the FAX. If resolution of concerns cannot be reached at that time, review of the application shall be completed under the Individual Permit process.</i></p>	Preservation/Developable	A/C

Site No.	1982 Site No.	Map No.	Site Description, Enforceable and Administrative Policies and Management Strategies	1982 Designation	New Designation
214	143	21	CORTINA DRIVE (2.8 acres; Private Ownership) (Scores: Hydrology = 61; Species Occurrence = 26; Social Function = 42) <i>A hydrologic analysis shall be done, and this analysis shall meet the acceptable standards of the Municipal Department of Public Works in order to prevent flooding of adjacent property, maintain groundwater recharge and flood storage, as well as both surface and subsurface cross drainage, and prevent drainage of wetlands. It shall be used in determining the placement of fill and requirements for setbacks such that surface drainage patterns are maintained.</i>	Developable	C
215 and 216	149 through 151	22	ABOVE CROW CREEK ROAD (43 acres; Public & Private Ownership) (Scores: Hydrology = 98; Habitat = 73; Species Occurrence = 32; Social Function = 59) Lies partly within Municipal park land. Provides hydrology values of flood storage and recharge to California Creek and open space functions. <i>These main functions shall be retained.</i>	Conservation	B
217	137	17	CROW CREEK ROAD (27.6 acres; Public Ownership) (Scores: Hydrology = 81; Habitat = 85; Species Occurrence = 61; Social Function = 42) <i>Drainageways and small creeks shall be maintained with a minimum 65-foot setback for flood control, water quality and moderate habitat values.</i>	Preservation Undesignated	B
217	138 and 139	18	CROW CREEK ROAD—CREEK (2.6 acres; Public Ownership) (Scores: Hydrology = 68; Habitat = 76; Species Occurrence = 50; Social Function = 44) <i>Creek associated drainageway shall be maintained. (Lies within floodplain and retention area). Additional wetland delineation may be required.</i>	Preservation Undesignated	A
218	141	21	MOOSE MEADOWS (121.5 acres; Public Ownership) (Scores: Hydrology = 111; Habitat = 105; Species Occurrence = 67; Social Function = 64) Unique habitat type within Municipality. Provides recharge and flood control for several tributaries of Glacier Creek. <i>Recreation potential high: fills for minor enhancements could be permitted, i.e. trails, parking pull-outs, but these shall be placed at fringes. Separate wetland along Aspen Road designated "C"; provides buffer to Alyeska Creek; shall be maintained with a 75-foot setback from creek.</i>	Preservation Developable	A/C
219	None	19 and 22	WINNER CREEK WETLANDS (60 acres approx.; Public Ownership) (Scores: Not Assessed) Includes wetlands in valley floor and on plateau up the Winner Creek Valley. Contains numerous ponds and tributaries. Important for flood control in lower valley and for limited fish and wildlife habitat. Some designations may change as a result of the ongoing Municipal-State Glacier-Winner Creek planning efforts currently underway. Habitat values limited to those areas adjacent to waterbodies since most sites are diminished by shorter, cooler growing seasons because of higher elevations and distance from the coast. <i>Fill actions shall be avoided or located at fringes to the maximum extent. An 85-foot setback shall be maintained from any creeks, drainageways, and waterbodies. Upper Winner Creek Valley sites are mostly riparian and in the floodplain and shall be preserved to the maximum extent.</i>	Undesignated	B





# **MAPS**

**Depicting the Anchorage coastal zone boundary and Recreation Use Designation**

**MAP A: Anchorage Bowl**

**MAP B: Chugiak-Eagle River**

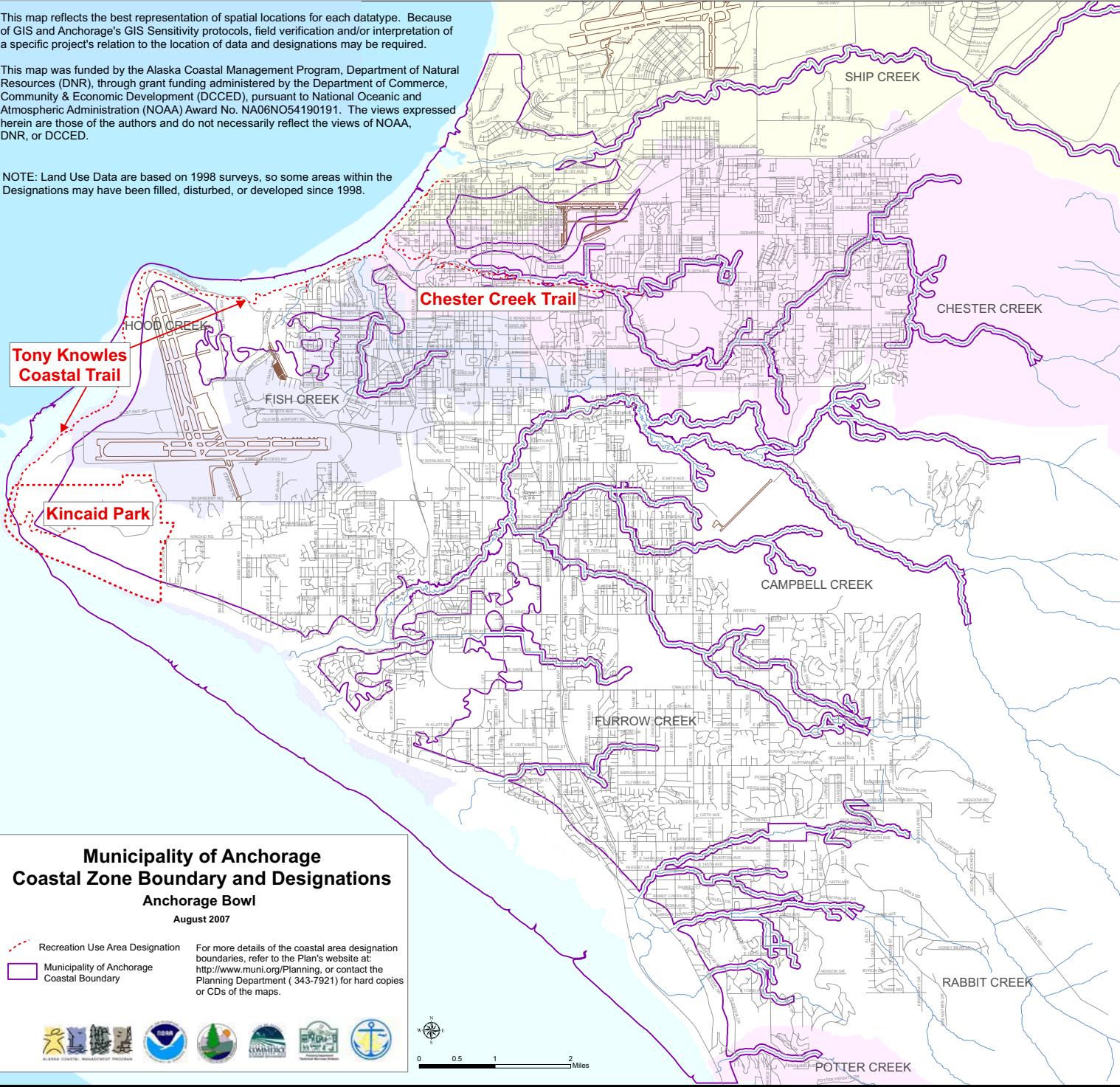
**MAP C: Turnagain Arm**

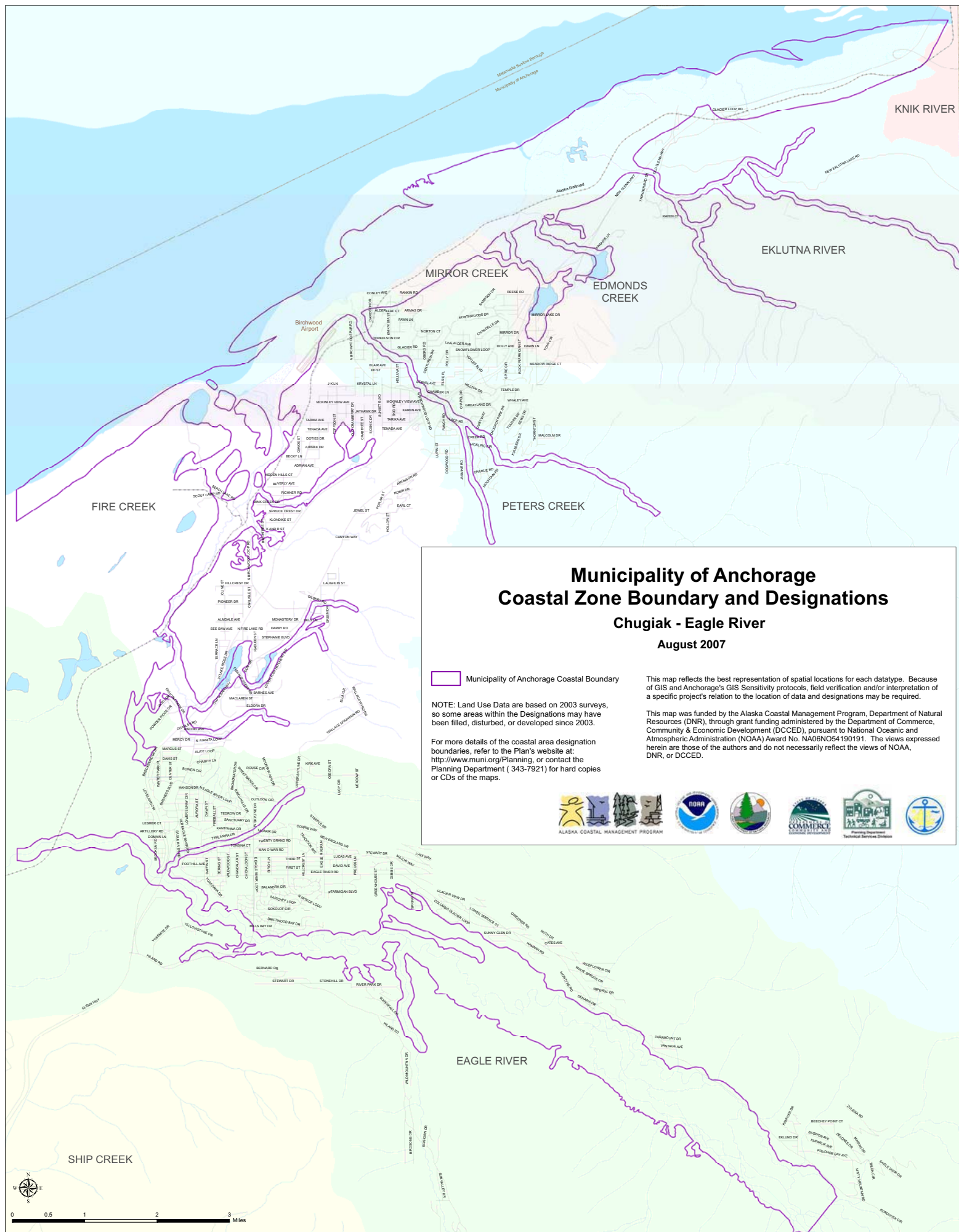


This map reflects the best representation of spatial locations for each datatype. Because of GIS and Anchorage's GIS Sensitivity protocols, field verification and/or interpretation of a specific project's relation to the location of data and designations may be required.

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NOTE: Land Use Data are based on 1998 surveys, so some areas within the Designations may have been filled, disturbed, or developed since 1998.





## MAP B



# MAP C

