



PHOTO OF AJKE BAY SUNSET BY SYDNEY MITCHELL, LAROCHE + ASSOCIATES

Juneau coastal

Management Plan



A Component of the Comprehensive Plan,
City and Borough of Juneau, Alaska

Final Plan Amendment
February 2008

Prepared By:



LaRoche+Associates

Volume I:
Juneau Coastal Management Plan
(Part Two of the Juneau Comprehensive Plan)

City & Borough of Juneau
Community Development Department

Final Plan Amendment
February 2008



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FOREWORD

Background

The United States Congress passed the Coastal Zone Management Act in 1972 and offered financial and jurisdictional incentives for states to participate. Five years later, the Alaska State Legislature passed the Alaska Coastal Management Act. Alaska won federal approval of the Alaska Coastal Management Program (ACMP) in 1979. The City and Borough of Juneau Coastal Management Plan (Volume 1) was approved and became effective in 1986. The Juneau Wetlands Management Plan (Volume 2) was added to the tools for local control in 1993. In 2003, the Alaska Legislature changed the rules. LaRoche+Associates was hired to assist the City and Borough of Juneau (CBJ) in updating these plans to comply with State mandates. Volumes 1 and 2 have been revised under what is called the Transition Amendment Process.

Major Changes

The ACMP has recently changed in ways that require significant changes in plans like the Juneau Coastal Management Plan (JCMP). For example, Juneau may no longer write policies about air, land or water quality issues, as these are regulated exclusively by the Department of Environmental Conservation. Although mining is a development activity that may be subject to the ACMP and reviewed for consistency, Juneau may no longer write policies about mining activities, except for sand and gravel. Timber harvest has long been off limits, but now the proscription is more firm.

In addition, in order to have policies for many types of uses and resources, Juneau must first designate specific areas for these uses and resources. It is no longer legal for a district plan to have enforceable policies about coastal resources that can be applied on a case-by-case basis, anywhere within the coastal district. These resources, or these areas where a use occurs, must be described or mapped at a scale sufficient to determine whether a proposed project is located within the area and then justified by scientific studies or documentation of local usage. This new state requirement applies to recreation, subsistence, natural hazards, tourism, major energy facilities, important habitats, commercial fishing and seafood processing, and historical areas.

For Juneau, the clear choice was to focus on designating the wetland units of the previously approved Wetlands Management Plan as important habitats, with the goal of obtaining re-approval of the Wetlands Management plan. In October 2006, the State did not recommend approval of the designations or wetland policies to the DNR Commissioner in its final findings. This action resulted in a request by the CBJ for mediation of the findings with respect to the important habitat designations and wetland policies. Subsequent to the mediation, Juneau revised the Important Habitat Wetland Designation Maps, revised the wetland policies, and solicited a specific letter from the U. S. Army Corps of Engineers which demonstrated that the JWMP is compatible with, but does not duplicate, federal wetland regulations and authority. The state signed a letter of agreement on November 19, 2007 (*Appendix I-C*). These revised designations and policies are presented in Volume II.

Organization of the Plan

The Comprehensive Plan and the (JCMP) were originally developed simultaneously, and there is a strong desire to keep them integrated as much as possible. However, there is also a concern over amendments to either. Amendments to district coastal management programs must be approved by the Commissioner of Alaska Department of Natural Resources. Juneau does not wish to have all parts of its Comprehensive Plan subject to the state amendment process, since there are many parts which have nothing to do with coastal management. This results in an organizational structure that requires explanation. For example, the JCMP: Volume I begins with Chapter VIII, following the final chapter of the Comprehensive Plan.

In 1983 a resource inventory and analysis was prepared for both the Comprehensive Plan and the JCMP. This is called "The City and Borough of Juneau Comprehensive Plan, Volume II, Technical Appendix" and is available in paper copy only at the City and Borough of Juneau Department of Community Development. The Technical Appendix has never been updated. Instead, updates to relevant information have been incorporated into subsequent updates of the Comprehensive Plan and other planning documents. The Comprehensive Plan was revised in 1995 and again in 2003. In that period of time Juneau has transitioned to digital format, with all recent plans distributed via the website. As a result, the resource inventory in this document is not comprehensive. Instead it includes only that information necessary to support enforceable policies. Readers desiring more comprehensive resource information are directed to the Juneau website <http://www.juneau.org/cddftp/index.php>.

The Juneau Wetlands Management Plan became effective in 1993. It is an integral part of the JCMP and is presented with this revision as Volume II. They are to be considered one plan to avoid unnecessary duplication of required elements, such as Chapter X: Implementation, that are identical for both. Also, in this way the Appendices for both Volumes remain separate and distinct.

CHAPTER VIII GENERAL PROVISIONS

Section 1. Introduction

Coastal management is the activity of managing the use and development of coastal resources on and offshore. This emphasis in management is generally inspired by the federal Coastal Zone Management Act of 1972 which declared the need for this effort nationwide and set up a program to enable coastal states to develop and operate coastal management programs. Alaska established its coastal program with legislation in 1977. The Alaska Coastal Management Act was revised most significantly in 2003-2005. A detailed description of the amended Alaska program is provided in the "Final Environmental Impact Statement, Office of Ocean and Coastal Resource Management's Review of the Amendments to the Alaska Coastal Management Program, November 18, 2005, Appendix C."

The federal act delegates to states, rather than the federal government, the primary management responsibility. States which choose not to participate suffer no penalty, but willing states receive benefits. One of these was funding to develop and maintain coastal programs. A second benefit is called "federal consistency."

Consistency means that if a state obtains a federally-approved coastal program, as Alaska did in 1979, the federal government thenceforth will conduct its activities in conformance with the State's coastal policies. There are limits to the application of this power; but overall, consistency is a significant advantage to coastal states and has proven to be a very useful tool in assuring uniform treatment of coastal resources between the state and federal levels of government.

The backbone of the program in Alaska is contained in Chapter 11 AAC 112. These are the "standards" or rules for how land and water use proposals are to be evaluated in Alaska's coastal zone. Where there are coastal issues of local concern that are not adequately addressed by state or federal laws, Juneau may enhance these standards with more specificity. These are the enforceable policies found in Chapter IX of this plan.

"Guidelines" are codified in 11 AAC 114. This chapter of state regulations sets forth how a district such as Juneau may develop its coastal plan, what the required elements are, and how the Alaska Department of Natural Resources will consider the plan for approval.

Funds have been available since 1976 for local governments to develop district coastal management plans. There are some obvious benefits for a local government to participate in ACMP. Clearly the resources involved are important to Alaska residents; and if they can be involved in management decisions, the Act presumes that better decisions will result. Further, when a local coastal program has been approved by the State, state agencies must conform their permitting activities to the enforceable policies of that local plan.

There is a process for incorporating local plans into the federally approved ACMP which is short and follows quickly upon approval at the state level. When this has happened, the local plan becomes binding upon federal agencies as well as state agencies. It must be emphasized that the approved local plan is binding upon the sponsoring local government as well. The approved local program is equivalent in legal strength to state agency regulations. The State is actually engaged in a rule-making exercise when it approves local plans. This is important to understand because

the result is a commitment by all levels of government to policies in the local plan and thus, predictability for agencies and the public.

The CBJ began efforts to develop a local coastal management program in 1978. It was decided in 1981 to completely revise the Comprehensive Plan and in tandem, complete the coastal management program.

There are several aspects of the relationship between the Comprehensive Plan and JCMP that should be emphasized:

1. The issues, goals and objectives of the JCMP are drawn from those of the Comprehensive Plan and the Technical Appendix, as amended by subsequent updates and area-specific plans.
2. The coastal program is a shared management tool. It creates expectations and requirements that not only affect the public, but are shared among all three levels of government. The Comprehensive Plan, on the other hand, is primarily a local tool. The Comprehensive Plan can be amended at the will of the CBJ Assembly. The coastal program can only be amended with concurrence by the state and federal governments. (See Chapter X)
3. The Comprehensive Plan relies upon a series of subsequent actions for implementation. The coastal program is self-implementing.
4. The Comprehensive Plan is an umbrella effort by, which many subsequent actions are guided. Coastal management serves to implement parts of the Comprehensive Plan as well as itself.
5. The Comprehensive Plan covers the entire area of the CBJ. The JCMP covers the coastal area of the CBJ as defined in Section 4 of this chapter.
6. The resource inventory and analysis in the Technical Appendix supports both the Comprehensive Plan and coastal program. However, the Technical Appendix is not the only source of data used. Other sources used have been noted in the text and in section 5 of this chapter.

Section 2. Definitions

The Appendix to the Comprehensive Plan contains a glossary for the various terms used throughout the ten chapters of the Plan. There are, however, a few terms that are specific to coastal management and those are included in this chapter. Terms that are defined in Alaska laws are included in text boxes.

Adjacent has the same meaning as in Alaska regulation.

<p>11 AAC 112.990 (a) (2) "adjacent" means near but not necessarily touching; . (Eff. 7/1/2004, Register 170)</p>
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Army Corps of Engineers (COE) The U.S. Army Corps of Engineers, the Corps, designs and constructs military projects as well as civil projects, such as harbors, for coastal communities. The Corps also regulates development in navigable waters (Section 10 of the Rivers and Harbors Act of 1899, as amended), and placement of fill material in waters and wetlands (Section 404 of the Clean Water Act).

Coastal water has the same meaning as in Alaska regulation.

11 AAC 112.990 (a)(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)

Direct and significant Impact has the same meaning as in Alaska regulation.

11 AAC 114.990 (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)

Downtown Waterfront Study or **Downtown Waterfront AMSA** is a special area plan for the downtown waterfront section of the city. This is a component of the JCMP as envisioned under the Area Meriting Special Attention provisions of A.S. 46.40.210(1) and 11 AAC.114.400.

Enforceable Policies has the same meaning as "district enforceable policies" in Alaska Regulations.

11 AAC 110 (a) (24) "district enforceable policy" means a provision contained in a district plan that either has been approved by the commissioner under 11 AAC 114 or was approved by the former Coastal Policy Council under former 6 AAC 85 and remains in effect under sec. 46(c), ch. 24, SLA 2003; "district enforceable policy" includes

- (A) the definition of a term used in the provision; and
- (B) a boundary map or boundary description developed by a district and incorporated into the district plan to identify the area within the district that is subject to a specific provision of the plan; (Eff. 7/1/2004, Register 170)

Practicable has the same meaning as in Alaska regulations.

11 AAC 112.990. (a) (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)

Public need has the same meaning as in Alaska regulation except that “documented” means 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)

Reasonably Foreseeable has the meaning as in Alaska regulation.

11 AAC 110.990. Definitions (38) "reasonably foreseeable" means a fact-specific determination of whether something can reasonably be foreseen; "reasonably foreseeable" does not include remote or speculative consequences; (Eff. 7/1/2004, Register 170)

Water-Dependent has the same meaning as in Alaska regulation. In Juneau water-dependent uses would include uses such as, but not limited to:

- a. Marine transportation terminals including ferry, cruiseship, tanker, barge and float plane.
- b. Small boat marinas including sales, service, storage and moorage.
- c. Marine construction and repair yards.
- d. Fish buying and processing plants.
- e. Marine freight handling and storage areas.
- f. Other industries requiring frontage on deep-draft navigable waters.

11 AAC 112.990 (a)(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; (Eff. 7/1/2004, Register 170)

Water Related has the same meaning as in Alaska regulation. In Juneau water-related uses would include uses such as, but not limited to:

- a. Marine warehousing.
- b. Recreation and open space including marine parks, shoreline pathways, access corridors and view points, including vehicular scenic turnouts.
- c. Dwellings.
- d. Hotel, motels, restaurants and bars, if approved as conditional uses.

11 AAC 112.990 (a)(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)

Water-oriented is a use category defined in the Downtown Waterfront AMSA for the purposes of that study only. It is defined as "a use or mixture of uses which benefit from being near the water and which contain elements that are water-dependent, water-related, or that provide public access to the shoreline area. Examples include retail, office or restaurant developments providing

transient moorage facilities and/or pedestrian walkways and use areas on their water side." Water oriented uses are a subset of water-related uses.

Section 3. Planning Process

PUBLIC PARTICIPATION

In 1982 the CBJ Assembly created a Citizens Advisory Committee (CAC) to help develop the Comprehensive Plan/Coastal Management Program. The Assembly appointed 18 members to the CAC, including representatives of civic and neighborhood organizations and the general public. The members were also selected to assure a broad representation of geographical areas within the CBJ.

With the passage of HB 191 in 2003 the Alaska Legislature mandated that changes to district plans be accomplished by July 2005. Recognizing that the original timeline was unworkably short, the 2005 Alaska Legislature granted an extension in March, 2005. Nevertheless, such compressed timelines did not allow for a classic planning process, nor the use of a CAC. Instead, CBJ staff and the consultant worked through standing committees: Assembly Lands Committee, Planning Commission and Wetlands Review Board.

The state regulations to guide the planning process and the federal funding became available in the summer of 2004. A plan evaluation was completed in July 2004. The statewide standards, from which district enforceable policies may be derived, became effective on July 1, 2004 and, as amended, October 29, 2004, June 1, 2005, and June 25, 2005. Required elements of the plan were revised as necessary to support enforceable policies and were reviewed by the CBJ standing committees at various meeting in 2004 and 2005.

AGENCY CONSULTATION

The CBJ staff and consultant began agency consultation with the plan evaluation in 2004. Agency consultation was on-going through-out 2004 and 2005 via State-hosted workshops and teleconferences. The consultant conferred with Office of Project Management and Permitting staff through-out the plan revisions. On January 18, 2006, the CBJ staff and consultant met with Office of Project Management and Permitting staff to respond to comments received on the Public Hearing Draft. In June 2006, the CBJ staff and consultant met with Office of Project Management and Permitting staff to discuss the CBJ's response to the Office of Project Management and Permitting's Preliminary Recommendations to the Commissioner and negotiate the final revisions to this plan.

Section 4. The Coastal Boundaries

Both state and federal program requirements acknowledge the inter-relationships of the various coastal resources and call for inland boundaries of coastal zones (the area to be subject to the requirements of the coastal program) to be established in such a way as to respect the natural systems of the coast, yet not go further inland than necessary and practical. Obviously, some natural systems are interconnected for hundreds of miles. Rivers flowing to the sea and fish

traversing much of their length in both directions are a frequently cited example. It could even be argued that the snow at the top of the mountain which eventually makes its way to the rivers and into the sea is cause for including mountain tops in the coastal zone. However, practicality and the actual need for management attention must be considered when defining boundaries. Coastal programs must concentrate on those areas where management is really needed.

1. The inland coastal boundary of the City and Borough of Juneau coastal resource district includes all of the area in the zones of direct interaction and direct influence defined in the Biophysical Boundaries of Alaska's Coastal Zone, prepared by the Alaska Department of Fish and Game.
2. The district boundary adopted herein does not change the interim boundaries of ACMP. Biophysical boundaries were established for the Alaska coastal zone by the Alaska Department of Fish and Game in 1978. The boundaries identify and define the landward and seaward limits of coastal physical and biological processes. The coastal boundaries are subdivided into three zones, each reflecting the degree of coastal influence and indirect influence.

Within the area of the CBJ, the zone of direct interaction includes all the marine waters of Lynn Canal and Stephens Passage and extends landward to the region of bald eagle nesting, the extent of active coastal erosion, saltwater intrusion and tidal influence of the Mendenhall and Lemon Creek wetlands, and includes all of the CBJ to the 600-foot contour. The zone of direct influence is defined by the Sitka spruce-hemlock forest and extends inland to about the 2,500 foot contour. This zone includes freshwater systems where anadromous fish spawning and overwintering occurs. The zone of indirect influence extends landward to the regional snowline, or the average lower limit on glaciers of year round snow cover. This boundary is approximately the 3,500 foot elevation on the Herbert Glacier. Human activities in this zone may have a direct impact on coastal processes. The seaward limits of the zone of indirect and direct influence include the zone of direct interaction or all marine waters.

The ACMP guidelines and standards govern the boundaries of the coastal resource districts. Districts may plan for areas within their political boundaries only. The Alaska Coastal Management Act does not geographically increase the jurisdiction of local governments in Alaska. In general, the ACMP boundary system is designed to concentrate attention in the most critical areas where the need for management is the greatest and to provide somewhat less attention to areas where management is not so critical. This results in a relative decrease in initial management and planning effort as one moves either inland or seaward from the shoreline.

As indicated, the ACMP boundaries have been in existence since 1978. They were the starting point for the coastal aspect of the CBJ's Resource Inventory and Analysis. The result of that effort could have led to a proposal to move the inland boundary further inland or closer to the shoreline. As it happens, the boundaries are unchanged in this program. The Inventory and Analysis revealed no particular need to change them, and so no proposal to do so is made.

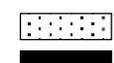
Map 1 shows the boundaries for the CBJ coastal zone. The seaward boundaries are defined by the same means as the state's seaward boundary; that is, the limit of the CBJ's jurisdiction. Wherever the corporate limits of the CBJ end in water areas, so ends the CBJ coastal zone. The 1990 annexation of the portion of Admiralty Island that is reflected on the boundaries map expanded the CBJ's coastal zone. The 2005 plan amendment expands the applicability of the CBJ enforceable policies to the annexed portion.

Map 2 depicts the previously approved Downtown AMSA boundary which is entirely within the boundaries of the CBJ coastal zone. *Note: The Office of Project Management and Permitting has determined that the Downtown AMSA does not meet the criteria for re-approval. As such Map 2 is included for information only, is not an enforceable component of this plan and has no bearing on enforceable policies at this time.*

Juneau Coastal Management Plan December 2005 COASTAL ZONE BOUNDARIES Juneau, Alaska



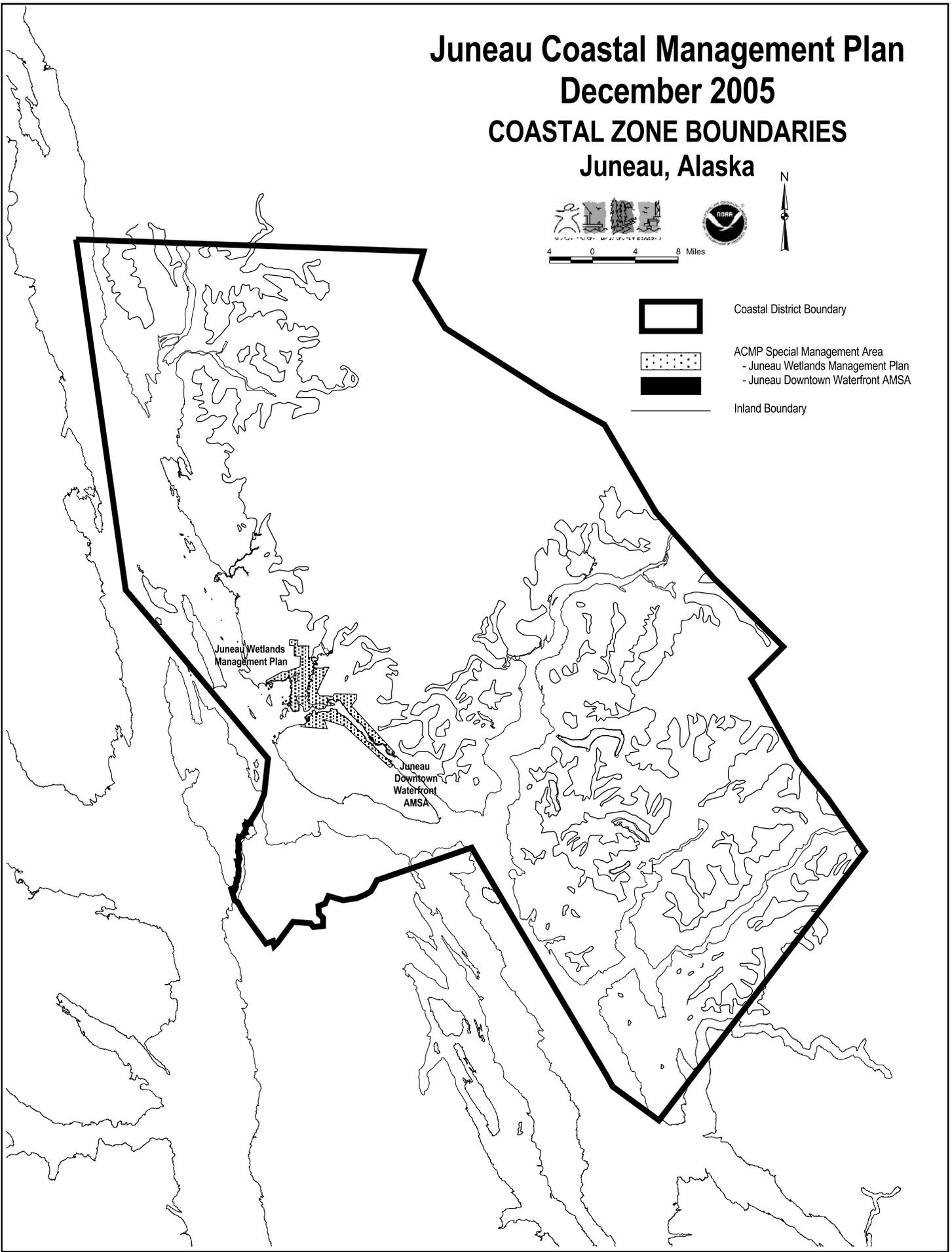
Coastal District Boundary



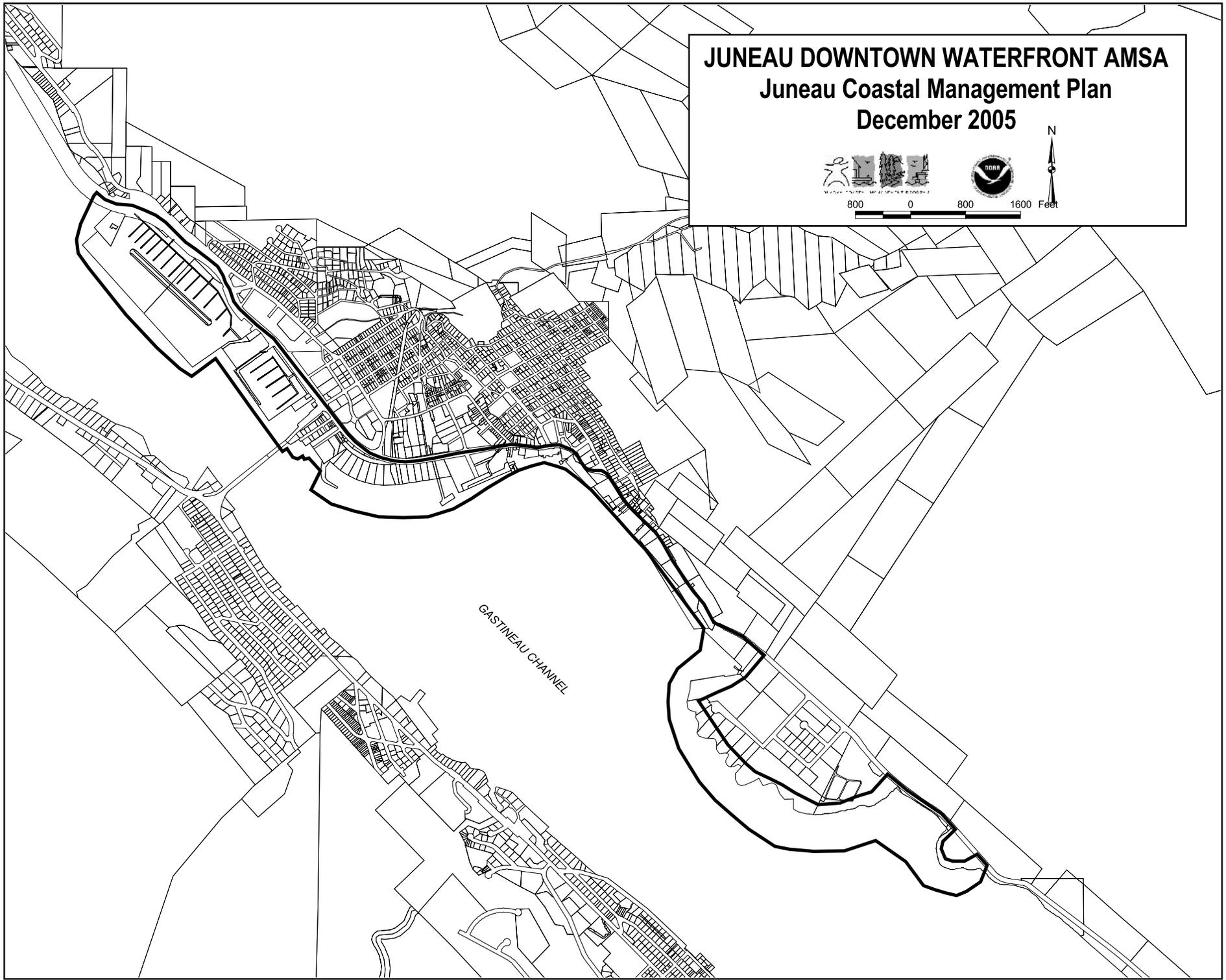
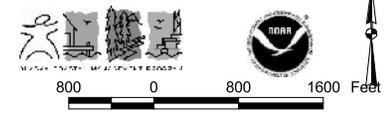
ACMP Special Management Area
- Juneau Wetlands Management Plan
- Juneau Downtown Waterfront AMSA



Inland Boundary



JUNEAU DOWNTOWN WATERFRONT AMSA
Juneau Coastal Management Plan
December 2005



Section 5. Resource Inventory and Analysis

An effective coastal management program must be based on an understanding of coastal resources, including what they are, where they are located, how they are related to each other and to human activities, and how factors affecting them may change in the future. The standards and guidelines of the ACMP include subjects to be addressed by an Inventory and Analysis of natural resources, habitats and human activities in the coastal area.

Habitats and resources subject to the ACMP Include: offshore areas; estuaries; wetlands and tideflats; rocky islands and seacliffs; rivers, streams and lakes; and important habitats. Human activities to be addressed include: major land and water uses and activities, major land and resource ownerships, and major cultural and historic resources. In addition, the ACMP requires that these resources be analyzed to determine anticipated needs and demands for coastal resources and habitats, their environmental capability and sensitivity, and any significant anticipated changes that might affect them.

In 1983, a detailed inventory and analysis of natural resources, economics and population, land use, public facilities and transportation, and housing was prepared as an initial step in the planning process. Because the Inventory and Analysis serves as a foundation of both the Comprehensive Plan and JCMP, it extends to subjects not specifically required under ACMP guidelines and standards and uses a terminology somewhat different than that used in the ACMP. The Resource Inventory and Analysis is included in The City and Borough of Juneau Comprehensive Plan, Volume II, Technical Appendix. That publication may be viewed at the CBJ Department of Community Development. Relevant sections are included in Appendix I-D to this volume.

As part of the development of the Wetlands Management Plan an inventory and analysis of practicable alternatives was completed. That inventory and analysis is contained in the Juneau Coastal Management Plan Volume II: Juneau Wetlands Management Plan, Chapter II. This more recent study also serves as an inventory and analysis to support the Coastal Development and Waterfront Development Area enforceable policies.

In 2004, the Long Range Waterfront Plan was completed. The Long Range Waterfront Plan for the City and Borough of Juneau is a guidebook to manage and focus waterfront change. It documents the unique concerns of the CBJ for downtown waterfront development (see Maps 2, 3A – 3E) and includes the following information regarding a seawalk.

“The seawalk is possibly the most important project contemplated under the Waterfront Master Plan and one that was consistently viewed by community participants during the outreach effort as a top priority. As envisioned, the seawalk will unify the waterfront and its various diverse uses, creating a tremendously useful recreation, mobility, and social feature for residents and visitors (see Figures 28 and 43). While a number of pedestrian, street and view corridors will link the surrounding urban fabric to the waterfront, the seawalk will serve as the defining linkage connecting all activities along the waterfront. Its presence, while not generating a direct revenue to the CBJ and private property users, will undoubtedly increase property values along the waterfront by becoming a new pedestrian thoroughfare and in many cases a “must use” venue by area residents and visitors.

The basic design components for the seawalk should be straightforward. The width of the seawalk should be a minimum of 16 feet to provide ample areas for pedestrians (both in motion and gathering to enjoy the surrounding environment), bicyclists, street furniture (benches, weather protection, signage, lighting, trash receptacles), public art, monuments, and small points of interest and activity (see Figure 44). In some cases, width may need to be reduced to 12 feet, but this reduction should be infrequent. Views should be maximized by designating the walkway to be barrier-free, limiting fences only for security and/or safety reasons, and creating structures and shelters which are transparent and screen-like. Materials and finishes should have a maritime and/or natural theme to form the base palette for all designs and street furniture. The entirety of the seawalk should be ADA accessible. Where necessary, security features would be built into the seawalk to ensure that users are separated from ship's lines, heavy equipment, and gangway systems; if portions of the seawalk need to be closed due to an elevated level on the Homeland Security Advisory System, gates and other barriers should easily be placed and a viable alternate route offered (see Area D discussion for additional details). Security barriers when not needed should be as transparent as possible. At each of the ends of seawalk—the Juneau-Douglas Bridge and the South Franklin Street Dock—a smooth transition into a continuing recreation corridor should occur.

*Beyond these basic parameters, the CBJ should take some exciting liberties with the seawalk to truly make it a reflection of the community and to offer various programmed elements and feeling along the waterfront. A suggested approach for created themed zones is presented as Figure 38. Segments should encourage diversity and creativity. Special architectural features could include: a seaside pavilion; a tidal pool formed by a ring of meter-wide rocks; canopied seating areas; extensive landscaping wildlife enhancement along the Gold Creek Protection Zone; and dramatic high-tide features such as sections of the seawalk that flood at the yearly highest tides encourage interaction between people and the sea. Public art installations should also be an important component of the seawalk. Dramatic lighting can also become an artistic component of the waterfront, creating a lit ribbon along water's edge during the longer winter nights.” (Long Range Waterfront Plan, October 2004, pg. 61
http://www.juneau.org/plancomm/Final_LRWP_112204.php)*

In addition, the following studies supplement and update the resource inventory and analysis for Coastal Development and Special Waterfront Area enforceable policies and can be viewed on line at <http://www.juneau.org/cddftp/> Relevant sections are included in Appendix I-D to this volume.

Comprehensive Plan – 1995 Update, Incorporating 2003 Amendments
Juneau Household Waterfront Opinion Survey - 2004
Waterfront Plan - 1986
Subport Vicinity Revitalization Plan - 2003
Tourism Plans

Land Ownership Maps and the Waterfront Development Area Maps are provided on the following pages.

OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



4000 0 4000 Feet



Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

- Ownership**
-  FEDERAL
 -  STATE
 -  CBJ
 -  PRIVATE

Subarea 1
Eagle River to Berners Bay
Map 1

Berners Bay

Echo Cove

Benjamin Island

Eagle Beach

Glacier Highway

OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



2000 0 2000 Feet



Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

- Ownership**
-  FEDERAL
 -  STATE
 -  CBJ
 -  PRIVATE

Subarea 2
Lena Cove to Eagle River
Map 2A

Amalga Harbor

Pearl Harbor

Shrine of St. Therese

Chukchev Highway

OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



1000 0 1000 Feet



Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

- Ownership
- FEDERAL
 - STATE
 - CBJ
 - PRIVATE

Subarea 2
Lena Cove to Eagle River
Map 2B

Tee Harbor

Lena Cove

Point Louisa

OWNERSHIP STATUS

Juneau Coastal Management Plan

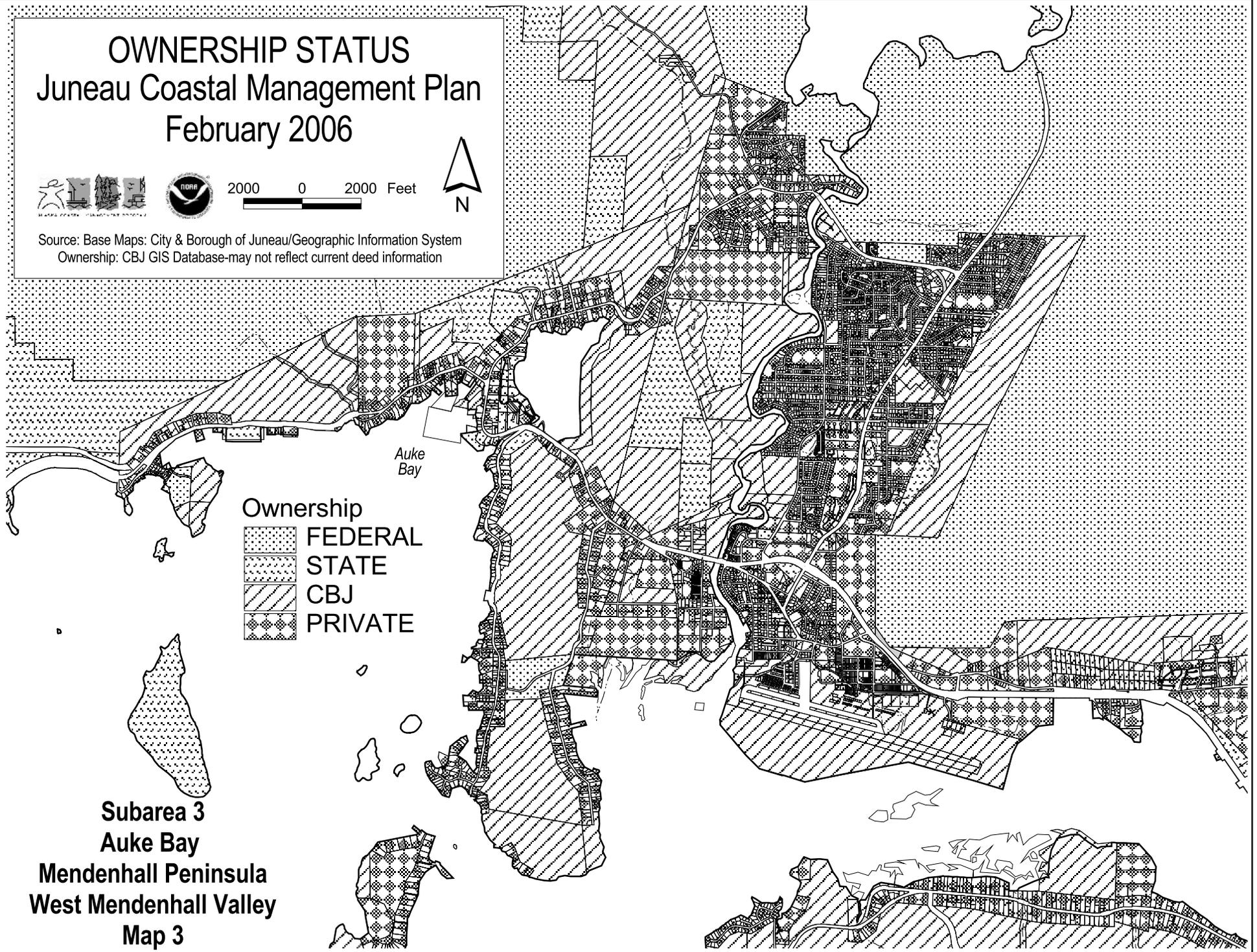
February 2006



2000 0 2000 Feet



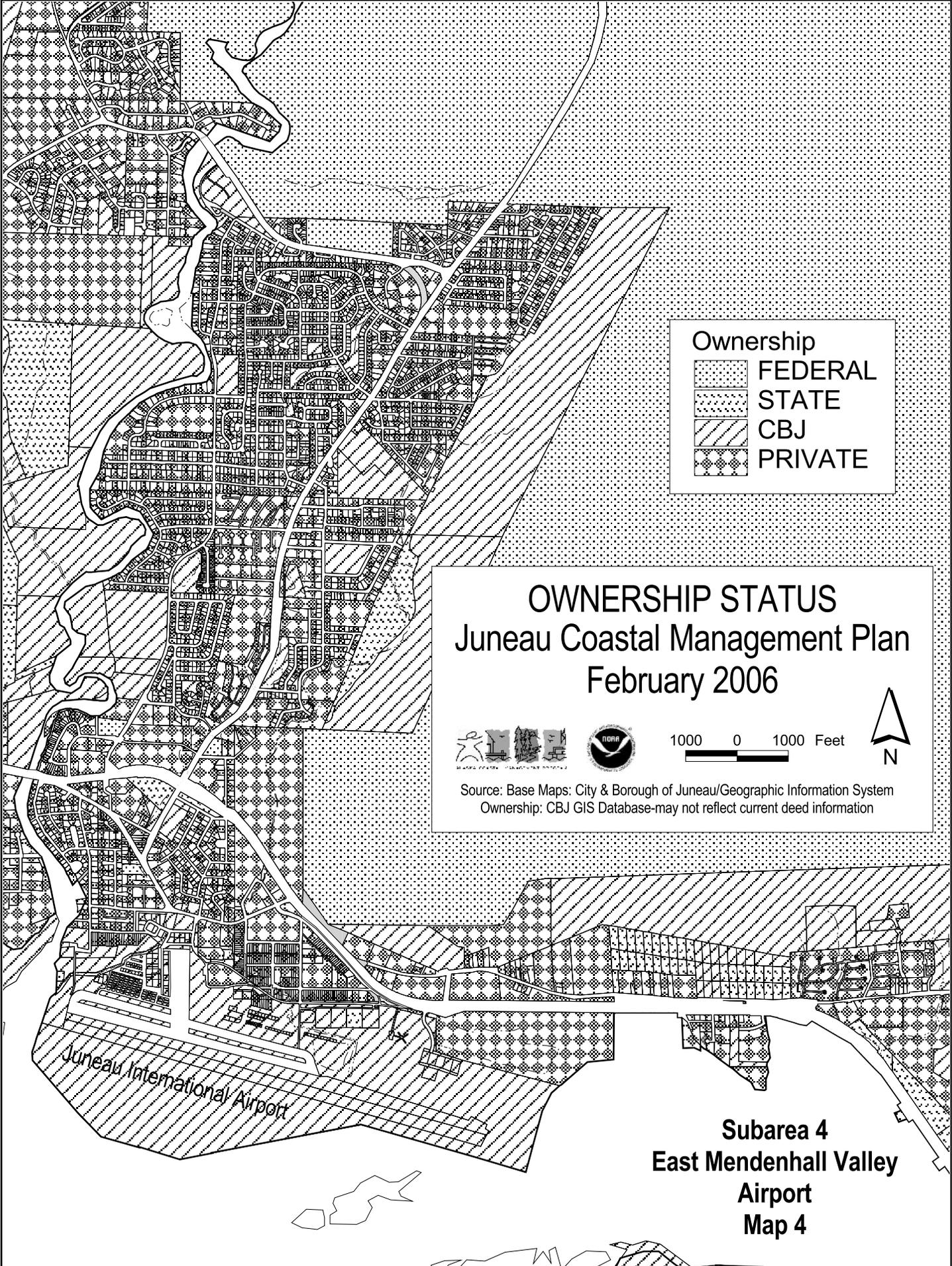
Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information



Ownership

-  FEDERAL
-  STATE
-  CBJ
-  PRIVATE

Subarea 3
Auke Bay
Mendenhall Peninsula
West Mendenhall Valley
Map 3



Ownership	
	FEDERAL
	STATE
	CBJ
	PRIVATE

OWNERSHIP STATUS
Juneau Coastal Management Plan
February 2006



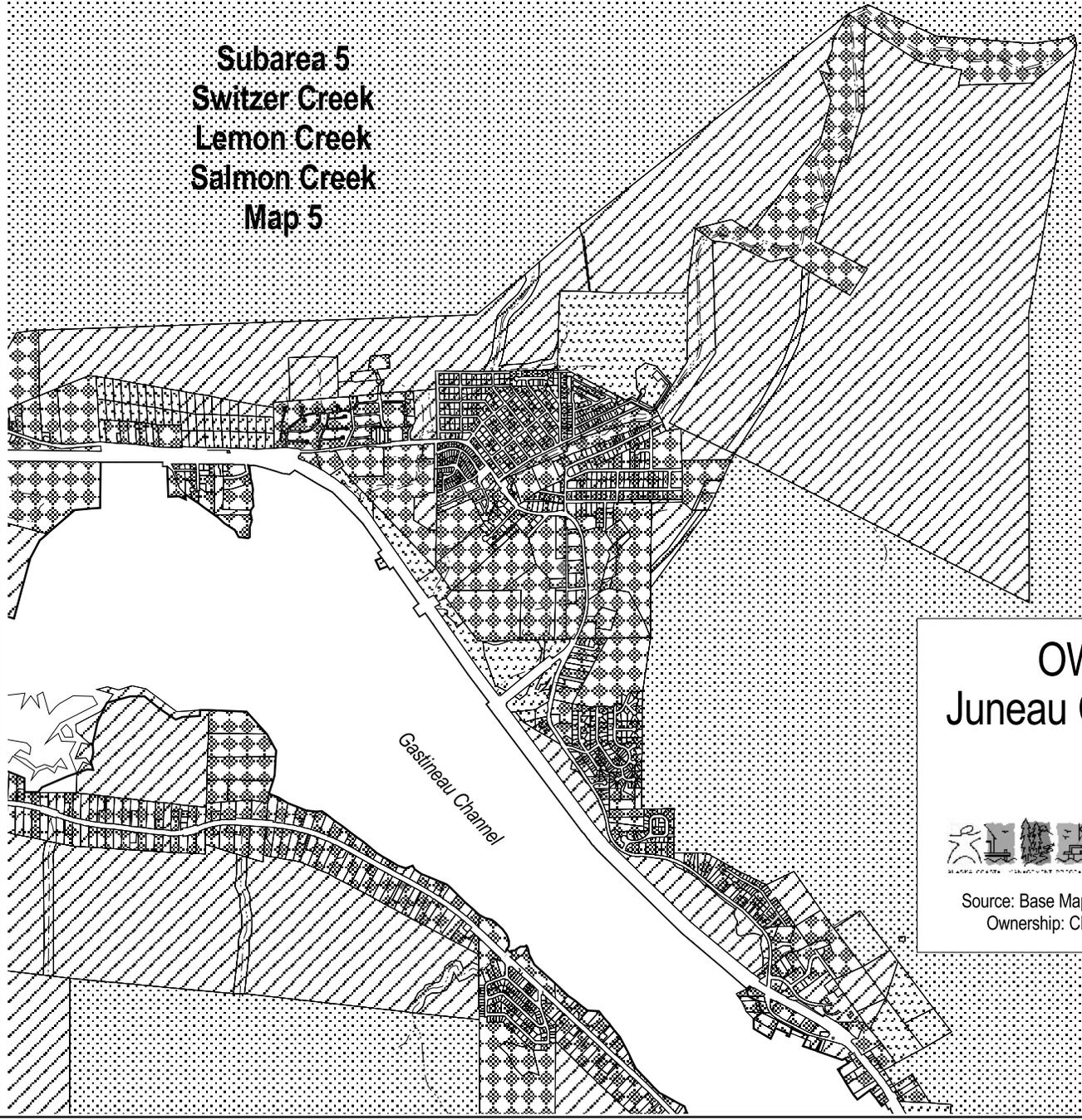
1000 0 1000 Feet 

Source: Base Maps: City & Borough of Juneau/Geographic Information System
 Ownership: CBJ GIS Database-may not reflect current deed information

Juneau International Airport

Subarea 4
East Mendenhall Valley
Airport
Map 4

Subarea 5
Switzer Creek
Lemon Creek
Salmon Creek
Map 5



Ownership

	FEDERAL
	STATE
	CBJ
	PRIVATE

OWNERSHIP STATUS
Juneau Coastal Management Plan
February 2006

1000 0 1000 Feet

Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



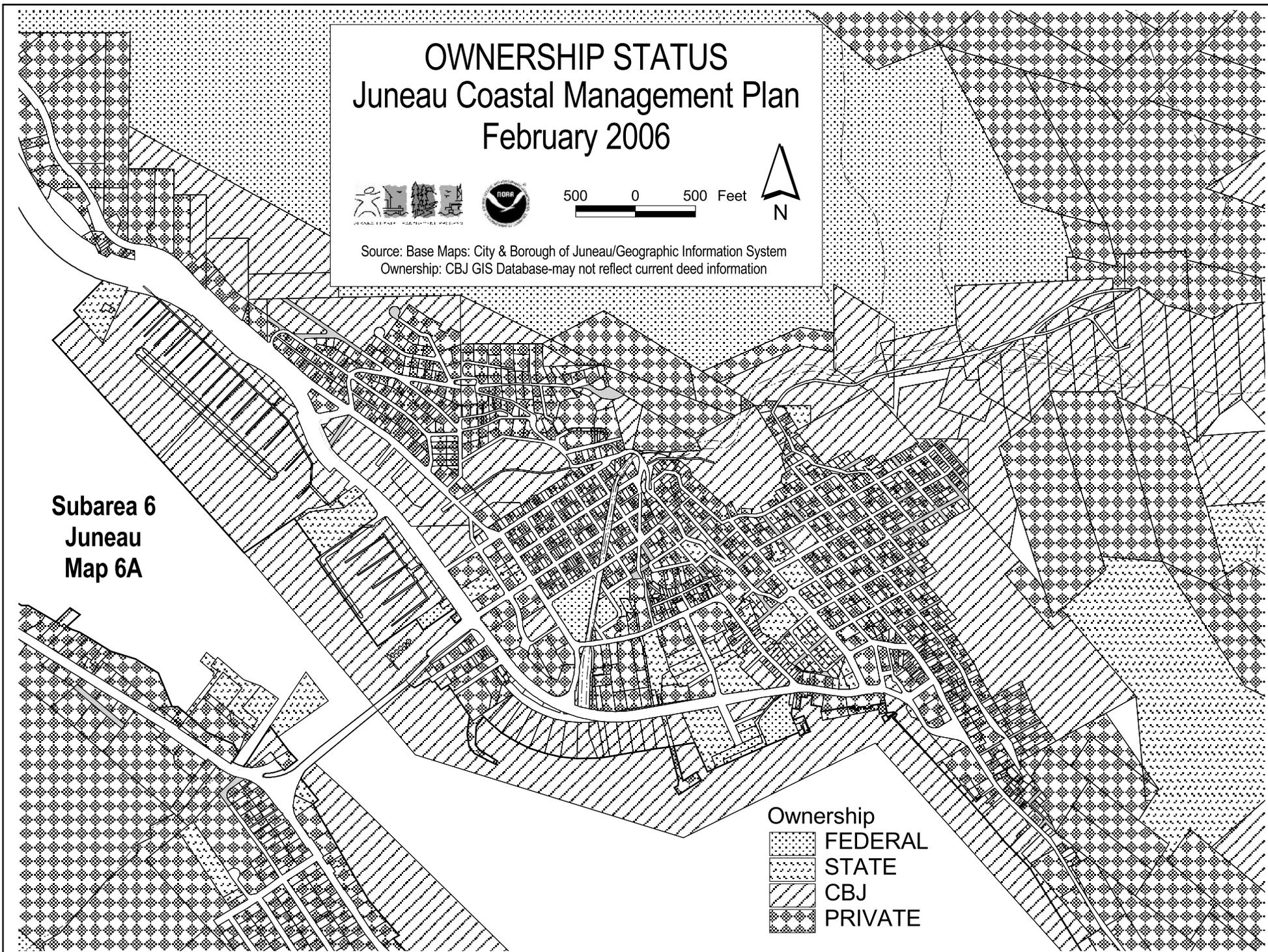
500 0 500 Feet



Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Subarea 6
Juneau
Map 6A

- Ownership
-  FEDERAL
 -  STATE
 -  CBJ
 -  PRIVATE



OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



400 0 400 Feet

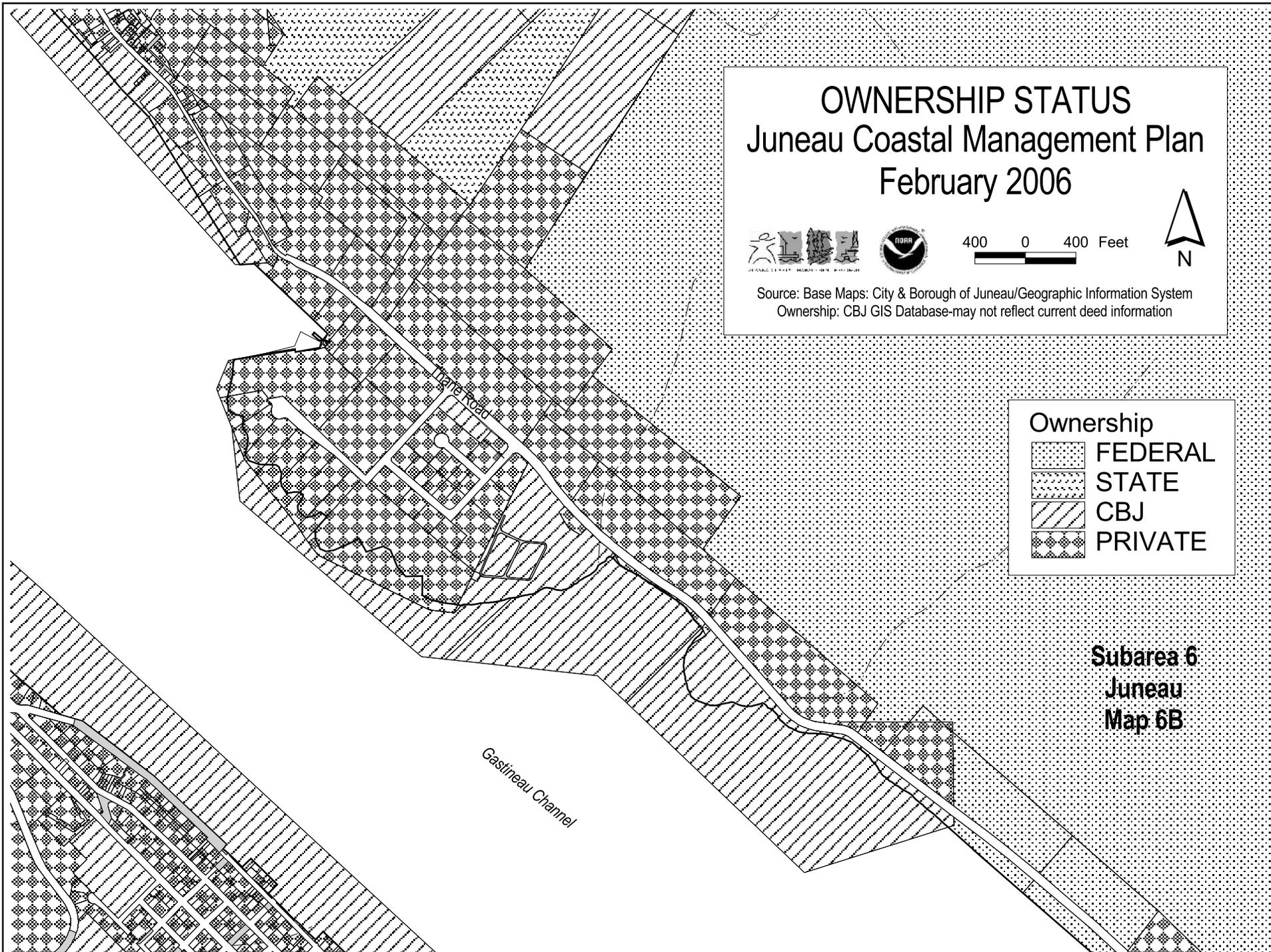


Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Ownership	
	FEDERAL
	STATE
	CBJ
	PRIVATE

Subarea 6
Juneau
Map 6B

Gastineau Channel



**Subarea 7
Gold Creek Watershed
Last Chance Basin
Salmon Creek Watershed
Map 7**

**OWNERSHIP STATUS
Juneau Coastal Management Plan
February 2006**



1000 0 1000 Feet



Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Ownership

	FEDERAL
	STATE
	CBJ
	PRIVATE



OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



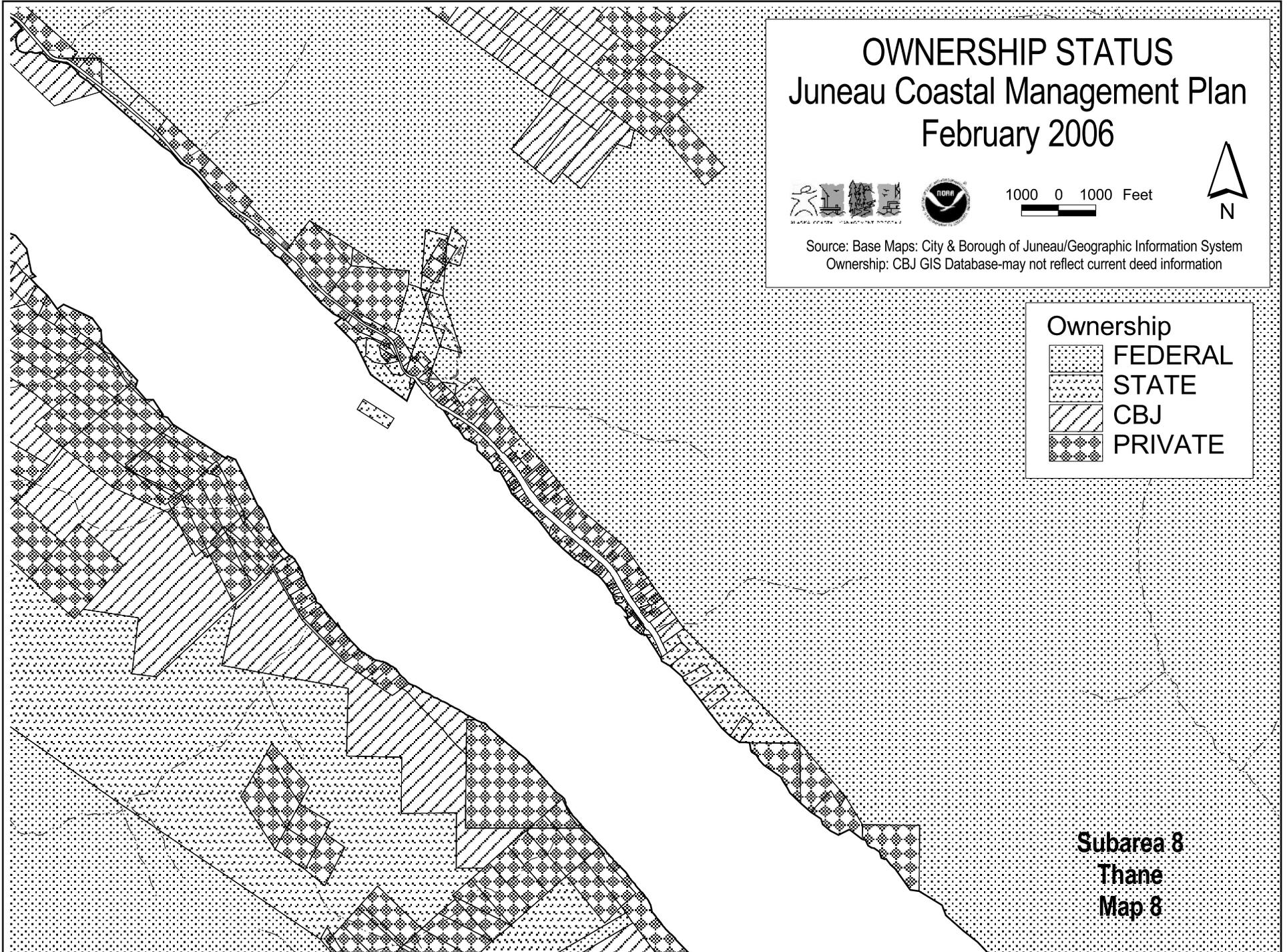
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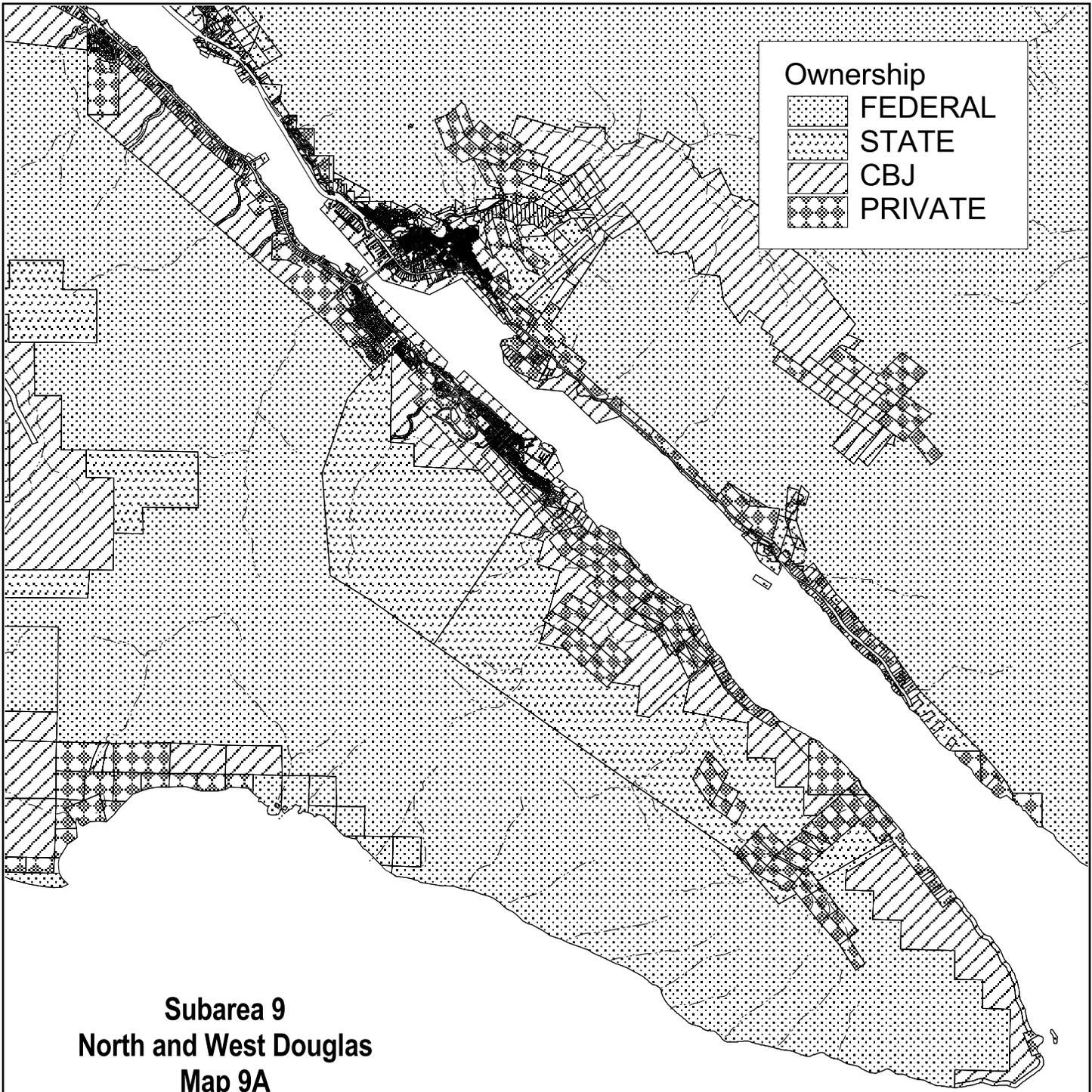


Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Ownership	
	FEDERAL
	STATE
	CBJ
	PRIVATE

Subarea 8
Thane
Map 8





Ownership

-  FEDERAL
-  STATE
-  CBJ
-  PRIVATE

**Subarea 9
North and West Douglas
Map 9A**

**OWNERSHIP STATUS
Juneau Coastal Management Plan
February 2006**



3000 0 3000 Feet



Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



1000 0 1000 Feet

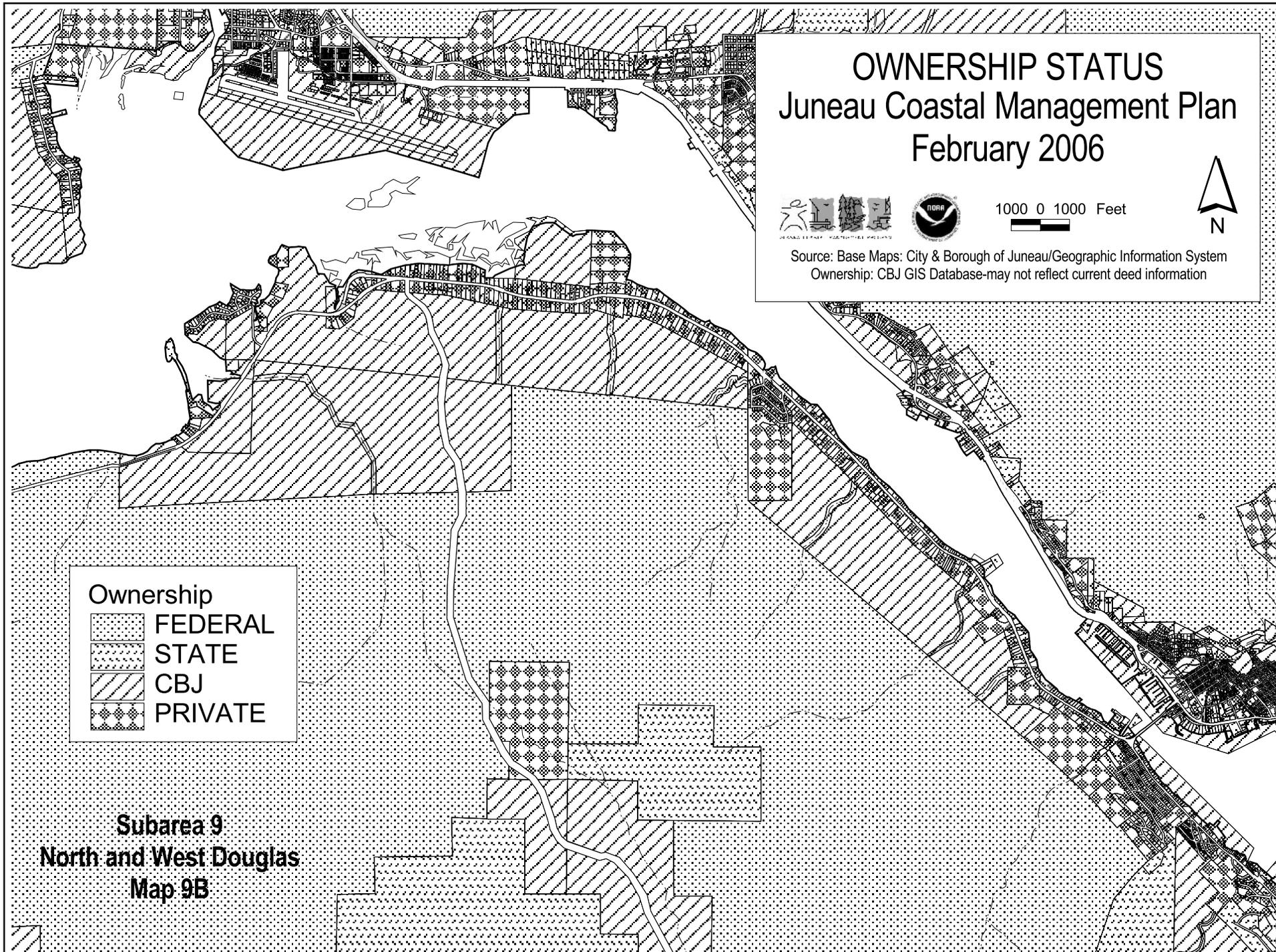


Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Ownership

	FEDERAL
	STATE
	CBJ
	PRIVATE

Subarea 9
North and West Douglas
Map 9B



OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



2000 0 2000 4000 Feet

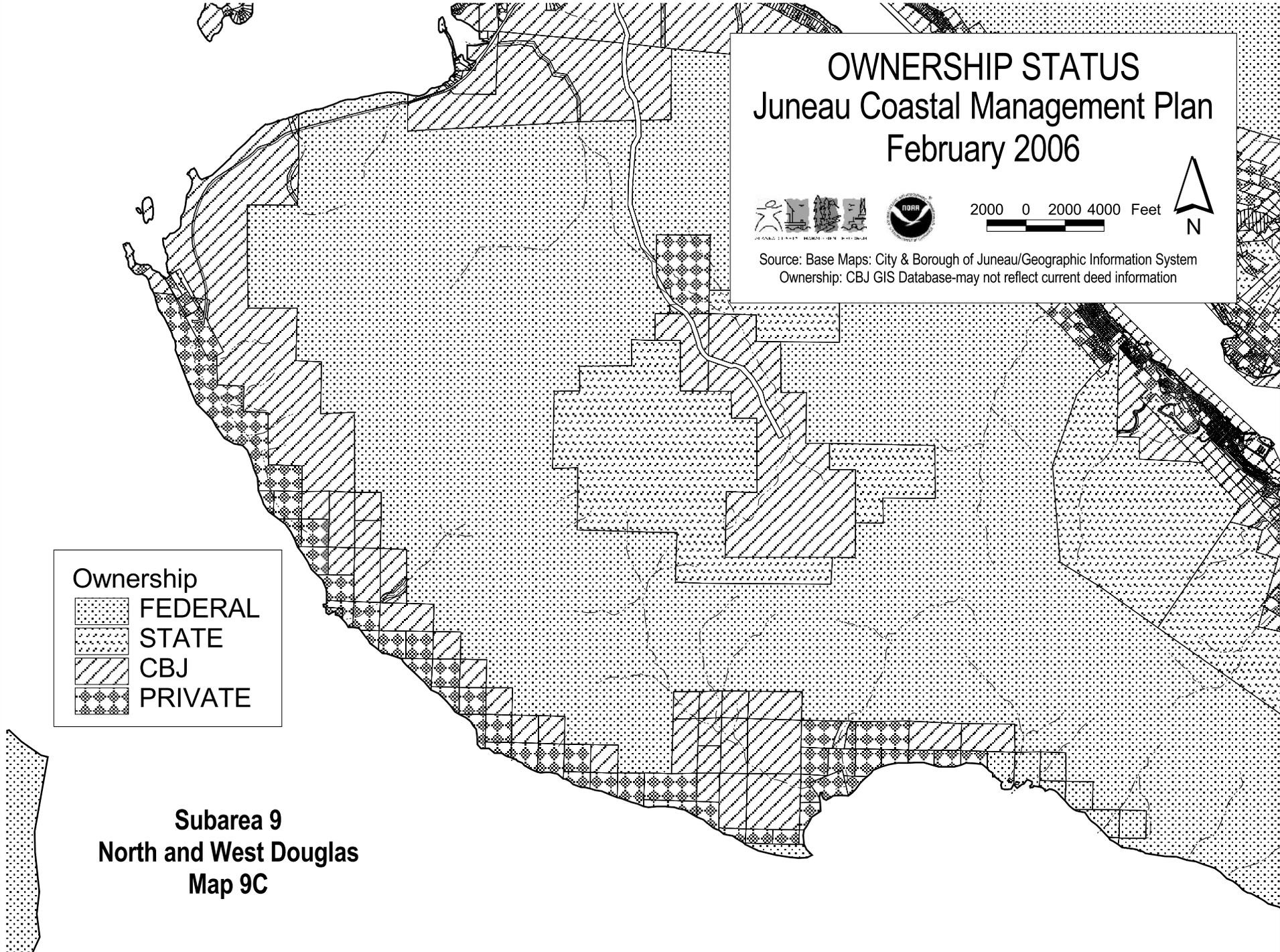


Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Ownership

	FEDERAL
	STATE
	CBJ
	PRIVATE

Subarea 9
North and West Douglas
Map 9C



OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



500 0 500 1000 Feet

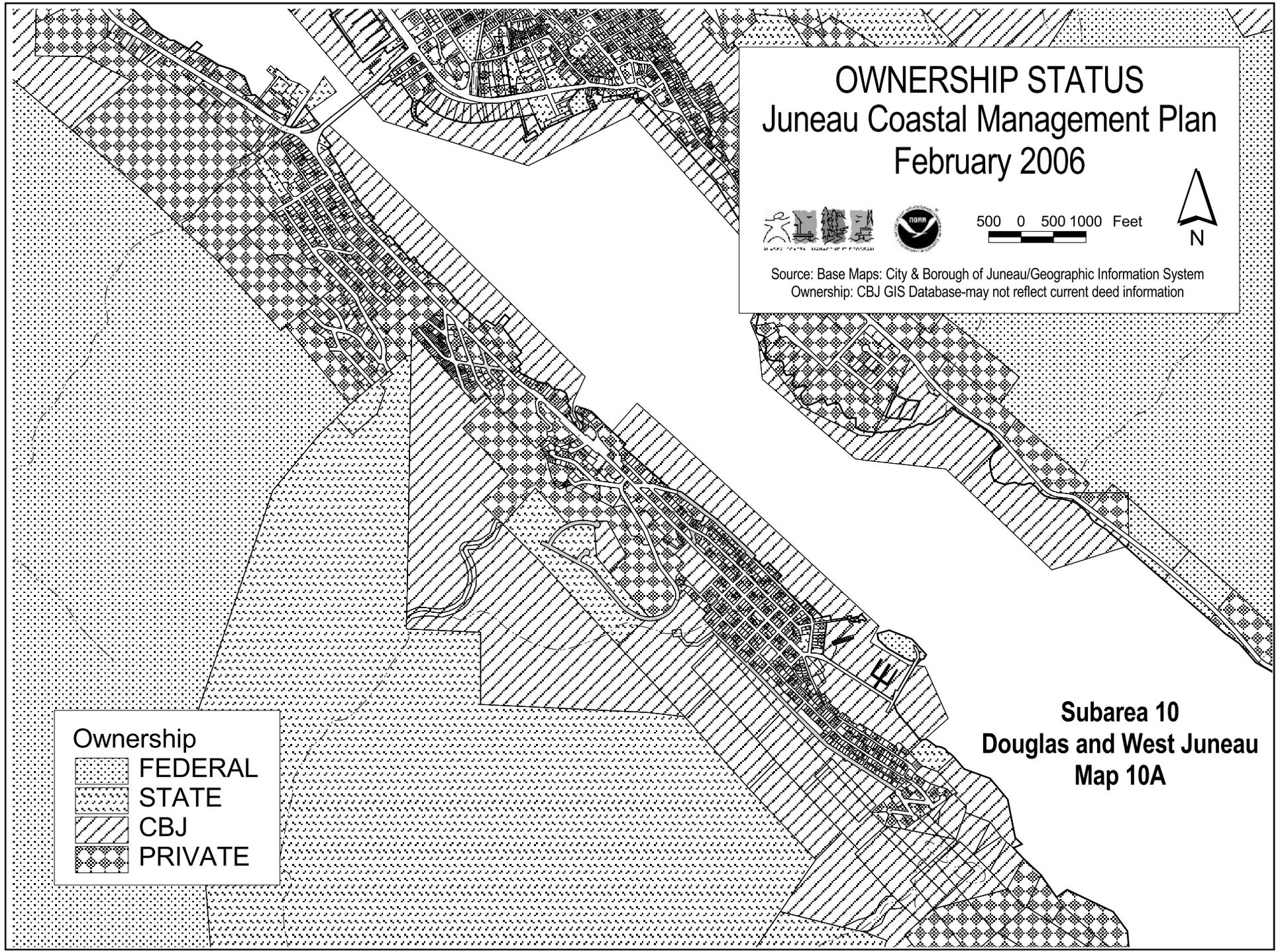


Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Ownership

	FEDERAL
	STATE
	CBJ
	PRIVATE

Subarea 10
Douglas and West Juneau
Map 10A



OWNERSHIP STATUS

Juneau Coastal Management Plan

February 2006



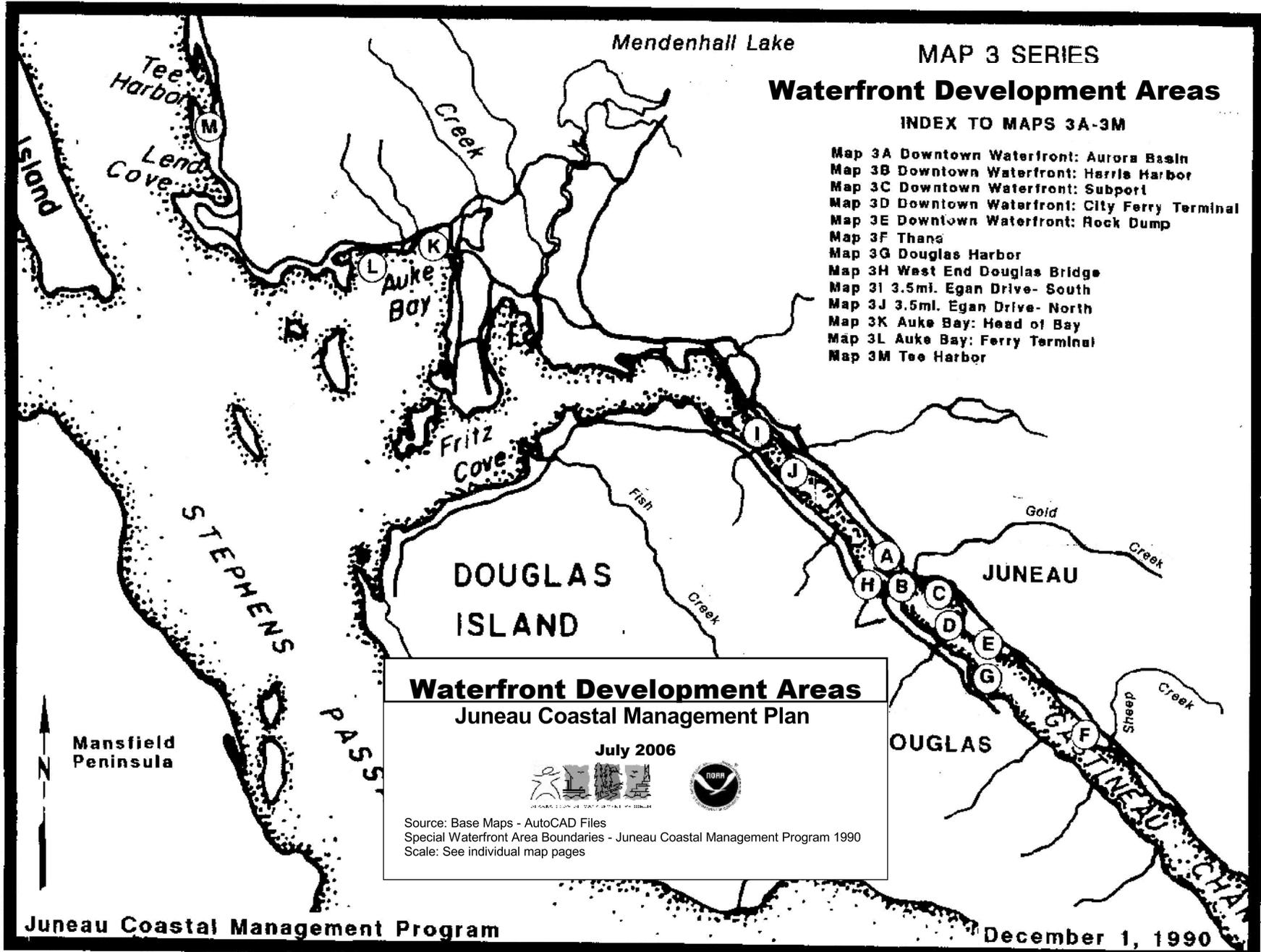
800 0 800 1600 Feet



Source: Base Maps: City & Borough of Juneau/Geographic Information System
Ownership: CBJ GIS Database-may not reflect current deed information

Ownership	
	FEDERAL
	STATE
	CBJ
	PRIVATE

Subarea 10
Douglas and West Juneau
Map 10B



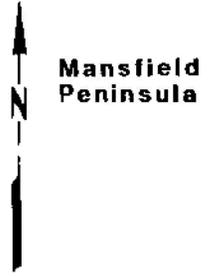
Mendenhall Lake

MAP 3 SERIES

Waterfront Development Areas

INDEX TO MAPS 3A-3M

- Map 3A Downtown Waterfront: Aurora Basin
- Map 3B Downtown Waterfront: Harris Harbor
- Map 3C Downtown Waterfront: Support
- Map 3D Downtown Waterfront: City Ferry Terminal
- Map 3E Downtown Waterfront: Rock Dump
- Map 3F Thana
- Map 3G Douglas Harbor
- Map 3H West End Douglas Bridge
- Map 3I 3.5mi. Egan Drive- South
- Map 3J 3.5mi. Egan Drive- North
- Map 3K Auke Bay: Head of Bay
- Map 3L Auke Bay: Ferry Terminal
- Map 3M Tee Harbor



Waterfront Development Areas

Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
 Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990
 Scale: See individual map pages

Waterfront Development Areas

MAP 3A DOWNTOWN WATERFRONT: AURORA BASIN

Waterfront Development Areas Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990

**INLAND LIMIT OF
WATERFRONT
DEVELOPMENT AREA**

**SEAWARD LIMIT OF
PERMANENT DEVELOPMENT**

200 0 200

Juneau Coastal Management Program 1990

AURORA
BASIN

Map labels include: PARK STREET, SPRUCE STREET, AVENUE, DRIVE, HIGHLAND DRIVE, GLACIER AVENUE, EDAN DRIVE, and various lot numbers.

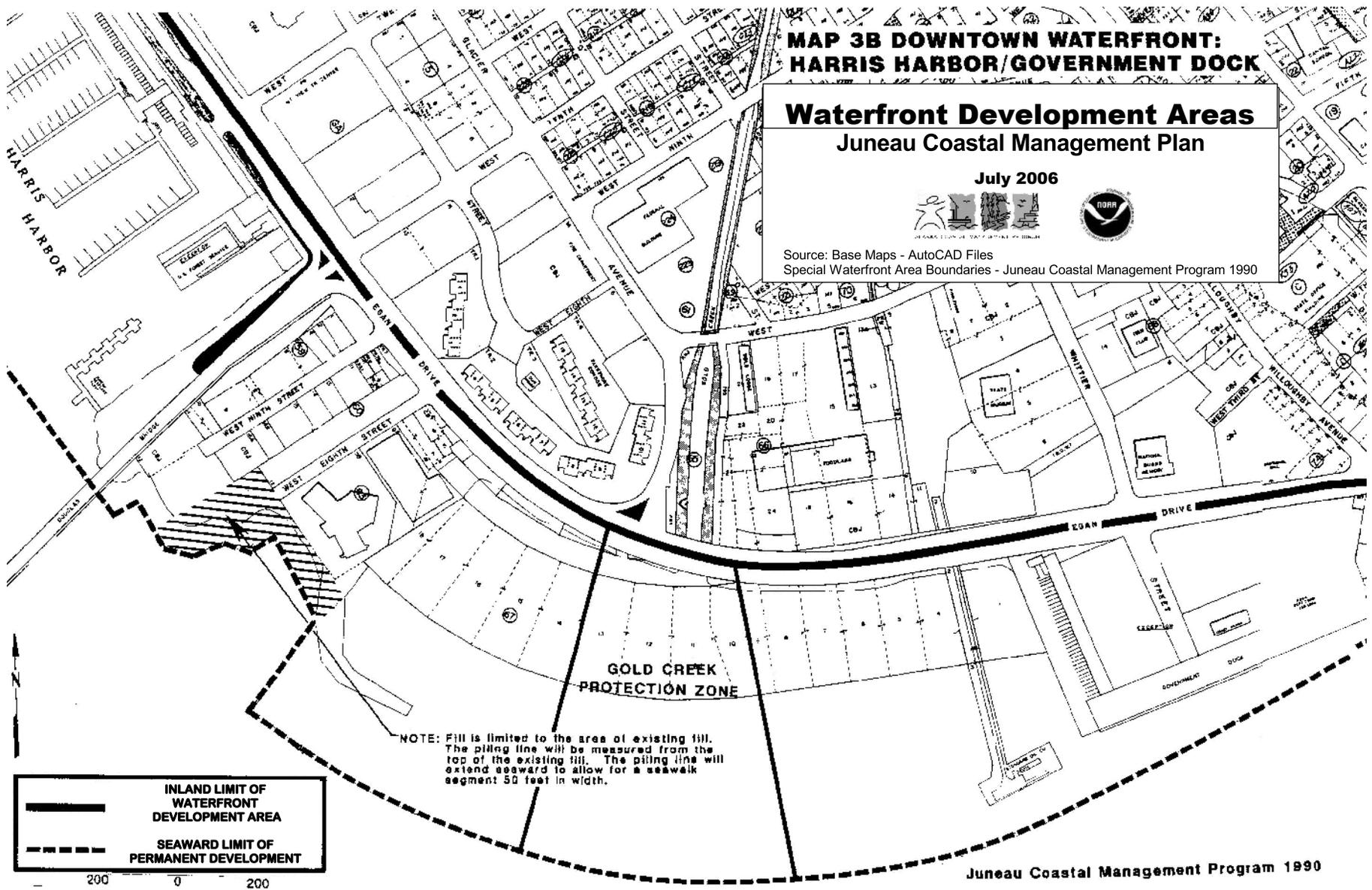
**MAP 3B DOWNTOWN WATERFRONT:
HARRIS HARBOR/GOVERNMENT DOCK**

**Waterfront Development Areas
Juneau Coastal Management Plan**

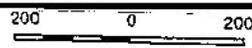
July 2006



Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990



**INLAND LIMIT OF
WATERFRONT
DEVELOPMENT AREA**
**SEAWARD LIMIT OF
PERMANENT DEVELOPMENT**



NOTE: Fill is limited to the area of existing fill. The piling line will be measured from the top of the existing fill. The piling line will extend seaward to allow for a seawalk segment 50 feet in width.

Juneau Coastal Management Program 1990

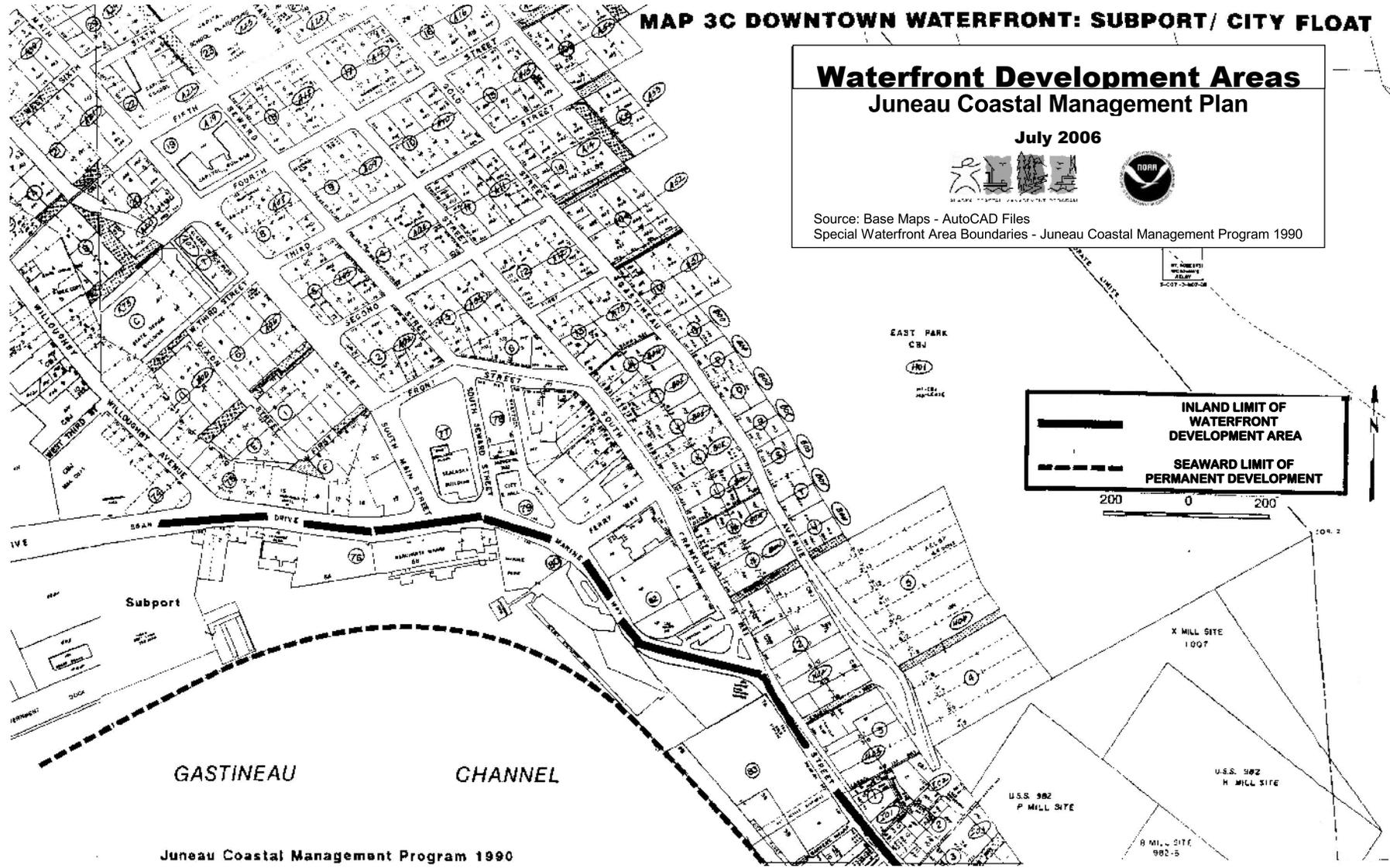
MAP 3C DOWNTOWN WATERFRONT: SUBPORT/ CITY FLOAT

Waterfront Development Areas
Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990



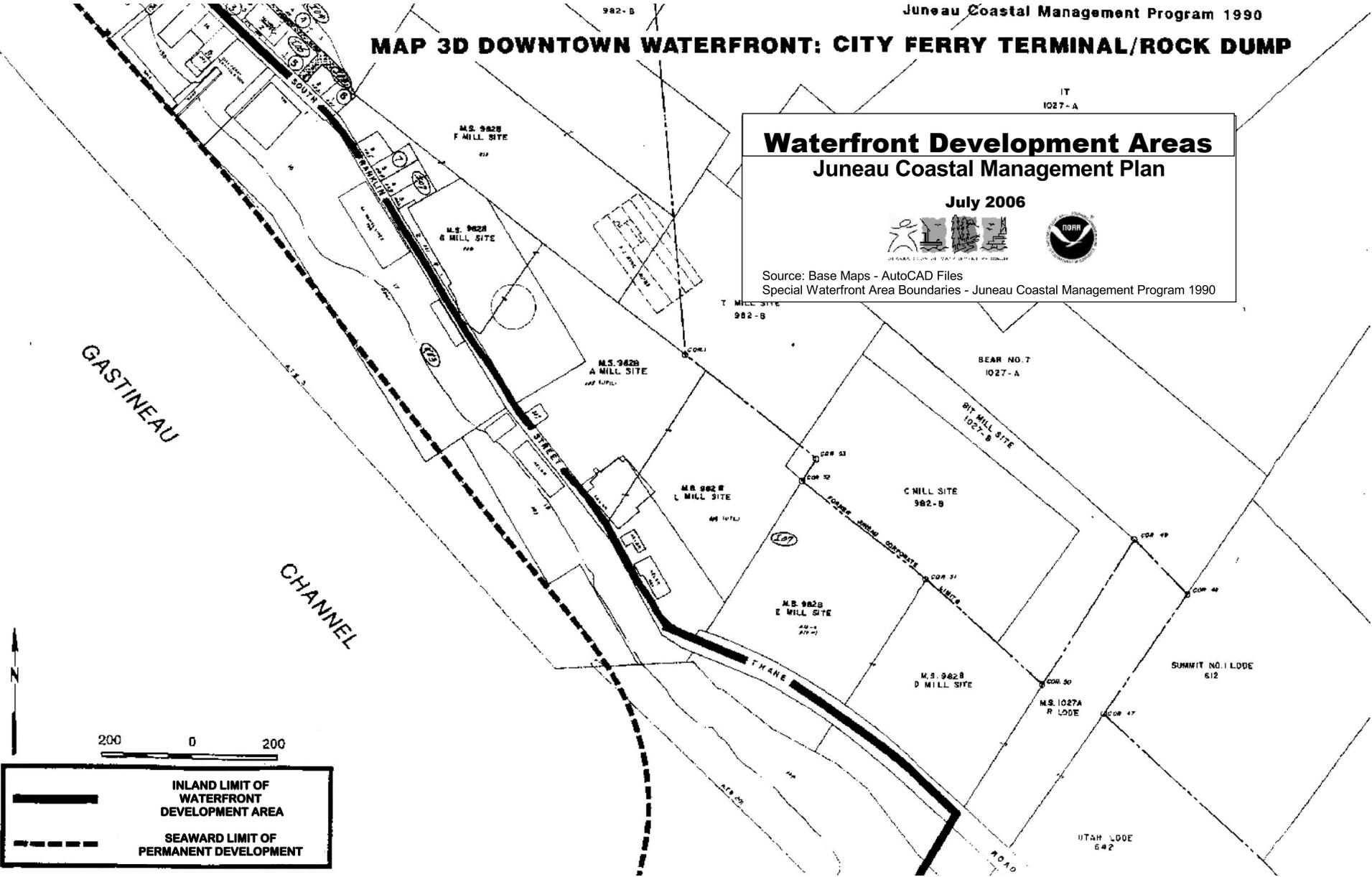
Juneau Coastal Management Program 1990

MAP 3D DOWNTOWN WATERFRONT: CITY FERRY TERMINAL/ROCK DUMP

Waterfront Development Areas
Juneau Coastal Management Plan
 July 2006



Source: Base Maps - AutoCAD Files
 Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990





	INLAND LIMIT OF WATERFRONT DEVELOPMENT AREA
	SEAWARD LIMIT OF PERMANENT DEVELOPMENT

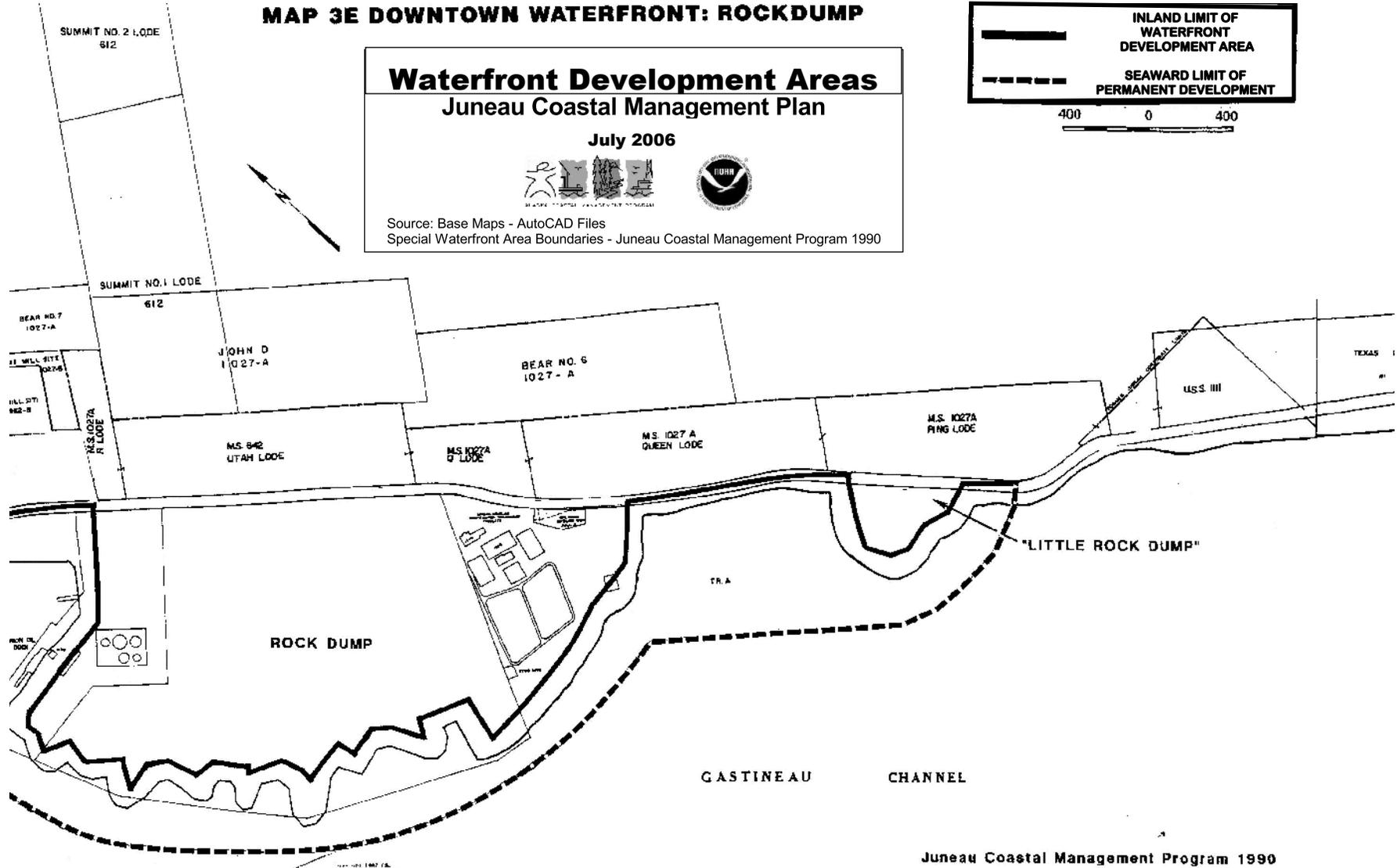
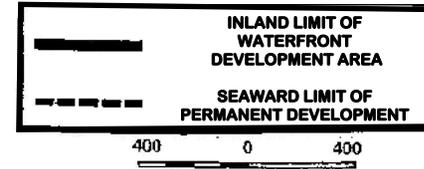
MAP 3E DOWNTOWN WATERFRONT: ROCKDUMP

Waterfront Development Areas Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990



Juneau Coastal Management Program 1990

MAP 3F THANE

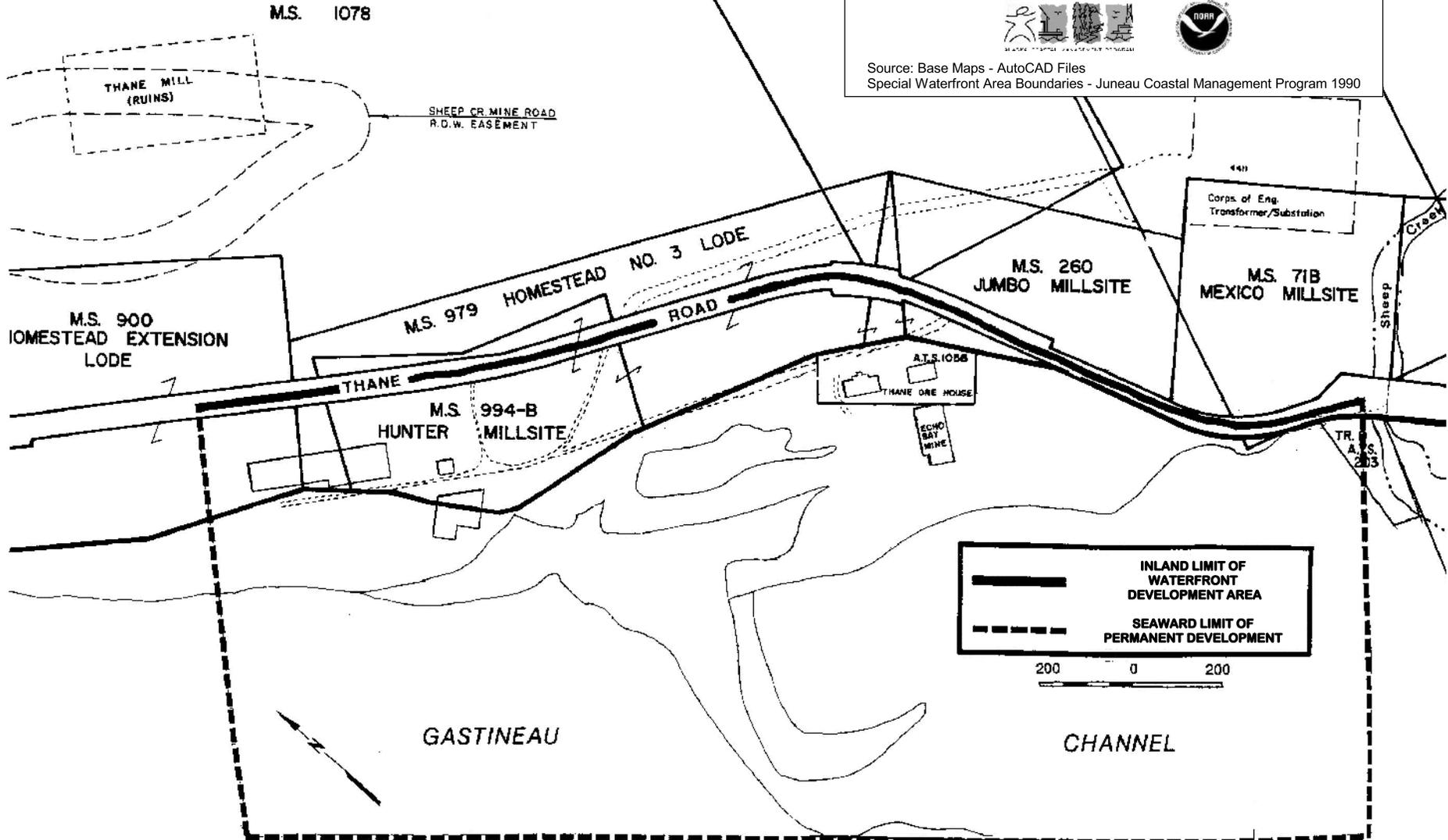
Waterfront Development Areas

Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990



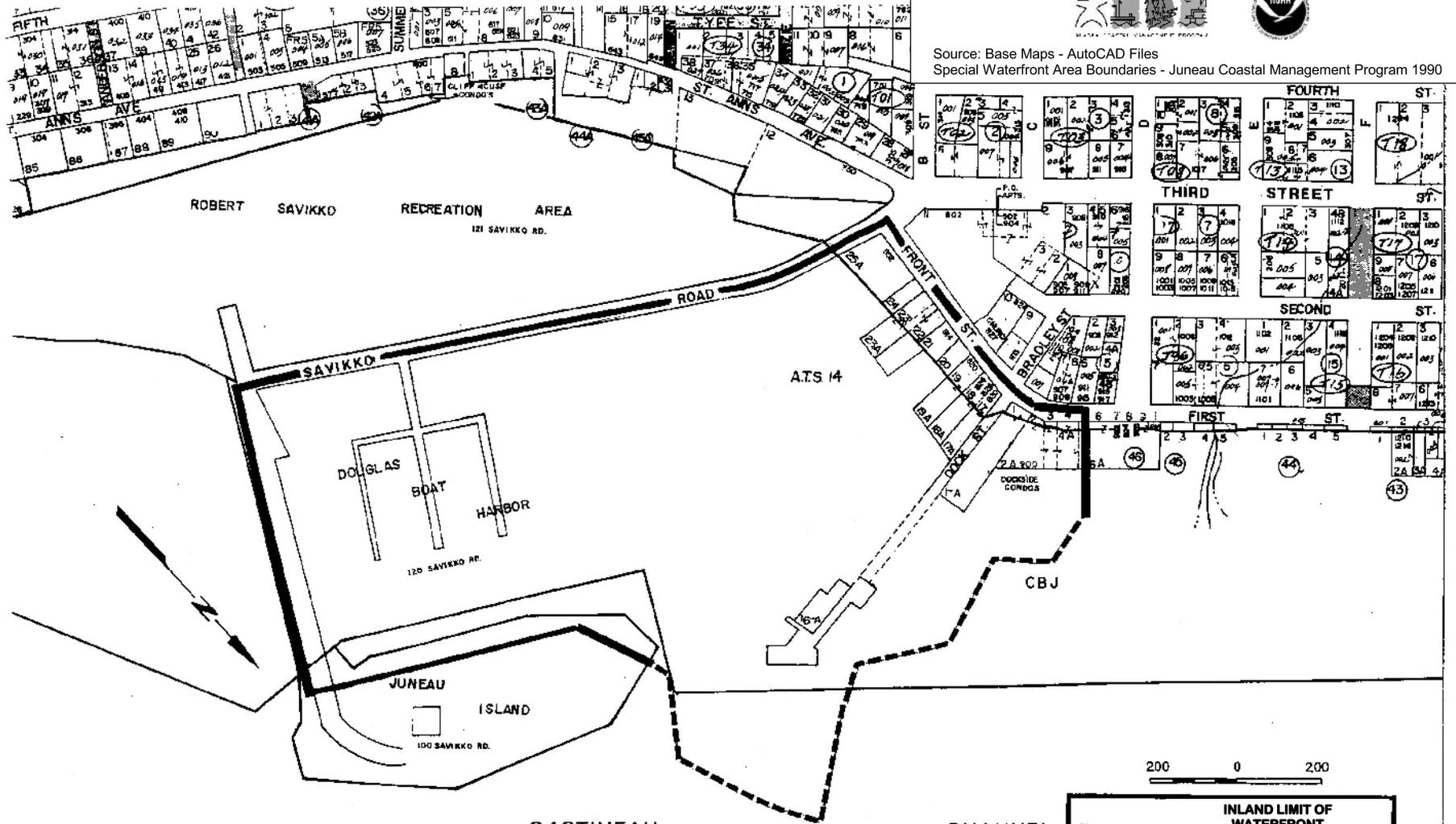
Waterfront Development Areas

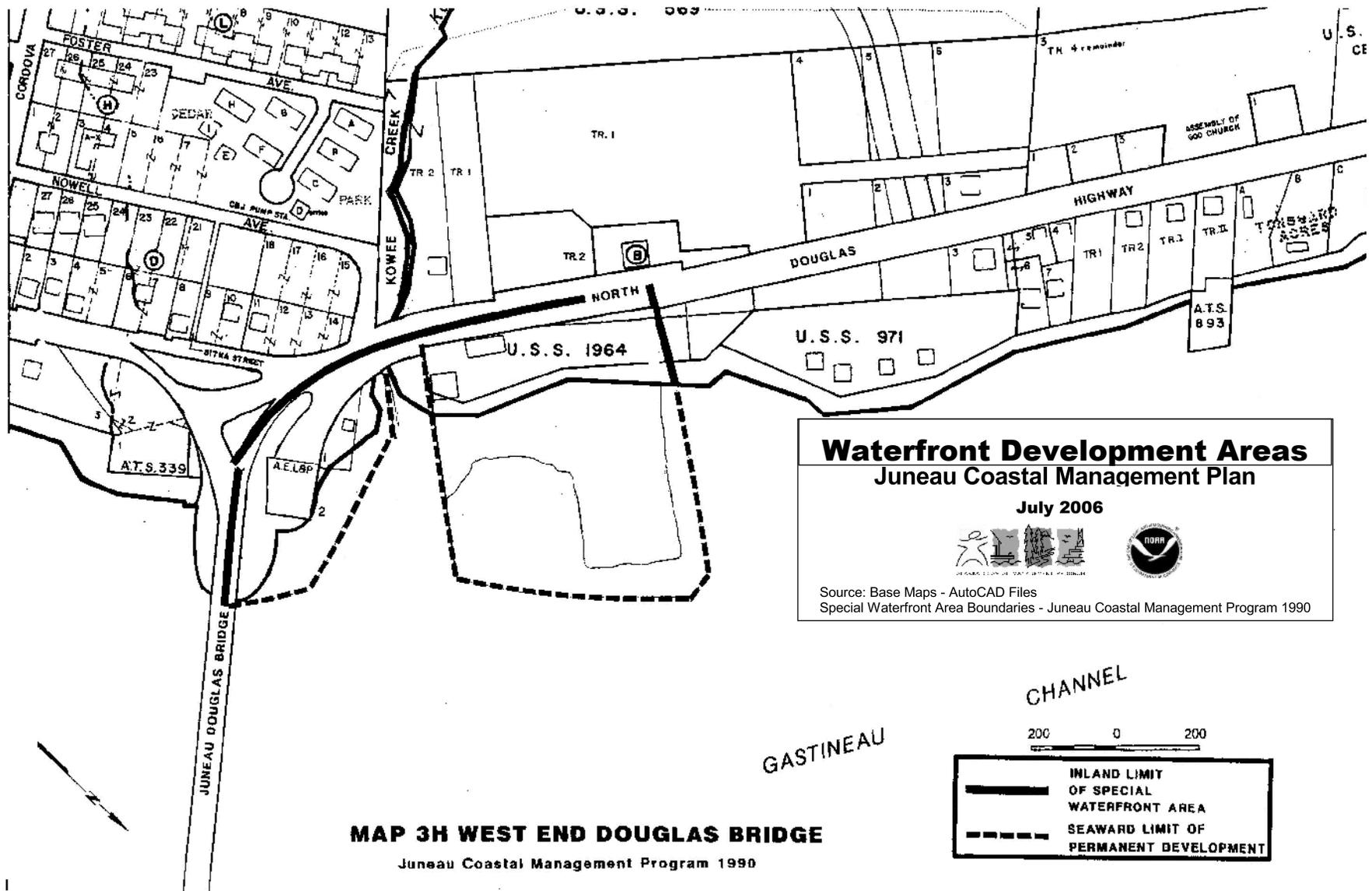
Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
 Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990





Waterfront Development Areas
Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
 Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990



	INLAND LIMIT OF SPECIAL WATERFRONT AREA
	SEAWARD LIMIT OF PERMANENT DEVELOPMENT

MAP 3H WEST END DOUGLAS BRIDGE
 Juneau Coastal Management Program 1990

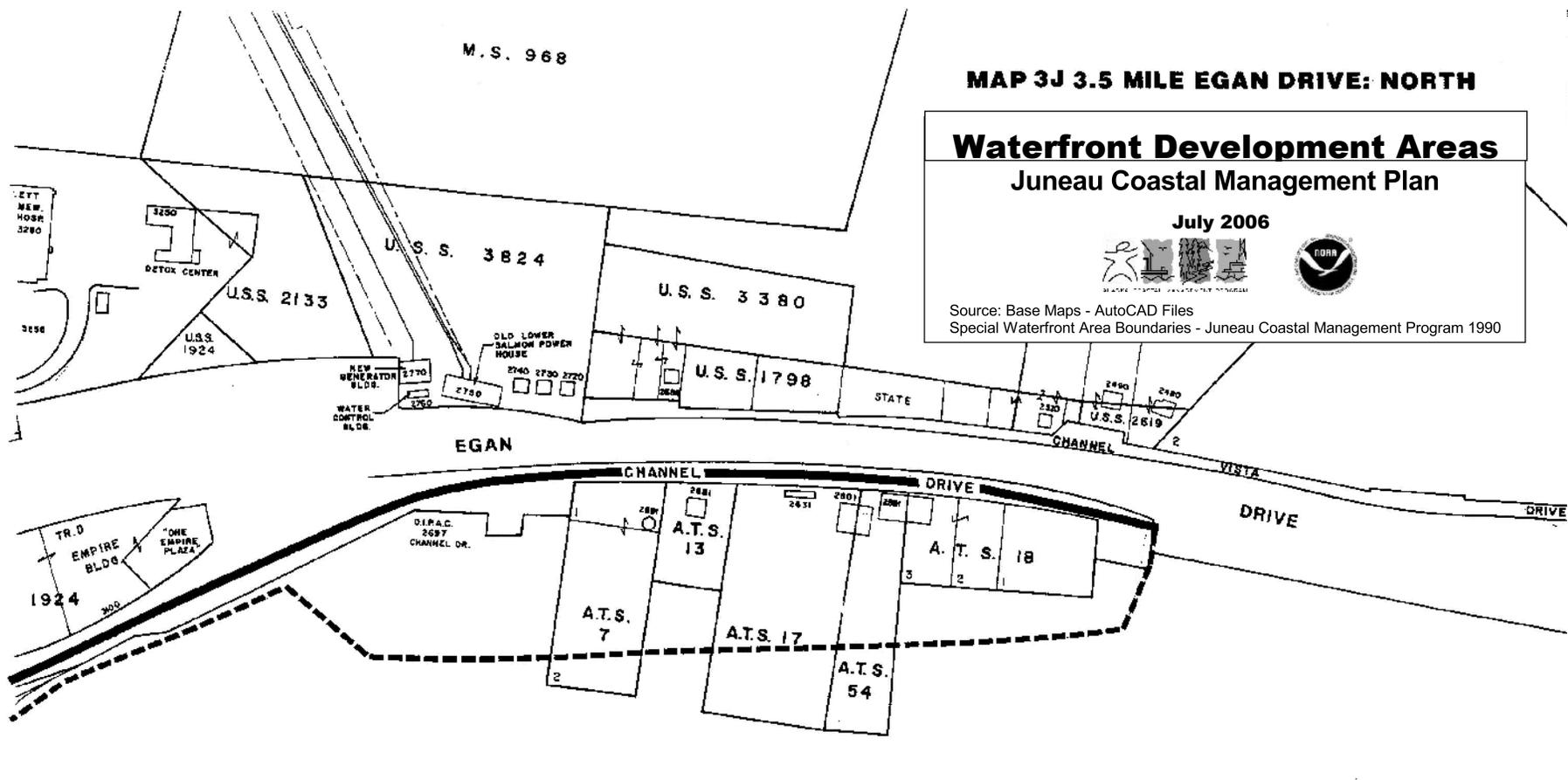
MAP 3J 3.5 MILE EGAN DRIVE: NORTH

Waterfront Development Areas
Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990



INLAND LIMIT OF WATERFRONT DEVELOPMENT AREA
———
SEAWARD LIMIT OF PERMANENT DEVELOPMENT
- - - -



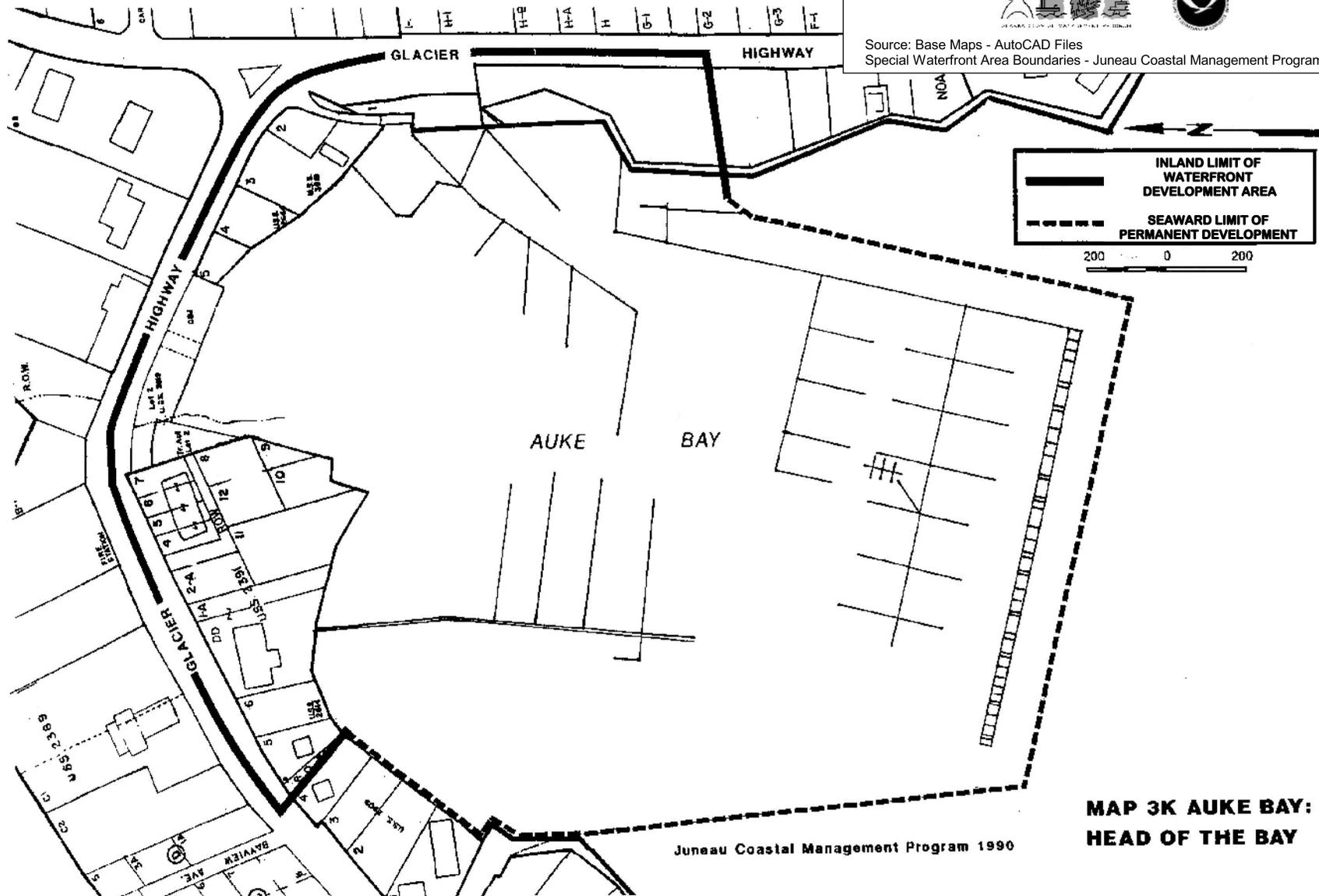
Juneau Coastal Management Program 1990

Waterfront Development Areas Juneau Coastal Management Plan

July 2006



Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990



Waterfront Development Areas

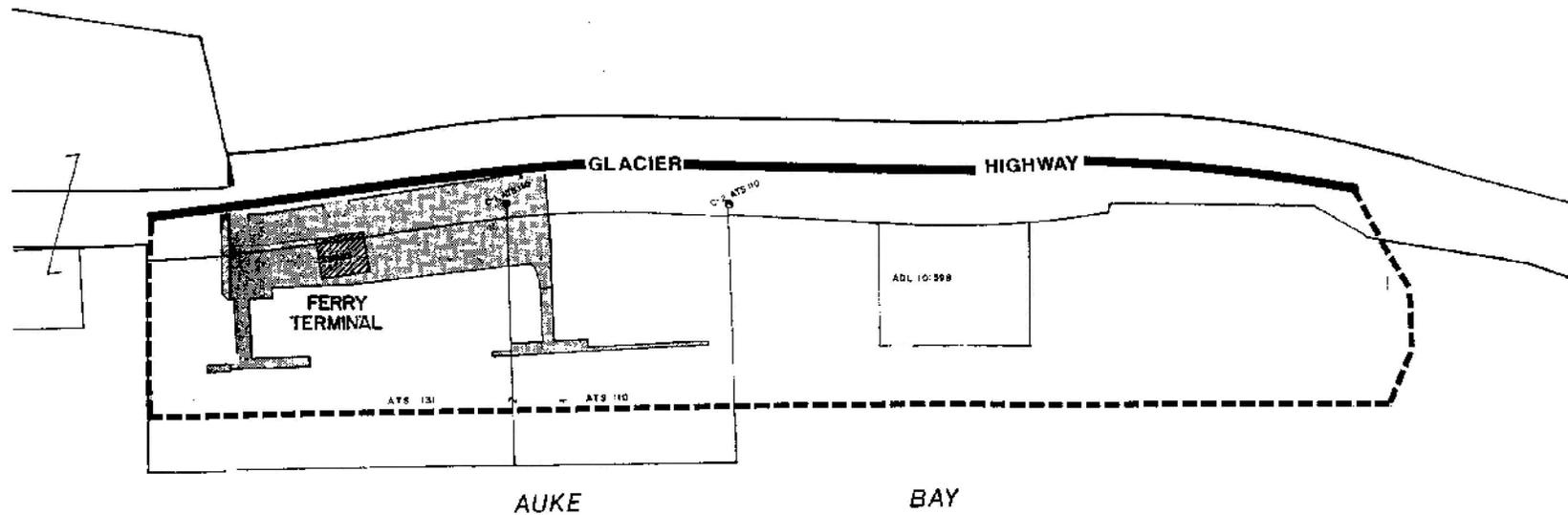
Juneau Coastal Management Plan

July 2006

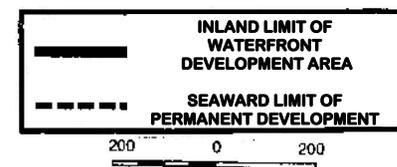


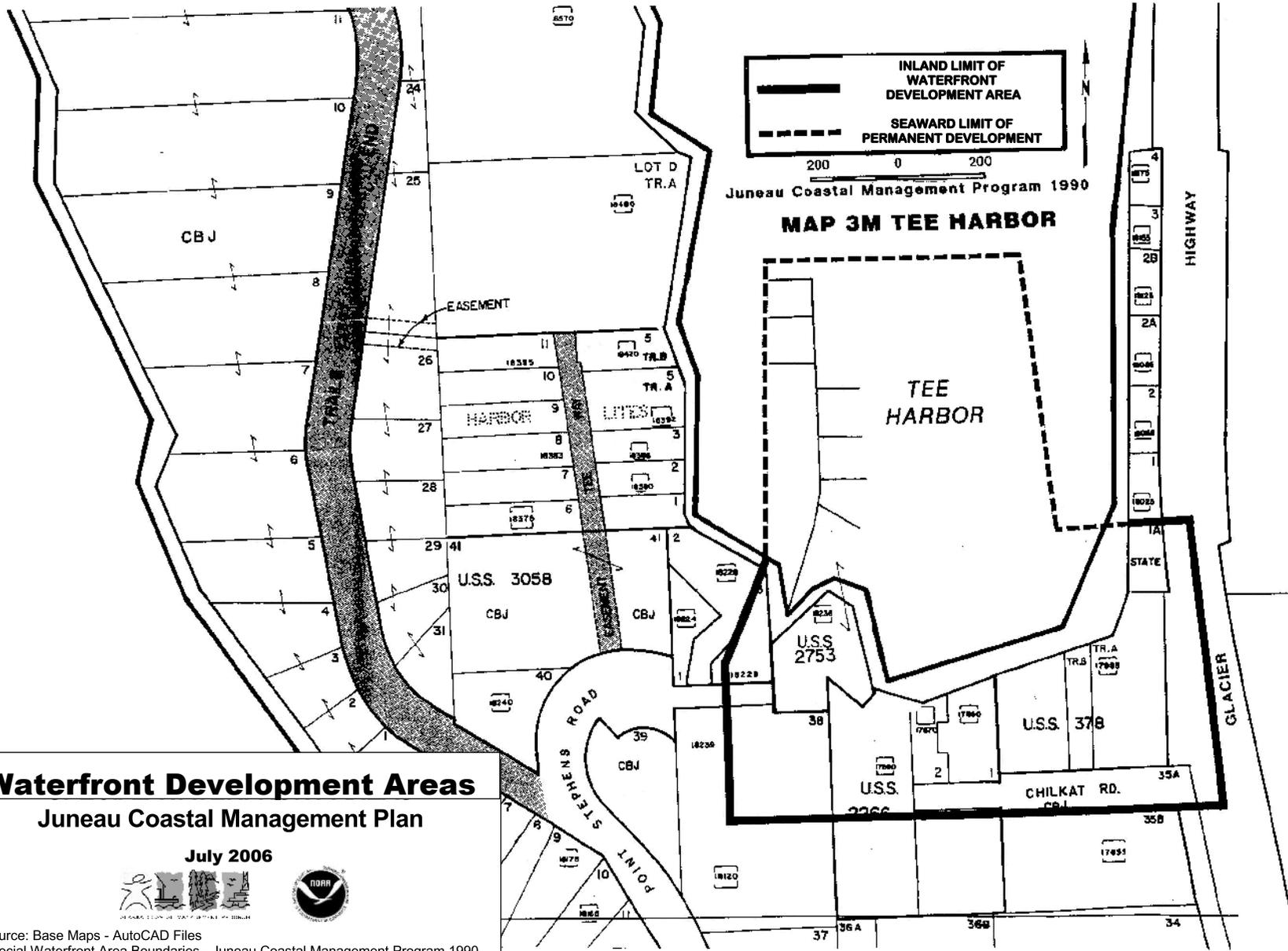
Source: Base Maps - AutoCAD Files
Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990

MAP 3L AUKE BAY: FERRY TERMINAL



Juneau Coastal Management Program 1990





INLAND LIMIT OF WATERFRONT DEVELOPMENT AREA
 SEAWARD LIMIT OF PERMANENT DEVELOPMENT

200 0 200

Juneau Coastal Management Program 1990

MAP 3M TEE HARBOR

TEE HARBOR

Waterfront Development Areas
 Juneau Coastal Management Plan
 July 2006

Source: Base Maps - AutoCAD Files
 Special Waterfront Area Boundaries - Juneau Coastal Management Program 1990

The important habitat designations and enforceable policies for those designated habitats are contained in the Juneau Coastal Management Plan Volume II: Juneau Wetlands Management Plan, Chapter III. Chapter II of that volume comprises the resource inventory and analysis for the wetlands designation and policies. (Note that the alternatives analysis in Volume II also serves to support the coastal development policies in this volume). The important habitat designations are depicted on maps in Appendix II-C of that volume.

CHAPTER IX

ISSUES, GOALS, OBJECTIVES & POLICIES

Section 1: INTRODUCTION

The Statewide Standards of the Alaska Coastal Management Program, Article 2, Uses and Activities and Article 3, Resources and Habitats, provide standards for the use of agencies and coastal districts in carrying out their responsibilities under the Alaska Coastal Management Act. Uses and activities in the coastal area must be consistent with the applicable district plan and the applicable enforceable policies contained in this chapter. District enforceable policies may address only uses, activities and resources contained in the Statewide Standards and District Coastal Management Plan Requirements. Therefore, the Statewide Standards and district plan requirements that are the basis for the enforceable policies are included in text boxes at the beginning of each of the sections that follow. These are followed by issues of local concern, goals and objectives.

Throughout this chapter, numerous goals and objectives are presented that cannot be achieved through enforceable policies given the limitations of the new state laws. Nevertheless, they are expressions of coastal issues that are important to the CBJ. 11 AAC 114.200 requires that the CBJ describe the means used to achieve objectives stated in the district plan. As a unified home rule municipality the CBJ has many options for implementing the issues, goals and objectives that cannot be implemented through enforceable policies. These include but are not limited to zoning, land use and building permits. Refer to the CBJ Municipal Code Chapter 49.70 for municipal standards which may be applicable through local zoning and permitting.

The CBJ uses two types of policies to achieve its goals and objectives: Enforceable Policies and Municipal Standards.

Enforceable Policies of the City and Borough of Juneau relate to the development and use of specific coastal resources. They are binding on the City and Borough, the public, state agencies, and federal agencies to the extent they are consistent with other applicable local, state and federal regulations. These are the "enforceable policies" discussed in the requirements of 11 AAC 114.270. These enforceable policies are listed again separately in Appendix I-A.

Under AS 46.40.210(7), a district coastal management plan is a plan that sets out policies and standards "to guide public and private uses of land and water within that district ..."
Municipal Standards of the City and Borough of Juneau also relate to the development and use of specific coastal resources. They are also binding on the City and Borough and the public, and may be binding on state agencies and federal agencies to the extent the actions for these agencies are required to comply with local land use law. The primary distinction between municipal standards and enforceable policies is that municipal standards may not meet one or more criteria of approvability contained in the state laws. As such a municipal standard is implemented and enforced through local authorities and may only be used in an advisory capacity during the state consistency review process (when there is no local permit). These municipal standards are codified in CBJ Title 49.

11 AAC 114.270. District enforceable policies. (a)District enforceable policies must

(1) address only uses and activities identified in 11 AAC 112.200 - 11 AAC 112.240 and 11 AAC 112.260 - 11 AAC 112.280 and areas designated under 11 AAC 114.250(b) - (i);

(d) Unless a district can demonstrate that a matter is of local concern, a district may not adopt, and the commissioner will not approve, an enforceable policy that addresses matters included in the statewide standards contained in 11 AAC 112.200 – 11 AAC 112.240 and 11 AAC 112.260 – 11 AAC 112.280.

(e) A district enforceable policy must

(1) be clear and concise as to the activities and persons affected by the policy and the requirements of the policy;

(2) use precise, prescriptive, and enforceable language;

(3) not address a matter regulated or authorized by state or federal law unless the enforceable policy relates to a matter of local concern as defined in AS 46.40.070(a)(2)(C); and

(4) not arbitrarily or unreasonably restrict or exclude uses of state concern.

(f) In accordance with AS 46.40.040(b), a district may not address a matter regulated by the Department of Environmental Conservation under to AS 46.03, AS 46.04, AS 46.09, and AS 46.14 and the regulations adopted under those statutes.

(h) In reviewing and approving a district enforceable policy developed under this chapter that addresses a matter of local concern, the commissioner must find that

(1) the coastal use or resource

(A) is within a defined portion of the district's coastal zone that has been mapped or described under 11 AAC 114.230(c)(1);

(B) has been demonstrated as sensitive to development in the resource analysis developed under 11 AAC 114.240(a);

(C) is not adequately addressed by state or federal law, including consideration of comments by the appropriate state or federal agency in comments on the public hearing draft under 11 AAC.114.315 or during consultation under 11 AAC 114.340(c)(5); and

(D) is of unique concern to the coastal resource district as demonstrated by local usage or scientific evidence that has been documented in a resource analysis under 11 AAC 114.240(c); (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

Special words and phrases used within this document that have been defined within state statutes and regulations, or by the CBJ, are included in Chapter VIII.

Section 2: COASTAL DEVELOPMENT

11 AAC 112.200. Coastal development. (a) *In planning for and approving development in or adjacent to coastal waters, districts and state agencies shall manage coastal land and water uses in such a manner that those uses that are economically or physically dependent on a coastal location are given higher priority when compared to uses that do not economically or physically require a coastal location.*

(b) *Districts and state agencies shall give, in the following order, priority to*

(1) water-dependent uses and activities;

(2) water-related uses and activities; and

(3) uses and activities that are neither water-dependent nor water-related for which there is no practicable inland alternative to meet the public need for the use or activity.

(c) *The placement of structures and the discharge of dredged or fill material into coastal water must, at a minimum, comply with the standards contained in 33 C.F.R. Parts 320 - 323, revised as of July 1, 2003. (Eff. 7/1/2004, Register 170)*

ISSUES OF LOCAL CONCERN

Juneau is situated in a spectacular and varied natural setting. Its aquatic and terrestrial resources are of exceptional economic, aesthetic, and recreational value, but also have numerous implications for resource and land use planning and management. In addition to their distinctive characteristics, each resource is interdependent in a complex and often highly sensitive environment.

The major port facilities for commercial and industrial goods and materials are located on the southern part of the downtown waterfront. Because of the geography and development pattern of that area, room for expansion is limited. In addition, traveling up the Gastineau Channel is a significant detour for most barge traffic. Truck traffic to and from the port adds to the noise and congestion in the downtown area.

Port development continues to be of importance to both commerce and recreation throughout the CBJ. Cruise ship visits are increasing every year; cruise vessel lengths are increasing as well as the number passengers carried. Moorage for cruise ships and upland support areas have become extremely important to the continued growth of the tour industry and local private enterprise.

Recreational boat use is also on the increase and the CBJ Harbormaster has a waiting list of approximately 150 boats borough-wide. Summer season private boat visits are also on the increase with larger, ocean-going yachts becoming more familiar in the Juneau area.

Ferry traffic is increasing in the Auke Bay area as the Alaska Marine Highway expands the number of voyages to accommodate increasing “drive-on” tourists during the summer season. From time to time, Auke Bay is also frequented by ore ships serving Skagway and Greens Creek.

In the short term, it is important to expand and improve on the existing waterfront industrial sites within the CBJ. In the long term, development of new port facilities which are more accessible to marine traffic of Southeast Alaska would be more desirable. An appropriate site should provide protected docking space and adequate land for storage and industrial facilities.

Growth is likely to occur among resource-based industries such as mineral extraction and processing, fisheries, and timber. Land with good access to maritime shipping channels is required to support this development.

Local and state governments recognize the importance of coastal resources to the environmental quality and economic vitality of the CBJ. To ensure their preservation and appropriate development, the state requires each local jurisdiction to complete a district coastal management plan. Most of the developable land in the CBJ is within the area defined as the coastal zone. Environmentally sensitive habitats and waterfront areas which are particularly subject to intense development pressures are downtown Juneau, Auke Bay, North Douglas and Echo Cove.

ACMP laws require that district coastal management programs carefully manage the development of shoreline areas and place highest priority on reserving waterfront areas for water-dependent and water-related uses. The obvious overlap between a local Comprehensive Plan for the CBJ and a coastal management program necessitates integrating the two approaches.

GOALS AND OBJECTIVES

Goal

It is the goal of the CBJ to incorporate its district coastal management program with its comprehensive plan and, in planning for use of coastal areas, to place highest priority on water-dependent and water-related uses.

Objectives

Assure that all requirements of the state and federal coastal zone management program are addressed within the comprehensive plan and its implementing ordinances and regulations.

Maintain, implement and improve Juneau's state and federally approved coastal management program including the incorporation of general coastal management goals and policies in this Plan and including the maintenance of enforceable coastal management policies as requirements in the CBJ Land Use Code.

Designate areas for water-dependent and related uses on the Land Use Code Maps. Where appropriate, designate publicly-owned shoreline areas for open space and recreational use.

ENFORCEABLE POLICIES

Map Reference and Applicability

Enforceable policies relating to coastal development apply to the placement of structures or fill, in coastal waters throughout the entire coastal district. (*See Volume I, Map 1: Coastal Zone Boundaries*)

(2.1) Except for Waterfront Development Areas in section 3, filling of intertidal areas seaward of mean high tide for the expansion of upland area is specifically prohibited unless clear and convincing evidence is provided showing that all of the following conditions exist:

- (A) That strict compliance with the policy would prevent the applicant from making a reasonable use of the property or would make compliance unreasonably burdensome;
- (B) That fill is the only means to allow development of the property which is similar to other properties in the vicinity;
- (C) That less than the proposed fill would prevent the applicant from making a reasonable use of the property or would make compliance unreasonably burdensome.

Provided, log and mining transfer facilities and the following public facilities are exempt from this policy: bridges, causeways, boat ramps, utility transmission facilities, pipelines, treatment plant lines and outfalls, and transportation facilities.

Authority: 11 AAC 112.200(c)

Refer to CBJ code for Coastal Development municipal standards. See also Section 3. WATERFRONT DEVELOPMENT AREAS for enforceable policies which are specific to those areas.

Section 3. WATERFRONT DEVELOPMENT AREAS

ISSUES OF LOCAL CONCERN

Refer to the issues of local concern expressed in section 2 of this Chapter.

GOALS AND OBJECTIVES

In addition to the goals and objectives stated under Section 2. Coastal Development and the following goals and objectives are applicable to the Section 3. Waterfront Development Areas.

Goal

It is the Goal of the CBJ to expand the role of downtown Juneau as the civic, cultural and economic center of the community through careful urban design and planning of public and private facilities.

Objectives

Facilitate the pedestrian usage of Downtown including:

1. Encourage development which improves pedestrian facilities.
2. Extend the waterfront seawalk.

Encourage continued public and private redevelopment of the South Franklin Street waterfront area, considering the following:

1. Create additional buildable sites bordering the waterfront.
2. Encourage redevelopment for mixed uses and incorporate architectural guidelines to insure aesthetic and harmonious building styles.
3. Expand dock facilities.

Update and adopt Downtown Waterfront Plan to include uplands, tidelands, and submerged lands from Norway Point to the little rock dump and the corresponding easterly shore of Douglas Island.

Goal

It is the Goal of the CBJ to facilitate availability of sufficient and suitable acreage for port facilities, and to work closely with the public and private sectors to facilitate commerce and enjoyment of the waterfront through development of well designed port facilities.

Objectives

Prepare a port development plan to assess current and future moorage demand, upland support facility demand, general availability of waterfront property adjacent to harbor areas throughout the borough, and to identify facility and locational requirements to address the demand.

Conduct an inventory of waterfront property to ascertain location, marine attributes (depth, currents, and winds), environmental attributes, size, access, and ownership. Prepare a detailed engineering and economic feasibility analysis of potential new or expanded port facility sites.

Based on the port plan and feasibility studies, designate appropriate areas for port facility development.

Over the near term, encourage in-filling and completion of existing port facilities prior to establishment of new sites.

Support the development of recommended moorage and associated facilities, such as showers and laundries for transient and local boats.

Protect from land use conflict and/or displacement, potential new or expanded port and water dependent and water-related industrial, commercial, governmental, and recreational facilities.

Evaluate the effect of changes in state and federal environmental laws on water-related and water-dependent facilities such as fuel docks, tidal grids, and upland boat storage and repair yards, and the role of the CBJ in facilitating compliance with those laws through the planning and zoning process.

Identify suitable upland locations for dry land moorage of smaller vessels with launch ramp; reconfigure harbors to accommodate change.

Goal

It is the Goal of the CBJ to designate sufficient and suitable land for anticipated commercial and industrial development as part of its overall economic development program.

Objectives

If it is demonstrated that additional land is needed for commercial or industrial uses or that there are particular location-specific requirements for certain activities, consider appropriate amendments to the Comprehensive Plan maps. They should be evaluated in relation to all applicable policies of the Comprehensive Plan.

ENFORCEABLE POLICIES

Map Reference and Applicability

Policies apply to the Map Series 3: Waterfront Development Area Maps (3A – 3M), dated December 1, 1990.

Map Series 3: Waterfront Development Area Maps (3A-3M), dated December 1, 1990, show the boundaries of each waterfront development area, and the maximum seaward limits for permanent development in each waterfront development area. The land or water inside the boundaries shown on Map Series 3: Waterfront Development Area Maps is subject to the provisions of this section. Uses allowed within the waterfront development areas as provided in this section are not allowed along other waterfronts within the city and borough unless such uses are allowable outside the waterfront development areas under the terms of the coastal development section of this chapter.

Interpretation of the JCMP Waterfront Development Area Maps

The purpose of this subsection is to assist users of the Waterfront Development Area Maps.

Lines which apparently follow street or right of way centerlines shall be construed as following such centerlines.

Lines which apparently follow property or lot boundary lines shall be construed as following such boundary lines.

Lines at the first and second rock dumps shall represent a line one hundred feet upland from the mean high water line. Lines on other land and water areas where there are no survey lines shall be construed by using the scale of the Waterfront Development Area Maps. Where doubt arises over the location of a line, the parties shall first establish the true scale of the map by using a known distance between points visible on the map. The seaward edge of the line appearing on the map shall then be construed as the line.

General Enforceable Policies for All Waterfront Development Areas

(3.1) Fill proposals within the Waterfront Development Areas, as depicted on maps 3A through 3M, are all allowed. The size of any fill shall not exceed that necessary for the use unless a larger fill is needed to maintain integrity of the fill, or maintain or restore littoral processes.

Authority: 11 AAC 112.200(c)

Specific Enforceable Policies for the Waterfront Development Areas

(3.2) Seawalk. A pedestrian access easement and walkway intended to provide a continuous pedestrian path along the entire downtown waterfront area shall be included with all future development or redevelopment along the downtown waterfront shoreline. This walkway, to be known as the seawalk, shall be a continuous path along the entire downtown waterfront as depicted in the Long Range Waterfront Plan (*see Appendix I-D*). In lieu of constructing the required seawalk, property owners developing or redeveloping property along the waterfront shoreline within the area encompassed by the Long Range Waterfront Plan shall pay a fee to the City and Borough equal to 20 percent of the final project cost for a seawalk constructed to public assembly standards for the section abutting their property. Unless the alignment of the seawalk requires otherwise, owners of property along the waterfront shoreline within the area encompassed by the Long Range Waterfront Plan developing or redeveloping their property shall dedicate all easements necessary for construction of a seawalk 16 feet in width.

(A) Reserved.

(B) Reserved.

(C) The seawalk shall not be required for existing buildings located along the water's edge until additions or alterations, or both, in excess of 50 percent of the gross square footage of the existing structure are proposed or undertaken within a 36-month period as determined by the City and Borough building division. General maintenance or repair work is exempt from this requirement.

(D) Reserved.

Authorities: 11 AAC 112.200(c) 11 AAC 112.220

(3.3) No additional intertidal fill may be allowed in the Tee Harbor Waterfront Development Area, as depicted on Map 3M, except that necessary to construct a public boat ramp.

(3.4) Gold Creek Mouth Protection Area. No structures or activities shall be allowed in this area, as depicted on Map 3B, except as needed by the U.S. Coast Guard for its purposes or as allowed by the Alaska Department of Fish and Game for habitat maintenance and enhancement.

Section 4. NATURAL HAZARDS

11 AAC 112.210. Natural hazard areas. (a) In addition to those identified in 11 AAC112.990, the department, or a district in a district plan, may designate other natural processes or adverse conditions that present a threat to life or property in the coastal area as natural hazards. Such designations must provide the scientific basis for designating the natural process or adverse condition as a natural hazard in the coastal area, along with supporting scientific evidence for the designation.

(b) Areas likely to be affected by the occurrence of a natural hazard may be designated as natural hazard areas by a state agency or, under 11 AAC 114.250(b), by a district.

(c) Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.

(d) For purposes of (c) of this section, "appropriate measures in the siting, design, construction, and operation of the proposed activity" means those measures that, in the judgment of the coordinating agency, in consultation with the department's division of geological and geophysical surveys, the Department of Community and Economic Development as state coordinating agency for the National Flood Insurance Program under 44 C.F.R. 60.25, and other local and state agencies with expertise,

(1) satisfy relevant codes and safety standards; or

(2) in the absence of such codes and standards;

(A) the project plans are approved by an engineer who is registered in the state and has engineering experience concerning the specific natural hazard; or

(B) the level of risk presented by the design of the project is low and appropriately addressed by the project plans. (Eff. 7/1/2004, Register 170)

11 AAC 114.250. Subject uses, activities, and designations. (b) A district shall consider the likelihood of occurrence of natural hazards in the coastal area and may designate natural hazard areas. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

ISSUES OF LOCAL CONCERN

Landslide and Avalanche Hazards

Avalanches and landslides present a serious threat to human safety and development in some areas of the CBJ, and their nature and severity have been well documented. Careful evaluation of specific sites and corresponding land use and engineering solutions can help to minimize the risk of disaster.

Avalanches and landslides are discussed together because of their common origin. Snowslide avalanches are most likely to occur on steep, brushy, or non-vegetated slopes. The debris and rubble at the base of steep rock slopes consist of soil and rocky materials which were deposited by slow erosional processes and/or sudden large scale movements of snow and/or rock. These

debris slopes are susceptible to landslides. Studies of existing data and an analysis of aerial photographs indicate general locations and boundaries of landslide/avalanche areas.

Among other causes, landslides may be triggered by earthquakes. The nearest known active seismic fault is the Fair-weather, approximately 100 miles west of Juneau. Lynn Canal, Chatham Strait and the Gastineau Channel are classified as major, though presently inactive, faults. Studies by the Corps of Engineers have indicated that Juneau is in a Seismic Risk Zone 3 in which major damage to structures from an earthquake equal to or greater than 6.0 on the Richter Scale may occur. In the past 50 years, there have been at least five earthquakes of this magnitude within 125 miles--the range at which damage might occur.

The Land Use Code adopted in 1987 included a new section which regulates development in landslide/avalanche areas. Currently the Land Use Code allows a developer to challenge the boundary of the avalanche and mass wasting area shown on the maps. If the Engineering Department is satisfied with the report, and the required criteria have been considered, the maps are revised. So far, four map amendments have taken place.

In 1992, "The Juneau Area Mass-Wasting and Snow Avalanche Hazard Analysis" was adopted. It updated portions of a study completed in 1972 which provided initial mapping of these hazards. There are still areas needing more detailed study and other areas where landslide and avalanche potential has not been studied at all. Additional work to expand the study area has been completed but has yet to be adopted.

Flooding

Flooding occurs with relative frequency in the Juneau area. It is a natural event that becomes a problem only when it threatens human health, safety, or development. Appropriate land use designations and development requirements can help minimize the potential of flood damage and threats to human health and safety. It is important to distinguish between the floodway, which is the main channel that is essential to the rapid drainage of floodwaters, and floodplain, which is an area that floodwaters may cover. Coastal flooding can also occur as a result of high winds and high tides that create storm surges and wave run-ups.

Floods occur when climatic factors and development activities alter natural flow conditions in flood prone areas. Warm rainfall on a heavy snowpack, or periods of heavy melting contribute to high stream flows and may result in flooding. The most serious flooding (that which threatens human safety and development) occurs when peak stream flows coincide with high tides. Development, such as roads and buildings, creates impermeable surfaces which cause increased volumes and rates of stormwater runoff. Stream crossings and under-sized culverts which are blocked by stream debris or ice restrict the passage of storm flows.

Construction in floodways is dangerous to human life and property and further increases flooding potential and is, therefore, prohibited. In the 100-year floodplain, development should be prohibited unless measures which mitigate potential hazards are undertaken.

The current floodplain requirements in the Land Use Code, at CBJ 49.70.400 have been developed to comply with the Federal Emergency Management Agency so that local property owners can maintain eligibility under the National Flood Insurance Program. This insurance is available anywhere in Juneau and is mandatory for any financing of property if the loan has federal origins. Homes on hillsides that have mudslide threats can also be insured under this

program if the CBJ maintains eligibility. In view of all of the above, it is vital to local safety and peace of mind that the CBJ maintain its flood management program

ENFORCEABLE POLICIES

Enforceable policies apply to natural hazard areas designated by the district under 11 AAC 114.250(b) or by a state agency under 11 AAC 112.210(b). No such areas are designated as part of this plan. Therefore, there are no Natural Hazard enforceable policies. Refer to CBJ code for Natural Hazard municipal standards.

Section 5. RECREATION, TOURISM & COASTAL ACCESS

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. (d) A district shall consider and may designate areas of tourism use. Criteria for designation of areas of tourism use are the area receives or has the potential to receive significant use by the visitor industry using cruise ships, floatplanes, helicopters, buses, or other means of conveying groups of persons to and within the area. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

11 AAC 112.220. Coastal access. Districts and state agencies shall ensure that projects maintain and, where appropriate, increase public access to, from, and along coastal water. (Eff. 7/1/2004, Register 170)

ISSUES OF LOCAL CONCERN

Parks and Recreation

Many Juneau residents choose to recreate in developed parks and facilities, both indoor and outdoor. Others choose to spend time in natural areas, where the existence of minimal improved facilities is the most important element. Providing a broad range of recreational experiences involves a cooperative effort between the local, state and federal government.

In 1995 the Parks and Recreation Department updated their long range plan. The “Juneau Area Recreation Plan” (1982), contained the following recommendations:

1. Designate appropriate municipal lands for recreation.
2. Develop a Mendenhall Valley indoor recreation facility.
3. Acquire land on the west bank of the Mendenhall River as recreational open space.
4. Develop cooperative agreements with state and federal government for management of U.S. Forest Service land and state tidelands.

In planning for the dispersed portion of recreational opportunities, the CBJ Parks and Recreation

Department has worked closely with the State Division of Parks and Outdoor Recreation, the U.S. Forest Service, the National Park Service, multiple citizen groups and individuals to produce a vision document called the “Juneau Trails Plan” (1992). As a comprehensive evaluation of all the trails in the Juneau area regardless of land ownership or management authority, this document identifies a wide spectrum of actions from improvement of existing trail conditions, to suggestions for construction of new trails or back-country cabins.

In recent years, there has been increasing commercial use of public trails in connection with the burgeoning tourist population. This use appears to be accelerating, and there seems to be increasing acceptance of the need to regulate this use to protect the resource and the quality of the recreation experience for local residents and tourists alike.

There is a lack of adequate neighborhood and community parks and facilities in major areas, including the Mendenhall Valley and Lemon Creek. There is an immediate need to acquire, designate, and maintain public access to beaches and shoreline areas.

The Eaglecrest ski area, located on Douglas Island, hosts 45,000 skier visits annually. Eaglecrest is an important winter recreational resource to many Juneau families. It is believed that the second channel crossing would increase skier visits.

Open Space

Open space is an essential component of Juneau’s community form and identity. It should be maintained and enhanced, especially in relation to future development. Shoreline areas are a major coastal resource, which also function as valuable natural recreational resources. Most are publicly owned.

In several community wide surveys, CBJ residents indicated a desire to preserve open space and natural resources, particularly those with significant environmental and recreational values.

The West Mendenhall Valley Greenbelt has been established, beach access routes have been identified and signs put in place, and there have been improvements made for recreational access to Echo Cove and Amalga Harbor.

Valuable habitat areas within the CBJ require retention of vegetation and water resources. Inadequately regulated development degrades scenic resources. The quality of residential developments is enhanced by standards and policies to preserve open space.

Demand for outdoor recreational opportunities is related to tourism and residential growth. Tourism is increasing at an estimated rate of 10 to 15 percent annually. The challenge is to provide a quality experience for the visitor with improved facilities and infrastructure while addressing concerns from the permanent population about expanding impacts caused by more and different tourism opportunities.

GOALS AND OBJECTIVES

Goal

It is the Goal of the CBJ to continue providing quality dispersed outdoor recreational opportunities; and to acquire and develop sufficient local parks and recreational facilities in

locations convenient to all areas of the CBJ. Places given priority for new facilities include rapidly developing areas and currently developed areas which lack adequate parks.

Objectives

Adopt the “Juneau Trails Plan” (1992), as an addendum to this plan.

Develop parks and recreation facilities, for both urban level and dispersed recreation, based on Juneau’s unique characteristics, needs, and traditions. In developing dispersed recreation opportunities such as wildlife viewing areas and increased sport fishing opportunities, recognize the importance of habitat and sensitive area protection.

Cooperate with the State of Alaska and the U.S. Forest Service to encourage the establishment of recreational and open space facilities and areas.

Incorporate park lands in developing areas through designation of publicly owned lands, acquisition of private lands, or dedication of lands during the subdivision process.

Revise the subdivision code to provide a mechanism for designation of land for public purposes.

Support the formation of the Juneau Channel Islands State Marine Park.

Goal

It is the Goal of the CBJ to preserve as public open space publicly-owned lands and shoreline areas which possess important recreational, scenic, wildlife, and other environmental qualities or are subject to natural hazards.

Objectives

Designate public areas and sites recommended in the “Juneau Area Recreation Plan” for permanent public access and use. Work toward acquiring such privately-owned land through dedication, donation or purchase. Develop legal descriptions and revise the zoning map accordingly.

Acquire land or regulate its use as necessary to protect the public from natural hazards and preserve sensitive natural resources.

Encourage relevant state agencies to adopt open space management policies for state land and tidelands indicated in the “Juneau Area Recreation Plan.” Initiate cooperative management agreements proposed in the plan.

Where regulatory actions are inappropriate, acquire easements through dedication, donation, or purchase through privately-owned streamside lands and other areas indicated in the “Juneau Area Recreation Plan.”

Amend the Land Use Code relating to subdivision and planned unit development ordinances to strengthen open space requirements in residential development.

Revise the Land Use Code to establish special approval procedures to prevent conflict between water-dependent or water-related uses and areas designated as open space.

Designate corridors along streams and rivers on CBJ, state, and federal land. These corridors may vary in size depending on topography and surrounding uses, but should be more than 50 feet and less than or equal to 200 feet from the ordinary high water mark on both sides of the stream or river.

Designate corridors along recreation trails on CBJ, state and federal land. These corridors may vary in size depending on topography and surrounding uses.

ENFORCEABLE POLICIES

Recreation and Tourism Use

Enforceable policies apply to recreational and tourism use areas designated by the district under 11 AAC 114.250(b). No such areas are designated as part of this plan. Therefore, there are no recreational and tourism use enforceable policies. Refer to CBJ code for municipal standards.

Coastal Access

See Waterfront Development Area Enforceable Policy 3.2

Section 6. ENERGY FACILITIES

11 AAC 114.250. Subject uses, activities, and designations. (e) A district shall consider and may designate, in cooperation with the state, sites suitable for the development of major energy facilities. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

ISSUES OF LOCAL CONCERN

The topic of energy is pervasive in every element of human activity, interaction and comfort. The economic impacts associated with this resource consumption, and the unique potential of Juneau's renewable hydroelectric sites, presents policy makers with an enviable opportunity for guiding future community growth in this regard.

The privately owned Alaska Electric Light and Power Company (AEL&P) distributes electricity throughout most of the roaded area of Juneau. AEL&P buys most of its power wholesale from the federally-constructed Snettisham hydropower facility some 25 miles south of downtown Juneau, but it also generates power from hydro facilities on Salmon Creek, Annex Creek and Gold Creek. AEL&P also maintains a wide assortment of standby generating facilities when the primary hydro source is unavailable. The standby facilities include fourteen diesel generators and four jet turbine-powered generators.

11 AAC 112.230. Energy facilities. (a) *The siting and approval of major energy facilities by districts and state agencies must be based, to the extent practicable, on the following standards:*

- (1) site facilities so as to minimize adverse environmental and social effects while satisfying industrial requirements;*
 - (2) site facilities so as to be compatible with existing and subsequent adjacent uses and projected community needs;*
 - (3) consolidate facilities;*
 - (4) consider the concurrent use of facilities for public or economic reasons;*
 - (5) cooperate with landowners, developers, and federal agencies in the development of facilities;*
 - (6) select sites with sufficient acreage to allow for reasonable expansion of facilities;*
 - (7) site facilities where existing infrastructure, including roads, docks, and airstrips, is capable of satisfying industrial requirements;*
 - (8) select harbors and shipping routes with least exposure to reefs, shoals, drift ice, and other obstructions;*
 - (9) encourage the use of vessel traffic control and collision avoidance systems;*
 - (10) select sites where development will require minimal site clearing, dredging, and construction;*
 - (11) site facilities so as to minimize the probability, along shipping routes, of spills or other forms of contamination that would affect fishing grounds, spawning grounds, and other biologically productive or vulnerable habitats, including marine mammal rookeries and hauling out grounds and waterfowl nesting areas;*
 - (12) site facilities so that design and construction of those facilities and support infrastructures in coastal areas will allow for the free passage and movement of fish and wildlife with due consideration for historic migratory patterns;*
 - (13) site facilities so that areas of particular scenic, recreational, environmental, or cultural value, identified in district plans, will be protected;*
 - (14) site facilities in areas of least biological productivity, diversity, and vulnerability and where effluents and spills can be controlled or contained;*
 - (15) site facilities where winds and air currents disperse airborne emissions that cannot be captured before escape into the atmosphere;*
 - (16) site facilities so that associated vessel operations or activities will not result in overcrowded harbors or interfere with fishing operations and equipment.*
- (b) The uses authorized by the issuance of state and federal leases, easements, contracts, rights-of-way, or permits for mineral and petroleum resource extraction are uses of state concern. (Eff. 7/1/2004, Register 170)*

ENFORCEABLE POLICIES

Enforceable policies apply to sites suitable for the development of major energy facilities designated by the district under 11 AAC 114.250(e) or by a state agency under 11 AAC 112.230(a). No sites are designated by the district. Therefore, there are no Energy Facilities enforceable policies. Refer to CBJ code for Energy Facilities municipal standards.

Section 7. UTILITIES & TRANSPORTATION

11 AAC 112.240. Utility routes and facilities. (a) Utility routes and facilities must be sited inland from beaches and shorelines unless

- (1) the route or facility is water-dependent or water related; or
 - (2) no practicable inland alternative exists to meet the public need for the route or facility.
- (b) Utility routes and facilities along the coast must avoid, minimize, or mitigate
- (1) alterations in surface and ground water drainage patterns;
 - (2) disruption in known or reasonably foreseeable wildlife transit;
 - (3) blockage of existing or traditional access. (Eff. 7/1/2004, Register 170)

11 AAC 112.280. Transportation routes and facilities. Transportation routes and facilities must avoid, minimize, or mitigate

- (1) alterations in surface and ground water drainage patterns;
- (2) disruption in known or reasonably foreseeable wildlife transit; and
- (3) blockage of existing or traditional access. (Eff. 7/1/2004, Register 170)

ISSUES OF LOCAL CONCERN

Citizens have indicated repeatedly their desire to protect the scenic beauty and environmental values. The adverse environmental impacts of urban uses can be mitigated with well designed utility and transportation systems that protect the public health and lessen possible damage to the region's groundwater and wildlife resources.

Goal

It is the Goal of the CBJ to preserve the scenic beauty and coastal vistas.

Objectives

Encourage underground utilities and/or careful siting of overhead utility lines to minimize impacts to scenic beauty and coastal vistas.

ENFORCEABLE POLICIES

There are no Utilities and Transportation enforceable policies. Refer to CBJ code for Transportation and Utilities municipal standards.

Section 8. FISH & SEAFOOD PROPAGATION & PROCESSING

11 AAC 114.250. Subject uses, activities, and designations. (f) A district shall consider and may designate areas of the coast suitable for the location or development of facilities related to commercial fishing and seafood processing. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)

ISSUES OF LOCAL CONCERN

Fisheries Development Committee advises and assists the Assembly on all aspects of fisheries development and enhancement in the Juneau area, including infrastructure requirements; cold storage facilities; and recreational fishing opportunities. This is a nine-member committee consisting of persons with demonstrated interest in fisheries development, including commercial fishing; sport fishing; processing and transporting of fish; support, service, and supply needs of the commercial fishing fleet and recreational fishing boats; aquaculture development; and fish habitat protection and enhancement. The harbor department provides staff to the committee.

The Fisheries Development Committee has considered specific implementation strategies and facility developments that would support and enhance the fishing industry. The Committee's primary recommendation is that a concerted effort be made by the CBJ to promote the development of a publicly-owned cold storage facility of one million pound capacity, or larger based on a review of other successful Southeast Alaska facilities, recognizing that over 75 million pounds of seafood are harvested annually within the CBJ and vicinity. The facility could become a highly valued community asset that would greatly benefit the fishing industry as a whole and other non-fishing industrial uses as well. Examples of other uses are charter and sport fishing needs, airline and other transportation needs, food service industry needs, and use by private individuals.

Fishing related money and tax revenue is leaving the community and potential revenue is being diverted elsewhere. There are 680 limited entry permit holders in the CBJ. Fish caught in the CBJ area by CBJ residents are processed in other communities. The state-collected raw fish processing tax goes back to the community in which the fish are brought ashore, not where they are caught. The future will be in fresh and blast frozen fish. Juneau at present, is ill-prepared to meet these changes.

Juneau has lost some prominence as a source of support and service to the commercial fishing fleet over the decades, and there is a clear need to establish maritime services of several types in order to rebuild the resident fleet. On the positive side, there is a very active and growing private sector effort to process fish locally and an increasing level of success in producing more fish as the result of hatcheries and habitat protection. Commercial fishing and other forms of commercial marine activity combine with sport and pleasure marine activity to create a stronger market for facilities and services.

ENFORCEABLE POLICIES

Enforceable policies apply to areas of the coast designated by the district under 11 AAC 114.250(f) as suitable for the location or development of facilities related to commercial fishing and seafood processing. No areas of the coast suitable for the location or development of facilities related to commercial fishing and seafood processing are designated. Therefore, there are no Fish & Seafood Propagation & Processing enforceable policies. Refer to CBJ code for Fish & Seafood Propagation & Processing municipal standards. Also refer to Section 3. Waterfront Development Areas.

Section 9: TIMBER HARVEST & PROCESSING

11 AAC 112.250. Timber harvest and processing. AS 41.17 (Forest Resources and Practices Act) and the regulations adopted under that chapter with respect to the harvest and processing of timber are incorporated into the program and constitute the components of the program with respect to those purposes. (Eff. 7/1/2004, Register 170)

ISSUES OF LOCAL CONCERN

A prevalent habitat type and important economic asset is the coniferous forest. Much of this habitat is within the Tongass National Forest where the harvest is controlled by the U.S. Forest Service. The scale and location of the harvest could have some influence on infrastructure needs such as port facilities, housing, and others. Timber harvest can also influence downstream habitats and other resources within the CBJ with increase runoff and sedimentation or other negative Impacts of logging.

ENFORCEABLE POLICIES

The Forest Resources and Practices Act is incorporated into the ACMP. A district may not write enforceable policies under this standard. As such, there are no Timber Harvest & Processing enforceable policies. Refer to CBJ code for Timber Harvest & Processing municipal standards.

Section 10: SAND & GRAVEL EXTRACTION

11 AAC 112.260. Sand and gravel extraction. Sand and gravel may be extracted from coastal waters, intertidal areas, barrier islands, and spits if there is no practicable alternative to coastal extraction that will meet the public need for the sand or gravel. (Eff. 7/1/2004, Register 170)

ISSUES OF LOCAL CONCERN

Growth and development in the Juneau area have increased demand for sand, gravel, and quarry rock. The most extensive deposits of sand and gravel are in the valleys of the Mendenhall and Herbert-Eagle Rivers, and Lemon Creek. Primary sources of sand are the alluvial deposits within the Mendenhall Valley and areas adjacent to the Gastineau Channel. The “Natural Resource

Inventory Sand, Gravel, and Quarry Rock” (1978), the “West Lemon Creek Material Resource Assessment” (1985), and “Eleven Potential Borrow Resource Sites Within and Adjacent to the City and Borough of Juneau” (1988) are the primary sources of information regarding the location of these resources.

Development in areas where potential sand and gravel deposits are located can preclude extraction of these resources. As growth and development continue in the Mendenhall Valley and Lemon Creek areas, pressure for closing existing pits may grow.

CBJ gravel resources, which are essential to construction, are limited to relatively small areas which frequently are subject to development pressures. Because gravel extraction operations often conflict with surrounding land uses and some forms of development can preempt its use, it is important to take steps to avoid or minimize these conflicts.

ENFORCEABLE POLICIES

There are no Sand & Gravel Extraction enforceable policies. Refer to CBJ Title 49 for other applicable provisions.

Section 11: SUBSISTENCE

11 AAC 112.270. Subsistence. (a) *A project within a subsistence use area designated under 11 AAC 114.250(g) must avoid or minimize impacts to subsistence uses of coastal resources.*
(b) *For a project within a subsistence use area designated under 11 AAC 114.250(g), the applicant shall submit an analysis or evaluation of reasonably foreseeable adverse impacts of the project on subsistence use as part of*
(1) *a consistency review packet submitted under 11 AAC 110.215; and*
(2) *a consistency evaluation under 15 C.F.R. 930.39, 15 C.F.R. 930.58, or 15 C.F.R. 930.76.*
(c) *Repealed ___/___/2004. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

11 AAC 114.250. Subject uses, activities, and designations. (g) *Except in nonsubsistence areas as identified under AS 16.05.258, a district may, after consultation with appropriate state agencies, federally recognized Indian tribes, Native corporations, and other appropriate persons or groups, designate areas in which a subsistence use is an important use of coastal resources and designate such areas. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172)*

Juneau is a nonsubsistence area as identified under State law and as such may not designate areas in which a subsistence use is an important use of coastal resources.

Note that the findings of the Juneau Coastal Management Plan, as approved, 1986 stated: “Minimal subsistence activity presently occurs in the CBJ.”

Section 12. HABITAT

11 AAC 112.300. Habitats. (b) *The following standards apply to the management of the habitats identified in (a) of this section:*

- (1) *offshore areas must be managed to avoid, minimize, or mitigate significant adverse impacts to competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;*
- (2) *estuaries must be managed to avoid, minimize, or mitigate significant adverse impacts to*
 - (A) *adequate water flow and natural water circulation patterns; and*
 - (B) *competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;*
- (3) *wetlands must be managed to avoid, minimize, or mitigate significant adverse impacts to water flow and natural drainage patterns;*
- (4) *tideflats must be managed to avoid, minimize, or mitigate significant adverse impacts to*
 - (A) *water flow and natural drainage patterns; and*
 - (B) *competing uses such as commercial, recreational, or subsistence uses, to the extent that those uses are determined to be in competition with the proposed use;*
- (5) *rocky islands and sea cliffs must be managed to*
 - (A) *avoid, minimize, or mitigate significant adverse impacts to habitat used by coastal species; and*
 - (B) *avoid the introduction of competing or destructive species and predators;*
- (6) *barrier islands and lagoons must be managed to avoid, minimize, or mitigate significant adverse impacts*
 - (A) *to flows of sediments and water;*
 - (B) *from the alteration or redirection of wave energy or marine currents that would lead to the filling in of lagoons or the erosion of barrier islands; and*
 - (C) *from activities that would decrease the use of barrier islands by coastal species, including polar bears and nesting birds;*
- (7) *exposed high-energy coasts must be managed to avoid, minimize, or mitigate significant adverse impacts*
 - (A) *to the mix and transport of sediments; and*
 - (B) *from redirection of transport processes and wave energy;*
- (8) *rivers, streams, and lakes must be managed to avoid, minimize, or mitigate significant adverse impacts to*
 - (A) *natural water flow;*
 - (B) *active floodplains; and*
 - (C) *natural vegetation within riparian management areas; and*
- (9) *important habitat*
 - (A) *designated under 11 AAC 114.250(h) must be managed for the special productivity of the habitat in accordance with district enforceable policies adopted under 11 AAC 114.270(g); or*
 - (B) *identified under (c)(1)(B) or (C) of this section must be managed to avoid, minimize, or mitigate significant adverse impacts to the special productivity of the habitat.*

(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 biologically and significantly productive; or
(C) identified as state game refuges, state game sanctuaries, state range areas, or fish and game critical habitat areas under AS 16.20;
(2) "riparian management area" means the area along or around a waterbody within the following distances, measured from the outermost extent of the ordinary high water mark of the waterbody:
(A) for the braided portions of a river or stream, 500 feet on either side of the waterbody; (B) for split channel portions of a river or stream, 200 feet on either side of the waterbody;
(C) for single channel portions of a river or stream, 100 feet on either side of the waterbody;
(D) for a lake, 100 feet of the waterbody. (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172; am 6/25/2005, register 174)

ISSUES OF LOCAL CONCERN

Fish and Wildlife

The major aquatic habitat types in the CBJ are coastal, marine waters, intertidal flats, estuaries, fresh and saltwater wetlands, rivers, and lakes. These areas contain critical spawning and rearing habitat for many marine species, including salmon, trout, char, herring, halibut, rockfish, clams, mussels, and crabs.

Development has been accompanied by grading, filling, and channeling of waterways as well as interception of ground and surface water. This has caused the degradation of streams and fish resources in the Juneau area. Juneau has five DEC-listed Impaired Waterbodies including Jordan Creek, Duck Creek, Vanderbilt Creek, Lemon Creek, and Pederson Hill Creek although fish resources are still present. Among those which retain important fish resource values are Fish, Auke, Montana, Sheep, Peterson, and Cowee-Davles Creeks and the Mendenhall River.

Intertidal flats and intertidal shorelines are often important spawning and rearing habitats for many valuable fish and shellfish.

The herring and shellfish habitats of Auke Bay are sensitive to any major development activity which may affect water quality or other physical characteristics.

Bald eagles are present in the Juneau area in large numbers and subject to the Bald Eagle Protection Act of 1940 as amended (16 USC 668-558d). Shoreline areas and old growth forest habitat are prime nesting areas. The U.S. Fish and Wildlife Service recommends a no-build buffer zone of a least 330 feet around known eagle nests and retention of shoreline habitat in the vicinity to a depth of one-eighth mile.

Black bear habitat exists throughout the CBJ. Potentially dangerous conflicts with humans have resulted from the bears' attraction to garbage in populated areas.

Sitka black-tailed deer is an important game species whose populations are limited by the availability of wintering habitat. Optimal wintering areas, which are predominantly located in portions of old growth forests, have been identified on Douglas Island and around Lemon Creek. The loss of wintering habitat and the intrusion of human activities and domestic animals reduces the deer population.

Waterfowl use extensive portions of the marine, estuarine, and freshwater habitats and adjacent uplands. Concentrated use and breeding occur in the wetland and shoreline areas of Echo Cove, Eagle River Delta, Auke Bay, and Mendenhall Flats. The principal threat to waterfowl is development in wetlands and along shorelines. Estuarine areas also are important to bald eagles, black bears, brown bears, other fur-bearing mammals, and fisheries. The Mendenhall Flats are within a wildlife refuge of the Alaska Department of Fish and Game (ADFG).

Marine mammals, most notably humpback whales and sealions, are present in significant numbers in the Juneau area. Development in the marine environment itself, or in areas connected to these waters, may result in alterations to complex food webs. The entire marine area of the CBJ is a habitat critical to the survival of humpback whales. The Stellar sea lion ranges through the marine areas in the CBJ and has a major haul out area on Benjamin Island.

In addition to their ecological importance, and in some instances, to their value as game, wildlife of the CBJ is an important natural amenity.

Approximately 300 to 500 sea lions use a haulout area on Benjamin Island. This haulout (not a breeding rookery) is stable, has a long history and represents critical habitat for the Stellar sea lion. It represents a high population density of this species and one of only 19 known sea lion haulouts in southeast Alaska.

Vegetation and Wetlands

Wildlife often is associated with particular vegetation habitat types which provide nesting, shelter, or feeding areas. Certain habitats, such as timber areas, also possess economic value.

A prevalent habitat type in the Juneau area is the coniferous forest; it also is an important economic asset to the region. Much of this habitat is within the Tongass National Forest controlled by the U. S. Forest Service. The location and scale of harvest can affect the type and amount of wildlife habitat.

Both fresh and saltwater marshes (two forms of wetland) offer unique and limited habitat within the CBJ. These include fish and wildlife habitat, food web contributions, stormwater retention, and water quality enhancement. These habitats occur in estuarine, stream corridor, and lakeshore areas of the CBJ. Refer to Volume II: Juneau Wetlands Management Plan for a detailed discussion of functions and values of Juneau wetlands including the important habitat values.

Intertidal flats form a closely interacting ecosystem with adjacent marine waters and support a diverse population of fish and waterfowl, marine mammals, and other aquatic life. They are relatively scarce in the CBJ and vital to commercial and sport fisheries.

Stream Corridors and Lake Shorelines

In addition to their natural resource values, stream corridors are frequently important and unique recreational and scenic areas. A 200-foot corridor on both sides of streambanks, except Gold Creek, which has been substantially altered, encompasses the most important riparian habitat.

These natural amenities possess unique ecological, recreational, and scenic values. Portions of stream corridors also function as floodways and floodplains. Their values can be maintained and destruction of property from flooding and streambank erosion minimized by careful management of development.

Development along stream corridors and lake shorelines can destroy ecological, scenic, and recreational values. Development along stream corridors and lake shorelines can also cause destruction of streambanks, increased runoff, sedimentation and pollution, and increase the danger of flooding. Carefully designed development responsive to the conditions of the site can diminish the potential negative impacts on the aquatic and terrestrial ecosystems of these areas.

ENFORCEABLE POLICIES

Enforceable policies apply to important habitat areas designated by the district under 11 AAC 114.250(h). Refer to the JCMP Volume II: Juneau Wetlands Management Plan Appendix II-C for important habitat designations.

There are no general habitat enforceable policies. Refer to CBJ code for general Habitat municipal standards.

Also refer to JCMP Volume II: Juneau Wetlands Management Plan, Chapter III, for Wetlands enforceable policies.

Section 13. AIR, LAND & WATER QUALITY

11 AAC 112.310. Air, land, and water quality. Notwithstanding any other provision of this chapter, the statutes and regulations of the Department of Environmental Conservation with respect to the protection of air, land, and water quality identified in AS 46.40.040(b) are incorporated into the program and, as administered by that department, constitute the exclusive components of the program with respect to those purposes. (Eff. 7/1/2004, Register 170)

ISSUES OF LOCAL CONCERN

Air quality in the Juneau area generally has been exceptionally high. However, due to the rapid increase in urban development and installation of fireplaces and woodstoves, air quality has become a serious problem in some areas. The Mendenhall Valley is the area most seriously affected by air pollution due to air inversions during the winter months.

Serious air quality problems in the CBJ have become noticeable only in recent years. They are related primarily to pollutants resulting from the burning of wood. Automobile emissions are also a contributor to the problem. The most recent concern has been in regard to cruise ship emissions. Fortunately this impact is counter seasonal to the timing of air inversions.

Water quality problems in the CBJ are associated primarily with contamination of groundwater. As the population of Juneau increases and the pressures of development are felt, the protection of

the existing and potential domestic water supply becomes increasingly important. By identifying these areas and developing mitigating measures to ensure their protection, a high quality water supply can be assured.

Marine water quality has become an issue in recent years with increased cruise ship traffic and concern for inadequate and/or inappropriate handling of waste disposal.

Noise is a localized problem generally associated with automobile traffic, helicopter and airport operations. The most severe problems are in the vicinity of the airport, the Mendenhall Peninsula, and parts of the Mendenhall Valley.

ENFORCEABLE POLICIES

Coastal district plans cannot include any enforceable policies that address air, land or water quality. One of the major reforms of HB 191 was to effectuate the direct state implementation of DEC's air, land and water quality standards. HB 191 specifically provides that DEC's air, land and water quality standards are the exclusive standards of the ACMP for those purposes.

Refer to CBJ code for Air, Land & Water Quality municipal standards.

CHAPTER X IMPLEMENTATION

Section 1: INTRODUCTION

This chapter of the CBJ district plan accomplishes the following:

- Describes the CBJ organization
- Provides the CBJ with instructions on how to use its coastal management program and participate effectively in state consistency reviews
- Explains to other ACMP network participants how best to work with the CBJ in implementing its coastal management plan
- Provides the people of the CBJ, landowners, and development project applicants with an understanding of how the JCMP will be used.

Organization

The CBJ, which is a home rule borough, is eligible to be a coastal district in accordance with state law at AS 46.40.210(2)(B). Local ACMP decisions and actions are the responsibility of the Assembly. The Assembly has delegated ACMP implementation duties to the Planning Commission and Community Development Director. The Director has delegated certain duties to the CBJ Coastal Planner, a position within the Department of Community Development. The CBJ Coastal Planner is authorized to make routine decisions and to participate in consistency review and other daily implementation tasks.

The Community Development Director works with the Planning Commission to implement the Borough Coastal Management Plan (CMP). The Director regularly consults with the Planning Commission on matters related to implementation of the Coastal Plan. Decisions which typically also require one or more local permits are also brought to the Planning Commission for consideration during the consistency review process.

The point of contact for local consistency reviews involving CBJ coastal zone lands is the CBJ Coastal Planner. The address of the CBJ Coastal Planner is:

City and Borough of Juneau
Community Development Department
155 South Seward Street
Juneau, Alaska 99801
ATTN: Coastal Planner
(907) 586-0755

Subject Uses

In accordance with 11 AAC 100.010, land and water uses and activities in the coastal zone that are subject to a consistency review and district 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)
- 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 CBJ's coastal zone for land and water uses and activities requiring local permits or authorizations.

Proper and Improper Uses

The Alaska Administrative Code under 11 AAC 114.260 requires that district plans identify uses and activities, including uses of state concern, that are considered proper and improper within the coastal area. The CBJ has not identified any uses which are categorically prohibited within the coastal boundary. Proper and improper uses are determined by their compliance with performance standard policy requirements.

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

Designated Areas

District policies related to natural hazards; energy facilities; subsistence; historic, prehistoric and archeological resources; recreation; tourism; commercial fishing and seafood processing; and habitat only apply to projects within designated use areas. The CBJ has designated recreational use areas in Volume 1 and important habitats in Volume 2 of this plan.

Uses of State Concern

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

Alaska Statutes at AS 46.40.210(12) defines uses of state concern. 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 it is superceded by statutes or regulations or until it is formally rescinded by DNR.

The CBJ Coastal Management Program recognizes that certain uses and activities are of state concern and will not arbitrarily or unreasonably restrict or exclude these uses. "Uses of State Concern" are those land and water uses that significantly affect the long-term public interest. These uses are defined under AS 46.40.210(12).

Under the state's general definition, there are a number of uses of state concern in the CBJ. Some of the most important are:

1. Management and maintenance of state roads, highways, parklands, airports, and ferry terminals.
2. Disposition of state lands, waters, and forest resources.
3. Management of historic resources.
4. Conservation and maintenance of air, land, and water quality (solid and liquid waste disposal);

5. Commercial, sport and subsistence fish and wildlife harvest, and fish and wildlife research, rehabilitation and enhancement programs.
6. Port and harbor development.
7. Disposition of energy resources, minerals, and materials.

Goals and Objectives

Throughout Chapter IX numerous goals and objectives are presented that cannot be achieved through enforceable policies but, nevertheless, address important coastal issues. 11 AAC 114.200 requires that the CBJ describe the means used to achieve objectives stated in the district plan. As a unified home rule municipality the CBJ has many options for implementing the issues, goals and objectives that cannot be implemented through enforceable policies. These include but are not limited to zoning, land use and building permits. Refer to CBJ Municipal Code Chapter 49.70 for municipal standards which may be applicable through local zoning and permitting.

Section 2. JCMP PARTICIPANTS' DUTIES AND RESPONSIBILITIES

CBJ Planning Commission

The Planning Commission implements the JCMP when issuing consistency comments. In this capacity, the Commission will make determinations with regard to the application of terminology used in enforceable policies such as “unreasonably burdensome” within the context of a particular project proposal. The Planning Commission normally delegates authority to make consistency comments to the Coastal Planner, who acts under the authority of the Community Development Department Director. In addition, the Planning Commission has the following responsibilities:

- Monitor and assess consistency comments issued on its behalf by the CBJ Coastal Planner.
- Review every five years and amend, if required, the JCMP.
- Submit the JCMP every ten years to DCOM for reapproval. The submittal shall include an evaluation of the plan effectiveness and implementation, a presentation of any new issues, and a recommendation for resolving any problems that have arisen.

CBJ Coastal Planner

The CBJ Coastal Planner is a member of the CBJ Community Development Department staff and serves as dedicated staff to the CBJ Planning Commission. The CBJ Coastal Planner is supervised by and is under the authority of the CBJ Community Development Department Director. The CBJ Coastal Planner may also receive oversight and direction from the Planning Commission.

The CBJ Coastal Planner has day to day responsibilities within the CBJ Community Development Department for the administration of the JCMP. He or she must:

- Help applicants fill out the coastal project questionnaire (CPQ) and educate them about the ACMP and the JCMP throughout the process;
- Determine if information received is complete and sufficient for a consistency review;
- Decide which projects are routine and which projects must be reviewed by the Planning Commission;

- Evaluate uses and activities that require local, state, or federal permits or authorizations for consistency;
- Evaluate proposed projects against the enforceable policies of the JCMP;
- Accurately assess the effect of applicable policies of the JCMP on the application,
- Manage project information to ensure that it reaches all affected persons and organizations;
- Draft effective, concise and comprehensive consistency determinations and recommendations and produce evidence in support of the conclusions reached;
- Develop draft consistency comments and alternative measures for consideration by the Planning Commission, when necessary;
- Coordinate consistency review activities with adjoining coastal districts where issues or activities of mutual concern are under consideration;
- Prepare quarterly and annual reports to the state, as required by the CBJ's ACMP grant agreement; and
- Facilitate and receive public input, and act as an information resource concerning the JCMP.

The CBJ Coastal Planner represents the CBJ at meetings, conferences, and in ongoing interactions with applicants, the general public and state and federal agency staff regarding the JCMP.

Section 3. GENERAL CONSISTENCY REVIEW INFORMATION

Because the State of Alaska has adopted the JCMP as an amendment to the ACMP, the CBJ 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.

Two Types of Consistency Reviews

The enforceable components in this plan form the basis for a determination of consistency with the JCMP. There are two types of reviews: state-coordinated consistency reviews and 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. CBJ participates in the state-coordinated review (**see Section 4**). If only local authorization is required (but not state or federal authorization), then the CBJ itself reviews the project for consistency with the ACMP (**see Section 5**).

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. The CBJ has a number of Municipal Standards that regulate uses and activities in the coastal zone. The Municipal Standards can be found in the CBJ Title 49 and are binding on all local permits.

DEC "Carveout"

DEC's air, land, and water quality standards are the exclusive standards of the ACMP for those purposes. Issuance of DEC 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 a DEC authorization on the C list (see ABC List next) may be subject to a coordinated review if the project includes a different activity that is not subject to a DEC authorization but is the subject of an enforceable district policy or another C-listed authorization. However, the specific activities subject to the DEC authorization are not within the scope of those project activities to be reviewed.

In the case of a DEC single agency review, the scope of review is limited to an activity that is the subject of a district enforceable policy. DEC Policy Guidance No. 2003-001, January 7, 2004, contains the actual procedure by which DEC 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 [DEC] Permit or Contingency Plan Approval to Operate."

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, allowing them to concentrate on more complex projects that require more involved ACMP 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. 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 (the "A," "B," or "C" List). 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, DCOM will determine how much review the project requires.

Federal Authority and Consistency Determination

In accordance with federal law, the CBJ 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.

However, the federal government is not exempt from the ACMP or the JCMP. 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." (15 CFR 930.32(a)). The federal government meets this requirement in several ways, depending upon the type of project or activity being considered.

First, federally licensed or permitted activities proposed within the coastal area and affecting coastal uses or resources must be **consistent** with the ACMP, including the JCMP. (15 CFR 930.50).

Second, 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 JCMP (15 CFR 930.70).

And finally, 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 JCMP. Federal activities are "any functions performed by or on behalf of a federal agency in the exercise of its statutory responsibilities." This term 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." (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." (15 CFR 930.32(a)).

Section 4. CBJ PARTICIPATION IN STATE-COORDINATED CONSISTENCY REVIEWS

Procedure

The point of contact for state and federal consistency reviews involving the JCMP is the Office of Division of Coastal and Ocean Management (DCOM). DCOM's address is:

Central Office
302 Gold Street, Ste. 202
Juneau, AK 99801-0030
(907)-465-3562/ Fax#: (907)-465-3075

The state-coordinated consistency review process is contained in state regulations at 11 AAC 110. The CBJ may participate in that process as an affected coastal district. A brief discussion of the CBJ's role in the state consistency review process is described in this section. However, applicants should obtain current information on the state consistency review process from DCOM.

The CBJ strongly recommends that applicants who seek state or federal permits for a major or complex project in the coastal zone request pre-review assistance prior to submitting such an application. The CBJ seeks to work with applicants to initiate early communication and facilitate an expedient and informed consistency review.

The coordinating agency will notify the borough of a pending consistency review. If requested, the borough will participate in determining the scope of review of a proposed project, based on the borough's enforceable policies.

Upon the notification from the coordinating agency of the start of a consistency review, the CBJ Coastal Planner will determine whether the project information is adequate to allow the Borough to concur or object to an applicant's consistency certification. If more information is required, the Borough will notify the coordinating agency by the "request for additional information" deadline and specifically identify the additional information required.

Permit Application Meeting

During a consistency review, the CBJ Coastal Planner may contact the coordinating agency to request a meeting to resolve issues. The purpose of the meeting is to discuss coastal management and permitting issues of the proposed activity and to work toward resolution of issues of concern and potential conflicts. This meeting should be scheduled no later than 10 days after notification of the action is received by the CBJ Coastal Planner. At a minimum, representatives of the coordinating agency, the CBJ, affected major landowners, the applicant, affected interest groups and organizations, and affected resource agencies will be invited to participate. Subsequent work sessions may be beneficial to reaching early consensus on the consistency determination. Scheduling a permit application meeting does not change the final consistency review deadline of ninety days as directed in 11 AAC 100.265.

Consistency Comments

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

- state that the CBJ concurs with the applicant's consistency certification and explain why or
- identify that the CBJ objects to the applicant's consistency certification.

If the CBJ objects, the CBJ must

- identify and explain why the proposed project is inconsistent with specific state standards or district enforceable policies and
- identify any alternative measure that, if adopted by the applicant, would achieve consistency with the specific state standard or district enforceable policy.

Alternative measures are project conditions proposed by a state resource agency or coastal district that, if adopted by the applicant, would make the project consistent with either state standards or district enforceable policies. If the CBJ proposes alternative measures, it 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 there is no local permit, the CBJ Planning Commission does not need to take action. In this case the CBJ Coastal Planner will issue the Borough's consistency comments on behalf of the Planning Commission.

The CBJ Coastal Planner will ensure that local concerns are solicited and appropriately incorporated in the CBJ's consistency comment. Local input to the CBJ consistency comment must be received promptly in order to meet the state review deadlines. The borough will consider such input in developing comments and alternative measures regarding the consistency of a proposed project. Where local concerns cannot be incorporated in the CBJ consistency comment, the CBJ Coastal Planner must provide justification for this decision to the local contacts involved.

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 CBJ Coastal Planner, in consultation with the Planning Commission and affected parties, may decide that the scope of a project will require a public hearing. If a public hearing is needed, the CBJ Coastal Planner will submit a written request to the coordinating agency that they hold a public hearing 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 ninety 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.

If a hearing before the Planning Commission is required for a local determination of consistency and/or to prepare the CBJ's comments to the coordinating agency, the coordinating agency may modify the review schedule (11 AAC 110.270 (4)(C)).

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 CBJ coastal zone and if a new authorization or change in authorization is required.

Due Deference

Due deference is a concept and practice within the consistency review process that enables the commenting review participants 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 Borough and resource agencies are provided deference in interpretation of policies and standards in their area of expertise or area of responsibility. To be afforded due deference, the district must have an approved district plan and must submit comments during the consistency review. Then the district may be afforded due deference if no resource agency has specific authority or expertise and if the district can demonstrate expertise in the field. A district doesn't have to have a specific policy that applies to the proposed project under review. The district may comment on the consistency of the proposed project using the state standards.

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

Table 1 Major Procedures under the 30 Day and 50 Day Consistency Review Schedules

Procedure	Schedule (by day)	
	30-Day	50-Day
Pre-review assistance upon request.	-	-
Coordinating Agency provides public notice. (Day 1 starts on the day after the packet is determined to be complete.) 11 AAC 110.235(a)	1	1
Coordinating agency distributes notice that the review and comment period has started. The packet and a review schedule are distributed to the applicant, review participants, and any other interested party requesting project information. 11 AAC 110.235(d)	3	3
Review period. 11 AAC 110.245	1-17	1-30
Last day to request additional information necessary to concur with or object to an applicant's consistency certification. (The clock may be stopped to allow time for the applicant to provide additional information. Once requested information is provided and determined to be adequate, the clock will restart.) 11 AAC 110.240(a)	13	25
Last day for public hearing request.* 11 AAC 110.520(a)(1)(A) & (B)	17	30
Deadline for consistency comments to coordinating agency. 11 AAC 110.245	17	30
Coordinating agency distributes a proposed consistency determination to the review participants, the applicant and any other person who submitted timely ACMP comments. 11 AAC 110.255(e)	24	44
Last day for written statement requesting elevation to commissioner. 11 AAC 110.600	29	49
Issuance of the final consistency determination.** 11 AAC 110.265(c)	30	50
Consistency review must be completed after receipt of application, or the activity is presumed to be consistent.*** 11 AAC 110.265	90	90
Deadline for issuance of commissioner level consistency determination or response.**** 11 AAC 110.600(d)(2)	75	95

Section 5. CBJ COORDINATION OF LOCAL CONSISTENCY REVIEW

Under the provisions of AS 46.40.100, actions and approvals by local governments are also subject to consistency with approved district coastal management programs. In some cases, a proposed action requiring a municipal permit or approval will also need a state or federal permit, and the federal/state consistency review will take place at the state level. Sometimes, a proposed action will only require a municipal permit and no state or federal permit. In such cases, the municipal government is responsible for reaching the consistency determination.

Uses Subject to Local Consistency Review

All uses that are proposed in the CBJ coastal zone that do not require federal or state authorization or that is not a federal activity will require a determination of consistency from the CBJ if they are among the following local subject uses:

- All land and water uses requiring a permit or approval in accordance with CBJ Title 49.

Application Procedure and Time Line

There is no separate application for a local consistency determination under the JCMP. Rather, the applicant desiring to undertake a subject use applies to the CBJ for the required land use permit or approval.

The CBJ will issue its consistency determination in conjunction with the underlying zoning permit or approval. The underlying permit or approval process will establish the timeline for a local JCMP consistency determination. If the information provided by the applicant is incomplete or insufficient to allow a local consistency determination, the Borough will ask the applicant for the missing or required information in accordance with local authorization procedures.

The CBJ Title 49 Land Use Code details the review process and schedule for each specific permit or approval required. The CBJ will conduct its consistency review concurrently with its zoning permit or approval review process. Upon issuing its zoning permit or approval, the CBJ will also issue a consistency determination.

The CBJ strongly recommends that applicants who seek authorization from the Borough for a major project requiring local consistency review request a pre-application meeting before submitting the application.

Section 6. ELEVATION PROCESS/ APPEALS

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.

Appeal of Local Consistency Determination

The applicant, or any aggrieved person, may appeal the CBJ's consistency determination to the CBJ Planning Commission or Assembly, in accordance with the procedures established for the appeal of the underlying zoning permit or approval in CBJ Title 49. Subsequent appeals may be made to the Superior Court in accordance with the procedures established in CBJ Title 49.

Section 7. PLANNING FOR MAJOR PROJECTS

Introduction

Certain types of activities can significantly impact coastal resources and create major changes within the CBJ coastal zone. The CBJ is interested in participating in agency planning for large scale development projects and land management decisions. A consistency determination for a major project often takes place after the planning process is completed, which may mean that substantive decisions concerning the use have already been made. Conflicts that could have been avoided by mutual agreement early on become costly in terms of time and effort spent on resolving differences later on. To avoid this, major project planning establishes the following objectives:

- JCMP policies should be considered as early as possible in planning for proposed major uses.
- Problems and potential consistency conflicts should be addressed and resolved prior to the application stage, if possible.
- Prior resolution of differences should speed the issuance of subsequent permits or approvals.

There are three procedures that are strongly encouraged for major activities of area-wide concern: (1) pre-application meetings, (2) permit application meetings, and (3) local partnership in planning activities. Participation in these procedures will ensure that the preceding objectives have been met.

Major Projects

The following types of activities and actions are considered to be major activities of regional concern:

- Land disposal and subdivision of land over 100 acres in size
- Transportation/utility facility and corridor designation or construction
- Mineral exploration or development (projects requiring development of new airstrip or roads, major energy generation or transmission facilities, slurry pipelines, port facilities, extensive overburden or tailings disposal areas, offshore mining, or significant stream diversion)
- Large scale sand, rock, and gravel extraction (greater than 25,000 cubic yards)
- Transportation, storage, cleanup, and disposal of hazardous substances (including the Defense Environmental Restoration Act Program and other federal sites)
- Development of management guidelines for subject uses and activities on National Parks and Monuments, and State of Alaska Critical Habitat Areas
- Development of management guidelines for subject uses and activities on Native Corporation lands
- Industrial projects, including fish processing and petroleum product storage and transfer
- Construction of military facilities within the CBJ.

Local Participation in Planning Activities

Local participation in state and federal planning activities that affect the allocation of resources in the CBJ coastal zone benefits everyone involved. State and federal agencies should invite representatives of the CBJ Planning Commission, coastal zone communities, and major coastal zone landowners and land managers to take part when conducting regional planning and resource allocation studies. The CBJ Planning Commission will assist in the identification of local representatives to ensure that the plans that are developed reflect local concerns.

Pre-application Meeting Between CBJ and Applicant

At least 60 days prior to filing a permit application for a federal, state, or local permit or approval or proposing action on a disposal or management plan, parties involved in activities on the "major project" list are encouraged to present a development plan to the CBJ Community Development Department and other participants in the consistency review process. This meeting is not part of a state-coordinated consistency review and is optional.

Developers of large industrial projects should allow for sufficient lead time between their plan presentation to the Community Development Department and filing the permit application so that

key issues can be addressed in project planning and permit applications submitted. It is recommended that presentations include the following information.

- **Project Description.** The description should consist of a narrative describing the proposed use or activity.
- **Site Description.** The description should include information about the property as it currently exists, including such items as size, existing structures, vegetation, topography, and any other features that may be a factor in the design of or operation of the proposed project.
- **Owner, Sponsor or Developer.** The name of the agency, activity, business enterprise or person who will own the use should be provided, along with the name of other operators, if any.
- **Location and Size.** The location and size of the proposed project should be identified. A map, prepared at the most appropriate scale, and which may initially be hand drawn, should be provided showing the location of the proposed use and any structures, roads or alterations planned for the area. As the significance or complexity of the proposed project increases, the CBJ may, in its discretion, determine that professionally prepared maps and other documentation are needed at the time of application.
- **Construction Schedule.** The dates of any construction or other preparatory site activity should be given.
- **Operation Schedule.** The dates, times, and, if applicable, seasons of operation should be given.
- **Special circumstances.** Any special circumstances that exist that affect decisions made should be described.
- **Impact Assessment.** The prospective applicant's assessment of the impact on CBJ coastal zone resources that will be created by the proposed use should be given.
- **Statement of Consistency.** The applicant should provide a sufficiently detailed statement demonstrating that he or she has assessed the project against applicable JCMP policies and believes that the proposed use is consistent with the JCMP. Supporting material, such as studies and assessments supporting the prospective applicant's assertions, should be submitted to support any area where compliance is not apparent. Written justification for deviating from any applicable JCMP policy should be provided in the event that the proposed use does not comply with one or more of the pertinent policies.
- **Mitigation Measures.** Any actions or measures that will be undertaken to bring a nonconforming proposed use into conformity with the policies of the JCMP should be explained.

The CBJ recommends that the applicant provide the following additional information in connection with proposed uses that are of large size, occupy a large land area, involve intensive activities, or are generally complex in nature:

- **Statement of Local, State or Federal Need.** Information supporting the public need and necessity for, and the benefit to be gained from, the project;
- **Alternative Sites.** Consideration of alternative locations outside the CBJ coastal zone.
- **Alternative Size and Scope.** Consideration of a reduced size and/or scope of the project.
- **Alternative Development Schedule.** Consideration of alternative construction and site preparation times.

Within 30 days of notification that an applicant would like to make a presentation, the CBJ Coastal Planner will notify affected major landowners, the general public, and other consistency review participants and will work with these groups to hold the presentation meeting. As appropriate, discussions may follow the presentation to identify issues and conflicts that need to be addressed prior to permit review and preparation of the CBJ consistency comment. The CBJ Coastal Planner will be available to work with developers in project planning. The CBJ Coastal Planner may provide a written summary to the developer outlining major consistency concerns and policy issues. Copies will be sent to DCOM and the coordinating agency. All pre-application meetings sponsored by the CBJ are open to the public. The CBJ will notify appropriate state agencies in advance and invite them to attend.

After the applicant's presentation, discussions will be held to identify issues and conflicts that need to be addressed prior to the submission of a formal application. Following the meeting, the CBJ will undertake additional pre-application work with the prospective applicant in project planning on request.

Section 8. AMENDMENTS AND REVISIONS

Every ten years, the CBJ must review and submit the JCMP to DCOM for reapproval (11 AAC 114.365 (b)). The submittal must include an evaluation of the plan effectiveness and implementation, a presentation of any new issues, and a recommendation for resolving any problems that have arisen.

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

Two processes are available to the CBJ for amending its plan. 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 JCMP are:

- 1) New policies or changes to existing policies
- 2) Alteration to the coastal zone boundaries
- 3) AMSAs or ACMP special management areas
- 4) Restrictions or exclusions of a use of state concern not previously restricted or excluded

Section 9. MONITORING AND ENFORCEMENT

AS 46.40.100 gives state resource agencies and municipalities enforcement responsibility for provisions of the Alaska Coastal Management Program. 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 Alaska Coastal Management Program. The responsibility for enforcing alternative measures

carried on state and federal permits rests with the permitting agency. The CBJ strongly encourages the state to enforce alternative measures and bring violators into compliance.

District 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 CBJ Coastal Planner and the Planning Commission have first-hand knowledge of local concerns and issues related to development activities. The CBJ Coastal Planner and Planning Commission 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 JCMP are carried out in the development process.

The CBJ Coastal Planner is the key individual in monitoring projects to ensure that alternative measures are carried out in the development process. The CBJ Coastal Planner and Planning Commission will rely on community input in monitoring implementation of alternative measures. Individuals, local governments, and landowners in the CBJ coastal zone may report suspected violations to the CBJ Coastal Planner, Planning Commission, or state and federal resource agencies. The CBJ Coastal Planner will investigate reports of violations and follow up with appropriate action to ensure state or federal enforcement. The CBJ Coastal Planner and Planning Commission 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 JCMP.

APPENDIX I-A – Enforceable Components

Enforceable Policies

COASTAL DEVELOPMENT

Map Reference and Applicability

Enforceable policies relating to coastal development apply to the placement of structures or fill, in coastal waters throughout the entire coastal district. (*See Volume I, Map 1: Coastal Zone Boundaries*)

(2.1) Except for Waterfront Development Areas in section 3, filling of intertidal areas seaward of mean high tide for the expansion of upland area is specifically prohibited unless clear and convincing evidence is provided showing that all of the following conditions exist:

- (A) That strict compliance with the policy would prevent the applicant from making a reasonable use of the property or would make compliance unreasonably burdensome;
- (B) That fill is the only means to allow development of the property which is similar to other properties in the vicinity;
- (C) That less than the proposed fill would prevent the applicant from making a reasonable use of the property or would make compliance unreasonably burdensome.

Provided, log and mining transfer facilities and the following public facilities are exempt from this policy: bridges, causeways, boat ramps, utility transmission facilities, pipelines, treatment plant lines and outfalls, and transportation facilities.

Authority: 11 AAC 112.200(c)

WATERFRONT DEVELOPMENT AREAS

Map Reference and Applicability

Policies apply to the Map Series 3: Waterfront Development Area Maps (3A – 3M), dated December 1, 1990.

Map Series 3: Waterfront Development Area Maps (3A-3M), dated December 1, 1990, show the boundaries of each waterfront development area, and the maximum seaward limits for permanent development in each waterfront development area. The land or water inside the boundaries shown on Map Series 3: Waterfront Development Area Maps is subject to the provisions of this section. Uses allowed within the waterfront development areas as provided in this section are not allowed along other waterfronts within the city and borough unless such uses are allowable outside the waterfront development areas under the terms of the coastal development section of this chapter.

Interpretation of the JCMP Special Waterfront Area Map.

The purpose of this subsection is to assist users of the Waterfront Development Area Maps.

Lines which apparently follow street or right of way centerlines shall be construed as following such centerlines.

Lines which apparently follow property or lot boundary lines shall be construed as following such boundary lines.

Lines at the first and second rock dumps shall represent a line one hundred feet upland from the mean high water line. Lines on other land and water areas where there are no survey lines shall be construed by using the scale of the Waterfront Development Area Maps. Where doubt arises over the location of a line, the parties shall first establish the true scale of the map by using a known distance between points visible on the map. The seaward edge of the line appearing on the map shall then be construed as the line.

General Enforceable Policies for All Waterfront Development Areas

(3.1) Fill proposals within the Waterfront Development Areas, as depicted on maps 3A through 3M, are all allowed. The size of any fill shall not exceed that necessary for the use unless a larger fill is needed to maintain integrity of the fill, or maintain or restore littoral processes.

Authority: 11 AAC 112.200(c)

Specific Enforceable Policies for the Waterfront Development Areas

(3.2) Seawalk. A pedestrian access easement and walkway intended to provide a continuous pedestrian path along the entire downtown waterfront area shall be included with all future development or redevelopment along the downtown waterfront shoreline. This walkway, to be known as the seawalk, shall be a continuous path along the entire downtown waterfront as depicted in the Long Range Waterfront Plan (*see Appendix I-C*). In lieu of constructing the required seawalk, property owners developing or redeveloping property along the waterfront shoreline within the area encompassed by the Long Range Waterfront Plan shall pay a fee to the City and Borough equal to 20 percent of the final project cost for a seawalk constructed to public assembly standards for the section abutting their property. Unless the alignment of the seawalk requires otherwise, owners of property along the waterfront shoreline within the area encompassed by the Long Range Waterfront Plan developing or redeveloping their property shall dedicate all easements necessary for construction of a seawalk 16 feet in width.

- (A) Reserved.
- (B) Reserved.
- (C) The seawalk shall not be required for existing buildings located along the water's edge until additions or alterations, or both, in excess of 50 percent of the gross square footage of the existing structure are proposed or undertaken within a 36-month period as determined by the City and Borough building division. General maintenance or repair work is exempt from this requirement.
- (D) Reserved.

Authorities: 11 AAC 112.200(c) 11 AAC 112.220

(3.3) No additional intertidal fill may be allowed in the Tee Harbor Waterfront Development Area, as depicted on Map 3M, except that necessary to construct a public boat ramp.

(3.4) Gold Creek Mouth Protection Area. No structures or activities shall be allowed in this area, as depicted on Map 3B, except as needed by the U.S. Coast Guard for its purposes or as allowed by the Alaska Department of Fish and Game for habitat maintenance and enhancement.

COASTAL ACCESS

See Waterfront Development Area Enforceable Policy 3.2

WETLANDS MANAGEMENT

WM(1) All individual wetlands designated as Important Habitat will be managed in accordance with the wetland management categories presented in the charts and maps in Appendix II-D and the Anadromous Stream and Lake Corridor and Residential Road Corridor Designation Rules described in policies 5 and 6.

WM(2) The Anadromous Stream and Lake Corridor and Residential Road Corridor Designation rules take precedence over the underlying Important Habitat Wetland Management Designations.

WM(3) The Anadromous Stream and Lake Corridor Designation rules take precedence over the Residential Road Corridor Designation rules.

WM(4) Category A, B, C, D and EP wetlands will be managed according to the following policies:

- A. Category A wetlands may be developed if there is no net loss of individual functional values in the Designated Important Wetland Habitat unit. One environmental function may not be substituted for another.
- B. Category B wetlands may be developed if there is no net loss of aggregate functional values in the Designated Important Wetland Habitat unit. One environmental function may not be substituted for another. However, to the extent practicable, individual environmental functions that are rated high or medium high in Appendix II-F will be retained within the Designated Important Wetland Habitat unit.
- C. Category C wetlands may be developed if there is no net loss of aggregate functional values in the roaded area. To the extent practicable, individual environmental functions that are rated high or medium high will be retained within the designated area.
- D. Category D wetlands shall be developed using best management practices as contained in enforceable policy 7. Project design and scheduling must minimize adverse impacts.
- E. Enhancement potential (Category EP) wetlands are wetlands that have potential for environmental enhancement. These are wetlands that have been created or degraded by development. Publicly owned EP wetlands may only be used for enhancement projects.

WM(5) All anadromous streams and lakes in Designated Important Habitat Wetland Management categories shown with an "(S)" in the Designated Important Habitat Maps shall have an Anadromous

Stream and Lake Corridor Designation measured 50 feet from the Ordinary High Water Mark. This 50-foot Corridor shall be designated and managed as wetlands Category A. The Corridor extends upstream to the limit of anadromous fish use.

WM(6) Residential parcels with wetlands within the Residential Road Corridor Designation, shown with an “(R)” on the Important Habitat Designation maps, shall have a temporary 100-foot wide Category C designation corridor measured from the road frontage right-of-way to promote development near the road. The Residential Road Corridor Designation rule allows residential development on certain Category A or B wetlands under the Category C wetland policies. Wetland permits within the Residential Road Corridor shall be processed through the U.S. Army Corps of Engineers. The rule applies only to residential parcels where public water is already provided.

WM(7) Best management practices are required for development on any wetland. The following conditions will be prescribed for all wetland developments.

- A. Existing wetlands vegetation shall be stripped in mats and repositioned over regraded soil.
- B. The amount of fill shall be restricted to the minimum amount necessary to achieve stated project purposes.
- C. Hydrology surrounding the discharge site shall be maintained with the use of culverts, if necessary. Activities shall not adversely impact adjacent wetlands by causing ponding, drainage, siltation or inadvertent fill.
- D. Erosion at the construction site shall be controlled through revegetation and other appropriate means. Exposed soils shall be revegetated within one year.
- E. The Wetland Permit shall expire 18 months after the effective date of the permit if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was authorized.

WM(8) For each wetland unit, individual functions which have potential for high values as presented in Appendix II-E will be considered during review of a project. Any new information regarding the value of individual wetland functions will be evaluated and considered during the review of a project. Individual wetland functions may either be demonstrated to be less, or more, important than the data in Appendix II-E indicate. As wetlands are developed, some functions may become scarce, increase in value, and require special consideration during a project review.

WM(9) The following mitigation policies will apply to a development proposal that would be located in Category A or B wetlands and that requires municipal, State or federal permits:

- A. Avoid damage to the functional values by avoiding or relocating the development proposal.
- B. Where loss or damage to the functional values cannot be avoided, minimize loss or damage by limiting the degree or magnitude of the development and the actions associated with conducting the development.
- C. Where the loss of functional values cannot be minimized, restore or rehabilitate the wetland to its pre-disturbance condition, to the extent practicable.

- D. Where the loss of functional values at the development site is substantial and irreversible and cannot be avoided, minimized, restored, or rehabilitated, mitigate for the loss as follows:
 - (i) For Category A wetlands, the mitigation actions must be in-kind and must be on-site, located as close as possible to the development site(s).
 - (ii) For Category B wetlands, the mitigation actions must be either in-kind or out-of-kind provided the net aggregate values of the Designated Important Wetland Habitat unit are maintained. Mitigation actions must occur on-site, located as close as possible to the development site(s).

WM(10) The following mitigation policies will apply to a development proposal that would be located in Category C or D wetlands and that requires municipal, State or federal permits:

- A. Based on the extensive analysis of land use alternatives conducted in the land use inventory for the JWMP, the CBJ will presume that there is no practicable alternative for developments proposed on Category C and D wetlands. This presumption is rebuttable for individual projects, which means that the Wetlands Review Board can still conclude that there is a practicable alternative based on its review of project-specific evidence during the permit review process.
- B. Where the development proposal is otherwise lawful and entitled to a wetlands development permit, minimize the loss of functional values by limiting the degree or magnitude of the development and the actions associated with conducting the development.
- C. Where the wetland loss cannot be reduced by minimizing the development, mitigate by restoring or rehabilitating the wetland to its pre-disturbance condition, to the extent practicable.
- D. Where the loss cannot be reduced by minimization and restoration/rehabilitation, mitigate by compensating for the loss as follows:
 - (i) For Category C wetlands, the form of mitigation required will be selected on the basis of: (1) probability of success, (2) potential gain in functional values, (3) extent to which high and medium high functional values are retained, and (4) cost effectiveness. In general, the order of preference for mitigation is:
 - (a) on-site and in-kind;
 - (b) on-site and out-of-kind;
 - (c) off-site and in-kind; and
 - (d) off-site and out-of-kind.

For small-scale developments (five acres or less), the CBJ mitigation bank may be used to meet this requirement.

- (ii) For Category D wetlands, off-site compensatory mitigation is not required provided the minimization and restoration steps above in 13(B) and (C) are followed and best management practices as contained in enforceable policy 7 are employed.

WM(11) Some Designated Important Wetland Management Categories may receive a Category B designation for a portion of the unit and a Category C for the rest of the unit. If on-site mitigation is required as compensation for development within the Category B area of the Designated Important Wetland Habitat unit under policy 9(D)(ii), the mitigation project should occur within the Category B wetland area unless: (1) a suitable site or mitigation opportunity is not available within the Category B wetland area, or (2) the same or greater environmental benefit could be gained with less expenditure by conducting a mitigation project with the Category C wetland area.

Authority: 11 AAC 112.300(9) 11 AAC 114.250(h) 11 AAC 114.400
Maps: Volume II, Appendix II-C

Definitions

Adjacent has the same meaning as in Alaska regulation.

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

Army Corps of Engineers (COE) The U.S. Army Corps of Engineers, the Corps, designs and constructs military projects as well as civil projects, such as harbors, for coastal communities. The Corps also regulates development in navigable waters (Section 10 of the Rivers and Harbors Act of 1899, as amended), and placement of fill material in waters and wetlands (Section 404 of the Clean Water Act).

Coastal water has the same meaning as in Alaska regulation.

11 AAC 112.990 (a)(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)

Designated Important Wetland Habitat Category: The wetlands designations used by the CBJ from AI to UM11. This term is used interchangeably with **wetland unit**.

Developed: The value of improvements on the property is greater than twice the land value.

Direct and significant Impact has the same meaning as in Alaska regulation.

11 AAC 114.990 (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)

Discharge of Dredged Material: Any addition of dredged material into wetlands.

Discharge of Fill Material: The addition of fill material into wetlands.

Downtown Waterfront Study or **Downtown Waterfront AMSA** was a special area plan for the downtown waterfront section of the city. This was a component of the JCMP as envisioned under the Area Meriting Special Attention provisions of A.S. 46.40.210(1) and 11 AAC.114.400. *Note: Although the AMSA is not being carried-forward with the 2006 revisions the term is defined here for historical reference purposes.*

Dredged Material: Material that is excavated or dredged from wetlands.

Enforceable Policies has the same meaning as "district enforceable policies" in Alaska Regulations.

11 AAC 110 (a) (24) "district enforceable policy" means a provision contained in a district plan that either has been approved by the commissioner under 11 AAC 114 or was approved by the former Coastal Policy Council under former 6 AAC 85 and remains in effect under sec. 46(c), ch. 24, SLA 2003; "district enforceable policy" includes

(A) the definition of a term used in the provision; and

(B) a boundary map or boundary description developed by a district and incorporated into the district plan to identify the area within the district that is subject to a specific provision of the plan; (Eff. 7/1/2004, Register 170)

Enhancement: Increase in functional value. *Note: Application of this definition is limited to the Wetlands Management Enforceable Policies.*

Estuarine Wetlands: Tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is diluted by freshwater runoff.

Fill Material: Any material used for the primary purpose of replacing a wetland with dry land. Pilings are not considered to be fill material.

11 AAC 112.900 (13) "**freshwater wetlands**" means those environments characterized by rooted vegetation that is partially submerged either continuously or periodically by surface freshwater with less than 0.5 parts per thousand salt content and not exceeding three meters in depth; (Eff. 7/1/2004, Register 170; am 10/29/2004, Register 172) Authority: AS 46.39.010, AS 46.39.040, AS 46.40.040, AS 46.39.030, AS 46.40.010

In-kind mitigation means replacing a wetland that is being altered with a wetland of the same physical and functional type.

Lacustrine Wetlands: Wetlands situated in a topographic depression or a dammed river channel, lacking persistent vegetation greater than 30 % aerial coverage, and whose total area exceeds 20 acres.

Mitigation has the same meaning as in 11 AAC 112.900.

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) Authority: AS 46.39.010 AS 46.39.040 AS 46.40.040 AS 46.39.030 AS 46.40.010

On-site means an area within the parcel boundaries.

Off-site means an area outside of the parcel boundaries.

Out-of-kind mitigation means replacing a wetland that is being altered with a wetland of a different physical and functional type (CBJ wetlands mitigation bank or land trust that preserves or restores wetlands within the district may be considered out-of-kind mitigation).

Palustrine Wetlands: Non-tidal wetlands dominated by trees, shrubs, persistent emergents, or emergent mosses or lichens.

Practicable has the same meaning as in 11 AAC 112.990.

11 AAC 112.990. (a) (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)

Public need has the same meaning as in Alaska regulation except that "documented" means 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)

Reasonably Foreseeable has the meaning as in Alaska regulation.

11 AAC 110.990. Definitions (38) "reasonably foreseeable" means a fact-specific determination of whether something can reasonably be foreseen; "reasonably foreseeable" does not include remote or speculative consequences; (Eff. 7/1/2004, Register 170)

Riverine Wetlands: Wetlands in a freshwater channel; the channel either natural or artificial

11 AAC 112.900 (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) Authority: AS 46.39.010, AS 46.39.040, AS 46.40.040, AS 46.39.030, AS 46.40.010

Water-Dependent has the same meaning as in Alaska regulation. In Juneau water-dependent uses would include uses such as, but not limited to:

- a. Marine transportation terminals including ferry, cruiseship, tanker, barge and float plane.
- b. Small boat marinas including sales, service, storage and moorage.
- c. Marine construction and repair yards.
- d. Fish buying and processing plants.
- e. Marine freight handling and storage areas.
- f. Other industries requiring frontage on deep-draft navigable waters.

11 AAC 112.990 (a)(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; (Eff. 7/1/2004, Register 170)

Water Related has the same meaning as in Alaska regulation. In Juneau water-related uses would include uses such as, but not limited to:

- a. Marine warehousing.
- b. Recreation and open space including marine parks, shoreline pathways, access corridors and view points, including vehicular scenic turnouts.
- c. Dwellings.
- d. Hotel, motels, restaurants and bars, if approved as conditional uses.

11 AAC 112.990 (a)(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)

Water-oriented is a use category originally defined in the Downtown Waterfront AMSA, but is also applicable to Waterfront Development Areas as depicted in Maps 3A through 3 E. It is defined as "a use or mixture of uses which benefit from being near the water and which contain elements that are water-dependent, water-related, or that provide public access to the shoreline area. Examples include retail, office or restaurant developments providing transient moorage facilities and/or pedestrian walkways and use areas on their water side." Water oriented uses are a subset of water-related uses.

11 AAC 112.900 (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) Authority: AS 46.39.010, AS 46.39.040, AS 46.40.040, AS 46.39.030, AS 46.40.010

Wetlands Unit: The wetlands designations used by the CBJ from A1 to UM11. This term is used interchangeably with **Designated Important Wetland Habitat Category**.

Wetland Functional Value: The weighted sum of the functional values as per the Wetlands Management Plan formula.

APPENDIX I-B

Policy Justification and Cross Reference Tables

Policy Justification

Enforceable Policies are legally binding components of the Alaska Coastal Management Program and are applicable to public and private activities.

Under State statutes, the enforceable policies of the district coastal management plan must

- (1) be clear and concise as to the activities and persons affected by the policies, and the requirements of the policies;
- (2) use precise, prescriptive, and enforceable language; and
- (3) not address a matter regulated or authorized by state or federal law unless the enforceable policies relate specifically to a matter of local concern.

A matter of local concern is a specific coastal use or resource within a defined portion of the district's coastal zone that is

- (1) demonstrated as sensitive to development;
- (2) not adequately addressed by state or federal law; and
- (3) of unique concern to the coastal resource district as demonstrated by local usage or scientific evidence.

Under state regulations, district enforceable policies that address matters included in the statewide standards must be a matter of local concern in order to be approved.

District enforceable policies are limited to the following: Coastal development, designated natural hazard areas, coastal access, designated sites for major energy facilities, utility routes and facilities, sand and gravel extraction, designated subsistence use areas, transportation routes and facilities, designated areas of recreational use and tourism, designated areas for facilities related to commercial fishing and seafood processing, designated important habitats, or designated historic, cultural or archeological areas.

Under each of the sections that follow, enforceable policies reflect matters of local concern as well as the Alaska Coastal Management Program requirements. The District Plan supplements federal and state land and water management regulations affecting the coastal area. The program also provides guidance for all development within the coastal area. The policies provide for the development and operation of industrial, commercial, residential, recreational, and other uses of the coastal area in a manner that protects the environment and the quality of life in the City and Borough of Juneau.

COASTAL DEVELOPMENT

A. APPLICATION

Enforceable policies apply to development in or adjacent to coastal waters throughout the entire coastal resource district.

B. ISSUES OF LOCAL CONCERN

Juneau is situated in a spectacular and varied natural setting. Its aquatic and terrestrial resources are of exceptional economic, aesthetic, and recreational value, but also have numerous implications for resource and land use planning and management. In addition to their distinctive characteristics, each resource is interdependent in a complex and often highly sensitive environment.

The major port facilities for commercial and industrial goods and materials are located on the southern part of the downtown waterfront. Because of the geography and development pattern of that area, room for expansion is limited. In addition, traveling up the Gastineau Channel is a significant detour for most barge traffic. Truck traffic to and from the port adds to the noise and congestion in the downtown area.

Port development continues to be of importance to both commerce and recreation throughout the CBJ. Tour ship visits are increasing every year; tour vessel lengths are increasing as well as the number passengers carried. Moorage for tour ships and upland support areas have become extremely important to the continued growth of the tour industry and local private enterprise.

Recreational boat use is also on the increase and the CBJ Harbormaster has a waiting list of approximately 150 boats borough-wide. Summer season private boat visits are also on the increase with larger, ocean-going yachts becoming more familiar in the Juneau area.

Ferry traffic is increasing in the Auke Bay area as the Alaska Marine Highway expands the number of voyages to accommodate increasing “drive-on” tourists during the summer season. From time to time, Auke Bay is also frequented by ore ships serving Skagway and Greens Creek.

In the short term, it is important to expand and improve on the existing waterfront industrial sites within the CBJ. In the long term, development of new port facilities which are more accessible to marine traffic of Southeast Alaska would be more desirable. An appropriate site should provide protected docking space and adequate land for storage and industrial facilities.

Growth is likely to occur among resource-based industries such as mineral extraction and processing, fisheries, and timber. Land with good access to maritime shipping channels is required to support this development.

Local and state governments recognize the importance of coastal resources to the environmental quality and economic vitality of the CBJ. To ensure their preservation and appropriate development, the state requires each local jurisdiction to complete a district coastal management plan. Most of the developable land in the CBJ is within the area defined as the coastal zone. Environmentally sensitive habitats and waterfront areas which are particularly subject to intense development pressures are downtown Juneau, Auke Bay, North Douglas and Echo Cove.

ACMP laws require that district coastal management programs carefully manage the development of shoreline areas and place highest priority on reserving waterfront areas for water-dependent and water-related uses. The obvious overlap between a local Comprehensive Plan for the CBJ and a coastal management program necessitates integrating the two approaches.

C. RESOURCE INVENTORY & ANALYSIS

Refer to Volume I, Appendix D for demonstration of sensitivity and uniqueness.

D. ADEQUACY OF EXISTING LAWS

Prioritization of Uses. The statewide coastal development standard directs coastal districts to prioritize uses and activities in the coastal area based on whether the uses are water dependent, water-related, or neither but without an inland alternative. These terms are broad in scope and an enforceable policy that defines which uses or activities in the district fall into each of the three categories is making the broad standard more specific.

Placement of Structures and Discharge of Dredged or Fill Material. The coastal development standard requires compliance “at a minimum” with COE regulations, 33 C.F.R. Parts 320-323. These regulations provide the COE with general permitting authority over the placement of structures and discharge of dredged or fill material into navigable waters; the laws are broad in scope and general in their application. The enforceable policies that relate to this standard provide more specificity to ensure that local issues are addressed.

WATERFRONT DEVELOPMENT AREAS

A. APPLICATION

Policies apply to the JCMP Waterfront Development Area Maps Series 3: 3A- 3M, dated December 1, 1990. This map series was updated to comply with the Mapping guidelines and can be found in Volume I, pp. 27-40.

B. ISSUES OF LOCAL CONCERN

Juneau is situated in a spectacular and varied natural setting. Its aquatic and terrestrial resources are of exceptional economic, aesthetic, and recreational value, but also have numerous implications for resource and land use planning and management. In addition to their distinctive characteristics, each resource is interdependent in a complex and often highly sensitive environment.

The major port facilities for commercial and industrial goods and materials are located on the southern part of the downtown waterfront. Because of the geography and development pattern of that area, room for expansion is limited. In addition, traveling up the Gastineau Channel is a significant detour for most barge traffic. Truck traffic to and from the port adds to the noise and congestion in the downtown area.

Port development continues to be of importance to both commerce and recreation throughout the CBJ. Tour ship visits are increasing every year; tour vessel lengths are increasing as well as the number passengers carried. Moorage for tour ships and upland support areas have become extremely important to the continued growth of the tour industry and local private enterprise.

Recreational boat use is also on the increase and the CBJ Harbormaster has a waiting list of approximately 150 boats borough-wide. Summer season private boat visits are also on the increase with larger, ocean-going yachts becoming more familiar in the Juneau area.

Ferry traffic is increasing in the Auke Bay area as the Alaska Marine Highway expands the number of voyages to accommodate increasing “drive-on” tourists during the summer season. From time to time, Auke Bay is also frequented by ore ships serving Skagway and Greens Creek.

In the short term, it is important to expand and improve on the existing waterfront industrial sites within the CBJ. In the long term, development of new port facilities which are more accessible to marine traffic of Southeast Alaska would be more desirable. An appropriate site should provide protected docking space and adequate land for storage and industrial facilities.

Growth is likely to occur among resource-based industries such as mineral extraction and processing, fisheries, and timber. Land with good access to maritime shipping channels is required to support this development.

Local and state governments recognize the importance of coastal resources to the environmental quality and economic vitality of the CBJ. To ensure their preservation and appropriate development, the state requires each local jurisdiction to complete a district coastal management plan. Most of the developable land in the CBJ is within the area defined as the coastal zone. Environmentally sensitive habitats and waterfront areas which are particularly subject to intense development pressures are downtown Juneau, Auke Bay, North Douglas and Echo Cove.

C. RESOURCE INVENTORY & ANALYSIS

Refer to Volume I, Appendix D for demonstration of sensitivity and uniqueness.

D. ADEQUACY OF EXISTING LAWS

Placement of Structures and Discharge of Dredged or Fill Material. The coastal development standard requires compliance “at a minimum” with COE regulations, 33 C.F.R. Parts 320-323. These regulations provide the COE with general permitting authority over the placement of structures and discharge of dredged or fill material into navigable waters; the laws are broad in scope and general in their application. The enforceable policies that relate to this standard provide more specificity to ensure that local issues are addressed.

COASTAL ACCESS

A. APPLICATION

Policies relating to coastal access may apply to, from and along coastal waters throughout the entire coastal district however the policy in this plan is limited to the downtown waterfront area as noted within the policy.

B. ISSUES OF LOCAL CONCERN

Parks and Recreation

The forms of recreation chosen by residents and visitors in Juneau are as diverse as the population. Many people choose to recreate in developed parks and facilities, both indoor and outdoor. Others choose to spend time in natural areas, where the existence of minimal improved facilities is the most important element. It should be recognized that providing a broad range of recreational experiences involves a cooperative effort between the local, state and federal government.

In 2003 the Parks and Recreation Department updated their long range plan. The “Juneau Area Recreation Plan” (1982), contained the following recommendations:

1. Designate appropriate municipal lands for recreation.
2. Develop a Mendenhall Valley indoor recreation facility.
3. Acquire land on the west bank of the Mendenhall River as recreational open space.
4. Develop cooperative agreements with state and federal government for management of U.S. Forest Service land and state tidelands.

In planning for the dispersed portion of recreational opportunities, the CBJ Parks and Recreation Department has worked closely with the State Division of Parks and Outdoor Recreation, the U.S. Forest Service, the National Park Service, multiple citizen groups and individuals to produce a vision document called the “Juneau Trails Plan” (1992). As a comprehensive evaluation of all the trails in the Juneau area regardless of land ownership or management authority, this document identifies a wide spectrum of actions from improvement of existing trail conditions, to suggestions for construction of new trails or back-country cabins.

In recent years, there has been increasing commercial use of public trails in connection with the burgeoning tourist population. This use appears to be accelerating, and there seems to be increasing acceptance of the need to regulate this use so as to protect the resource and the quality of the recreation experience for local residents and tourists alike.

There is a lack of adequate neighborhood and community parks and facilities in major areas, including the Mendenhall Valley and Lemon Creek. There is an immediate need to acquire, designate, and maintain public access to beaches and shoreline areas.

The Eaglecrest ski area, located on Douglas Island, hosts 45,000 skier visits annually. Eaglecrest is an important winter recreational resource to many Juneau families. It is believed that the second channel crossing would increase skier visits.

Open Space

Open space is an essential component of Juneau’s community form and identity. It should be maintained and enhanced, especially in relation to future development. Shoreline areas are a major coastal resource, which also function as valuable natural recreational resources. Most are publicly owned.

In several community wide surveys, CBJ residents indicated a desire to preserve open space and natural resources, particularly those with significant environmental and recreational values.

The West Mendenhall Valley Greenbelt has been established, beach access routes have been identified and signs put in place, and there have been improvements made for recreational access to Echo Cove and Amalga Harbor.

Valuable habitat areas within the CBJ require retention of vegetation and water resources. Inadequately regulated development degrades scenic resources. The quality of residential developments is enhanced by standards and policies to preserve open space.

Demand for outdoor recreational opportunities is related to tourism and residential growth. Tourism is increasing at an estimated rate of 10 to 15 percent annually. The challenge is to provide a quality experience for the visitor with improved facilities and infrastructure while

addressing concerns from the permanent population about expanding impacts caused by more and different tourism opportunities.

C. RESOURCE INVENTORY & ANALYSIS

Refer to Volume I, Appendix D for demonstration of sensitivity and uniqueness.

D. ADEQUACY OF EXISTING LAWS

State and federal laws that deal with coastal access are broad in scope and general in application; district enforceable policies enacted for a seawalk provide specific management measures for addressing uses or activities of local concern.

HABITAT

A. APPLICATION

Policies apply to important wetland habitats designated by the district under 11 AAC 114.250(h).

Refer to the Foreword contained in Volume II for a detailed justification for the wetlands policies.

B. ISSUES OF LOCAL CONCERN – not applicable for policies developed as part of special area management plans.

C. RESOURCE INVENTORY & ANALYSIS

Sensitivity and uniqueness need not be documented for policies developed as part of special area management plans.

Enforceable Policies and Designations Cross Reference Table

Enforceable Policy Number, Name and page	Resource Inventory & Analysis	IGOs	Maps	Appndx.
(2.1), Coastal Development, V-1,pg. 46	V-1, pp 9, V-2 pp 27	V-1, pp 59-60	n/a	V-1,I-D
(3.1), Waterfront Development Areas, V-1, pg. 49	V-1, pp 9, V-2 pp 27	V-1, pp. 61-63	V-1, pp. 27-40	V-1,I-D
(3.2), Seawalk, V-1, pg. 50	V-1, pp 9, V-2 pp 27	V-1, pp. 61-63	V-1, pp. 27-32	V-1,I-D
(3.3), Tee Harbor, V-1, pg. 50	V-1, pp 9, V-2 pp 27	V-1, pp. 61-63	V-1, pp. 40	V-1,I-D
(3.4), Gold Creek, V-1, pg. 50	V-1, pp 9, V-2 pp 27	V-1, pp. 61-63	V-1, pp. 30	V-1,I-D
WM(1), (2), (3) General Wetlands, V-2, pg. 38	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(4), Wetlands Categories, V-2, pg. 38	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(5), Anadromous Stream/Lake Corridor, V-2, pg. 38	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(6), Residential Road Corridor, V-2, pg. 38	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(7), Best Management, V-2, pg. 39	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(8), High Value Wetland Functions, V-2, pg. 39	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(9), Category A & B Mitigation, V-2, pg. 39	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(10), Category C & D Mitigation, V-2, pg. 40	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
WM(11), Category B & C Mitigation, V-2, pg. 41	V-2, pp. 7-33	V-2, pp. 1-6	V-2, App. II-C	V-2,II-B*
* Juneau Wetlands Functions and Values, September 1987; Juneau Wetlands Functions and Values Map Appendix, September 1987				
Designation, Page, # policies	Resource Inventory & Analysis	Maps		Appndx.
Designated Important Habitat, WM(1) -(11)	V-2,Foreword pg. vi; pp. 7-33	Wetland Unit Maps: Management and Important Habitat Designations		V-2,II-C

APPENDIX I-C

Mediation & Approval Documents

MEMORANDUM

CITY/BOROUGH OF JUNEAU
155 South Seward Street, Juneau, Alaska 99801

DATE: November 20, 2007

TO: Planning Commission

FROM: Teri Camery, Planner *Devin Fauria for Teri Camery*
Community Development Department

SUBJECT: Commission Approval of Juneau Wetlands Management Plan Mediation Agreement with the State of Alaska

The purpose of this memo is to request Planning Commission approval of the attached agreement with the State of Alaska regarding acceptance of the Juneau Wetlands Management Plan (JWMP) in the Alaska Coastal Management Program (ACMP). This agreement is the result of a successful formal mediation effort which was completed on November 16, 2007. The agreement does not change the content of the JWMP as it currently exists in the CBJ Land Use Code. All changes are technical in nature.

The mediation agreement has been signed by the Director of Coastal and Ocean Management (the new ACMP office) and by CBJ Community Development Director, Dale Pernula. According to state regulations, the mediation agreement must be ratified by the district at a public meeting within 20 days of the date of the signed agreement. Thus Planning Commission approval of the agreement at this November 27 meeting is required; otherwise the mediation agreement will be invalidated. The final Juneau Coastal Management Program (JCMP) will come back to the Commission and Assembly for final approval into ordinance at a later date, as explained below.

Background

In 2003, the State Legislature passed legislation which required coastal districts to re-write their state-approved coastal management programs to conform to strict new state laws and regulations. To meet these requirements, CBJ hired a consultant to develop the plan revisions and held extensive meetings with the CBJ Wetland Review Board (WRB) and Planning Commission for approval on the plan update. The WRB and Planning Commission identified the Special Waterfront Areas and the JWMP as the most important elements of the JCMP to defend. The Commission and WRB also directed staff to keep the sections of the plan in code which could not be approved in the state program, such as streamside setback policies.

CBJ submitted the final JCMP Plan Amendment, as approved by the Planning Commission, to the State in July 2006. The state's final response on October 1, 2006 accepted the revised Special Waterfront Area policies but rejected the JWMP and its policies because the state believed it did not conform with state regulations. CBJ filed for mediation to keep the JWMP in the program. An all day mediation session was held on August 24, 2007. As a result of this meeting, staff revised the Important Habitat Wetland Designation Maps, revised the wetland policies, and solicited a specific letter from the U.S. Army Corps of Engineers which demonstrated that the JWMP is compatible with, but does not duplicate, federal wetland regulations and authority. After a final mediation teleconference on November 16, 2007, the State accepted these revisions.



JWMP Revisions in the Mediation Agreement

The revised JWMP, as accepted by the state, includes revised wetland maps according to the requirements of state regulations. No wetland areas have been deleted or added as a result of these revisions, and no wetland categories have been changed. The original maps now include certain clarifying details that the state requires. The map changes include the following:

- A statement regarding exclusion of Federal Lands from the wetland designations
- Clearer wetland boundaries on all wetland units
- The clear exclusion of ES wetlands, which are saltwater wetlands that are not formally categorized as A-B-C-D in the plan
- Clarification of the Residential Road Corridor and Anadromous Stream and Lake Corridor Designations

We are not including the old versions of the JWMP maps in your packet attachments for reference because the Commission has reviewed them in the past, and because there are different versions which will create confusion. The old maps are available for review on request.

The enforceable policies of the plan have also been changed. Like the maps, these changes are technical rather than substantive, and do not add any new policies from the previously adopted plan. The technical changes include the following:

- A change of the phrase “feasible and prudent” to “practicable” to conform with the state’s required terms
- Elimination of Best Management Practices which overlap with state authority, including BMPs that address filtration curtains, timing windows, and toxic pollutants
- A change in the term Shoreline Corridor Designation to Anadromous Stream and Lake Corridor Designation, and combining these policies into one
- A change in the term “wetland units” and “categories” to “Designated Important Habitat Wetland Management Categories”

The former wetland enforceable policies, which are currently in code, are attached for your reference and comparison.

Next steps

At the November 27, 2007 meeting the Planning Commission must approved the attached mediation agreement, which is required by state law within 20 days after the close of mediation proceedings. Following this approval, staff and our consultant will develop the final Juneau Coastal Management Program document into one complete package. The final plan will then to the Commission and Assembly for final approval and adoption into ordinance.

Please contact me at 586-0755 if you have any questions. I will be out of town through Tuesday the 27th. In my absence, please contact Dale Pernula at 586-0757 or Greg Chaney at 586-0761.

Attachments: Mediation agreement for Commission approval, including revised maps and wetland policies
Old Juneau Wetland Management Plan Policies (as currently in the adopted plan and written in code)

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF COASTAL AND OCEAN MANAGEMENT
<http://www.alaskacoast.state.ak.us>

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A CENTRAL OFFICE
302 GOLD STREET, SUITE 202
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JUNEAU, ALASKA 99811-1030
PH: (907) 465-3562 FAX: (907) 465-3075

November 19, 2007

Mr. Dale Pernula
Director, Community Development Department
City and Borough of Juneau
155 South Seward Street
Juneau, Alaska 99801-1397

RE: City and Borough of Juneau ACMP Mediation

Dear Mr. ~~Pernula~~ ^{Dale} -

As required by 11 AAC 114.350(g), this letter serves as the written agreement and is the result of mediation between the City and Borough of Juneau (CBJ) and the State of Alaska (SOA). Pursuant to 11 AAC 114.350, the CBJ requested mediation for the disapproved portion of their coastal district management plan relating to the wetlands important habitat designation and wetlands enforceable policies WM(4) – WM(15). After one day of mediation and a brief follow-up telephone mediation session, the parties reached the following agreement:

1. The CBJ has made changes suggested by the SOA to refine the designated wetlands important habitat maps. The SOA has reviewed and approved these maps, thereby approving the CBJ's designated areas for important habitat. The SOA approved maps are incorporated into this agreement and are enclosed with this agreement as Enclosure 1.
2. The CBJ has made changes suggested by the SOA to refine enforceable policies for the designated wetlands important habitat areas. The SOA has reviewed and approved 11 enforceable policies. The CBJ coastal district plan also has one non-enforceable administrative policy that has been approved by the SOA as part of the CBJ's plan, although that administrative policy may not be co-located with the enforceable policies. The approved policies are incorporated into this agreement and are enclosed with this agreement as Enclosure 2.
3. The Alaska coastal management program laws prevent coastal districts from duplicating state and federal authorities. The Army Corps of Engineers, through its letter dated October 23, 2007 and through a follow up phone call between Corp's representative John Leeds and AAG Lindsay Wolter, agrees that the CBJ Wetlands Management Plan is consistent and compatible with the Corp's 404(B)(1) Guidelines, but not duplicative of those guidelines. Based on the October 23rd letter and the follow up phone conversation, the SOA agrees that

"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."

Mr. Dale Pernula
November 19, 2007
Page 2

the CBJ Wetlands Management Plan is not duplicative of the Corp's authority. The Corp's October 23, 2007 letter is incorporated into this agreement and is enclosed with this agreement as Enclosure 3.

By signatures below, each party agrees that the issues raised by CBJ for mediation have been resolved as described above, and that this agreement represents the written agreement as required by 11 AAC 114.350(g). This agreement is subject to approval by the Department of Natural Resources Commissioner and ratification by the district within 20 days of the date of this agreement.

 11-19-07

Randy Bates, Director, DCOM



Dale Pernula, Director, CDD, CBJ

If you have any questions, please do not hesitate to contact me by email at randy.bates@alaska.gov or by telephone at 907-465-8797.

Sincerely yours,



Randy Bates
Director

Enclosures

1. Enclosure 1 – 071119 CBJ Mediation – Maps
2. Enclosure 2 – 071119 CBJ Mediation – Enforceable Policies
3. Enclosure 3 – 071119 CBJ Mediation – COE October 23 Letter

cc: Tom Irwin, Commissioner, DNR
Marty Rutherford, Deputy Commissioner, DNR
Dick Lefebvre, Deputy Commissioner, DNR
Kim Kruse, Acting Deputy Director, DCOM, DNR
Gina Shirey-Potts, Natural Resource Manager, DCOM, DNR
Lindsay Wolter, AAG, DOLaw
Teri Camery, CBJ Coastal Coordinator
Jane Sebens, CBJ Attorney



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
REGULATORY DIVISION
P.O. BOX 6898
ELMENDORF AFB, ALASKA 99506-0898

October 23, 2007

Regulatory Division

Mr. Randy Bates, Deputy Director
Office of Project Management and Permitting
Alaska Department of Natural Resources
302 Gold Street
Juneau, Alaska 99801

Dear Mr. Bates:

At the request of the City and Borough of Juneau, the U.S. Army Corps of Engineers ("Corps") offers the following statement on the Juneau Wetlands Management Plan (JWMP) as it relates to the 40 CFR Part 230, Section 404(B)(1) Guidelines for Specification or Disposal Sites for Dredged or Fill Materials ("404(B)(1) Guidelines" or "Corps Guidelines").

The Corps worked extensively with CBJ and significantly contributed to the development of the JWMP in the early 1990s and is well-acquainted with how it appropriately contrasts with the 404(B)(1) Guidelines. The 404(B)(1) Guidelines are designed to serve as a general template for wetland permitting nationwide. They do not make a distinction, for instance, between the forested wetlands common to Southeast Alaska and the marsh wetlands of the Midwest. The factors to be reviewed under the federal guidelines are also necessarily broad and topical in nature. For example, the regulations provide:

All factors which may be relevant to the proposal must be considered, including the cumulative effects thereof: Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The 404(B)(1) Guidelines do not classify wetlands, or include a mechanism for classifying wetlands, according to higher and lower values, nor do the guidelines apply category-specific scientific analysis to wetland units in particular geographical areas. That is the primary reason the Corps considers the JWMP, as part of the Alaska Coastal Management Program (ACMP), a beneficial management tool. It addresses issues unique to the Juneau district with specificity and through a classification system not included in, or addressed by, federal law. The JWMP categorizes wetlands into four categories (A, B, C, or D) based on value and the advance assessment of 15 different wetland functions, including, but not limited to: sediment and toxicant retention; riparian support; groundwater recharge; groundwater discharge; regional ecological diversity; ecological replacement cost; down slope beneficiary sites; nutrient export; and, erosion sensitivity.

07 OCT 2007 11:18:20

This is the reason the Corps authorized the re-issuance of three General Permits (GP), POA-2000-01, POA-2000-02, and POA-2000-03 to CBJ for use on Category C and D wetlands. These three GP's were reissued on May 18, 2006, and expire on May 18, 2011. The body of scientific and functional analysis that supports and provides specificity to the C and D wetland categories is the same body of scientific and functional analysis that supports and provides specificity to the A and B wetland categories.

The Corps considers the JWMP consistent and compatible with the 404(B)(1) Guidelines, but not duplicative of those guidelines. As a component of the ACMP, the JWMP complements the Corps' Guidelines by providing, tailoring, and appropriately applying, specific relevant data to the management of local wetlands.

Please feel free to contact Mr. John Leeds me at (907) 790-4490 if you have any questions.

Sincerely,



Terri Stinnett-Herczeg
Acting Chief, East Branch

07 OCT 2006 10:10:10

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES OFFICE OF PROJECT MANAGEMENT AND PERMITTING

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October 4, 2006

Ms. Teri Camery
City and Borough of Juneau
115 South Seward Street
Juneau, AK 99801

RE: Commissioner Approval of the City and Borough of Juneau's Final Plan Amendment

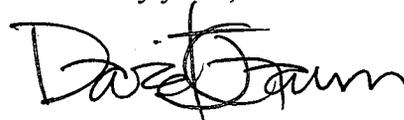
Dear Ms. Camery:

Congratulations! The DNR Commissioner has recently approved your Final Plan Amendment in accordance with OPMP's recommendations. I am writing to remind you that a complete and clean electronic version (i.e., compact disk, 2 copies) of your Final Plan Amendment incorporating all the changes approved by the DNR Commissioner (including deleting all parts of the plan that were not approved) must be submitted within 15 days after approval. This is required before we can send your Final Plan Amendment to the Office of Ocean and Coastal Resource Management (OCRM) for their review and approval.

For more information on what elements of your plan need to be changed and what elements need to be deleted, please see our Final Plan Amendments web page for a copy of OPMP's Final Findings and Conclusions and associated tables. If you need a copy emailed to your or a hardcopy of the documents, please let me know.

When we receive a complete and clean electronic version of your Final Plan Amendment, we will forward that to OCRM for their approval as part of the routine program change request under 15 CFR 923.84. Once OCRM has approved the plan, the CRSA Board will need to approve the plan, and we will file it with the Lieutenant Governor. The plan will take effect 30 days after it is filed with the Lieutenant Governor.

Sincerely yours,



David J. Gann
Natural Resource Specialist

cc: Gabrielle LaRoche

"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF THE COMMISSIONER

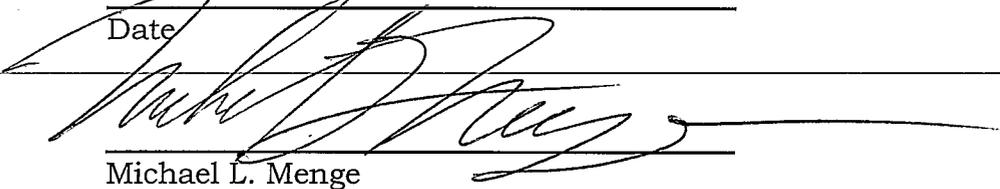
FRANK H. MURKOWSKI, GOVERNOR

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The Commissioner of the Department of Natural Resources finds that the City and Borough of Juneau Coastal Management Plan meets the requirements of AS 46.39, AS 46.40, 11 AAC 112 and 11 AAC 114 for coastal management plans, and pursuant to 11 AAC 114.345(k)(1), approves the plan in part, adopting by reference the findings and conclusions set forth in the September 20, 2006, recommendation of the Office of Project Management and Permitting.

October 2, 2006

Date



Michael L. Menge
Commissioner

APPENDIX I-D

Addendum to Resource Inventory and Analysis

Part One of this Addendum contains excerpts from the following documents.

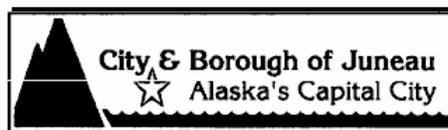
1. Comprehensive Plan – 1995 Update, Incorporating 2003 Amendments
2. Comprehensive Plan – Volume Two Technical Appendix, 1983
3. Long Range Waterfront Plan - Final Document 2004
4. Subport Vicinity Revitalization Plan - 2003
5. Transportation Plan Recommendations - July 9, 2001

Part Two of this Addendum contains inventory and analysis excerpts from The Downtown Waterfront Plan AMSA, 1986 which was incorporated into the JCMP in 1986.

COMPREHENSIVE PLAN OF THE CITY & BOROUGH OF JUNEAU

1995 UPDATE Incorporating 2003 Amendments

Note: Maps referred to in this document have been deleted in the interest of file size unless they contribute to the implementation of the Juneau Coastal Management Plan. Please refer to the maps contained in Volume I, Chapter VIII and Volume II, Appendix C for Coastal Management maps.



Presented by:
Community Development Department

NOVEMBER 1996

Revised 7/14/2004

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CHAPTER 2.

SUSTAINABILITY, GROWTH, AND DEVELOPMENT

Policies relating to the CBJ's future land use patterns in terms of physical form, housing, economic development, community development, and the emerging concept of sustainability, are critical to its future condition and provide direction to all other parts of the Plan. The subject of energy has been added to this chapter as one of the fundamental subjects essential to community well-being.

SUSTAINABILITY

World-wide, a new approach to planning endeavors called "sustainability" is emerging. The premise on which sustainability is based is embodied in the generally accepted definition: sustainability is meeting our needs without compromising the ability of future generations to meet their needs. A sustainable community will maintain its ecological, economic, social, and governmental systems into perpetuity. Common aspects of sustainability are:

1. very long-term planning;
2. dedication to the vitality and integrity of local and global systems; and
3. recognition that "environment" and "development" are inseparable.

The concept is applicable to the planning efforts of any organization but seems especially suited to municipal comprehensive planning which, as the art has progressed over the current century, helped to lay the groundwork of holistic thinking from which the sustainability concept was born. Depending on the past efforts of a city, the actual process of devising a sustainable plan may not be new but the concept does call upon civic leaders and the public to re-examine their community and its desires and to look more deeply into the future.

In 1992 the U.S. President signed on to "Agenda 21" which was developed at the Earth Summit in Rio. The challenge to all communities in the U.S. was to prepare a plan for becoming a sustainable community by the year 1996. With the inclusion of a sustainable approach to this Comprehensive Plan update, Juneau has taken one step toward that challenge.

In order to assess the sustainability of the various elements of the Comprehensive Plan, a series of questions must be answered to evaluate if the policies or activities are sustainable into the future. The questions address the social, governmental, ecological, and economic interrelationships of the policies and activities proposed. The answers to these questions will give some indication of the sustainability of the existing and proposed policies or activities.

This questioning process will indicate whether Juneau is being managed in a sustainable manner. We are likely to find that in some areas we are and in some areas we are not. In order to assure the continuance of those currently sustainable activities and to bring on track those that are not,

we need to identify a set of indicators which are measurable and have some value that can be monitored. These indicators will show where improvement is needed or where we are succeeding toward a sustainable future into the next and succeeding centuries.

Sustainability indicators need to be reflective of the social, governmental, ecological and economic interrelationships of the community. There are many indicators, measures and values for measures which need to be identified to give the overall picture of sustainability for a community. In order to be successful, these indicators should be developed and agreed upon by diverse interests in the community. It is not an easy task and it won't be finished quickly. The important point is that it take place in a format which embodies a nonpartisan approach, welcoming diversity, mutual respect, seeking informed discussion, building consensus, and encouraging broad public participation.

The Juneau Sustainable Community Roundtable, associated with the Juneau Chamber of Commerce, was challenged by the Planning Commission to develop the questions, indicators, and measures as discussed above. The Roundtable took up this challenge and established the Task Force on Indicators and Measures which developed a series of questions to be asked in the approval review of proposed projects. These questions address the categories of Social/Ethical, Political/ Governmental, Ecological and Economic. The Task Force went on to establish a catalog of over 200 measures of sustainability from which 26 key indicators and 47 measures for those indicators were chosen as possibilities for Juneau to consider. Additionally, the Task Force outlined the process, principles, and values for building a sustainable community for Juneau. The work of the Task Force was periodically taken to the Roundtable for input. In May, 1995, a document of questions, indicators, and measures was advanced for consideration by individual members of the Roundtable. This work is presented for discussion purposes in Appendix C of the Comprehensive Plan.

The concept of sustainability was used in preparation of several parts of the 1995 update of the Plan and over time it is intended to apply throughout. Thus, the mention of it here, at the beginning, is only for the purpose of introducing it. The actual application of the concept must occur as each subject area is addressed. This takes time and effort for staff, public officials and the public to achieve. The 1995 revision is a start in that direction that should be continued and expanded.

POLICY 2.1. IT IS THE POLICY OF THE CBJ TO BUILD A SUSTAINABLE LOCAL AND GLOBAL COMMUNITY WHICH PERSISTS OVER GENERATIONS AND IS SUFFICIENTLY FAR-SEEING, FLEXIBLE, AND WISE TO MAINTAIN ITS ECONOMIC, SOCIAL, ECOLOGICAL, AND GOVERNMENTAL SUPPORT SYSTEMS.

Implementing actions:

2.1.1. Develop a series of questions which address the interrelationships of policies and activities within the community for the purpose of determining the long-term sustainability of the community.

2.1.2. Develop a list of indicators, measures, and values, which are based upon the principal sustainability interrelationships--social, governmental, ecological and economic.

2.1.3. Incorporate sustainability indicators into the process of reviewing and approving proposed policies and activities to assure the long-term sustainable future of the community.

2.1.4. Assess the state of the community to determine if the CBJ is managing itself in a sustainable manner.

2.1.5. Update the Comprehensive Plan within five years of adoption, and at earlier times for subjects and policies that mature early, to incorporate the indicators, measures and policies which result from the actions above. Periodically, review the indicators and measures to confirm their sustainability. Periodically, update the values and measures to track Juneau's progress toward, or away from, sustainability.

COMMUNITY FORM

The 1984 Plan was based in part on an anticipated 3 to 4 percent increase in population per year through the late 1990's. This projected rate of growth did not account for the currently observable decline in state revenues. In fact, the rate of growth has been much lower and more formal projections, done for review of mining permits and based on state revenue projections and projected employment in basic sectors, show substantially less growth is predicted for the near future. Despite this change in expectations, the reasons for considering community form are the same. Under most projections, growth will occur. The real variable is time. The impact of a four percent increase in population is about the same, whether it takes one year or two to actually occur. Cities should seek to guide development patterns in order to assure the following results:

- „ Sufficient development opportunities to meet a broad range of residents' needs and lifestyles.
- „ Efficient and economical provision of urban level services including community sewer, water and storm drainage; police and fire protection; schools, libraries and recreational facilities; and social and medical services.
- „ Protection of the region's scenic and environmental assets and economically valuable natural resources.

By clearly distinguishing those areas which are most suitable for future urban development, the CBJ will determine the community's ultimate physical form.

To facilitate an understanding of the land allocation process, several key concepts are defined below:

Urban Service Area: Site of existing urban development plus adjacent vacant land needed and appropriate for future urbanization, based on proximity to sewer, water and other public facilities, ownership and physical suitability.

Rural Area: All land outside the urban service area which contains natural resources in need of protection from development or areas unsuitable or not needed for more intense urban development. Urban services are not to be planned for or extended to these areas except when they must be provided to serve a new growth area as defined below.

New Growth Areas: Sites in rural areas suitable and available for future urban/suburban development when specifically approved by the CBJ in accordance with the procedures and criteria set out in this Plan and in the CBJ Land Use Code. Non-residential uses such as port facilities or resource-related industrial development, e.g. a lumber mill or fish processing plant, may be appropriate in some new growth areas.

Transition Area: Land located within the Urban Service Boundary which is set aside for higher density development after public sewer and water have been provided. Transition areas are identified by the designator “T” on the Comprehensive Plan maps.

In order to set management policies for land use, development is defined as follows:

Urban/Suburban: Residential, commercial, industrial and/or public development in the urban service and new growth areas which requires and supports a full complement of public services and facilities. A minimum residential density of three dwelling units (DU) per acre is needed before community water and sewer should be extended as a practical matter although densities of five units or more are considered more economically feasible. Under special circumstances dictated by ownership patterns, previous development commitments or other factors, residential densities as low as one unit per acre have occurred and have in fact been served by public water. In the early 1990’s public sewer was also extended to parts of the West Mendenhall Valley where densities range from one to five units per acre depending on the neighborhoods being served.

Rural: Natural resource management and conservation activities and extremely low density residential uses characterized by few public services, no public water and sewer, and limited police and fire protection. Rural dispersed residential development is intended to occur at a density no greater than one dwelling unit per acre; in special circumstances, densities as low as one unit per five acres may be required. In areas encompassing sensitive wildlife habitats and other natural resources, subdivision may not be appropriate.

Adequate Development Opportunities

Private and public land ownership patterns within the CBJ have a significant impact on the location of future urban development.

It is advisable to have more than a 15-year supply of vacant land in some categories, especially commercial and industrial, to facilitate long-range planning for needed public services and facilities.

One mechanism the CBJ has used to provide some predictability to patterns of future growth has been the “transition area” concept applicable to areas within the Urban Service Boundary but

without public sewer and water. A designation in a transition area specifies the current lower density classification as well as the proposed higher density classification which would go into effect with the installation of public sewer and water. For example, areas in the West Valley are shown on the Comprehensive Plan maps as “RDR(T) ULDR.” This designation means that once sewer and water services are provided, a zoning upgrade consistent with the higher density designation may occur.

One of the primary responsibilities of the CBJ is to facilitate future growth by insuring that adequate land is available when needed and providing a level of public services and facilities sufficient to promote public health, safety, and convenience.

POLICY 2.2. IT IS THE POLICY OF THE CBJ TO ENSURE AVAILABILITY OF SUFFICIENT LAND THAT IS SUITABLY LOCATED AND PROVIDED WITH THE APPROPRIATE PUBLIC SERVICES AND FACILITIES TO MEET THE COMMUNITY’S FUTURE GROWTH NEEDS. A RANGE OF DEVELOPMENT OPPORTUNITIES IN URBAN AND RURAL AREAS WILL BE PROVIDED TO ACCOMMODATE THE VARIOUS NEEDS AND LIFESTYLES OF JUNEAU’S RESIDENTS.

Implementing actions:

2.2.1. Estimate and plan for the CBJ’s anticipated population growth for 15 years between 1995 and 2010, developing detailed population estimates every 5 years.

2.2.2. Designate sufficient land on the Comprehensive Plan maps (Chapter 6) to serve projected growth needs for residential, commercial/industrial and other land uses.

2.2.3. Revise the Land Use Code with respect to transition areas to provide:

1. When public sewer and water are available, a zoning upgrade (increase in density) of about 50 percent of the upgrade potential will be automatic. (For example, a D-3(T) D-18 will automatically transition to D-10, and a D-1(T) D-5 will transition to a D-3.) An increase in density closer to or up to the upper range of the (T) designation may be proposed and adopted, subject to public hearing, if deemed appropriate or if petitioned by the developer.
2. Special powers to mitigate the effects of zoning upgrade (increase in density) on existing neighborhoods be available to the Planning Commission.
3. Clarify upgrade procedures to respond to: (1) proposals to upgrade large areas outside of the applicant’s ownership and; (2) proposals to upgrade small areas within a larger area of lower density zoning.

2.2.4. Continue to notify property owners of potential change in zoning in transition areas which will accompany development of public sewer and water service in the area.

2.2.5. As part of the Comprehensive Plan implementation and updating process (Chapter 7), monitor land availability and cost for various land uses and reevaluate the designations on the land use plan map.

2.2.6. Develop capital improvement plans and budgets for public facilities and services which are needed to support the land use pattern determined in this Comprehensive Plan (Chapter 4, Transportation/Public Facilities and Services; other community form policies below).

2.2.7. Develop a map overlay system to annually document changes to the Juneau land base.

Urban Development Patterns

The CBJ's future community form depends upon transportation systems, open space and the amount of land available to meet projected demand for residential, commercial and industrial uses and the most appropriate allocation of land for these purposes.

Compact growth in urban areas is preferable because there the use of land is more efficient; urban services are more economically provided and maintained; adverse environmental impacts are minimized; and the majority of residents who prefer a high level of services are better served.

Most commercial and industrial land is located within the urban service area to insure the provision of the required high level of public services and facilities and to prevent intrusion into environmentally sensitive and/or resource-rich rural areas. Due to topography and private/public ownership patterns, the developed or urban portion of the CBJ is linear, with major concentrations in old Juneau, the Mendenhall Valley, Lemon Creek and Auke Bay on the mainland and Douglas and West Juneau on Douglas Island. Smaller enclaves are found at Thane, Lena Cove and Tee Harbor.

Based on extensive studies of the experience of other American cities, compact urban development is preferable to urban sprawl. By concentrating development, the CBJ will limit the number of acres dedicated to urban uses and minimize the per unit costs of extending sewer, water, utility lines and roadways. Significant reductions in travel, energy consumption and pollution will result by encouraging the development of residential uses in relative proximity to shopping, employment, cultural and recreational facilities.

POLICY 2.3. IT IS THE POLICY OF THE CBJ TO PROMOTE COMPACT URBAN DEVELOPMENT WITHIN AND ADJACENT TO EXISTING URBAN AREAS TO INSURE EFFICIENT UTILIZATION OF LAND RESOURCES AND FACILITATE ECONOMIC PROVISION OF URBAN FACILITIES AND SERVICES.

Implementing actions:

2.3.1. Delineate an urban service area which contains sufficient land in accord with the policies herein and relevant implementing actions.

2.3.2. Adopt an urban service boundary which defines the limits within which the full range of urban services, such as water and sewer, will be provided by the CBJ. Except for fulfilling existing commitments or serving new growth areas, such services should not be provided elsewhere. Delineate the urban service boundary by ordinance in the Land Use Code.

2.3.3. Depict the new growth areas on the official zoning map.

2.3.4. Adopt a capital improvements program (CIP) which schedules community sewer, water, storm drainage and transportation improvements for all areas within the urban service boundary and new growth areas over a period of 15 years.

2.3.5. Establish specific policies and land use plan map designations for the full range of needed urban land uses and activities; see Chapters 4, 5 and 6.

Rural Area Development

A majority of the land and water within the CBJ is outside existing or planned urban development areas; in this Plan, this is defined as the rural area. It is suitable for a broad range of activities--rural residential development, timber harvest, mining and sand/gravel extraction, scenic resources, fish and wildlife habitat, and many forms of outdoor recreational activities.

POLICY 2.4. IT IS THE POLICY OF THE CBJ TO PERMIT APPROPRIATE AND NEEDED DEVELOPMENT IN RURAL AREAS WHILE ASSURING PROTECTION OF NATURAL RESOURCES AND RECREATIONAL OPPORTUNITIES.

Implementing actions:

2.4.1. Coordinate all planning and development decisions in the rural area with state and federal agencies with appropriate jurisdiction.

2.4.2. Designate as public open space those publicly-owned rural lands of high recreational value or significant potential natural hazards, consistent with the open space land use policies in Chapter 5.

Environmental Protection

The City and Borough of Juneau is located in one of the world's most beautiful natural settings. Throughout this comprehensive planning process, citizens have indicated repeatedly their desire to protect the scenic beauty and environmental values of the region as well as promote the careful development of valuable timber, mineral and fishing resources. Through a plan which emphasizes compact development, the CBJ can mitigate the adverse environmental impacts of urban uses and provide community sewer and water systems sufficient to protect the public health and lessen possible damage to the region's groundwater and wildlife resources.

POLICY 2.5. IT IS THE POLICY OF THE CBJ TO PROTECT THE REGION'S SCENIC, ENVIRONMENTAL, AND ECONOMICALLY VALUABLE NATURAL RESOURCES FROM THE ADVERSE IMPACTS OF URBAN DEVELOPMENT. DEVELOPMENT SHALL BE CONTROLLED CAREFULLY AND, IF NECESSARY, PROHIBITED IN NATURALLY HAZARDOUS AREAS.

Implementing actions:

2.5.1. Designate, on the Land Use Code Maps, those areas containing valuable natural resources and/or natural hazards. Manage development to minimize the adverse impacts of urban use.

2.5.2. Develop management plans for all categories of CBJ-owned natural resources including firewood and sand and gravel. The Community Development Department shall assist the Lands and Resources Division to prepare such plans after an inventory of CBJ lands is completed.

Coastal Resources Planning

Coastal resources are clearly important to the environmental quality and economic vitality of the CBJ. Nearly all the developable land in the CBJ is within the area defined as the coastal zone by the state. Environmentally sensitive habitats and waterfront areas which are particularly subject to intense development pressures, such as downtown Juneau, Auke Bay, North Douglas Island and Echo Cove, merit special attention.

Nearly all the developable land in the CBJ is within the coastal zone defined by the Alaska Coastal Management Program which requires that local governments carefully manage the development of shoreline areas and place highest priority on reserving waterfront areas for water-dependent and water-related uses. The obvious overlap between a local comprehensive plan for the CBJ and a coastal management program necessitates integrating the two approaches.

POLICY 2.6. IT IS THE POLICY OF THE CBJ TO INCORPORATE ITS DISTRICT COASTAL MANAGEMENT PROGRAM WITH ITS COMPREHENSIVE PLAN AND, IN PLANNING FOR USE OF COASTAL AREAS, TO PLACE HIGHEST PRIORITY ON WATER-DEPENDENT AND WATER-RELATED USES.

Implementing actions:

2.6.1. Assure that all requirements of the state and federal coastal zone management program are addressed within the comprehensive plan and its implementing ordinances and regulations.

2.6.2. Maintain, implement and improve Juneau's state and federally approved coastal management program including the incorporation of general coastal management goals and policies in this Plan and including the maintenance of enforceable coastal management policies as requirements in the CBJ Land Use Code.

2.6.3. Designate areas for water-dependent and related uses on the Land Use Code Maps. Where appropriate, designate publicly-owned shoreline areas for open space and recreational use.

2.6.4. Maintain limited authority for the granting of U.S. Army Corps of Engineers Section 404 permits by the CBJ for wetland areas specified in the Juneau Wetlands Management Plan.

2.6.5. Use the following definitions for coastal management terms in this Plan and in subordinate matters:

1. Coastal Development is defined to include industrial, port and harbor, commercial and residential development.
2. Water-dependent is defined as a use or activity which can be carried out only on, in, or adjacent to water areas because the use requires access to the body of water.
3. Water-related is defined as a use or activity which 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 water, would result in a public loss of quality in the goods or services offered.

NEW GROWTH AREAS

New growth areas are defined as sites in rural areas potentially suitable for urban/suburban residential development--characterized by urban densities and a full complement of services and facilities, including water and sewer, recreational, educational and neighborhood commercial services. Non-residential uses such as port facilities or resource-related industrial development, may also be appropriate.

The concept of new growth areas responds to the need for limited urban level development opportunities outside the urban service area, especially for selected lands of the CBJ, Goldbelt, and the state. Four of the most likely sites for new growth, at Echo Cove, and on west, south, and north Douglas Island, are illustrated conceptually on the Comprehensive Plan maps (Chapter 6). The exact location, size, nature, timing and public/private involvement in the development of these areas will be determined in the future.

Development of new growth areas as satellite communities was identified as the most desirable way to accommodate growth outside the urban area. As planned developments, they can provide residents the advantages of urban living in a rural setting while minimizing incursion into environmentally sensitive areas.

Under the provisions of the Alaska Statehood Act, the CBJ has acquired nearly 20,000 acres of state lands which were selected on the basis of their potential residential, economic, and recreational value. Much of this property is located in non-urbanized portions of the CBJ.

As a beneficiary of the Alaska Native Claims Settlement Act, Goldbelt, the local ANCSA corporation, received title to nearly 4,000 acres of property at Echo Cove and on west and south Douglas Island. These tracts are potentially suitable for large-scale residential development or resort development. Other commercial uses of this land have been considered including golf course development, recreational airport, and maritime industrial development.

The development of carefully sited, well-designed new growth areas is an innovative means by which Juneau residents can have the advantages of rural living and urban amenities. Large amounts of land in suitable ownership are available for such development.

POLICY 2.7. IT IS THE POLICY OF THE CBJ TO ENCOURAGE AND FACILITATE THE DEVELOPMENT OF NEW GROWTH AREAS IN SUITABLE LOCATIONS IN THE RURAL AREA OF THE CBJ IN ORDER TO ACCOMMODATE LIMITED URBAN LEVEL DEVELOPMENT OPPORTUNITIES OUTSIDE THE URBAN SERVICE AREA.

Implementing actions:

2.7.1. Revise the New Growth Area section of the Land Use Code to provide flexibility for developing each individual New Growth Area, to define the mixed use development option, and to include all the implementing measures listed in the Comprehensive Plan.

2.7.2. Establish minimum open space, recreational and landscaping requirements, providing flexibility to allow consideration of new data, conditions, and analysis.

2.7.3. Provide minimum standards for roadways and bicycle and pedestrian paths.

2.7.4. Revise Land Use Code to require a demonstration from the developer that the number of residential units proposed will be sufficient to create a viable community and support the efficient provision of roads and utilities such as community-level water, sewer, and drainage systems. The acreage required will be based in part on assuming a minimum urban/suburban density of four dwelling units per acre. Additional acreage to accommodate open space, future expansion, recreational, public and commercial uses will be required.

2.7.5. Require developers, including the CBJ, to demonstrate economic feasibility and market demand for the proposed development if public lands and/or investments are involved.

2.7.6. Allow for phasing of the development which permits construction in reasonable increments within an overall design concept.

2.7.7. Require developers to post bonds, if necessary, to assure the project is completed within a specified timetable and in substantial compliance with the approved development plan.

2.7.8. Establish policies and procedures for classifications, management and disposal of CBJ lands for new growth areas, through the use, in part, of the Lands Management Ordinance. (CBJ Chapter 53.09)

2.7.9. With the assistance of the Planning Commission, CBJ staff, and citizens, determine the CBJ's role in the marketing and/or development of new growth areas, particularly those located on publicly owned lands. The most efficient institutional mechanism for managing its development activities depends on the nature and extent of its involvement. Options include expanded Community Development Department, development officer, Land Management Office, independent development commission, and non-profit development corporation.

2.7.10. Evaluate the feasibility of developing each of the sites identified in this Plan and any additional potential sites for new growth, based on the following considerations:

1. Physical amenities, including views, vegetation, topography, water access, etc.
2. Physical suitability, including soils, slopes, climate, prevailing winds, etc.
3. Potential natural resource conflicts, including wildlife habitats, wetlands, groundwater supplies, commercially valuable mineral and timber resources.
4. Size/configuration.
5. Ownership patterns.
6. Proximity to commercial and employment centers.
7. Costs of extending roads and utilities and providing community water, sewer and storm drainage.
8. Market demand and financial feasibility studies conducted by the CBJ or private developers.
9. CBJ disposition/development strategies for lands under its ownership, current usage of the site.
10. Recreational use conflicts.

2.7.11. Determine in conjunction with potential developers the pertinent information including demographic characteristics, economic conditions, amenities and growth potential of the CBJ prior to development of new growth areas.

2.7.12. Identify road corridors and potential mass-transit service for new growth areas prior to development.

2.7.13. Require that each new growth area must be developed according to a unified, comprehensive plan which ensures the:

1. Use of energy-efficient siting, design, and construction techniques.

2. Efficient provision of sewer, water, and roads based on a sufficient population to support these services.
3. Preservation of vegetation, views, and other natural amenities.
4. Provision of passive and active recreational activities, including water access, open space, community recreational facilities, and pedestrian and bicycle paths.
5. Elimination of land use conflicts. This is particularly important in developments which combine residential and non-residential uses.

HOUSING

One of the CBJ's most important responsibilities is to provide a safe, healthy, and pleasant living environment for its residents. Although it does not construct housing, the CBJ plays a key role by establishing land use policies and development standards, providing public services, and subsidizing certain types of development. The purpose of this subject section is to recommend policies which encourage adequate housing for all Juneau residents and protect the character and livability of its neighborhoods.

Housing Availability and Affordability

The distribution of housing by type is summarized below:

HOUSING DISTRIBUTION BY TYPE (1995):

Type	# Units	Percent
Single family/Duplex and Condominiums	7,391	51
Multifamily	2,368	34
Mobile homes	1,195	15
TOTAL	10,954	100

Source: Community Development Department, 1995.

After many years of a housing shortage in the CBJ, a building boom took place in the early 1980's. The number of housing units rose from 7,516 in 1980 to 10,200 in 1985. Even with this high level of activity, supply was doing little better than meeting demand with a moderate vacancy rate of 3 to 4 percent.

The CBJ was also involved during this period of construction activity with sponsorship of a rental stimulation program. This was a low interest loan program for the purpose of stimulating rental construction with an emphasis on the low income market. 225 units were constructed under this program.

Later in the 1980's a complete turnaround took place in the housing market. Vacancy rates climbed to approximately 10 percent, with a 7 percent vacancy in a single family dwellings and 24 percent in multifamily dwellings. This substantial increase is considered to be a result of declines in employment, and therefore a decline in population, and some overbuilding.

The CBJ is presently experiencing a significant housing shortage. The 1992 vacancy survey shows the overall vacancy rate for the CBJ has declined from 1.3 percent in October of 1991 to 1.2 percent in October of 1992. In December of 1995, the overall vacancy rate was estimated by the Community Development Department (CDD) to be less than 1.03 percent. This is a seriously low vacancy rate. Practically speaking, a 1 percent vacancy rate is equivalent to zero availability of housing.

The reasons for the lack of housing construction commonly cited in the CBJ's "Low Income Housing Task Force Report," (1992), the "Housing Inventory Assessment and Capacity Review" (prepared by Soenksen and Associates, 1993) and more recently in a multifamily housing study done for the CBJ by Barker and Associates, 1994, are:

1. lack of long term financing;
2. construction costs still exceed the costs of purchasing existing units;
3. loss of federal tax incentives;
4. uncertainty about future economic growth; and
5. lack of return on the investment.

During the 1994 building season there was a significant increase in the number of single family homes, mostly custom homes, and more platting activity than in several prior years. This suggests that the cost versus value concern has eased for single family homes which are still the easiest to finance.

The "Housing Inventory Assessment and Capacity Review" points out that during the recent recession a large number of multifamily dwellings were placed on the market. Prices, and therefore valuations, dropped and have not recovered. This continues to be a drawback to the economic feasibility of construction of new housing.

The "Low Income Housing Task Force Report" discusses the shortage in low income housing. As housing becomes scarcer, prices and rents rise. This impacts low income households which are least able to absorb the increase, especially those who do not own homes. This sector of the market is customarily housed in multifamily development. (Community Development comments on AJ Large Mine Permit Application, 1993)

"The Juneau Multi-family Housing Program Feasibility Study" estimates the existing pent up demand for housing to be 300 additional housing units to obtain a healthy vacancy rate (5%), as well, the number of housing units needed jumps to 875.

Projected growth in the CBJ from 1995 to 2000, will create additional demand for housing. To meet the existing pent up demand and future growth, 1,215 new housing units will be needed. That figure increases to 1,820 housing units if a 5 percent vacancy rate is to be maintained.

Following the 1994 vote to retain the capital in Juneau, building plans which had been “on hold” were brought to life. Mid-way through 1995, building permits had been issued or were in process for approximately 300 dwelling units.

As housing choice is influenced both by lifestyle and income, the CBJ should encourage and facilitate the provision of a variety of housing opportunities--single family detached and attached housing, condominiums, apartments and mobile homes--at reasonable prices. Insuring an adequate supply of rental housing, particularly for low income households, is also an important priority.

POLICY 2.8. IT IS THE POLICY OF THE CITY AND BOROUGH OF JUNEAU TO ENCOURAGE AND FACILITATE PROVISION OF A VARIETY OF HOUSING OPPORTUNITIES IN SUFFICIENT QUANTITIES AND AT AFFORDABLE PRICES, TO MEET THE HOUSING NEEDS OF ITS RESIDENTS. PROVISION OF AN ADEQUATE SUPPLY OF HOUSING FOR LOW AND MODERATE INCOME FAMILIES IS A TOP PRIORITY.

Implementing actions:

2.8.1. Monitor vacancy rates and housing activity, and report findings twice a year. The vacancy rate goal for each housing type should not be less than 5 percent.

2.8.2. **Take direct action to stimulate creation of housing at the appropriate** time the vacancy rate falls below an acceptable rate.

2.8.3. Designate an adequate amount of vacant land for all types and densities of residential development on the Comprehensive Plan Land Use Maps.

2.8.4. Continue to streamline the development permit review process.

2.8.5. Review and modify, if necessary, local building and fire codes to permit use of new, cost-efficient construction techniques and materials consistent with acceptable health and safety standards.

2.8.6. Review planned unit development (PUD) provisions in zoning code to insure maximum opportunity for flexible siting, design, and construction of residential developments. As an incentive, grant density bonuses which permit construction of more units than permitted by underlying zoning to developments which exceed legal requirements and meet the necessary criteria.

2.8.7. Maintain design guidelines and standards in the Land Use Code which require adequate landscaping and screening, permit storage facilities, establish buffers between the mobile home developments and adjacent properties.

2.8.8. Encourage quality design of public housing by establishing minimum standards for landscaping, open space areas, and other features.

2.8.9. Upgrade the CDD capability to track and monitor development activity and vacancy rates. Refine CDD vacancy analysis, and ability to establish housing demand of all forms. Track the impact of mining development and tourism on housing stock and construction activity.

2.8.10. Inventory, assess, and make available CBJ lands for public and non-profit development proposals that will provide affordable housing. Offer these lands at a negotiated value and make provisions for a timed/sunset clause for development.

2.8.11. Partner with the private sector to purchase, design and build Single Room Occupancies (SRO) complexes in existing under-utilized or unused buildings in downtown Juneau.

2.8.12. Encourage the Juneau Legislative Delegation to introduce legislation to make mandatory the reimbursement of property owners for market value decreases in the event of a capital move.

2.8.13. Continue to partner with non-profit local housing organizations and Alaska Housing Finance Corporation to build moderate and low income apartment complexes.

2.8.14. Partner with the University of Alaska Southeast to build student housing.

2.8.15. Provide an incentive program, such as parking relief or assistance, for conversions of commercial uses back to, or to residential uses in Mixed Use areas.

2.8.16. Create a program of seminars where private parties and developers can be trained in permitting procedures, financing options and building and Land Use Codes.

Housing Condition

Housing stock generally is in good condition; over half of all residential units have been constructed since 1970. Most marginal and substandard units, estimated to be less than 5 percent of the total, are located in downtown Juneau. By encouraging their preservation/rehabilitation, the CBJ can minimize the need for new units. In addition, rehabilitation of homes of historic significance will enhance Juneau's social and cultural vitality.

POLICY 2.9. IT IS THE POLICY OF THE CITY AND BOROUGH OF JUNEAU TO FACILITATE THE PRESERVATION AND REHABILITATION OF EXISTING HOUSING.

Implementing actions:

2.9.1. Continue to use federal Community Development Block Grant (CDBG) monies to provide low interest housing rehabilitation loans, when available.

2.9.2. Adopt standards for rehabilitation which meet acceptable levels of public health and safety.

2.9.3. Identify residential property of historical significance, using the Downtown Historic District Development Plan and other sources, document public and private funding sources for rehabilitation of these properties, and assist owners in obtaining these funds.

ECONOMIC DEVELOPMENT

The economic circumstances of an area help determine the amount, rate, and **type** of land development; they also influence the demand for housing and public facilities and services and have a strong relationship to the overall quality of living. Over the last decade, economic development has been pursued publicly and privately with a number of efforts that will be summarized below. Private efforts include substantial progress in the permit process for reopening the AJ and Kensington Mines, the opening and expected reopening of the Greens Creek Mine, a tremendous increase in both cruise ship and independent tourism, modest resurgence of the commercial fishery and the advent of several small manufacturing businesses. Public efforts include continued program development by the Juneau Economic Development Council including drafting an Overall Economic Development Plan, outreach and assistance by the Community Development Department, and study of port authorities and related organizational ideas to further stimulate and attract development.

The economy and population of Juneau developed originally to support mining activities in the area. Since Juneau became the territorial capital in 1906, there has been increasing reliance on government as the major support for the area's economy. Juneau's growth in population, since Alaska became a state in 1959, occurred in large part as a result of state government expansion. The increased state role is most evident in resource management and community development activities financed by the state's share of revenues from oil originating in the Prudhoe Bay area. This source of revenue is now declining as a function of the price of oil but soon the decline will be a function of the amount of oil and there is no revenue-generating engine on the horizon that has anything like the impact that Prudhoe Bay has had. Some hope is aimed at the ANWR area also on the north slope of Alaska but reserves have yet to be proven and the area is legally unavailable for exploration. Laws and policies change but many years would be needed to actually produce oil and revenue from ANWR and Alaska's revenue from Prudhoe Bay will have substantially declined long before that could occur, even if ANWR was accessible now and even if it was eventually shown to have large reserves.

Employment can be categorized as "basic" and "support." Basic jobs are those generated and paid for by outside income; support jobs are generated by the exchange of dollars within the community. For every 100 basic sector jobs in Juneau in 1980, there were 93 support positions. The percentage of support jobs has increased steadily, whereby in 1988 for every 100 basic sector jobs there were 125 support positions. Current data (1994) from the Alaska Department of

Labor indicates an increased ratio of 100 basic sector jobs for every 136 support positions. This basic/support ratio reflects the increasing development of “big box” and other retail outlets in Juneau.

The primary contributors to Juneau’s basic employment are federal and state positions with central and regional functions. The former are statewide responsibilities, while regional positions serve southeast Alaska. In the third quarter of 1994, there was a total of 6,635 basic sector jobs in Juneau, of which 5,189 were government positions. Government therefore generates approximately 78 percent of basic sector employment. Tourism, mining, the fishing industry, local manufacture of goods and the ANCSA corporations provide the balance of basic sector jobs. An important caveat in consideration of both basic and support jobs is that many are of a seasonal nature. Seasonally based employers include tourism, construction, fishing, and retail/wholesale businesses.

The support sector accounted for a total of 6,969 jobs in 1986 while in 1994 they accounted for 9,039 jobs. The major components of the support sector jobs are retail and wholesale trade, government to serve the local population, services and transportation, and public utilities.

Opportunities for expanding the economic base have increased due to growth potential in mining, seafood, tourism and services. State government does not show the same potential due to stabilization in size in the years leading up to 1995 and reductions in state spending that are anticipated for the rest of the decade.

State Capital

Juneau’s position as the state capital of Alaska is not only a major source of identity for the community but its major economic activity; nearly one-third of the work force is employed by the State of Alaska. Development of new facilities or replacement of existing structures necessary to accommodate the state work force should be planned with careful coordination between state and local officials. This growth will have significant impacts on all other development within the CBJ, including housing, transportation, public services, and cultural, commercial, and recreational activities.

In early 1995, Juneau embarked on a Capital City Visioning Project to define an image of how Juneau could look and how it might function in the future as a Capital City. This effort will be closely tied to the Comprehensive Plan. The Vision, when adopted by the Assembly, will become an addendum to this Plan. For informational purposes, a description of the Visioning Project, its goal and a list of possible projects, is included as Appendix A.

Juneau must continue efforts to make itself as attractive and functional as possible to serve the special needs of a capital city.

POLICY 2.10. IT IS THE POLICY OF THE CITY AND BOROUGH OF JUNEAU, THROUGH A COOPERATIVE EFFORT WITH THE STATE OF ALASKA, TO PLAN FOR AND SUPPORT DEVELOPMENT OF AN ATTRACTIVE SETTING, FACILITIES, AND OTHER SERVICES TO ENHANCE THE STATE CAPITAL.

Implementing actions:

2.10.1. Initiate joint planning, with representatives of the state legislature and appropriate state agencies, for the downtown capital complex and surrounding area.

The following issues should be discussed:

1. Defining the physical boundaries of the state capital planning area.
2. Designating an area for a new capitol building and related structures.
3. Formulating a facilities plan which identifies the nature, timing, cost, and local/state roles and responsibilities for all needed improvements.

2.10.2. Request federal agencies to coordinate their plans for expansion or modification of federal facilities in the downtown area with CBJ and state plans for state capital facilities.

2.10.3. Encourage consolidation of central state offices in downtown Juneau using the capital complex concept.

2.10.4. Encourage and assist the state in development and use of convenient and reliable teleconference and video conference facilities to improve state agency functions and to facilitate constituent contact for legislators.

2.10.5. Encourage coordinated or joint planning efforts to address the need for alternative transportation and parking opportunities for state workers and legislative personnel.

2.10.6. Seek ways and means to encourage or directly develop housing options for legislative personnel.

Downtown Juneau

Downtown Juneau has traditionally been the economic, civic, and cultural center of the CBJ. With the decision to retain the capital in Juneau, opportunities and pressures for development downtown have increased. It is important that new development be based on community objectives for the waterfront, capital complex, historic district and other areas. Careful planning for public facilities and development of an urban design concept and development standards for the area are necessary.

POLICY 2.11. IT IS THE POLICY OF THE CBJ TO EXPAND THE ROLE OF DOWNTOWN JUNEAU AS THE CIVIC, CULTURAL AND ECONOMIC CENTER OF THE COMMUNITY THROUGH CAREFUL URBAN DESIGN AND PLANNING OF PUBLIC AND PRIVATE FACILITIES.

Implementing actions:

2.11.1. Develop a comprehensive transportation plan for the downtown area which addresses the need for alternative transportation and assures adequate parking in downtown to support activities.

2.11.2. Encourage the construction of an additional two stories of parking on the state office building garage. The 104 spaces could serve as legislative parking, and as private for lease parking to serve the upper Franklin area.

2.11.3. Coordinate and possibly combine planning for the downtown with any development effort for the capital complex.

2.11.4. Facilitate the pedestrian usage of Downtown including:

1. Encourage development which improves pedestrian facilities.
2. Extend the waterfront seawalk.
3. Repair and widen sidewalks.
4. Separate pedestrian ways from vehicular traffic where practical.
5. Encourage addition of third elevator in State Office Building to bring pedestrians from Willoughby to Main Street.
6. Encourage development of bicycle storage facility.

2.11.5. Encourage continued public and private redevelopment of the South Franklin Street waterfront area, considering the following:

1. Create additional buildable sites bordering the waterfront.
2. Encourage redevelopment for mixed uses and incorporate architectural guidelines to insure aesthetic and harmonious building styles.
3. Expand dock facilities.

2.11.6. Update and adopt Downtown Waterfront Plan to include uplands, tidelands, and submerged lands from Norway Point to the little rock dump and the corresponding easterly shore of Douglas Island.

Tourism and Visitors

Tourism is Juneau's largest private industry. It is thriving and plays an important role in diversifying the economy. Juneau had approximately 480,000 visitors in 1994, a market wide increase of 15 percent over 1993. The scale of operations involved in the tourist trade varies widely and serves several different types of tourists. There appear to be four distinct types of

potential visitors with different characteristics and needs: cruise, convention, independent, and overnight groups and small ship users. Long-range planning efforts should focus on strategies to promote and accommodate each type of use.

The trend in the cruise ship industry has been toward larger ships and more affordable packages. This has resulted in an upward spiral of rapid growth. In 1994, 373,000 cruise ship visitors arrived, an increase of approximately 30 percent over 1992. Over 400,000 are expected during the 1995 season. Cruise ship passengers and crew have shown the greatest increase in numbers due in part to the building of larger ships, better docks downtown and costs which are comparable with other types of vacation travel. Tourist accommodations, offerings, and infrastructure in Juneau have endeavored to keep pace with this growth. Steady growth over the long run in this segment has been predicted.

Convention and business travelers comprise a small portion of the tourist traffic in Juneau. As a capital city, general government center, increasingly diverse shopping center, and business and trade center, Juneau also hosts business travelers who come to lobby, shop, work with colleagues and the government, and to hold conventions and meetings. Construction of Centennial Hall led to additional increases in tourism, conventions and business visitation. These visitors typically come for business or professional reasons, but may take advantage of tourist services while here in Juneau. Competition for the convention trade has increased within the southeast Alaska marketing area. Convention travel should be encouraged to ensure continued growth of the segment. The potential for new facilities and services to serve its needs should be explored.

The 1986 CBJ Waterfront Plan, the Waterfront Center report on Juneau, and the Juneau Convention and Visitors Bureau all cite a need for a major visitor facility/orientation center that visitors can use to get an idea of the features of the city and outlying areas. This would be a service to all types of tourists although its location may limit its usefulness to a particular segment (i.e., a Visitor Center located on South Franklin, with limited parking capacity, may not be as useful to an independent tourist driving off the ferry in Auke Bay as one located nearer the ferry terminal or airport). A center would also help to promote and direct people to the mix and array of attractions and facilities.

Independent travelers are a diverse group, with widely different needs. This population requires different services and facilities from those sought by the packaged tour visitors, and in general contributes more money per day-of-visit to the local economy. Some fill hotels and an ever-growing supply of bed-and-breakfast inns in private homes all over the borough. Others arriving by recreational vehicle find a severe shortage of places to camp and park. Still others arriving by ferry, private boat, and plane are campers, bicyclists and pedestrians. All need accommodations of one kind or another. A review of the overall tourism market conducted by CDD in 1993 indicated that this segment of the industry is currently under-developed in Juneau.

There is a shortage of good camping areas and recreational vehicle parks in Juneau. There may be weaknesses in the current recreational vehicle park regulations which make it difficult to establish RV parks just for the summer, when they are needed. Another shortage that is often mentioned in discussions of tourism support is the lack of housing for workers and service personnel. Many of these workers are college students filling summer-only positions who do not live in Juneau permanently. Their wages are low in comparison to the permanent residents and

they cannot afford costly housing. This, plus the legislative-related housing shortage means that the CBJ, or some entity, will have to take some assertive steps to remedy the seasonal housing problems, or risk an artificial limitation on the growth of the tour industry.

Efforts have been made to promote Eaglecrest as a ski destination in the Yukon and around other Southeast Alaska communities. Improvements have been made to upgrade the lodge buildings, the parking areas, and the ski runs, which have increased Eaglecrest's appeal as a ski area. This is an excellent example of a multi-purpose facility which accommodates locals as well as visitors.

Tourism activities add to the economic diversity of the CBJ and the strength and vitality of the downtown area. On the other hand, expansion of tourism opportunities has the potential to impact the quality of life for local citizens. There is strong support in some sectors of the community to develop a strategy which will accommodate tourism in balance with the needs of local citizens and the established policy of protecting our natural attractions.

Public concern over the impacts of tourism is clearly increasing. A League of Women Voters telephone survey in the winter of 1995 asked a question to elicit this concern. The result was the most one-sided response ever. The vast majority, 87 percent of respondents, believe that the CBJ should take a more active role in addressing tourism and its impacts. In a related question, some 22 percent of the respondents felt that the social impacts or costs of tourism outweigh the benefits of that industry. The issue was on the Assembly's mind in any case, because a Tourism Working Group was created by a special Strategic Policy Committee of the Assembly. The Working Group forwarded a philosophical statement to the Assembly which was adopted by motion in the Spring of 1995 and which has been worked into the policy below. The Working Group will continue its efforts over the summer of 1995, conducting a more detailed telephone survey and an economic impact survey. The result should be a more detailed and specific tourism policy which can be added to this Plan at a later time.

The challenge is to provide a quality experience for the visitor with improved facilities and infrastructure while addressing concerns from the permanent population about expanding impacts caused by more and different tourism opportunities.

POLICY 2.12. IT IS THE POLICY OF THE CBJ TO ENCOURAGE TOURISM, CONVENTION AND OTHER VISITOR-RELATED ACTIVITIES THROUGH THE DEVELOPMENT OF APPROPRIATE FACILITIES AND SERVICES, WHILE PROTECTING JUNEAU'S NATURAL AND CULTURAL ATTRACTIONS FOR LOCAL CITIZENS AND VISITORS ALIKE, AND TO PARTICIPATE IN THE ACCOMMODATION OF THE FUTURE GROWTH OF TOURISM IN A MANNER THAT ADDRESSES BOTH COMMUNITY AND INDUSTRY CONCERNS.

Implementing actions:

2.12.1. Initiate and serve as leader of a long-term planning effort with citizens and the visitor industry to identify the capacity of existing facilities, assess future demand for services, and

develop a plan to accommodate growth in balance with the need to protect natural and cultural attractions, and the needs of local citizens. This plan for the visitor industry should be updated as needed and made a part of the Comprehensive Plan.

2.12.2. Develop a process by which the comprehensive impacts of tourism, as identified by the Assembly and its subcommittees, will be evaluated, and how negative impacts might be mitigated on: 1) an individual project or service basis to address the impacts of specific undertakings; 2) a sector basis such as the cruise sector, the convention sector or other sector if the negative impact is attributable to a particular sector; and, 3) an industry-wide basis if the impact is attributable to the entire industry.

2.12.3. Encourage recognition of the value of historic resources and preservation to tourism in Juneau and promote accurate representation of Juneau's unique cultures.

2.12.4. Identify areas with unique or locally important values, such as Last Chance Basin, and develop a system to regulate uses which may have adverse impacts on these areas.

2.12.5. Work with representatives from the cruise line industry, private developers, Juneau Convention and Visitors Bureau, and other tourism-related businesses to plan and develop additional or improved moorage and berthing facilities, including additional lightering and short-term moorage facilities.

2.12.6. Design new convention and tourist facilities for multi-purpose uses to accommodate local residents as well as visitors. Reach out to assist developers who can provide facilities or services that will broaden the array of attractions and experiences while not decreasing quality of life for Juneau citizens.

2.12.7. Focus marketing efforts on overnighting visitors.

2.12.8. Support the development of recreational vehicle parks and campgrounds. Revise Land Use Code to allow these uses in appropriate areas of the CBJ. Review development standards to insure compatibility with surrounding land uses.

2.12.9. Support Eaglecrest as a regional recreation and tourist facility.

2.12.10. Work with the tourism industry to create and market "shoulder" season activities and recreational opportunities boroughwide.

2.12.11. Conduct frequent appraisals of transportation facilities to insure they meet local and tour-related uses and demands.

2.12.12. Seek ways and means to encourage or directly develop housing options for moderate income workers who support the tourism industry locally.

University of Alaska Southeast

The University of Alaska Southeast (UAS) is an important contributor to the educational, social, cultural, and economic vitality of the CBJ. Through cooperative effort, the UAS will be able to expand to accommodate its needs and develop in a manner consistent with the planning and development objectives of the CBJ.

POLICY 2.13. IT IS THE POLICY OF THE CBJ TO SUPPORT EXPANSION AND DEVELOPMENT PLANS OF THE UNIVERSITY OF ALASKA SOUTHEAST.

Implementing actions:

2.13.1. Work with representatives of the UAS to determine the needs of the university for expansion and development. Give particular attention to the development plans of the UAS which affect land use policies in Auke Bay.

2.13.2. Assist UAS in the development of additional student housing.

2.13.3. Encourage UAS to provide a full range of university programs that take advantage of the local environment, both natural and governmental, to attract students from other Alaska communities as well as from outside of Alaska.

Port Facilities

Historically, port development location in the Juneau-Douglas area has been a significant factor in the layout and development of the remaining community. Future growth and development of the Juneau area will be greatly impacted by the location, orientation and the type of port facilities developed. Port development issues are interwoven into many sections of the CBJ Comprehensive Plan including waterfront development; downtown Juneau; tourism/visitors; mining development; regional transportation; and commercial, industrial and public facilities.

The major port facilities for commercial and industrial goods and materials are located on the southern part of the downtown waterfront. Because of the geography and development pattern of that area, room for expansion is limited. In addition, traveling up the Gastineau Channel is a significant detour for most barge traffic. Truck traffic to and from the port adds to the noise and congestion in the downtown area.

Port development continues to be of importance to both commerce and recreation throughout the CBJ. Tour ship visits are increasing every year; tour vessel lengths are increasing as well as the number passengers carried. Moorage for tour ships and upland support areas have become extremely important to the continued growth of the tour industry and local private enterprise. Recreational boat use is also on the increase and the CBJ Harbormaster has a waiting list of approximately 150 boats borough-wide. Summer season private boat visits are also on the increase with larger, ocean-going yachts becoming more familiar in the Juneau area.

Ferry traffic is increasing in the Auke Bay area as the Alaska Marine Highway expands the number of voyages to accommodate increasing “drive-on” tourists during the summer season. From time to time, Auke Bay is also frequented by ore ships serving Skagway and Greens Creek.

In the short term, it is important to expand and improve on the existing waterfront industrial sites within the CBJ. In the long term, development of new port facilities which are more accessible to marine traffic of Southeast Alaska would be more desirable. An appropriate site should provide protected docking space and adequate land for storage and industrial facilities.

POLICY 2.14. IT IS THE POLICY OF THE CBJ TO FACILITATE AVAILABILITY OF SUFFICIENT AND SUITABLE ACREAGE FOR PORT FACILITIES, AND TO WORK CLOSELY WITH THE PUBLIC AND PRIVATE SECTORS TO FACILITATE COMMERCE AND ENJOYMENT OF THE WATERFRONT THROUGH DEVELOPMENT OF WELL DESIGNED PORT FACILITIES.

Implementing actions:

2.14.1. Maintain an entity to carry out port planning, development and management functions.

2.14.2. Prepare a port development plan to assess current and future moorage demand, upland support facility demand, general availability of waterfront property adjacent to harbor areas throughout the borough, and to identify facility and locational requirements to address the demand.

2.14.3. Conduct inventory of waterfront property to ascertain location, marine attributes (depth, currents, and winds), environmental attributes, size, access, and ownership. Prepare a detailed engineering and economic feasibility analysis of potential new or expanded port facility sites.

2.14.4. Based on the port plan and feasibility studies, designate appropriate areas for port facility development.

2.14.5. Over the near term, encourage in-filling and completion of existing port facilities prior to establishment of new sites.

2.14.6. Update and revise as necessary the recommendations of the 1983 Small Boat Harbor Study. Support the development of recommended moorage and associated facilities, such as showers and laundries for transient and local boats.

2.14.7. Protect from land use conflict and/or displacement, potential new or expanded port and water dependent and water-related industrial, commercial, governmental, and recreational facilities.

2.14.3. Encourage the expanded use of Juneau by state and federal government vessels and cooperate with those agencies in the development of adequate port and related upland facilities to meet present and future needs.

2.14.9. Evaluate the effect of changes in state and federal environmental laws on water-related and water-dependent facilities such as fuel docks, tidal grids, and upland boat storage and repair yards, and the role of the CBJ in facilitating compliance with those laws through the planning and zoning process.

2.14.10. Evaluate methods for assuring shore-side security without using fencing or security gates on CBJ port facilities.

2.14.11. Evaluate the creation of a free trade zone in the CBJ and encourage duty-free handling and shipment of goods through Juneau from foreign ports.

2.14.12. Identify suitable upland locations for dry land moorage of smaller vessels with launch ramp; remove restrictions from Auke Bay Harbor; reconfigure harbors to accommodate change.

Commercial and Industrial Development

An important characteristic of the Juneau economy has been the relatively low level of retail sales activity in comparison to other Alaskan cities. This pattern has changed in recent years as evidenced by the increase in employment in the retail sector. In 1993 and 1994 three new retail outlets of considerable size, Costco, K-Mart and Carrs, were constructed. Together they have dramatically changed the number and kind of goods available locally, and have also stimulated an increase in shopping from outside the CBJ.

A major factor in the past low level of retail sales activity was “leakage”; the purchase of many goods by mail, in Seattle or elsewhere due to more variety and lower prices. Recent studies indicate that Juneauites buy most of their goods locally with 75 percent of all households reporting doing 76 to 100 percent of all their spending in Juneau.

Commercial and industrial activity requires sufficient and suitable land. Careful attention to the space requirements and locational considerations of potential uses is necessary to promote and maintain the local economy.

POLICY 2.15. IT IS THE POLICY OF THE CBJ TO DESIGNATE SUFFICIENT AND SUITABLE LAND FOR ANTICIPATED COMMERCIAL AND INDUSTRIAL DEVELOPMENT AS PART OF ITS OVERALL ECONOMIC DEVELOPMENT PROGRAM.

Implementing actions:

215.1. Follow the specific land use policies (Chapter 5) and Comprehensive Plan maps (Chapter 6) of this Plan which establish criteria for designation of commercial and industrial land.

2.15.2. If it is demonstrated that additional land is needed for commercial or industrial uses or that there are particular locational requirements for certain activities, consider appropriate

amendments to the Comprehensive Plan maps. They should be evaluated in relation to all applicable policies of the Comprehensive Plan.

Mining

Mining is foremost among Juneau's private sector activity in importance as a provider of well-paid year-around employment. Juneau benefitted demonstrably with the opening of the Greens Creek Mine and suffered as well when that mine closed. Greens Creek is expected to reopen in 1997 and provide about 250 permanent jobs. The AJ and Kensington Mines area also expected to reopen, after two to three year development phases, and will together provide about 800 basic sector jobs. In addition, there are still other active mining prospects in and around the borough.

POLICY 2.16. IT IS THE POLICY OF THE CBJ TO SUPPORT THE DEVELOPMENT OF MINERAL RESOURCES IN AN ENVIRONMENTALLY SOUND MANNER, GIVING PROPER RECOGNITION TO THE UNIQUE VALUES OF THIS COMMUNITY.

Implementing actions:

2.16.1. Continue to implement the Mining Ordinance, #89-47am, which provides for review of mining permit applications and ensures that information is gathered and analyses are performed in a manner that satisfies the needs of the City and Borough and the operator of the mining operation.

2.16.2. Discourage the development of satellite communities associated with mining development, thereby encouraging development of the existing urban areas, maximizing economic benefits. This does not preclude the provision of camps which provide short-term housing and minimal services.

2.16.3. Encourage, if feasible, the cooperative development of roads and ports in the development of the individual mining enterprises.

2.16.4. Encourage coordination and cooperation among the mining, tourism, fishing and recreation industries in both development and operation of activities.

Seafood Industry and Commercial Fishing

The CBJ Fisheries Committee has considered specific implementation strategies and facility developments that would support and enhance the fishing industry. The Committee's primary recommendation is that a concerted effort be made by the CBJ to promote the development of a publicly-owned cold storage facility of one million pound capacity, or larger based on a review of other successful Southeast Alaska facilities, recognizing that over 75 million pounds of seafood are harvested annually within the CBJ and vicinity. The facility could become a highly valued community asset that would greatly benefit the fishing industry as a whole and other non-fishing industrial uses as well. Examples of other uses are charter and sport fishing needs, airline and other transportation needs, food service industry needs, and use by private individuals.

Fishing related money and tax revenue is leaving the community and potential revenue is being diverted elsewhere. There are 680 limited entry permit holders in the CBJ. Fish caught in the CBJ area by CBJ residents are processed in other communities. The state-collected raw fish processing tax goes back to the community in which the fish are brought ashore, not where they are caught. The future will be in fresh and blast frozen fish. Juneau at present, is ill-prepared to meet these changes.

Jobs will be created in the CBJ both directly and indirectly by development of a publicly-owned cold storage facility. The Sitka cold storage operation has 15 full-time and 30 seasonal jobs. Indirect jobs could be created through the attraction of additional primary and secondary processors to our community; expansion of processing capability of already established processors; possible storage of fish in Juneau by outside processors; and, trucking company jobs and businesses will be expanded because of the need to transport fish to and from the cold storage facility.

Juneau has lost some prominence as a source of support and service to the commercial fishing fleet over the decades, and there is a clear need to establish maritime services of several types in order to rebuild the resident fleet. On the positive side, there is a very active and growing private sector effort to process fish locally and an increasing level of success in producing more fish as the result of hatcheries and habitat protection. Commercial fishing and other forms of commercial marine activity combine with sport and pleasure marine activity to create a stronger market for facilities and services.

POLICY 2.17. IT IS THE POLICY OF THE CBJ TO SUPPORT THE DEVELOPMENT AND EXPANSION OF THE SEAFOOD INDUSTRY AND OF SERVICES AND FACILITIES WHICH BENEFIT COMMERCIAL FISHING ACTIVITY AND ATTRACT FISH PROCESSORS AND HARVESTERS TO JUNEAU.

Implementing actions:

2.17.1. Investigate the development of a large-capacity, publicly-owned cold storage facility.

2.17.2. Provide for and encourage the location of hatcheries and remote release projects in the CBJ or its vicinity to support a local seafood processor.

2.17.3. Assist in the location of suitable sites for seafood processing activities.

2.17.4. Support the development of aquaculture and the location of suitable sites within the borough.

Regional Economics and Services

Juneau is, in fact as well as in perception, a political/commercial/transportation hub for most of southeast Alaska. There are many examples of regional economic interchange including regional participation at the University of Alaska Southeast, commercial-retail shopping by outside residents, regional marketing of special events, regional participation in sporting events, manufacture of goods for outlying communities, supply and shipping for outlying resource development activities, participation of the regional populace with state and federal agencies including the Alaska State Legislature, financial, insurance, clerical, consulting and communications services provided to residents of outlying communities as well as many others.

Local issues directly related to serving residents and organizations in the southeast Alaska region include:

1. transportation terminals (marine and air);
2. roads;
3. parking;
4. mass transit;
5. freight accommodation;
6. lodging/housing;
7. commercial retail activities;
8. convention facilities;
9. communications services;
10. retail services and goods

Transportation is particularly significant to the development of regional commerce through the CBJ. Goods, customers and information, rely on the ability to travel in and out of the community rapidly, effectively and at the lowest cost to achieve maximum participation.

Juneau has a unique and important role to play in helping the region achieve a successful future. Finding an equitable balance between the CBJ's contribution to solving the region's problems, and the benefits that CBJ will receive for participating in regional solutions has been an ongoing debate. Only by fully participating in the regional development planning efforts will the CBJ see its economic development goals fulfilled.

Clearly, Juneau has responsibilities and opportunities as a provider of regional services and as a significant political, cultural, and economic presence in southeast Alaska.

POLICY 2.18. IT IS THE POLICY OF THE CBJ TO ENCOURAGE AND SUPPORT REGIONAL ECONOMIC DEVELOPMENT IN OTHER CITIES AND LOCATIONS IN SOUTHEAST ALASKA; CREATE A LOCAL ENVIRONMENT OF SERVICES AND OFFERINGS ATTRACTIVE TO COMMERCE ORIGINATING FROM OUTSIDE THE BOROUGH, AND, ACTIVELY PARTICIPATE IN DEVELOPMENT AND IMPLEMENTATION OF REGIONAL SUSTAINABLE DEVELOPMENT GOALS.

Implementing actions:

- 2.18.1. Conduct a market study to determine the economic impact of regional markets.
- 2.18.2. Revise and adopt the 1994 findings and recommendations of Juneau's Overall Economic Development Plan related to regional economic development.
- 2.18.3. Encourage regional marketing for locally made goods, and locally provided services.
- 2.18.4. Encourage development of attractive travel packages for regional shoppers.
- 2.18.5. Continue to participate in regional planning processes.
- 2.18.6. Consider the impact of local activities on regional systems. Coordinate with other regional communities and jurisdictions to avoid, minimize or reconcile intergovernmental conflicts.
- 2.18.7. Encourage economic development in particular industries that represent regional economic strengths.
- 2.18.8. Strengthen and expand the partnership between communities in Southeast Alaska, using the Southeast Conference and other means.

COMMUNITY DEVELOPMENT

The CBJ has increasingly become involved in development activities such as the Centennial Hall convention facility, senior and low and moderate income housing projects, parking facilities, and public service facilities. Future possibilities for involvement include port and marina facilities, a performing arts center, public uses for some portion of its selected lands, and joint planning and development of a capital complex with the state.

Planning and Development Responsibilities

In response to demand for subsidized housing and facilities such as the convention center, the CBJ has expanded its role in development. However, current and planned activities are considered complementary to private development.

The development role requires specialized knowledge and experience in real estate, management, financial analysis, and public administration. The CBJ has relied primarily on consultants to provide these particular skills. Due to the CBJ's increasing role in planning and development, and because of the close relationship between these activities, an assignment of responsibility for these functions within local government is warranted.

POLICY 2.19. IT IS THE POLICY OF THE CBJ TO ASSIGN THE CITY AND BOROUGH MANAGER RESPONSIBILITY FOR ALL DEVELOPMENT FUNCTIONS OF THE CBJ. THE MANAGER'S OFFICE WILL COORDINATE DEVELOPMENT ACTIVITIES OF THE PRIVATE AND PUBLIC SECTORS FOR PROJECTS WHICH ARE CONSISTENT WITH THE COMPREHENSIVE PLAN AND MEET IMPORTANT PUBLIC NEEDS.

CBJ Lands

In 1959, at the time of statehood, Alaska was granted over 100 million acres of land from the federal government. The state, in turn, transferred thousands of acres to municipalities to provide opportunities for community expansion. This was accomplished through the Municipal Entitlement Act of 1978. The City and Borough of Juneau (CBJ) owns and manages approximately 23,000 acres of land. Over 19,500 of those acres were part of the CBJ's municipal land entitlement from the State of Alaska. The CBJ intends to make a portion of these lands available for private use. Careful evaluation of development potential and market demand for CBJ lands is important in planning for their efficient and appropriate use. The State of Alaska has also selected lands within the CBJ, and decisions will also need to be made on their future use.

POLICY 2.20. IT IS THE POLICY OF THE CBJ TO HOLD CERTAIN LANDS IN THE PUBLIC TRUST, AND TO DISPOSE OF CERTAIN LANDS FOR PRIVATE USE WHEN DISPOSAL SERVES THE PUBLIC INTEREST.

Implementing actions:

2.20.1. Follow the 1995 Land Management Plan, which is consistent with the Comprehensive Plan and will serve as the major means of implementing policies and guiding management, development and disposition of selected lands.

2.20.2. Implement and regularly update the Land Disposal Program of the Land Management Plan which calls for the regular disposal of CBJ land under a 10-year schedule.

2.20.3. Continue to evaluate the use and development potential of all CBJ and state selected lands.

2.20.4. Evaluate the opportunities for joint development of CBJ lands with state and private landholders.

2.20.5. Classify CBJ lands for residential, commercial, industrial, recreation or resource uses, or open space, based on the policies, land use designations, the natural resources/hazards and open space/recreation elements of this Plan.

2.20.6. Base disposal of CBJ lands on demonstrated market demand and evidence that disposal will be in the public interest. Coordinate activities with an orderly system for extending and

constructing the public facilities and services called for in the transportation/public facilities and services element of the Plan.

2.20.7. Evaluate land not scheduled for immediate disposal for possible interim uses prior to private development.

2.20.8. Enact a general application ordinance which specifies that any use of CBJ lands for commercial gain, other than the passage of commercial vehicles over public streets, must occur under a permit from the CBJ and with payment of a fee.

ENERGY

The topic of energy is pervasive in every element of human activity, interaction and comfort. The economic impacts associated with this resource consumption, and the unique potential of Juneau's renewable hydroelectric sites, presents policy makers with an enviable opportunity for guiding future community growth in this regard. There is also the need to balance the short-term goals of private enterprise such as resource development and petroleum distribution companies, with the perceived benefits of renewable energy, environmental quality and long-term sustainable development practices.

Access to affordable, secure supplies of energy is required for almost every activity of government, business and private citizens. The overall goal of energy policy should be to assure and enhance the near-term and long-term quality of life for all current and future citizens in Juneau, at the lowest cost to energy users and the environment. Given the ways in which local communities of today are affected by, and affect the global arena, energy policy should reflect the need to establish a fair degree of independence from uncertain international energy markets, and to ensure responsible contributions of our community to the global human and natural environment. The ultimate goal needs to be creation of an energy system which is sustainable, locally and globally.

Wise application of free-market forces can help establish and maintain the most effective uses of energy at the least overall cost when public policy provides the necessary foundation for these forces to work efficiently. By developing a climate that fosters economic incentive within government and within the community at large, energy policy can play a crucial role in the development of a local energy system which can help assure the long-term economic viability of Juneau.

Least-cost, or integrated-resource planning, in which investment in energy conservation is weighed against investment in energy purchase, and in which life-cycle costs are included in all decision making, can provide a framework for cost-effective, responsible energy planning. Education is an important element in giving direct assistance to energy users and for maintaining an informed citizenry. As used below, "near-term" means one to five years; and "long-term" means five years or longer.

The Juneau Assembly's Energy Advisory Committee produced the following policies and implementing actions. This is the culmination of work conducted during public meetings held over a year's time.

Energy Planning

Understanding where energy is used in the CBJ, its sources, and the financial and social implications of our energy use is fundamental to establishing a sound policy for energy use. In order to implement the policies outlined in this section it will be necessary to establish a plan for the future use of energy resources in the CBJ.

POLICY 2.21. IT IS THE POLICY OF THE CBJ TO ANALYZE THE CBJ ENERGY SYSTEM, ESTABLISH A LONG-TERM ENERGY PLAN, AND IMPLEMENT THAT PLAN FOR THE EFFICIENT AND SUSTAINABLE USE OF ENERGY IN THE CBJ.

Implementing actions:

2.21.1. Undertake an analysis of the entire energy system in our community, and determine near-term and long-term needs and opportunities.

2.21.2. Catalog the CBJ's current energy budget: sources and uses, in energy units (gallons, KWH and dollars).

2.21.3. Establish and implement an energy plan.

Energy Efficient CBJ Buildings and Projects

Currently (1995) there is no established protocol nor are there effective guidelines for managing energy use within the CBJ government. Given the \$2.5 million annual expense associated with this energy use, and the potential savings and enhancement of long-term viability by better managing this energy use, mechanisms should be established to efficiently and effectively manage energy use by the CBJ government. In addition to keeping costs to Juneau's taxpayers as low as possible and conserving energy in general, it is the role of the CBJ to set an example for businesses and individuals in adopting cost effective energy saving technologies and operating procedures.

POLICY 2.22. IT IS THE POLICY OF THE CBJ TO INCORPORATE TECHNOLOGIES AND OPERATING PRACTICES THAT WILL PROMOTE EFFICIENT AND COST EFFECTIVE ENERGY USE INTO ALL OF ITS NEW AND EXISTING BUILDINGS AND ENERGY-USING PROJECTS.

Implementing actions:

- 2.22.1. Establish and fund a revolving energy conservation investment fund, to invest in energy-saving public projects that meet CBJ return-on-investment criteria.
- 2.22.2. Develop a system for rewarding CBJ employee initiative and responsibility in good energy management.
- 2.22.3. Establish energy management goals for targeted CBJ buildings.
- 2.22.4. Incorporate life-cycle costs.
- 2.22.5. Invest in necessary metering equipment and monthly project energy reports.
- 2.22.6. Enact water conservation ordinances.
- 2.22.7. Replace inefficient street lighting and lighting in CBJ buildings and facilities upon replacement cycle.

Maximize Use of Local Energy Resources

Juneau's fuel supply is subject to disruption due to a variety of reasons: embargoes, price hikes, shipping disputes, or disasters. Use of local energy resources reduces these risks. In addition, most of the money used to purchase fossil fuels leaves Juneau. We can have a much healthier local economy if we develop and encourage the use of our own energy resources.

POLICY 2.23. IT IS THE POLICY OF THE CBJ TO MAXIMIZE THE USE OF LOCAL ENERGY RESOURCES, AND KEEP ENERGY DOLLARS WITHIN THE COMMUNITY.

Implementing actions:

- 2.23.1. Encourage fuel switching and dual fuel systems which are cost effective for buildings.
- 2.23.2. Review transportation options for CBJ fleet and public transit systems, car pooling, and downtown parking.
- 2.23.3. Encourage conservation to reduce the amount of money leaving the community to pay for fuels.

Full-Cost Analysis

The very real environmental and social costs, now and to future generations, of relying so completely on fossil and nuclear fuels are not included in, and are thus external to, the prices we

pay for fossil/nuclear energy. Wise local and global energy production and use requires these external costs to be internalized into energy prices, in order to conserve energy and to encourage its production from renewable sources. Because national and state policies, where they exist, have not been implemented to do this, the CBJ should take the initiative to protect long-term interests of its citizens. The exact dollar value of these costs is always hard to determine, yet they must not be ignored since they ultimately have a major economic impact and affect the quality of our lives.

POLICY 2.24. IT IS THE POLICY OF THE CBJ TO INCLUDE THE INDIRECT, OR EXTERNAL, COSTS OF ENERGY USE IN ITS ECONOMIC ANALYSES.

2.24.1. Encourage energy regulators and providers to expand the cost-of-service definition to include quantifiable external and indirect costs in establishing the cost of energy to be used in the life-cycle cost analyses of CBJ facilities, projects, and operations.

Maximize Use of Renewable Energy Resources

About 85 percent of the energy used in Juneau is provided by fossil fuels. Conservation and renewable resources could displace much of this fossil fuel and greatly reduce both the dependence on these fuels and the export of capital from Juneau and Alaska.

POLICY 2.25. IT IS THE POLICY OF THE CBJ TO MAXIMIZE THE USE OF RENEWABLE ENERGY RESOURCES.

Implementing actions:

2.25.1. Give preference to dependable, cost-competitive, renewable sources when choosing a source of energy.

2.25.2. Analyze life-cycle costs of energy applications with consideration of renewable sources given priority.

2.25.3. Consider projected potential price and supply disruption when choosing energy sources for all end uses.

2.25.4. Consider multiple fuel uses for each end-use when designing new systems.

2.25.5. Consider impacts on environmental quality.

2.25.6. When investments required to establish use of renewables are not cost-competitive for the next five years or longer, consideration should be given to long-term economic viability and environmental impacts.

Minimize Utility Investment

The peak rate of energy use (peak load) determines the size of generators, transformers, wires, backup generators, etc. The cost of these capital investments has a major effect on rates, and can be reduced by leveling out energy use on a daily and seasonal basis.

POLICY 2.26. IT IS THE POLICY OF THE CBJ TO ENCOURAGE ELECTRICAL ENERGY USE PATTERNS WHICH MINIMIZE UTILITY INVESTMENT.

Implementing actions:

2.26.1. When additional sources of energy are required for the CBJ, require an analysis of the cost effectiveness of energy conservation programs and load-leveling mechanisms before the construction of new energy facilities.

2.26.2. Where public financing is required, require investment in conservation over construction of new energy facilities if conservation is more cost effective.

2.26.3. Incorporate life-cycle costs.

2.26.4. Encourage lowering peak loads by shifting to off-peak periods.

2.26.5. Encourage interruptible loads.

2.26.6. Apply these measures to both public and private sectors as appropriate.

Use of Favorable Energy Assets for Job Creation

A stable and reasonably priced source of electricity will enhance Juneau's business and industrial climate. Energy, worldwide, will likely cost more and be less dependable in supply in the future. Juneau's favorable electric energy assets include a current hydroelectric supply and a potential additional hydroelectric supply.

POLICY 2.27. IT IS THE POLICY OF THE CBJ TO TAKE ADVANTAGE OF JUNEAU'S FAVORABLE ELECTRICAL ENERGY ASSETS TO ADD QUALITY JOB OPPORTUNITIES.

Implementing actions:

2.27.1. Explain Juneau's favorable energy assets to potential employers.

2.27.2. Encourage planning for the next increment of hydroelectric power to be brought on-line in Juneau.

2.27.3. Assist current users with cost effective conservation programs.

Use Renewable Energy for Transportation

The CBJ currently consumes 7 million gallons of gasoline for automobiles per year (1987), most of which is used in private autos and light trucks. Owning and operating a private vehicle in Juneau ranges from \$3,000 - \$10,000 per year in cost. Private auto transportation may not be sustainable in the long term. The CBJ's linear topology is amenable to an efficient, high-quality public transportation system which could make private auto ownership unnecessary for many people.

POLICY 2.28. IT IS THE POLICY OF THE CBJ TO ENCOURAGE THE TRANSPORTATION OF CBJ RESIDENTS, VISITORS, FREIGHT, MAIL, AND PARCELS WITH RENEWABLE ENERGY OR ON PUBLIC TRANSPORTATION.

Implementing actions:

2.28.1. Use a mix of vehicle sizes and fuels for public transport to promote fuel and cost efficiency, and to keep frequency of service such that it will encourage use of public transportation systems.

2.28.2. Seek the use of newly-available federal funding (Intermodal Surface Transportation Efficiency Act of 1991) for long range transportation planning.

2.28.3. Solicit extensive public and industry input, especially from the freight, tourism, and mining industries, in planning for public transportation.

2.28.4. Encourage creation and operation of a renewable energy public or private transportation system in Juneau that is so good and extensive that one can conveniently live without a private auto and that will:

1. Move people safely, quickly, and pleasantly, with minimum fossil fuel use, among destinations within main residential and commercial areas.
2. Accommodate tourism traffic in private/exclusive carriages on the public transportation system, to a majority of the tourist destinations now served by private conveyances.
3. Be amenable to transportation of freight, mail, and parcels within the CBJ's main residential and commercial areas.
4. Make available land now committed to parking lots and rights-of-way for other development or for restoration.

Creation of Energy Efficient Buildings

Juneau's maritime climate and comparatively cold winters mean that keeping living spaces warm must needlessly consume energy if efficient heating, insulating and ventilating practices, materials, equipment and design are not used in the construction of new buildings and in remodeling existing buildings.

POLICY 2.29. IT IS THE POLICY OF THE CBJ TO REQUIRE COST EFFECTIVE ENERGY EFFICIENT BUILDING AND REMODELING PRACTICES.

Implementing actions:

2.29.1. Encourage the installation of renewable sources of electrical energy-heating systems in new construction.

2.29.2. Encourage the conversion of existing heating systems from fossil fuel to renewable sources of electrical energy.

2.29.3. Encourage participation in the state's residential energy programs.

2.29.4. Encourage participation in current residential energy efficient mortgage programs for both new and existing homes.

2.29.5. Establish energy efficient standards for new and existing multifamily housing and commercial buildings.

2.29.6. Encourage favorable lending rate programs for energy efficient multifamily housing and commercial construction or renovation.

2.29.7. Consider water conservation ordinances. Water conservation measures would lead to significant energy savings to the CBJ in pumping water and in treating wastewater. These measures might include such things as metering of water, mandatory installation of low flow plumbing fixtures, or other incentives to save water.

Industrial Energy Use

The design and operation of industrial developments can be managed to reduce, transfer or minimize waste of energy and to maximize use of renewable energy. Mining projects tend to be energy intensive and short-lived (tens of years). Within the CBJ they could have a great effect on the CBJ energy economy and be greatly affected by the CBJ energy policy. For industries with large amounts of fuel material by-products (e.g. wood waste), or with high temperature energy by-products (e.g. steam), the generation of electrical energy for sale to the utility grid can be useful and increase overall community energy efficiency. Similarly, there are industries which produce large amounts of waste heat, e.g., over one megawatt thermal, and could use this energy resource to displace fossil fuel energy in nearby structures for space heating or other low temperature processes. The CBJ could play a role in making such projects viable, saving

considerable energy dollars for use in the community, rather than for export to pay fossil fuel energy costs.

POLICY 2.30. IT IS THE POLICY OF THE CBJ TO ENCOURAGE LARGE INDUSTRIAL USERS TO BE AS EFFICIENT AS POSSIBLE IN THEIR USE OF ENERGY; USE RENEWABLE (E.G. HYDROPOWER) SOURCES AND TO MAKE ENERGY BY-PRODUCTS AVAILABLE FOR USE ELSEWHERE IN THE COMMUNITY.

Implementing actions:

2.30.1. Encourage large industrial facilities to provide excess storage/production capacity for community use of energy resources where practical (e.g., LPG tank farm).

2.30.2. Investigate and encourage conversion of facilities such as LPG tank farm for other energy uses, such as hydrogen production from hydroelectric surplus.

2.30.3. Discourage energy intensive projects compromising CBJ energy policy.

2.30.4. Assist those proposing energy intensive projects, such as mining, in understanding, at the earliest point in their projects, the CBJ energy policy.

2.30.5. Require the use of renewable and environmentally sensitive energy sources for energy intensive projects, where cost effective.

2.30.6. Review reclamation plans for conversion to further potential industrial uses.

2.30.7. Increase the capacity of LPG infrastructure in CBJ if mine-related LPG use develops.

2.30.8. Encourage the development of sources that could provide energy in the winter months.

2.30.9. Encourage the development of co-generated electrical power at avoided cost.

2.30.10. Encourage land use patterns of development close to potential location of surplus waste heat.

2.30.11. Require the evaluation and analysis of potential energy-intensive waste heat producing projects.

2.30.12. Provide economic incentives for the construction of waste heat distribution systems for sources that will likely provide a long-term supply of energy at an attractive cost.

Waste Reduction and Recycling

It is in the long-term interest of all in the CBJ, and worldwide, to minimize the use of materials and to recycle used materials as a part of conserving natural resources. Recycling, where

appropriate, will lead to the more economical use of resources and lessen the impact on the environment by lessening the need for extraction and the disposal of materials. In the energy context, the activity of recycling should be carried out in recognition of the net-energy transfer of the recycling effort. Since Juneau is located far from major recycling markets, it may not be energy efficient to recycle some classes of materials at the present time. Reduced resource use is therefore especially important. Cost, however, should be a determining factor in recycling only when there is a significant cost to the CBJ for encouraging the recycling. In view of these sometimes contradictory conditions, the two efforts of materials conservation and energy conservation should be conducted in a mutually supportive manner.

POLICY 2.31. IT IS THE POLICY OF THE CBJ TO ENCOURAGE WASTE REDUCTION AND RECYCLING ACTIVITIES WHICH HAVE A POSITIVE NET-ENERGY TRANSFER THAT HAS A POSITIVE OR COST-NEUTRAL FISCAL IMPACT TO THE CBJ.

Implementing actions:

2.31.1. Encourage recycling of materials that have a positive net-energy transfer, even if the cost of recycling is marginal for the present time.

2.31.2. Utilize community service program and halfway house correctional programs to provide human resources for recycling and waste reduction.

2.31.3. Include waste reduction and recycling goals in its purchasing policy.

Public Education on Energy

Individual consumer decisions and behavior are significant in governing the extent of required energy development. Nationally, there is a trend toward using rate incentives to further community energy goals. The effect of these incentives is maximized by advising consumers on how to take advantage of them. Only a well-educated citizenry is able to make will informed decisions.

POLICY 2.32. IT IS THE POLICY OF THE CBJ TO INCREASE PUBLIC UNDERSTANDING OF HOW ENERGY DECISIONS AFFECT INDMDUAL CONSUMER COSTS.

Implementing actions:

2.32.1. Recognize that dealing with limited energy availability is a new, complex area, and that expert help must be provided if consumers are to make substantial contributions to an improved energy picture.

2.32.2. Improve energy education in K-12 public school educational curriculum. The Juneau Energy Advisory Committee recommends this include:

- energy as a fundamental human need
- historical perspective of energy
- understanding our local energy system, and how it fits with the state, federal, and world systems
- helping students become smart consumers
- informing future voters on the need to establish and maintain an energy system that is high quality, secure, equitable, and sustainable
- a multi-disciplinary approach to energy
- working with the Juneau Energy Advisory Committee on energy
- curriculum

2.32.3. Conduct public education program to explain the benefits of conservation of energy during the periods in which AEL&P is using diesel fuel instead of hydropower.

2.32.4. Conduct public meetings to explain and discuss the Energy Component of the Plan.

CHAPTER 3.

NATURAL RESOURCES AND HAZARDS

Juneau is situated in a spectacular and varied natural setting. Its aquatic and terrestrial resources not only are of exceptional economic, aesthetic and recreational value but also have numerous implications for land use planning and management. In addition to their distinctive characteristics, each resource is interdependent in a complex and often highly sensitive environment.

Traditional comprehensive plans have directed their attention primarily toward land use, transportation and public facilities. In the last two decades, however, cities are more and more frequently called upon, either by state and federal law or by their own citizens, to address an ever wider array of subjects. So it was that in the 1984 Comprehensive Plan, Juneau prepared a rough inventory of natural resources and addressed the issues and concerns for those resources voiced by the citizens. As it happens, the primary product of comprehensive planning, the zoning ordinance, or Land Use Code as it is called in the CBJ, can be an effective tool for addressing resource management issues.

The CBJ does not engage in those areas of management usually reserved to the state, such as fish or game allocation. Some concerns, however, which are shared with the state, such as habitat protection, are actually better done at the local level. This is true in terms of trying to achieve habitat protection that is sensitive to the rights of landowners as well as to the resource. It is also true because cities have a much broader grant of authority from the state, that of land use control, than do state agencies.

The policies and implementing actions which follow are those called for by the citizenry and appropriate to implementation at the local level through the use of local authority. In some cases, notably wetlands, the CBJ has taken a high-profile stance and proposed a significant management role for itself, in part to manage the values these resources represent, but also to conduct wetlands management and regulatory affairs in a manner more sensitive to the needs of land owners and developers than might be the case if wetlands management was left entirely in the hands of state and federal agencies.

NATURAL RESOURCES

Stream Corridors and Lake Shorelines

Stream courses and lakes possess unique ecological, recreational and scenic values. Portions of the stream corridors also function as floodways and floodplains. Development along stream corridors and lake shorelines can destroy their ecological, scenic and recreational values. It also can cause destruction of stream banks, increased runoff, sedimentation and pollution, and increase the danger of flooding. Carefully designed development, which is responsive to the

conditions of the site can diminish the potential negative impacts on these ecosystems, and may be able to actually enhance stream and lake habitat and water quality.

Shoreline values can be maintained and destruction of property from flooding and stream bank erosion minimized by careful management of development, which primarily takes the form of requiring development to be set back from shorelines of streams and lakes. The 1986 Juneau Coastal Management Program (JCMP) contains “enforceable policies” concerning streamside management, and the Land Use Code addresses streamside protection as well. Additionally, in 1985, a resolution was passed which designated approximately 2,056 acres throughout the borough as open space in recognition of anadromous stream corridors. Further efforts are required to protect stream corridors and to coordinate the various management regimes.

POLICY 3.1 IT IS THE POLICY OF THE CBJ TO PROTECT STREAM CORRIDORS AND LAKE SHORELINES FROM ADVERSE EFFECTS OF DEVELOPMENT AND TO PROVIDE A HIGHER LEVEL OF PROTECTION FOR NON-URBAN SHORELINES IN PUBLIC OWNERSHIP.

Implementing actions:

3.1.1. On publicly-owned lands, continue to designate, on the Land Use Code Maps as not appropriate for development, an area extending 200 feet from the ordinary high-water mark of the shorelines or stream corridors of the anadromous fish streams and lakes listed in Appendix B.

3.1.2. Update the CBJ’s open space resolution periodically as additions or corrections are made to the list of anadromous streams.

3.1.3. Review proposals for selective vegetative removal on private land within the established 25foot “no disturbance” area abutting designated anadromous waters on a case-by-case basis and in consultation with the Alaska Department of Fish and Game. Allow limited removal of vegetation where natural functions being served by riparian vegetation can be maintained.

3.1.4. For all development, continue to require a minimum setback of 50 feet from the ordinary high-water mark of all stream corridors and lake shorelines listed in Appendix B.

3.1.5. Revise the Land Use Code to pull together in one section or cross-reference all of the requirements for stream and lake shoreline management which are now under Habitat, JCMP, and Wetlands Management.

3.1.6. Require easements for public access to lake shorelines and stream corridors in platting ordinance consistent with appropriate statutory and case law.

3.1.7. Give high priority to public acquisition of open space and/or public recreation easements to the stream corridor of Pederson Hill Creek to add to the recent public acquisition of stream corridors of Montana Creek and the west side of the Mendenhall River.

3.1.8. Where development or other causes have led to serious streambank erosion, undertake programs in cooperation with other appropriate agencies to prevent further erosion.

3.1.9: *Amend the Land Use Code to include additional criteria in the grounds for variance standards that require an evaluation of impacts to habitat and water quality for variance requests from streamside and lakeshore setbacks, and to provide for mitigation when variances to stream or lakeshore setbacks are granted.*

3.1.10: *Consider amending the Land Use Code to establish the Wetlands Review Board (WRB) as an advisory board to the Planning Commission regarding direct and cumulative impacts to riparian functions when variances to stream and lakeshore setbacks are required. The WRB shall also make recommendations regarding appropriate mitigation opportunities.*

3.1.11: *Update Appendix B, list of creeks, rivers, lakes with anadromous fishery resources in the CBJ, from time to time to reflect ADF&G's most current list of catalogued anadromous fish streams and lakes.*

3.1.12: *Evaluate, as part of the next Comprehensive Plan major revision, alternative methods of establishing the point from which the stream setback is established.*

3.1.13: *Consider revising sections of the Land Use Code which refer to the 50-foot stream setback, and the 25-foot no-disturbance area, from the ordinary high water mark of anadromous fish streams and lakes as listed in Appendix B of the Comprehensive Plan to include the following changes:*

Prohibit the Following Items:

33 feet to 50 feet from OHW:

- All structures, regardless of size, including decks and roof overhangs;
- Signs;
- Grading, including excavation, dredge and fill;
- Parking areas; and
- The use of fertilizers, herbicides, pesticides, and other chemical treatments.

OHW to 33 feet “no disturbance area”:

- Replacing the natural vegetation with a lawn, or lawn/shrub/tree landscaping;
- Cutting or significantly limbing trees that are rooted in the streambank; Removing tree stumps; and
- Cutting more than a few trees so that the overhanging vegetation is significantly reduced.

Permit the Following Items:

33 feet to 50 feet from OHW:

- Fences;
- Gardens;
- Swing sets;

- *Lawns without use of fertilizers; and*
- *Other similar items on a case-by-case basis and approved by staff.*

OHW to 33 feet “no disturbance area”: permitted on a case-by-case basis and in consultation with the Alaska Department of Fish and Game:

- *Limbing or cutting a small number of trees for view enhancement, provided the functions served by the setback are not significantly impacted;*
- *Cutting trees which could cause damage to structures on the lot;*
- *Removing and replacing a small number of trees and shrubs with other species that will serve the same function, provided the functions served by the setback are not significantly impacted;*
- *Changes to existing vegetation that improve stream habitat and function; and*
- *Other similar items on a case-by-case basis and as approved by staff.*

3.1.14: *Consider amending the Land Use Code to provide greater stream protection in future development. Evaluate the establishment of a 100-foot no-disturb setback in areas of CBJ which are currently less developed and with significant areas of unplatted or large lot properties.*

3.1.15: *CBJ Staff will determine the Ordinary High Water (OHW).*

3.1.16: *Follow up on following items:*

- Establish public educational program regarding the importance of the riparian setback.*
- Investigate possible incentives for property owners who make improvements to the riparian habitat on their own property.*
- Establish a GIS database, which can track variances and existing setbacks from streams and lakes in order to allow greater analysis of cumulative impacts to the riparian setback.*
- Note setbacks from streams and lakes as a plat note on subdivision plats. (2003 Revision)*

Wetlands

Juneau’s extensive wetlands include estuarine areas, freshwater wetlands that may or may not be directly adjacent to a waterbody, and forested wetlands. Wetlands are defined by the U.S. Army Corps of Engineers as areas where the prevalent vegetation is typically adapted for life in saturated soils, where there is water sufficient to saturate the soil during part of the growing season, and where soil conditions indicate that the soil is saturated. Approximately 54 percent of the area addressed in the Juneau Wetlands Management Plan (Mendenhall Valley, Lemon Creek, Auke Bay and North Douglas) were defined as wetlands by the Corps of Engineers in 1986. Additional wetland areas have been, and continue to be, identified by the Corps of Engineers and added to Juneau’s wetland base.

Wetlands serve important natural and human functions. These include providing fish and wildlife habitat and food sources, storm-water retention, recharge of the groundwater table, cleaning surface waters by retaining sediment and toxins, and providing recreational and scenic values to Juneau's population.

Prior to 1993, regulation of wetlands management in Juneau was primarily the purview of the Corps of Engineers. To establish a stronger local role in wetlands management, in 1993, the City and Borough of Juneau adopted the Juneau Wetlands Management Plan (JWMP) under the Alaska Coastal Management Program. The plan, which has been approved by both the State of Alaska and the federal government:

1. classifies wetlands based on their environmental functions and community needs from the higher value Category A and B wetlands, to the lower value Category C and D wetlands);
2. requires mitigation for development impacts that is appropriate to the environmental value of the wetland;
3. provides for establishment of a CBJ-administered Wetlands Mitigation Bank; and
4. provides for local wetlands permitting for lower value wetlands through decisions of the CBJ Wetlands Review Board.

The regulatory provisions of the Juneau Wetlands Management Plan and the maps of the wetlands covered under that Plan have been adopted into the CBJ Land Use Code. The Code also established a nine-member CBJ Wetlands Review Board. The Board has responsibility for issuing local wetlands permits for the Category C, D, and EP (enhancement potential) wetlands classified in the JWMP. The Board has also adopted a general wetlands mitigation strategy that recommends that, to mitigate for historic and future impacts to the wetlands base in Juneau, the CBJ pursue (1) wetlands protection, (2) public education, and (3) wetlands restoration and creation projects. The Board has conceptually approved a wetlands mitigation document entitled, "Recommendations for a Juneau Wetlands Mitigation Strategy," a technical report prepared by the Alaska Department of Fish and Game through funding provided by the Alaska Coastal Management Program. The Board further decided to focus the CBJ's initial wetland restoration and enhancement projects on restoring the water quality and habitat values in the Duck Creek watershed in the Mendenhall Valley. The CBJ is now an active participant in the Duck Creek Restoration Program, with other state and federal agency staff, interest groups, and members of the public.

The CBJ worked for many years to obtain a General Permit from the Corps of Engineers to allow the Wetlands Review Board to assume all responsibility for wetlands permitting on the Category C, D and EP wetlands. In July, 1995, the Corps issued the General Permit. In March 1994, the CBJ and Corps signed a cooperative permitting agreement that allowed Juneau to conduct its local wetlands permit process for projects in lower value wetlands, and required the Corps to complete its permit decisions for these projects in value wetlands in a shorter time period than is usual. This interim, joint permitting process was a necessary precursor to receipt of a General Permit from the Corps for these lower value wetlands.

Juneau's wetlands management program is beginning to guide the use and protection of our wetland resources. While the Land Use Code already codifies key portions of the Juneau Wetlands Management Plan, the Comprehensive Plan should serve as the policy backbone for the wetlands regulatory program and address issues that can't be addressed through regulation of private development.

POLICY 3.2. IT IS THE POLICY OF THE CBJ TO PROTECT HIGH-VALUE WETLANDS FROM ADVERSE EFFECTS OF DEVELOPMENT THROUGH AND USE MANAGEMENT AND TO SPONSOR OR PARTICIPATE IN EFFORTS TO ENHANCE OR RESTORE THE ENVIRONMENTAL VALUES OF JUNEAU'S WETLANDS.

Implementing actions:

3.2.1. Seek acquisition of Category A and EP (enhancement potential) wetlands to CBJ ownership for protection, and for use as wetland mitigation projects, respectively.

3.2.2. Retain all CBJ-owned Category A and B wetlands in CBJ ownership and manage for environmental protection. Consider the value of wetlands in public ownership for public education.

3.2.3. For Category A and B and other high-value wetlands, provide for the consideration of the wetlands classification and any history of development permit denials during property tax calculations conducted by the CBJ Assessor.

3.2.4. Fulfill permitting authority gained by issuance of a General Permit by the Corps of Engineers which delegated authority for permitting of fills for Category C, D, and EP wetlands to the CBJ.

3.2.5. Expand the coverage of the JWMP to include wetlands identified by the Corps of Engineers since 1986 (the date of the Corps' maps used as the basis for the JWMP), particularly forested wetlands. Extend the wetland classification system to these wetlands and include lower value wetlands under a General Permit, as appropriate under the Corps of Engineers' requirements for General Permits.

3.2.6. Protect the values of wetlands that have been developed as, or identified as prospective, education sites from impacts caused by adjacent development. Cooperate with public agencies and interest groups in the identification and development of appropriate wetlands interpretive and education sites and facilities.

3.2.7. Provide mechanisms to facilitate protection of high value privately-owned wetlands, such as through conservation easements.

3.2.8. Take appropriate administrative actions to protect high-value public wetlands, such as formally designating greenbelts along selected anadromous fish streams and vacating unneeded CBJ rights-of-way.

3.2.9. Provide flexibility in density rules to allow developments to be designed to minimize impacts to wetlands and stream habitats, such as through cluster development.

3.2.10. Cooperate with state and federal agencies in wetland and stream habitat restoration and enhancement efforts.

3.2.11. Implement the approved JWMP, which (1) classifies wetlands based on their functions and community needs, (2) requires mitigation appropriate to the environmental value of the wetland, (3) provides for establishment of a CBJ-administered Mitigation Bank, and (4) provides for local wetlands permitting for lower value wetlands through decisions of the CBJ Wetlands Review Board.

3.2.12. Develop and maintain a computer database to track locally-issued permits, wetlands acreage developed under CBJ permits, mitigation required, mitigation success, and enforcement actions.

3.2.13. Develop and use geographic information system capability to record information regarding wetland location, resource information, permitting, and mitigation projects.

3.2.14. Provide monitoring and enforcement to ensure that projects comply with project plans and with any conditions placed on local wetland permits.

3.2.15. Consider the cumulative impacts associated with wetland fills in making local wetland management decisions. (Note: The JWMP requires that cumulative changes in the wetlands base be considered by the Wetlands Review Board for each local wetlands permit issued, as well as during preparation of an annual report on local wetlands management.)

3.2.16. Implement a Wetlands Mitigation Strategy that provides for (1) wetlands protection, (2) public education, and (3) wetlands restoration, enhancement, and creation.

3.2.17. Incorporate wetland and stream habitat considerations into the planning, site selection, budgeting, design, construction and operation of CBJ projects affecting wetlands and anadromous fish stream corridors.

3.2.18. Require long-term monitoring of mitigation projects undertaken by the CBJ or private parties to ensure that the mitigation project was undertaken as planned and to ascertain project success.

Water Quality

In Juneau, the primary sources of impacts to water quality are “non-point sources.” Non-point sources refer to broad, diffuse sources or activities that generate wastes that are spilled, leaked, leached, eroded or dumped onto land or water. Non-point source pollutants can include sediment,

hydrocarbons, fecal coliform, heavy metals and other pollutants that are generated through streambank or upland erosion, urban runoff, landfills, sewage leach-fields, and other common features of our urban landscape.

Non-point sources are distinct from “point sources,” which are mainly industrial or sewage treatment plant discharges from a discrete waste-water discharge pipe. In Juneau, the municipal sewage treatment plants are the primary point source waste-water discharges.

To effectively protect water quality, the CBJ must control non-point source pollutant sources primarily through land use controls and “best management practices” applied to development projects. Non-point source controls affect where a development is located, and how it is constructed and operated. Examples of these controls include selecting a project site that is over 50 feet from open water or avoids wetlands, placing siltation fences around construction sites, constructing a retaining dike around fuel storage areas, installing an oil/water separator on storm drains for a parking lot, and disposing of snow away from streams.

Since 1988, the provision of city sewer utilities to additional areas within the Mendenhall Valley (Back Loop Road) has helped to resolve localized surface and groundwater quality problems formerly caused by failed on-site septic systems. The CBJ’s six-year Capital Improvements Plan (FY 1995-2000) calls for construction of additional sewer lines in the Industrial Boulevard and Mendenhall Peninsula areas, which will further reduce on-site sewage treatment and the potential for water quality impacts.

The federal Clean Water Act requires that every two years the Alaska Department of Environmental Conservation (DEC) must identify, rank and assess waterbodies with persistent water quality problems. Impaired waters, for which conventional “technology-based” water quality controls are not expected to bring the water quality into compliance with state water quality standards, may be subject to “Total Maximum Daily Load” allocations for pollutants. This means that DEC would determine the maximum amount of various pollutants that can be in the stream without violating water quality standards, and “allocate” a proportion of that pollutant load to each pollutant source. This type of allocation process could result in extremely stringent development controls in TMDL watersheds.

DEC continues to review Juneau waterbodies which exceed state water quality standards. The list of “impaired” waterbodies is updated every two years. As of 1995, the list included:

<u>Water Body</u>	<u>Pollutants</u>	<u>Sources</u>
Duck Creek	Dissolved oxygen, debris, metals, fecal coliform, habitat modification, turbidity	Urban runoff, landfill, road runoff, land development
Lemon Creek	Turbidity, sediment, habitat modification debris	Urban runoff, gravel mining
Pederson Hill Crk	Turbidity, fecal coliform, petroleum products, habitat modification, sediment	Urban runoff
Vanderbilt Creek	Turbidity, debris, sediment, habitat modification	Urban runoff

The CBJ has entered into a Memorandum of Agreement (MOA) with DEC to cooperate in preparing water quality assessments and watershed recovery plans. The mutual goal is to improve the water quality in these listed streams such that they will comply with State Water Quality Standards and to have them removed from the “impaired” listing. It is essential that effective plans be implemented to improve the water quality in the impaired streams--both to improve our natural water resources and the fisheries that they support, and to avoid the extremely restrictive development controls that the federal Clean Water Act will impose if the impairment is not remedied.

Given these obligations, laws, and the general public concern about all water quality issues, it is appropriate to address them in a comprehensive planning and land use management and planning context.

SUMMARY OF STORMWATER MANAGEMENT

Nonpoint source pollutants are carried from their source to the streams through stormwater. Stormwater is the water from rainfall or snowmelt that flows across the land surface. From the point on which it hits the land, it travels a course, which eventually leads to streams or lakes and eventually to the ocean. As the water moves across the land, it dislodges and picks up sediment and pollutants. Stormwater management is basically the control of these pollutants before they enter the stream systems. It is also an effort to reduce erosion, which in turn decreases the amount of sediment entering the streams.

The goal of stormwater management is to filter out as many of the pollutants and sediments from the stormwater before they enter the natural water body and to reduce erosion.

Any activity that alters the natural features of the land surface tends to alter the stormwater runoff characteristics. Traditionally, urban development has been the largest factor in increased stormwater runoff problems. The problems are directly tied to runoff quality and quantity. Methods employed to increase percolation of surface water into the ground will reduce the amount and speed of flow when it enters the streams. Likewise, filtering of the water before it enters the streams helps improve the water quality and thus, helps protect the habitat.

Stormwater runoff from urban development, and construction sites, often conveyed through municipal storm drains, is one of the leading contributors of degradation of water quality and habitat in streams and lakes nationwide.

In the past, CBJ has made an effort to reduce stormwater pollutants and sedimentation on a case by case basis and through storm drains. However, there are currently five streams which are listed as “impaired waterbodies” in the borough. They serve as evidence that the current efforts are insufficient.

Development and implementation of a comprehensive stormwater management plan would help meet the goal of reducing nonpoint source pollution. Development of a stormwater management plan should be initiated by an inventory or comprehensive analysis of what is currently being discharged and where. Additionally, it should address stormwater within the public drainage

system and on the streets, as well as stormwater that originates on private property and then flows into the public system. Methods to decrease the quantity of flow through increased percolation and reduced speeds of flow should be addressed. Likewise, methods to increase the water quality through additional filtering out of pollutants and sedimentation before entering the waterbodies should be addressed. (2003 Revision)

POLICY 3.3. IT IS THE POLICY OF THE CBJ TO PROTECT, MAINTAIN AND IMPROVE SURFACE WATER, GROUNDWATER AND MARINE WATER QUALITY IN ITS JURISDICTION SO THAT WATERS ARE IN COMPLIANCE WITH THE STATE OF ALASKA WATER QUALITY STANDARDS

Implementing actions:

3.3.1. Coordinate the various Comprehensive Plan sections that affect water quality (stream management, wetlands, domestic watersheds, open space) to ensure that implementing actions protect and maintain surface and groundwater quality.

3.3.2. Assure that stream corridors and surface waters receive greater attention in the local permitting process through application of streamside management requirements and adoption of additional requirements or criteria that protect these areas and waters if needed.

3.3.3. Participate with DEC in the development and implementation of waterbody recovery plans for the listed impaired waterbodies in Juneau, including use of “best management practices” for protection and improvement of water quality.

3.3.4. Coordinate with DEC when reviewing projects for local approvals (e.g., subdivisions, local permits, variances), planning CBJ projects (e.g., road and drainage projects, gravel mining, land disposals), or conducting enforcement in the impaired watersheds.

3.3.5. Map the impaired watershed areas on the Land Use Code Maps to ensure that they are accorded special attention.

3.3.6. Incorporate the goal of protecting and improving water quality into the planning, site selection, budgeting, design, construction and operation of CBJ and state-sponsored capital projects.

3.3.7. Cooperate with DEC in the development of a database of information related to permit conditions, permit compliance and watershed restoration in impaired waterbodies.

3.3.8. Consult with private landowners, industry and the public regarding cooperative approaches to improving water quality in the impaired watersheds.

3.3.9: *Develop a borough-wide stormwater management program, which at a minimum includes the following:*

- *Mapped inventory of current stormwater discharge points.*

- *Inventory of sediment load and pollutants at each site.*
- *Evaluation of current development standards for public and private development regarding how the standards effect water quantity and quality and how the standards can be improved to help reduce water quantity and improve water quality before stormwater enters the storm drain system.*
- *Performance standards, for public and private development, regarding the amount of pollution and sediment that gets transported with storm water into the drainage systems and into the streams, lakes or channel.*
- *Evaluation of snow management practices.*
- *Establishment of required BMP standards for erosion control.*
- *Inventory of storm drains, catch basin and oil water separators and a maintenance schedule for these facilities.*
- *Mapped inventory of locations on city-land that would be suitable for construction of stormwater treatment systems, such as detention systems or vegetated swales. Designate and retain lands for this purpose.*
- *Consideration of incorporating funding for storm water management into capital improvement projects, to ensure adequate funding for construction and maintenance of necessary stormwater treatment methods.*
- *Education and outreach as a component of the stormwater management plan.*
- *Consideration of density credits for development which actively reduces stormwater runoff. (2003 Revision)*

Watersheds

Water supplies for domestic uses in the CBJ are a limited resource. The existing domestic water sources are the Gold Creek and the Salmon Creek watersheds. “The Watershed Control Program - Salmon Creek Source” (1993), and the “Watershed Control and Wellhead Protection Program - Gold Creek Source” (1994) were adopted as part of the Juneau Comprehensive Plan to provide guidelines for the protection of the domestic water supply. In addition, the “1994 Update - Last Chance Basin Land Management Plan” was adopted which guides land use activities for the protection of the Gold Creek water source.

Given trends in water usage, steps must be taken to assure that sufficient high-quality water will be available for future domestic users. Existing and potential sources should be protected from degradation of quality and quantity.

POLICY 3.4. IT IS THE POLICY OF THE CBJ TO PROTECT WATERSHED AREAS THAT ARE OR POTENTIALLY COULD BE DEVELOPED FOR DOMESTIC WATER SUPPLIES TO PROVIDE AN ADEQUATE SUPPLY OF CLEAN, SAFE DRINKING WATER.

Implementing actions:

3.4.1. Continue to evaluate the potential of local watersheds for surface or groundwater development for municipal water supply.

3.4.2. Consider re-instituting the surface water monitoring program of 1985-1986 with the United States Geological Survey to monitor water quantity and quality of potential water sources. Continue the ongoing monitoring of Gold and Salmon Creeks.

3.4.3. Designate on the Land Use Code Maps watershed protection areas comprised of the following watersheds: Gold, Upper Salmon, McGinnis, Fish, Montana, Hilda, Middle Point and Peterson (on Douglas Island).

3.4.4. Regulate all development proposals and major activities in watershed areas which have high potential for development as a municipal water source to insure maintenance of high quality water.

3.4.5. Prohibit filling or draining of wetlands, bogs and muskegs in designated watershed protection areas if it is shown that such activity will result in degradation of water quality.

3.4.6. Prohibit development which will result in degradation of water quality, including resource extraction and siting of septic system drainfields, within designated watershed protection areas.

3.4.7. Regulate direct discharge from storm-water control devices into designated watershed areas.

3.4.8. Continue to implement the “Watershed Control and Wellhead Program -Gold Creek Source” (1994), and the “Watershed Control and Wellhead Program -Salmon Creek Source” (1993), for the protection of Juneau’s municipal water supply *

3.4.9. Designate lands under public ownership within Salmon Creek and Gold Creek watersheds as open space. Designate privately-held land “Resource Reserve.”

Air Quality

Although air quality in the Juneau area has generally been high, recently it has become a serious problem in some areas due to the rapid increase in urban development and installation of fire places and wood-stoves. The Mendenhall and Lemon Creek Valleys are the areas most seriously affected by air pollution, due to air inversions during the winter months.

The CBJ has adopted air quality control regulations which prohibit wood-stove burning during periods of poor air quality, provide for emission standards for new wood-stoves, prohibit open burning during the winter, and require construction of energy- efficient homes. As a result, air quality in the Mendenhall Valley has improved considerably since 1982.

The CBJ has also enacted laws to regulate open burning. Another significant effort being made to assure compliance with air quality regulations is through the program to pave residential streets to control dust. As a result of these efforts, Juneau's air quality is relatively good most of the time.

An issue of growing concern is that of indoor air quality. This issue may be addressed through the building codes. Overall, it is appropriate for the CBJ to remain involved and concerned with air quality.

POLICY 3.5. IT IS THE POLICY OF THE CBJ TO CONTINUE EDUCATIONAL PROGRAMS, CAPITAL IMPROVEMENT PROJECTS, AND REGULATORY MEASURES TO PROTECT AND IMPROVE AIR QUALITY.

Implementing actions:

3.5.1. Continue the cooperative program with the Alaska Department of Environmental Conservation (DEC) in implementing CBJ Chapter 36.40 regarding regulation of pollution from wood stoves and outdoor burning.

3.5.2. Undertake transportation improvements to reduce congestion and encourage residents to utilize alternative forms of transportation to reduce use of fossil fuels.

3.5.3. Continue monitoring air quality, working with state and federal regulatory agencies, stay abreast of air quality issues, concerns and technology.

Habitat Protection

The forests, wetlands, lakes, streams and marine waters of the CBJ are part of a network of habitat areas for fish and wildlife. Each of these areas supports a unique variety of animals. Urbanization often results in habitat fragmentation and degradation, causing long-term damage to animal populations.

The major aquatic habitat types in the CBJ are coastal marine waters, intertidal flats, estuaries, fresh and saltwater wetlands, rivers and lakes. These areas contain critical spawning and rearing habitat for many marine species, including salmon, trout, char, herring, halibut, rockfish, clams, mussels, and crab.

Development has been accompanied by grading, filling and channeling of waterways as well as interception of ground and surface water. This has caused the degradation of streams and fish resources in the Juneau area. Among the streams most seriously affected are Gold, Lemon, Duck, and Jordan Creeks. Those which retain important fish resource values are Fish, Auke, Windfall,

Vanderbilt, Lake, Montana, Steep, Peterson, and Kowee-Davies Creeks and the Mendenhall River.

A prevalent habitat type in the Juneau area is the coniferous forest; it also is an important economic asset to the region. Much of this forest habitat is within the Tongass National Forest controlled by the U.S. Forest Service. The location and scale of harvest can affect the type and amount of wildlife habitat.

Sitka Black-tailed Deer is an important game species whose populations are limited by the availability of wintering habitat. Optimal wintering areas, which are predominantly located in portions of old growth forests, have been identified on Douglas Island and around Lemon Creek. The loss of wintering habitat or the intrusion of human activities and domestic animals reduces the deer population. Two other species, Stellar sea lions and eagles, have unique requirements because of the Endangered Species Act and the Eagle Protection Act. They are therefore treated separately following this section.

Other sections of the Comprehensive Plan address habitat protection issues more specifically. These include Stream Corridors, Wetlands and Water Quality.

In addition to their ecological importance, and in some instances to their value as food sources, fish and wildlife populations of the CBJ are an important natural amenity valued by resident and visitor alike.

POLICY 3.6. IT IS THE POLICY OF THE CBJ TO PRESERVE AND PROTECT A DIVERSITY OF FISH AND WILDLIFE HABITAT THROUGHOUT THE CBJ.

Implementing actions:

3.6.1. Recognize fish and wildlife habitats, streams and wetlands as important land uses during the planning process. Include protection of important fish and wildlife habitats in CIP and land use planning.

3.6.2. Develop a Geographical Information System (GIS) capable of relating natural resources, fish and wildlife habitats, wetlands, and other information to the Land Use maps.

3.6.3. Revise Density Bonus policies in the Land Use Code to award bonus points for development which is designed to protect important fish and wildlife habitat.

3.6.4. Encourage clustering and other design alternatives which could protect fish and wildlife habitat.

3.6.5. Develop a Critical Wildlife Habitat map in cooperation with the Alaska Department of Fish and Game, the Fish and Wildlife Service, and the U.S. Forest Service as an overlay to the Land Use Code maps. Use this map as a guide in managing and protecting these areas.

3.6.6. Use a wide variety of management approaches to protect important wildlife habitat, including but not limited to: education, incentives (such as conservation easements), development regulations, private donations, or public acquisition.

3.6.7. Vary the use of management techniques based upon the size, location, vulnerability, and relative abundance of the wildlife habitat.

Stellar Sea Lion Habitat

The Stellar sea lion, while apparently healthy in Southeast Alaska, has been listed as threatened in Alaska. Benjamin Island is a major Stellar sea lion haul-out. The island has supported as many as 227 sea lions at one time according to the 1991 Recovery Plan for the Stellar sea lion prepared by the National Marine Fisheries Service. The primary sea lion haul-out is on the northwest shore. However, sea lions use the entire periphery of the island. Major haul-outs such as on Benjamin Island are considered critical habitat for the species. It is one of only 19 known major (supporting over 200 sea lions) sea lion haul-outs in Southeast Alaska. Of importance also is that the site is a popular local sea lion viewing destination and may be of growing interest to visitors.

POLICY 3.7. IT IS THE POLICY OF THE CBJ TO PROTECT AND PRESERVE THE AREAS ON BENJAMIN ISLAND IDENTIFIED AS CRITICAL STELLAR SEA LION HABITAT.

Implementing actions:

3.7.1. Designate publicly and privately owned areas identified as critical sea lion habitat on the Land Use Code Maps including a buffer area extending seaward of the haul-out.

3.7.2. Consult with the National Marine Fisheries Service on all development proposals, including commercial wildlife viewing, which could affect the sea lion's use of the island.

3.7.3. Prohibit development which would interfere with the critical sea lion habitat.

Eagle Nesting Areas

Bald eagles are present in the Juneau area in large numbers. Alaskan bald eagles are not an endangered or threatened species, but they are subject, nonetheless, to the Bald Eagle Protection Act of 1940 and the Migratory Bird Treaty Act of 1918. Shoreline areas and old growth forest habitat are prime nesting areas. The U.S. Fish and Wildlife Service recommends a non-buildable buffer zone of at least 330 feet around known eagle nests and retention of shoreline habitat in this vicinity to a depth of one-eighth mile, although certain activities can occur within the 330-foot zone in consultation with the Fish and Wildlife Service.

Locally, adequate protection can be given to this species by protecting nesting areas from conflicting land uses and human activity. An ordinance protecting eagle nests has been codified and prohibits construction within three hundred thirty feet on public land, or within fifty feet on private land, provided that there shall be no construction within three hundred thirty feet of such

nest between March 1st and August 31st if it contains actively nesting eagles. If “actively nesting” is interpreted to mean any aspect of nesting from the building of the nest through rearing of young eagles, development within the 330-foot radius of land around the tree is effectively prohibited. In practice, the CBJ has interpreted “actively nesting” to mean the months of March and April.

There is a generally held perception that the local population of bald eagles is increasing which, if true, may be attributable to an increase in fish in the area and/or a higher-than-expected tolerance of these birds to human presence. In any case, the eagles are still subject to special protection from law and enjoy considerable local affection.

POLICY 3.8. IT IS THE POLICY OF THE CBJ TO PROTECT AREAS SURROUNDING IDENTIFIED EAGLE NESTS FROM CONFLICTING LAND USES.

Implementing actions:

3.8.1. Designate and map eagle nest locations and a 50-foot and 330-foot buffer area around the nest. Update this map periodically to include information gathered by the Fish and Wildlife Service in their annual eagle surveys.

3.8.2. Work with the Fish and Wildlife Service and developers to revise existing Code provisions which prohibit development on private land during the “actively nesting” periods in order to protect the nesting eagles while at the same time accommodating some development during the building season.

3.8.3. Consider open space or low density land use designations where eagle nest concentrations are particularly high.

3.8.4. On private lands, any siting of structures and roads and cutting of old growth trees within the 330-foot buffer zone around eagle nests will be done in consultation with the U.S. Fish and Wildlife Services. A maximum number of old growth trees will be retained in the buffer zone. When a CBJ conditional use permit is required, the nesting requirements of the eagles will be given strong consideration.

3.8.5. In situations where lands are proposed for private platting and if the private party is willing, the CBJ may consider exchanging land of equal value for those lands within 330 feet of the eagle nest tree and retain it as an eagle management area.

3.8.6. Private land within the eagle management radius will be subdivided into large lots, the largest of which will contain the nest tree. Roads will be located as far from the nest as possible, preferably landward from the nest tree. Low density residential or open space uses will be encouraged. These requirements will be expressed as a note on the approved plat.

3.8.7. Request the U.S. Fish and Wildlife Service to re-examine the status of the Bald Eagle in the Juneau urban area in terms of population, behavior and tolerance of human presence and

activity. Consider any new suggestions from the Service for enhancing the presence and health of eagles in the urban area.

Bear Management

A recurring problem which may grow as Juneau grows, is the tendency of black bears to become habituated to human-generated garbage. Many areas of town sit astride traditional bear pathways or are adjacent to bear habitat. The clear indication is that once a bear becomes habituated to eating garbage, it is almost impossible to rehabilitate to natural behavior. The normally shy bears become less afraid of human contact and at least two non-fatal attacks on humans have occurred in the 1989-1994 period.

Experts with the Alaska Department of Fish and Game (ADF&G) indicate that the CBJ's efforts to monitor garbage refuse containers have resulted in a decrease of garbage bears. They strongly urge, however, that the refuse container requirements should be strengthened to require garbage containers to be kept in bear resistant enclosures. A bad berry crop in any given year may result in more bears turning to garbage as a food source and continued efforts to control garbage are important. In the years between 1987 and 1994, authorities have been forced to kill as many as 21 garbage bears in a single season.

ADF&G coordinates closely with the Juneau Police Department (JPD) regarding bear incidents. The JPD patrol officers inform the Community Service Officers (CSO) about bear problem locations so CSO's can follow up with closer monitoring of garbage storage at those locations. In 1993, 524 notices of improper garbage storage were issued.

Bears are enjoyed by the community as a natural resource. The need to trap or destroy garbage bears is upsetting to many citizens in Juneau. Continued interaction between bears and human settlement is inevitable but the foraging of bears for garbage does no good for either bears or humans.

POLICY 3.9. IT IS THE POLICY OF THE CITY AND BOROUGH OF JUNEAU TO PREVENT BEARS FROM GAINING ACCESS TO AND BECOMING HABITUATED TO THE CONSUMPTION OF HUMAN-GENERATED GARBAGE BY PUBLIC EDUCATION, PROPER MANAGEMENT OF GARBAGE, AND PROTECTION OF THE NATURAL HABITAT AND FOOD SOURCES UPON WHICH BEARS DEPEND.

Implementing actions:

3.9.1. Revise existing Title 36 Litter Code to include a new ordinance which would require garbage to be stored in a bear-resistant enclosure.

3.9.2. Continue the current effort coordinated with JPD and CDD to monitor compliance with refuse container ordinances. Work toward efficient, effective enforcement.

3.9.3. Through public education and publicity, enlist the community's efforts to prevent bears from gaining access to garbage.

3.9.4. Study feasibility of mandatory garbage pick-up, its costs and effectiveness in preventing stockpiled garbage.

Gravel Resources

This resource, essential to construction, is limited to relatively small areas in the CBJ which frequently are also subject to development pressures. Growth and development in the Juneau area have increased demand for sand, gravel and quarry rock. The most extensive deposits and sand and gravel are in the valleys of the Mendenhall and Herbert-Eagle Rivers and Lemon Creek. Primary sources of sand are the alluvial deposits within the Mendenhall Valley and areas adjacent to the Gastineau Channel. Rock suitable for quarrying is located throughout the Juneau area. The "Natural Resource Inventory Sand, Gravel, and Quarry Rock" (1978), the "West Lemon Creek Material Resource Assessment" (1985), and "Eleven Potential Borrow Resource Sites Within and Adjacent to the City and Borough of Juneau" (1988) are the primary sources of information regarding the location of these resources.

Development in areas where potential sand and gravel deposits are located can preclude extraction of these resources. As growth and development continue in the Mendenhall Valley and Lemon Creek areas, pressure for closing existing pits may grow.

Because gravel extraction operations often conflict with surrounding land uses and some forms of development can preempt its use, it is important to take steps to avoid or minimize these conflicts.

POLICY 3.10. IT IS THE POLICY OF THE CBJ TO CONSERVE AND PROTECT FROM CONFLICTING LAND USES KNOWN GRAVEL DEPOSITS AND THOSE IDENTIFIED IN THE FUTURE.

Implementing actions:

3.10.1. Designate known gravel resource areas on the Land Use Code Maps.

3.10.2. Require additional review of any permanent structures or other development proposed within gravel resource areas which would preclude the eventual development of gravel resources: allow development if evaluation by a licensed civil engineer demonstrates that significant gravel resources do not exist on a particular site and if development does not interfere with extraction of gravel resources in nearby areas.

3.10.3. Recognize the potential for conflict between gravel extraction operations and other nearby development.

HAZARDS

Landslide and Avalanche Hazards

Avalanches and landslides present a very serious threat to human safety and development in some areas of the CBJ, and their nature and severity have been well documented. Careful evaluation of specific sites and corresponding land use and engineering solutions can help to minimize the risk of disaster.

Avalanches and landslides are discussed together because of their common origin. Snowslide avalanches are most likely to occur on steep, brushy, or non-vegetated slopes. The debris and rubble at the base of steep rock slopes consist of soil and rocky materials which were deposited by slow erosional processes and/or sudden large scale movements of snow and/or rock. These debris slopes are susceptible to landslides. Studies of existing data and an analysis of aerial photographs indicate general locations and boundaries of landslide/avalanche areas.

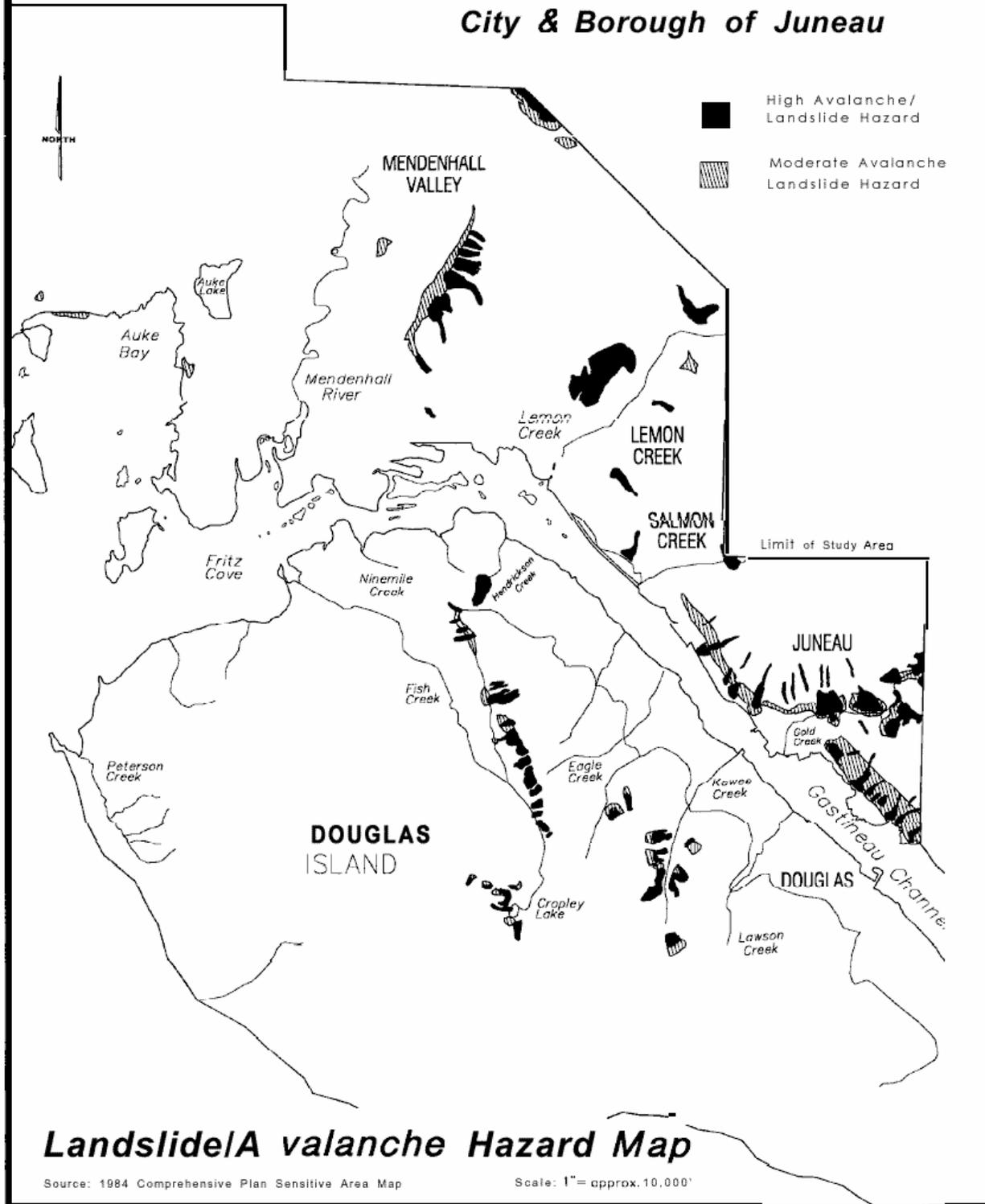
Among other causes, landslides may be triggered by earthquakes. The nearest known active seismic fault is the Fair-weather, approximately 100 miles west of Juneau. Lynn Canal, Chatham Strait and the Gastineau Channel are classified as major, though presently inactive, faults. Studies by the Corps of Engineers have indicated that Juneau is in a Seismic Risk Zone 3 in which major damage to structures from an earthquake equal to or greater than 6.0 on the Richter Scale may occur. In the past 50 years, there have been at least five earthquakes of this magnitude within 125 miles--the range at which damage might occur.

The Land Use Code adopted in 1987 included a new section which regulates development in landslide/avalanche areas. Currently the Land Use Code allows a developer to challenge the boundary of the avalanche and mass wasting area shown on the maps. If the Engineering Department is satisfied with the report, and the required criteria have been considered, the maps are revised. So far, four map amendments have taken place.

In 1992, "The Juneau Area Mass-Wasting and Snow Avalanche Hazard Analysis" was completed. It updated portions of a study completed in 1972 which provided initial mapping of these hazards. There are still areas needing more detailed study and other areas where landslide and avalanche potential has not been studied at all. Documented or not, the threats are real and the consequences can be devastating.

Comprehensive Plan

City & Borough of Juneau



POLICY 3.11. IT IS THE POLICY OF THE CBJ TO MINIMIZE THE THREAT TO HUMAN SAFETY AND DEVELOPMENT POSED BY LANDSLIDES AND AVALANCHES.

Implementing actions:

3.11.1. Designate areas of moderate and high landslide/avalanche hazards as being subject to such threats on the Land Use Code Maps.

3.11.2. Determine boundaries of hazard areas on the basis of the landslide/ avalanche hazard maps, and the maps of avalanche areas using the 1972 “Geophysical Hazards Investigation for the City and Borough of Juneau, Alaska” and the 1992 “Juneau Area Mass-Wasting and Snow Avalanche Hazard Analysis.”

3.11.3. Complete reassessment of hazard areas: include all areas of the original 1972 study which were not included in the 1992 study including the downtown waterfront area. Complete the detailed mapping of the White Subdivision.

3.11.4. Provide mitigating standards in the Land Use Code for development in landslide and avalanche hazard areas based on the 1972 and the 1992 studies. These standards may include dissipating structures or dams, appropriate structural and special engineering, or other techniques that respond to the specific hazards of the site. All development in the hazard areas must include mitigating measures that respond to the specific hazards of that site.

3.11.5. If a developer disagrees with the boundaries shown on the maps, the developer may seek departmental relocation of the boundaries by submitting site-specific studies prepared by an engineer, geologist, or recognized specialist in snow avalanche or mass-wasting behavior, energy, velocity, and destructive potential. Such studies shall include detailed analyses of topography, vegetation, soil and snow conditions, storm and climate analysis, and other factors relevant to the description of the snow avalanche or mass-wasting process. The study must describe how each of the factors was used in re-evaluating the snow avalanche or mass-wasting hazard. The results must indicate hazard boundaries and the physical characteristics of the process (extent, velocity, energy, flow height, impact and depositional loading, etc.).

3.11.6. Designate all public lands located in hazard areas as open space on the Comprehensive Plan Maps. Include all CBJ land in hazard area in Parks and Open Space Plan.

3.11.7. Review any proposed land disposals of CBJ lands in light of their hazard classification.

3.11.8. Prohibit industrial and resource extraction activities in high landslide or avalanche hazard areas unless it is determined that these activities will not increase the threat of landslides and avalanches on existing and potential development.

3.11.9. Require a hazard threat study for proposed development in areas outside of mapped hazard areas if the property shows potential for containing or being affected by such threats.

3.11.10. Eliminate from long- and short-range development plans any public facilities which would have the effect of concentrating people in hazard areas.

3.11.11. Tax foreclosed property in the high hazard areas will be dedicated to the public open space.

Flooding

Flooding occurs with relative frequency in the Juneau area. It is a natural event that becomes a problem only when it threatens human health, safety, or development. Appropriate land use designations and development requirements can help minimize the potential of flood damage and threats to human health and safety. It is important to distinguish between the floodway, which is the main channel that is essential to the rapid drainage of floodwaters, and floodplain, which is an area floodwaters may cover. Additionally, coastal flooding can occur as a result of high winds and high tides that create storm surges and wave run-ups.

Floods occur when climatic factors and development activities alter natural flow conditions in flood prone areas. Warm rainfall on a heavy snowpack or periods of heavy melting contribute to high stream flows and may result in flooding. The most serious flooding (that which threatens human safety and development) occurs when peak stream flows coincide with high tides.

Development, such as roads and buildings, creates impermeable surfaces which cause increased volumes and rates of stormwater runoff. Stream crossings and under-sized culverts which are blocked by stream debris or ice restrict the passage of storm flows.

Construction in floodways is dangerous to human life and property and further increases flooding potential and is, therefore, prohibited. In the 100-year floodplain, development should be prohibited unless measures which mitigate potential hazards are undertaken.

The current floodplain requirements in the Land Use Code, at CBJ 49.70.400 have been developed to comply with the Policy below and with the requirements of the Federal Emergency Management Agency so that local property owners can maintain eligibility under the National Flood Insurance Program. This insurance is available anywhere in Juneau and is mandatory for any financing of property if the loan has federal origins. In 1994, there was \$17.6 million in local flood insurance coverage, almost a 40 percent increase since 1990. There are 124 active local policies, up 29 percent since 1990. Of these, one is in the coastal velocity flood zone, 68 are in mapped riverine zones and the rest are unmapped flood areas. The 1990-94 increases may be due in part to increasing real estate values, but the total number of policies will grow as more older homes are sold or refinanced with federal-origin loans. Homes on hillsides that have mudslide threats can also be insured under this program if the CBJ maintains eligibility. In view of all of the above, it is vital to local safety and peace of mind that the CBJ maintain its flood management program.

POLICY 3.12. IT IS THE POLICY OF THE CBJ TO PROHIBIT RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT IN FLOODWAYS, TO REGULATE DEVELOPMENT IN FLOODPLAINS, AND MAINTAIN A PROGRAM OF EDUCATION, ASSISTANCE, AND INFORMATION IN ORDER

TO MAINTAIN ELIGIBILITY FOR THE NATIONAL FLOOD INSURANCE PROGRAM FOR THE BENEFIT OF LOCAL HOMEOWNERS AND THE LENDING INDUSTRY.

Implementing actions:

3.12.1. Designate, on the Land Use Code Maps, areas within the 100-year floodplain but outside floodways as public open space if the subject land is in public ownership.

3.12.2. Use the floodway and floodplain boundary lines outlined on maps prepared by the Corps of Engineers as the basis for defining flood boundaries.

3.12.3. Apply the following guidelines to development proposals in the 100-year floodplain.

1. Allow sand and gravel operations, recreational activities, open space and parking lots in floodplains only if the activities do not increase the flood danger.
2. Require industrial equipment and stored raw materials in the 100-year floodplain to be adequately bermed or otherwise protected.
3. Prohibit commercial or industrial storage of toxic chemicals or materials in the 100-year floodplain.

Hazardous Materials

Federal law now requires information-sharing regarding extremely hazardous material. This law is known as the Emergency Planning and Community Right-to-Know Act. It is intended to encourage and support emergency planning efforts at the state and local level and to provide communities with information concerning potential chemical hazards. In addition, the federal government is required to identify and investigate potential hazardous waste sites within the community and enforce cleanup if the existing materials are considered hazardous.

In the early 1990's, municipalities were required to take responsibility for household hazardous wastes. In September of 1992, an assessment for disposal of household hazardous wastes was added to the utility billings. At present, the household hazardous waste disposal program is contracted by CBJ to a private contractor and is offered bi-monthly.

There is clearly a local responsibility to be aware of the location, nature, and potential effects of hazardous materials and to minimize the possibility of injury, death and property damage from the inappropriate storage, use, disposal, or release of such materials.

POLICY 3.13. IT IS THE POLICY OF THE CBJ TO ASSIST IN THE IDENTIFICATION AND MITIGATION OF IMPACTS ASSOCIATED WITH HAZARDOUS MATERIALS.

Implementing actions:

- 3.13.1. Collect and assess data on the amount and location of hazardous materials in the community.
- 3.13.2. Use this information in developing an emergency response plan.
- 3.13.3. Consider alternative siting and/or mitigation measures in approving permits for new development.
- 3.13.4. Cooperate with state and federal agencies in the investigation of hazardous waste sites.
- 3.13.5. Continue to provide hazardous waste disposal opportunities.
- 3.13.6. Provide information to the public regarding hazardous waste disposal opportunities.

Litter and Junk

The general municipal activity of devising and enforcing rules against litter and inappropriate stockpiling of junk has been gathered under the program name "Junk Busters." The program embraces the efforts of the Community Development Department, the Police Department and work by associated contractors and organizations. Television, radio and newspaper advertisements promote understanding of litter laws, encourage participation toward solving litter-related problems and let the public know what to do if there is a problem. A Junk Busters hotline was established in 1994 which provides three services: submittal of litter and junk complaints 24 hours a day; a recorded message about current recycling opportunities available in Juneau; and recorded information about household hazardous waste and waste oil disposal. In 1993,94 junk cars were towed and disposed of by the CBJ under the Junk Busters program.

Litter Free, Inc. is a non-profit organization with a broad spectrum of volunteers from the community. The CBJ has provided them with a yearly donation to aid their efforts toward coordinating volunteer and non-profit organization cleanups of public areas in CBJ. In addition, the CBJ assists in the annual spring cleanup sponsored by Litter Free, Inc. This organization is, in 1995, considering an adopt-a-river program, expanding cleanups to more than one a year with an additional focus on marine litter. They also arrange for "Captain Clean" to go to the schools to give anti-litter presentations.

Another component of the Junk Busters program addresses illegal dumping. Illegal dumping on public land is reported to CBJ. An investigation of dumpers is initiated. If CSO's are unable to find the culprits or unable to get them to clean up, and when all other methods have failed, the CBJ cleans up the property and recovers the cost through a property tax lien.

Channel Sanitation accepts the refuse free of charge. In 1993, Channel Sanitation accepted \$10,000 dollars worth of refuse, or about 143,000 pounds. This amount is for litter picked up throughout the whole year under the Junk Buster and Litter Free, Inc. programs.

Success in these efforts can be defined in two ways. In one case, the large amounts of refuse being gathered and properly disposed represents the cleanup of both current and long-standing

litter and junk problems. On the other hand, developing a history of steadily reducing the amount of material that has to be gathered would indicate that the community is making progress toward the goal of preventing litter and junk in the first place.

POLICY 3.14. IT IS THE POLICY OF THE CBJ TO CARRY OUT AND IMPROVE PROGRAMS WHICH WILL BOTH REDUCE AND ELIMINATE LITTERING AND ACCUMULATION OF JUNK WITHIN THE BOROUGH AS WELL AS CLEAN UP SUCH MATERIAL WHEN IT IS FOUND.

Implementing actions:

- 3.14.1. Revise the Land Use Code to limit the number of unlicensed or inoperative vehicles allowed on residential property.
- 3.14.2. Investigate, with the business community, a cost effective method for disposal of metals.
- 3.14.3. Evaluate the need to provide additional facilities for waste oil disposal.
- 3.14.4. Support a marine cleanup program, including community awareness to discourage use of plastics.
- 3.14.5. Continue to support non-profit, anti-litter organizations.
- 3.14.6. Continue work to update and improve litter and zoning ordinances which will result in improved community appearance.
- 3.14.7. Continue to provide information to the public regarding recycling opportunities.

Noise

An increasing problem in Juneau, the most significant sources of noise are the airport, seaplane operations on the waterfront, and automotive traffic. In recent years, noise or the absence of it, has become a recognized concern in community well-being. Some significant advancements are being made in the reduction of noise at its source, but noise cannot be eliminated completely. Local, state, and federal agencies, in recognition of this fact, have developed guidelines and procedures to deal with noise in the community land use planning process.

The most exhaustive study of noise in the Juneau area is included within the Airport Master Plan and Noise Compatibility Study. The recommendations of the Noise Compatibility Program which resulted from the study were included in the 1987 update of the Comprehensive Plan. This study and the recent efforts of the Noise Advisory Committee present a detailed response to the noise problems associated with aircraft. An airport noise exposure map is included at the end of this section. It is excerpted from the 1986 Noise Compatibility Study, and shows noise contours important to land use planning. The study will be updated in 1997. The noise contours are expected to decrease in area.

The purpose of considering noise in a comprehensive plan and in the regulation of development is not to prevent development but rather to encourage development that is compatible with various noise levels. The objective is to guide noise-sensitive land uses away from the noise and encourage non-sensitive land uses where there is noise. Where this is not possible, measures should be included in development projects to reduce the effects of noise.

In recent years, it has been generally recognized by the Planning Commission, and CDD, that the CBJ noise control regulations are limited and perhaps ineffective in protecting public health. Several noise experts familiar with the CBJ noise regulations have strongly encouraged the CBJ to adopt a “modern” noise control ordinance.

The primary responsibility for integrating noise consideration into the planning process rests with local government. Noise, like soil conditions, floodplains and other considerations, is a valid land use determinant. Scientific evidence clearly points to noise as not simply a nuisance but also an important health and welfare concern.

POLICY 3.15. IT IS THE POLICY OF THE CBJ TO MINIMIZE THE EXPOSURE OF CITIZENS TO THE HARMFUL EFFECTS OF EXCESSIVE NOISE, AND TO CONTROL THE LEVEL OF NOISE POLLUTION IN A MANNER WHICH WILL BE COMPATIBLE WITH COMMERCE AND PUBLIC SAFETY, THE USE, VALUE, AND ENJOYMENT OF PROPERTY, SLEEP AND REPOSE; AND THE QUALITY OF THE ENVIRONMENT.

Implementing actions:

3.151. Establish land use patterns which consider the effects of high-noise generators, particularly in the airport vicinity and along major traffic corridors.

3.15.2. Consider noise mitigation when reviewing new roadway improvements. Require berms and planting strips along highways and major arterials in noise sensitive areas, and encourage DOT&PF to leave vegetation in residential areas to absorb traffic noise.

3.15.3. Implement the guidelines developed in the 1987 Juneau International Airport Master Plan to manage airport-generated noise impacts on surrounding development.

1. Establish a policy against rezoning non-residentially zoned land to any category that permits permanent residences when such land lies within the existing or future Ldn 65 contour.
2. Maintain large-lot zoning in areas that have already been zoned residential and lie within incompatible areas.
3. Restrict mobile home development in areas which are impacted by aircraft noise and lie within the Ldn 65 contour.

4. Establish special protection features in the local building code for new construction of habitable structures within the Ldn 65 contour such that habitable buildings be constructed to attain an interior noise level equivalent to an average of 45 decibels or less.

5. Require aviation easements as a condition of subdivision approval on any residential subdivision proposed within the Ldn 65 contour.

3.15.4. Provide leadership in implementing the Juneau Fly Neighborly Program, an operator-supported, self-policing program intended to observe and improve an existing voluntary noise abatement program.

3.15.5. Initiate development of a comprehensive noise control ordinance when noise complaints or other indicators indicate increasing noise pollution and/or community sensitivity to noise. Such a comprehensive noise control ordinance should establish maximum environmental noise levels applicable within designated areas of the CBJ.

CHAPTER 4.

TRANSPORTATION, PUBLIC FACILITIES, SERVICES, AND AMENITIES

This Chapter addresses the infrastructure and a variety of public services grouped into four subject sections: Transportation, where the emphasis is primarily on structures, but includes some attention to traveling activity; Public Facilities, where the emphasis is on maintenance and enhancement of infrastructure such as water, sewer and drainage; Public Services, which may involve structures, but where the emphasis is on services and programs; and, Cultural Services and Amenities, where the emphasis is on quality of life considerations, and addresses the education, recreation, scenic and cultural needs of the community.

TRANSPORTATION

An efficient and balanced urban transportation system facilitates the movement of people and goods to and within the CBJ while conserving energy and reducing air pollution. Timely and coordinated multi-modal transportation improvements to the current system are necessary to support the growth patterns envisioned in this plan.

New opportunities have emerged to plan and fund the construction of local transportation facilities through the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The federal act now considers local transportation issues including roads, pedestrian facilities, bike lanes, scenic enhancements and local transit improvements as well as other transportation-related improvements.

Regional Transportation System

Due to the lack of a road connection with other regions of Alaska and Canada, the CBJ depends upon air and marine transportation which also serves the southeast region of Alaska. Waterway transit accounts for much of the passenger, most freight and all vehicular traffic to and from Juneau.

Juneau International Airport

Juneau's airport has played an important role in the past development of the city and will play an even more important role in future development. The airport is an integral part of many of the policies and implementing actions of the Comprehensive Plan, such as state capital, tourism and visitors, commercial and industrial development, mining, seafood industry and commercial fishing, regional economics and services, wetlands, noise, and regional transportation system.

The airport is part of residents' private and professional lives. Air transportation in Juneau is critical for the movement of goods and people. Much of the commerce in Juneau passes through the airport as cargo or as business people traveling to or from the capital city. Residents visiting their elected representatives and state government agencies mainly use air transportation. The rapid growth of tourism has made Juneau's airport the second busiest in the state. The projected growth in tourism will result in an even busier airport.

Further, the airport serves as a hub for northern Southeast Alaska. Residents of Haines, Skagway, Gustavus, Hoonah, and other communities are served by carriers using Juneau's airport. Connections to the lower 48, as well as the rest of Alaska, are made in Juneau. The development of Juneau as a regional center for commerce and medical service will emphasize this aspect of the airport's role. The FAA classifies Juneau International Airport as a small hub airport.

It is critical that Juneau continue the orderly development of the airport to meet the expanding needs of Juneau residents and to provide access for Alaskans to their legislature and state government. Wise development of the airport will contribute to the economic growth and diversification of the community. Juneau's airport plays a fundamental role in the basic infrastructure of the City, more so than in most areas of the country.

Surface Transportation

State and federal transportation agencies are responsible for providing surface links between Juneau and other communities of the Alaskan panhandle, or Canada, that have road access. In 1994, a study was initiated to study the environmental consequences of the alternative routes and methods and to select a preferred route. The Department of Transportation and Public Facilities (DOT&PF) continues to conduct a route assessment entitled the Juneau Access Study. The alternatives listed include, no-build, marine (ferry), west Lynn Canal, east Lynn Canal, and Taku River route. The Taku River route has been substantially eliminated from consideration because of opposition by the British Columbia government. Other than no-build, all alternatives have some form of ferry link, either interim operations between phases or on a permanent basis.

Marine Transportation

There is strong local support for increasing ferry service to and from other points in Southeastern Alaska, thus expanding Juneau's role as a regional center. The Auke Bay terminal was expanded to simultaneously accommodate two ships in 1982. The expansion significantly increased ferry traffic particularly in the summertime tour season.

The CBJ must maintain its regional, national, and international transportation links if it is to prosper and overcome its physical isolation. As Southeast Alaska's largest city, Juneau can improve its role as a regional transportation and service center by improving its access to this transportation network.

POLICY 4.1. IT IS THE POLICY OF THE CBJ TO SUPPORT THE IMPROVEMENT OF TRANSPORTATION SYSTEMS WHICH REINFORCE JUNEAU'S ROLE AS THE CAPITAL CITY OF ALASKA AND A REGIONAL

TRANSPORTATION AND SERVICE CENTER. IT IS FURTHER THE POLICY OF THE CBJ TO MAINTAIN AIRPORT FACILITIES THAT PROVIDE BASIC TRANSPORTATION NEEDS FOR JUNEAU RESIDENTS AS WELL AS FOR OTHER ALASKANS AND VISITORS TO JUNEAU, AND TO WORK WITH THE PUBLIC AND PRIVATE SECTORS TO FACILITATE COMMERCE, ECONOMIC DEVELOPMENT, AND ACCESS TO ALASKA'S CAPITAL CITY.

Implementing actions:

4.1.1. Assume a leadership role in the encouragement of surface transportation links into and out of the borough. Consider all alternatives to improve transportation links between Haines, Skagway and other areas of Southeast Alaska, including roadways, high speed ferries, and light or standard rail.

4.1.2. Update and keep the Airport Master Plan current.

4.1.3. Protect all designated airport properties from land use conflict and/or displacement.

4.1.4. Maintain an entity to carry out airport planning, development and oversee airport management functions.

4.1.5. Encourage the development of a Global Positioning System (GPS) to allow increased weather-limited landings at the Juneau Airport.

4.1.6. Improve transportation facilities that accommodate air and marine links between the CBJ and outlying communities.

4.1.7. Undertake a comprehensive port facilities feasibility study.

4.1.8. Coordinate activities with appropriate state and federal transportation agencies and the private sector to determine priority, timing, interagency roles and responsibilities, and funding.

4.1.9. Encourage early and meaningful public participation in transportation decision-making processes.

Local Transportation System

With the exception of the Mendenhall Valley, existing development in the CBJ is linear, that is, confined to narrow benches of land on either side of the Gastineau Channel and Lynn Canal. This makes transportation facilities comparatively more expensive than in other areas where arterials can serve more homes or businesses per mile of length. Traffic congestion caused by community growth and tourism-related activities has increased in the downtown area and other corridors in the borough. The CBJ has identified a general list of transportation-related problems which include:

- Defining the nature and scope of the downtown transportation needs which result in poor circulation and parking problems.
- Current transportation facilities are inadequate to support increased development of north and west Douglas Island.
- Traffic congestion at 10th Street and Egan Drive, and Douglas Highway on the Douglas side of the Juneau-Douglas Bridge.
- A shortage of marine industrial port facilities which limits the number and type of services that can be located in Juneau.
- Traffic congestion and safety considerations for the Glacier Highway through the Lemon Creek area and Sunny Point Intersection/Access.
- Traffic congestion in the vicinity of Mendenhall Mall and Vintage Park.
- Increasing traffic congestion and vehicular and pedestrian conflicts in the downtown area especially during the summer tour season.
- Incomplete and dangerous bike routes.
- Street marking technology which is inadequate for Juneau's climate.

Juneau's public transit system is patronized heavily by state and federal office workers commuting between downtown Juneau and the Mendenhall Valley. The system currently accommodates approximately 8 to 10 percent of the commuter work force in the downtown area. The system has the potential of displacing a substantial portion of the total vehicular trips made in the CBJ. A number of recommendations from the Capital Transit Detailed Development Program, 198% 1992 are being considered to improve the quality of service and to increase ridership.

Previous investigations made by both DOT&PF and the CBJ for rail transportation of commuters between the Mendenhall Valley and the downtown indicated that this was not economically justifiable. However, the provision of a dedicated commuter lane on Egan Drive is a feasible, less costly, alternative which can provide much better transit service without requiring additional land for right-of-way.

Improved pedestrian and bicycle movement within and between major concentrations of population is needed to provide an alternative to automobile travel. Pedestrian and bicycle facilities are needed to provide safer and more efficient movement within and between neighborhoods and major concentrations of population. These facilities are also important as an aspect of recreation.

Private barge docks in downtown Juneau are not conveniently accessible to the Mendenhall Valley, the center of commercial and residential growth in the CBJ. North Douglas Island has

been identified as a possible location for new freight facilities, but this is feasible only if a second channel crossing is built. Cruise ship moorages also require improvement and expansion. New improvements to small boat marinas and boat ramps, including Amalga Harbor and the government float at Auke Bay have greatly improved the capacity of these facilities. Additional parking at Auke Bay and continued boat ramp improvements are needed.

The CBJ Harbor Board was formed by the Assembly to oversee new development projects. Emphasis has been placed on improving facilities to serve the fishing fleet and promote local fish processing as well as providing facilities and services to recreational mariners.

It is critical that the CBJ provide an efficient roadway system which facilitates traffic within and between major population centers, including the Valley, Auke Bay, and Douglas Island, as well as to and within downtown, the region's employment, cultural, and tourist center.

POLICY 4.2. IT IS THE POLICY OF THE CBJ TO PROMOTE A BALANCED, WELL-INTEGRATED LOCAL TRANSPORTATION SYSTEM WHICH PROVIDES SAFE, CONVENIENT AND ENERGY EFFICIENT ACCESS AND FACILITATES THE MOVEMENT OF COMMODITIES.

Implementing actions:

4.2.1. Urge formation of a Transportation Advisory Committee and enhance CBJ staff capability to address long- and short-range planning issues related to surface, marine, and air transportation for the borough.

4.2.2. Develop a list of needed roadway improvements according to priority, cost, and potential funding, and incorporate it into the CBJ's capital improvement plan and ISTEA Statewide Transportation Improvement Program Needs list. Potential road corridors in the Mendenhall Valley/Auke Bay and on Douglas Island are illustrated on the Comprehensive Plan maps.

4.2.3. Develop an overall intermodal transportation plan for the CBJ.

4.2.4. Develop an agreement between the CBJ and the Alaska Department of Transportation that spells out the responsibilities for planning, construction, maintenance and ownership of roads within the CBJ.

4.2.5. Require dedication of all needed rights-of-way. Obtain commitments to construct local and collector roadway improvements from private developers when projects are approved.

4.2.6. Review and implement adequate development standards in subdivision and other development ordinances to facilitate vehicular traffic and provide safe pedestrian and bicycle access.

4.2.7. Designate corridors for planned and potential roadways on the Comprehensive Plan maps to establish a basis for subsequent site specific studies, which also address the mitigation of associated environmental impacts through proper location of the actual right-of-way. Revise CBJ

development ordinances to assure that needed rights-of-way for planned or potential roadways are reserved when development proposals are reviewed and approved.

4.2.8. Urge DOT&PF to adopt detailed and comprehensive improvement plans for roadways under state jurisdiction. These plans should include clear goals and intentions for each roadway corridor and be developed through a public process.

4.2.9. Prepare and adopt a classification ordinance and map identifying the existing and/or proposed level of use for each street in the CBJ within the following categories:

Arterial. A street intended to carry large volumes of traffic at steady speeds with minimum interruptions to traffic flow, generally connecting with collector streets and major traffic generators within the area.

Collector. A street which forms the boundary of major blocks of land, is intended primarily for inter-neighborhood traffic, connects neighborhood local road systems to arterials, and is often a feeder road to commercial areas from the arterial system.

Street designed to provide vehicular access to abutting properties and discourage through-traffic.

4.2.10. Evaluate DOT&PF design concepts and endorse an accelerated schedule for improvements of the intersection near Sunny Point.

4.2.11. Encourage the upgrading of Thane Road with that portion from Taku Smokeries to the CBJ Sewer Treatment Plant as the highest priority, and from the CBJ Sewer Treatment Plant to Sheep Creek next in priority. All reconstruction of Thane Road should include pedestrian and bike lanes.

4.2.12. Urge more frequent painting or use of more durable marking material for crosswalk and street demarcation.

4.2.13 Evaluate the motor vehicle and pedestrian access to the Juneau International Airport including ingress, egress, parking, and non-airport traffic flow. Consider methods for routing non-airport traffic through alternative arterials.

Alternative Means of Transportation

Despite its contribution to congestion, air pollution, expense, and inefficient use of energy, the private automobile remains the favored mode of transportation in the CBJ. To minimize these problems, the CBJ can encourage and support the provision of alternative transportation opportunities. The most significant impact results from increasing the patronage of public bus service, augmented by private carpools and vanpools. Bicycling is an alternative for shorter commuter and shopping trips as well as recreation many months of the year and should be encouraged within and between all major concentrations of population. Improved pedestrian

access should greatly enhance the use of the downtown core area by local employees, shoppers and tourists.

POLICY 4.3. IT IS THE POLICY OF THE CBJ TO PROMOTE AND FACILITATE TRANSPORTATION ALTERNATIVES TO AUTOMOBILES AS A MEANS OF REDUCING CONGESTION AND AIR POLLUTION AND CONSERVING ENERGY.

Implementing actions:

4.3.1. Continue implementation of the Capital Transit Development Program.

1. Expand Capital Transit to provide holiday service.
2. Provide additional bus service during peak hours to the Mendenhall Valley and Douglas.
3. Implement new marketing programs to increase mass transit ridership.

4.3.2. Explore the feasibility of a downtown shuttle service and a Mendenhall Valley shuttle service linked by express buses. Consider using vehicles with alternative fuels.

4.3.3. Evaluate the provision of park-and-ride service.

4.3.4. Evaluate reinstitution of a CBJ-supported carpool program.

4.3.5. Develop employee incentives to use alternative modes of transportation which will not require the use of parking spaces in the Downtown area. Specifically establish such a system for CBJ employees to set a good example for other government and private sector employers.

4.3.6. Provide bus shelters and turnouts pursuant to the 1994 “Bus Passenger Shelter Design and Location Study.”

4.3.7. Require bicycle and pedestrian paths, preferably separated from automobile traffic, in all new growth areas and planned unit developments. Provide sidewalks and bicycle paths in and around the expanded campus of the University of Alaska Southeast, particularly in conjunction with the construction of student housing in the Auke Bay area.

4.3.8. Continue to support supplementary transit service for the elderly and handicapped.

4.3.9. Provide secure bike parking facilities at public buildings and encourage them in private developments.

4.3.10. Complete and/or upgrade a continuous separated bicycle/pedestrian pathway between the Mendenhall Valley and downtown Juneau by connecting those portions now existing.

4.3.11. Require sidewalks and bicycle paths or lanes along existing or newly constructed arterial and collector streets where appropriate to provide safe and efficient access and recreation and to reduce pedestrian/automobile conflicts.

4.3.12. Undertake a comprehensive study in cooperation with Alaska DOT&PF to determine the feasibility of a light rail, commuter lanes, or other mass transit systems to link Downtown with the Valley. The study should also include analysis and recommendations for zoning changes to allow land use patterns to reach the population densities necessary to justify such a system.

4.3.13. Identify and establish mass transit corridors.

4.3.14. Identify pedestrian routes in the Downtown area. Include provisions for rest areas, and methods to reduce the conflicts between pedestrian, bicycle, and vehicular traffic.

Subarea Transportation Needs

As documented in the Downtown Transportation Plan prepared for the CBJ in 1987, there are several major transportation problems in downtown Juneau. Coordinated planning is needed to improve traffic circulation, accommodate additional off-street parking, increase mass transit service and facilitate pedestrian movement. These improvements support the role of downtown as a residential neighborhood and governmental, cultural, and tourist center.

For the past two decades, the Mendenhall Valley/Auke Bay Vicinity has been the most rapidly growing area in the CBJ. Future growth patterns in this area have been considered in the Mendenhall Valley Transportation Plan Update completed in 1987 with a number of changes recommended to proposed road improvements. These include deletion of the planned Jordan Creek and West Valley collectors. Also numerous improvements are recommended to upgrade existing roadways including Glacier Highway, Egan Drive and the Mendenhall Loop Road.

Existing traffic conditions on Glacier Highway in the airport commercial area are congested and improvements are necessary to allow safer and more efficient vehicular and pedestrian movement.

If north, west and/or south Douglas Island are developed extensively, major road improvements will be necessary to facilitate the movement of traffic between the island and the rest of the CBJ. These include the widening and possible extension of Douglas Highway northward or southward, construction of a parallel bench road, and/or construction of a channel crossing to the Mendenhall Valley.

During the past decade, the CBJ has commissioned studies concerning waterfront development, airport expansion and transportation conditions in downtown Juneau and the Mendenhall Valley. However, a comprehensive evaluation of CBJ-wide transportation needs has not been completed.

To insure a smoothly functioning transportation system, the CBJ must address some serious transportation problems within and between major concentrations of population. The areas most

affected by projected growth, and therefore most subject to increased congestion, include downtown Juneau, Lemon/Switzer Creek, Mendenhall Valley/Auke Bay and Douglas Island.

POLICY 4.4. IT IS THE POLICY OF THE CBJ TO RESPOND TO THE SPECIAL TRANSPORTATION NEEDS OF EACH SUBAREA OF THE BOROUGH AND TO INTEGRATE THEM INTO A BOROUGH WIDE COMPREHENSIVE TRANSPORTATION PLAN.

Implementing actions:

Downtown

4.4.1. Encourage alternative modes of transportation to downtown Juneau such as more buses (including a shuttle service), vanpools and carpools, walking and bicycling for commuters.

4.4.2. Encourage the state, federal, and local government to adopt policies encouraging staggered work hours to relieve peak hour congestion.

4.4.3. Provide additional parking and alternative transportation opportunities to support downtown office, housing, retail, recreational, and cultural activities. Specifically, the CBJ should establish a partnership with private parties, developers, nearby landowners, federal government and the state to construct a transportation terminal within the CBJ near the downtown area which will consolidate parking and offer a hub for commuter and local shuttle transit vehicles.

4.4.4. Reduce allowable on-street parking to facilitate vehicular and pedestrian circulation as off-street parking becomes available.

4.4.5. Work with the state and the private sector to provide needed parking for employees through the construction of adequate multi-level parking associated with any major office development.

4.4.6. Encourage employers to promote the use of mass transit and carpooling among their employees as an alternative to additional parking.

4.4.7. Maintain and improve design standards for new developments which facilitate pedestrian movement, particularly in the waterfront and retail core areas. Explore the possibility of providing a network of pedestrian skyways connecting major office buildings and new developments.

4.4.8. Encourage DOT&PF to provide necessary improvements to Egan Drive to allow pedestrians safe crossing and access between Aurora Harbor and the AJ Rock Dump.

4.4.9. Continue to pursue the “harbor bypass” whereby existing streets and parking lots serving Aurora Harbor, the University of Alaska Southeast Marine Technology Center, Harris Harbor and the office complexes on the south side of the mainland bridge approach can all be interconnected with a public street.

4.4.10. Continue to pursue an upgrade project for the “West Willoughby/Glacier Avenue Corridor” from Centennial Hall to the high school.

4.4.11. Evaluate pedestrian access improvements to downtown which could include a connection between Willoughby Avenue and Fourth Street.

4.4.12. Encourage DOT&PF to take steps to reduce congestion at Tenth and Egan.

4.4.13. Encourage city, state and federal employers to provide sufficient parking facilities for downtown offices.

4.4.14. Consider and adopt, where and when applicable, the findings and recommendations from the 1994 Downtown Tour Season Traffic Study.

Lemon Creek Switzer Creek

4.4.15. Locate the proposed Lemon/Switzer Creek corridor between medium and low density residential land uses where possible.

4.4.16. Evaluate the need for a route connecting the proposed corridor with Glacier Highway or Egan Drive in the vicinity of Lemon Creek or Anka Street.

4.4.17. Require sidewalks and bicycle paths or lanes along existing or newly-constructed arterial and collector streets, where appropriate, to provide safe and efficient access and recreation and to reduce pedestrian/automobile conflicts.

Mendenhall Valley/Auke Bay

4.4.18. Pursue the upgrade of Glacier Highway between the McNugget intersection and the Loop Road.

4.4.19. Undertake transportation improvements within Auke Bay to accommodate additional demand resulting from the construction of the ferry terminal, boat marina, and other facilities, as well as the expansion of the University of Alaska Southeast. The proposed corridor should follow the division between low and medium density residential uses where possible.

4.4.20. Evaluate a corridor re-alignment of Glacier Highway from its intersection with UAS to Auke Bay. Encourage a new driveway for UAS that avoids the Auke Lake Wayside and minimizes adverse traffic impacts.

4.4.21. Require sidewalks and bicycle paths or lanes along existing or newly-constructed arterial and collector streets, where appropriate, to provide safe and efficient access and recreation and to reduce pedestrian/automobile conflicts.

Douglas Island

4.4.22. Locate potential road corridors in Douglas/West Juneau between low and medium density residential uses where possible.

4.4.23. Renew municipal support for construction of a second channel crossing to encourage use of north and west Douglas Island. Evaluate the economic, environmental, and engineering feasibility of a channel crossing to the Mendenhall Valley.

4.4.24. Designate corridor extensions of Douglas Highway access to the west and south sides of the island to serve potential sites of new growth.

4.4.25. Require sidewalks and bicycle paths or lanes along existing or newly-constructed arterial and collector streets, where appropriate, to provide safe and efficient access and recreation and to reduce pedestrian/automobile conflicts.

Rural

4.4.26. Develop a review procedure for the siting of dock facilities outside the waterfront districts.

4.4.27. Evaluate the extension of Glacier Highway northward into Berners Bay to enable a marine terminal in Berners Bay that could accommodate the Kensington and Jualin Mines and the Alaska Marine Highway System and provide benefits to other maritime users.

4.4.28. Require sidewalks and bicycle paths or lanes along existing or newly-constructed arterial and collector streets, where appropriate, to provide safe and efficient access and recreation and to reduce pedestrian/automobile conflicts.

PUBLIC AND PRIVATE UTILITIES AND FACILITIES

Public facilities--public buildings, water service, sewer services, earth retention structures and storm drainage systems--are not only important to the health, safety and economic well-being of Juneau, but they also strongly influence future growth patterns. The development envisioned in this comprehensive plan cannot be realized without the availability of public facilities and services on a timely and efficient basis.

There was rapid growth during the 1982-86 period, largely in the Mendenhall Valley but also in the north Douglas and Lemon Creek areas. In 1987 growth virtually stopped due to a dramatic contraction of the state budget. However, since the late 80's growth continued, gathering

4.15.4. Through the designated arts agency, continue to provide the community with technical assistance, reference and resource material, and rental equipment including a concert grand piano, professional dance floor, acoustic shell, theatrical lights, display panels, and portable sound equipment.

4.15.5. Co-sponsor summer weekly concerts in Marine Park.

4.15.6. Maintain fee schedules for all non-profit arts organizations for CBJ facilities including Centennial Hall and the High School Auditorium that are related to actual costs of using the facilities, but not more than approximately 50 percent of the regular fee schedule.

4.15.7. Through the Capital Improvement Program, promote the expansion of facilities for a wide variety of cultural activities including performing and visual arts. Such facilities shall be developed at an appropriate site or sites, such as an expansion of Centennial Hall or as a part of a larger Centennial Hall or community center complex, or, in cooperation with the University of Alaska, as part of the university campus.

4.15.8. Promote the development of neighborhood cultural centers or other appropriate opportunities for cultural expression and participation.

4.15.9. Promote purchase of durable art for CBJ.

4.15.10. Strengthen its Design Review District/Downtown Historic District standards and site development standards to prevent degradation of and to enhance the visual environment.

4.15.11. Establish a program to encourage the use of professional design services for projects having or likely to have a significant visual impact. The program should include recognition, as by annual awards, of outstanding building, landscape, and other appropriate design.

4.15.12. Support facilities, institutions organizations and individual artists, that enable the CBJ to maintain its regional stature.

4.15.13. Officially welcome participants, and otherwise encourage large regional artistic, social, and other cultural events such as the biennial Tlingit, Haida and Tsimshian Celebration and the folk, classical, and jazz music festivals.

Parks and Recreation

The forms of recreation chosen by residents and visitors in Juneau are as diverse as the population. Many people choose to recreate in developed parks and facilities, both indoor and outdoor. Others choose to spend time in natural areas, where the existence of minimal improved facilities is the most important element. Therefore, planning for the future of parks and recreation facilities involves provision for both organized recreation in urban level facilities and dispersed recreation where improvements are limited to trail systems and perhaps destination cabins. It should be recognized that providing a broad range of recreational experiences involves a cooperative effort between the local, state and federal government.

In 1995 the Parks and Recreation Department will be updating their long range plan. The results of this effort should be adopted as part of this plan. The “Juneau Area Recreation Plan” (1982), contained the following recommendations:

1. Designate appropriate municipal lands for recreation.
2. Develop a Mendenhall Valley indoor recreation facility.
3. Acquire land on the west bank of the Mendenhall River as recreational open space.
4. Develop cooperative agreements with state and federal government for management of U.S. Forest Service land and state tidelands.

In planning for the dispersed portion of recreational opportunities, the CBJ Parks and Recreation Department has worked closely with the State Division of Parks and Outdoor Recreation, the U.S. Forest Service, the National Park Service, multiple citizen groups and individuals to produce a vision document called the “Juneau Trails Plan” (1992). As a comprehensive evaluation of all the trails in the Juneau area regardless of land ownership or management authority, this document identifies a wide spectrum of actions from improvement of existing trail conditions, to suggestions for construction of new trails or back-country cabins. The Forest Service has officially adopted the plan, and it is to be approved by the Alaska Division of Parks as well. The Parks and Recreation Advisory Committee has unanimously endorsed it. The general nature of the plan and its long term look at trail related issues makes it an appropriate document to include as a component of the Comprehensive Plan.

In recent years, there has been increasing commercial use of public trails in connection with the burgeoning tourist population. This use appears to be accelerating, and there seems to be increasing acceptance of the need to regulate this use so as to protect the resource and the quality of the recreation experience for local residents and tourists alike.

There is a lack of adequate neighborhood and community parks and facilities in major areas, including the Mendenhall Valley and Lemon Creek. While recreational programs are in great demand in Juneau, the number of facilities to support these programs is insufficient. Planning underway by the CBJ Parks and Recreation Department should be coordinated with the CBJ School District. There is an immediate need to acquire, designate, and maintain public access to beaches and shoreline areas.

The Eaglecrest ski area, located on Douglas Island, hosts 45,000 skier visits annually. Of that number, about 92 percent are local residents. The average number of skiers per day has been increasing steadily. Eaglecrest is an important winter recreational resource to many Juneau families. The ski area would benefit from the provision of electrical power from Juneau’s existing electrical grid. It is believed that the second channel crossing would increase skier visits.

The Capital Improvement Program Six-Year Plan includes a prioritized listing of Parks and Recreation, Eaglecrest, and Centennial Hall projects. Funding is provided primarily through the

CBJ budget, with occasional state funding through the legislative process. As appropriate, other sources of funding should be investigated.

Although the CBJ contains a wide variety of outdoor recreational resources, more park and recreational facilities both indoor and outdoor, should be provided within the urban area.

POLICY 4.16. IT IS THE POLICY OF THE CBJ TO CONTINUE PROVIDING QUALITY DISPERSED OUTDOOR RECREATIONAL OPPORTUNITIES; AND TO ACQUIRE AND DEVELOP SUFFICIENT LOCAL PARKS AND RECREATIONAL FACILITIES IN LOCATIONS CONVENIENT TO ALL AREAS OF THE CBJ. PLACES GIVEN PRIORITY FOR NEW FACILITIES INCLUDE RAPIDLY DEVELOPING AREAS AND CURRENTLY DEVELOPED AREAS WHICH LACK ADEQUATE PARKS.

Implementing actions:

4.16.1. Adopt the “Juneau Trails Plan” (1992), as an addendum to this plan.

4.16.2. Develop a long-range plan for parks and recreation land management and acquisition, facility development and maintenance, program development and provision of services.

4.16.3. Develop a map layer that clearly labels developed or designated open space, parks, and beach access routes.

4.16.4. Pursue funding for acquisition and development of parks and recreation facilities through the CBJ Capital Improvements Program, state legislative process, and federal funding opportunities.

4.16.5. Enact a permit system for commercial use of public lands which includes commercial user fees as part of the funding source for dispersed recreation development and maintenance costs. Consider the value of the resource when establishing a commercial user fee.

4.16.6. Develop parks and recreation facilities, for both urban level and dispersed recreation, based on Juneau’s unique characteristics, needs, and traditions. In developing dispersed recreation opportunities such as wildlife viewing areas and increased sport fishing opportunities, recognize the importance of habitat and sensitive area protection.

4.16.7. Cooperate with the School District and Parks and Recreation Department to plan for joint use of neighborhood and community parks, community and school facilities, and sports fields by the students and general public.

4.16.8. Encourage development of additional facilities and provision of electric power from Juneau’s existing electrical grid to Eaglecrest ski area.

4.16.9. Cooperate with the State of Alaska and the U.S. Forest Service to encourage the establishment of recreational and open space facilities and areas.

4.16.10. Incorporate park lands in developing areas through designation of publicly owned lands, acquisition of private lands, or dedication of lands during the subdivision process.

4.16.11. Revise the subdivision code to provide a mechanism for designation of land for public purposes.

4.16.12. Officially welcome participants and otherwise encourage large regional sporting or athletic events such as the Gold Medal Basketball Tournament.

4.16.13. Support the formation of the Juneau Channel Islands State Marine Park.

Open Space

Open space is an essential component of Juneau's community form and identity. It should be maintained and enhanced, especially in relation to future development. Shoreline areas are a major coastal resource, which also function as valuable natural recreational resources. Most are publicly owned.

The West Mendenhall Valley Greenbelt has been established, beach access routes have been identified and signs put in place, and there have been improvements made for recreational access to Echo Cove and Amalga Harbor. Area for a Mendenhall Valley recreational facility has been accommodated in the Dimond Park plan.

The CBJ should maintain awareness of and educate the public of, the importance of open space in land use and development decisions. Valuable habitat areas within the CBJ require retention of vegetation and water resources. Inadequately regulated development degrades scenic resources. The quality of residential developments is enhanced by standards and policies to preserve open space.

Demand for outdoor recreational opportunities is related to tourism and residential growth. Tourism is increasing at an estimated rate of 10 to 15 percent annually.

POLICY 4.17. IT IS THE POLICY OF THE CBJ TO PRESERVE AS PUBLIC OPEN SPACE PUBLICLY-OWNED LANDS AND SHORELINE AREAS WHICH POSSESS IMPORTANT RECREATIONAL, SCENIC, WILDLIFE, AND OTHER ENVIRONMENTAL QUALITIES OR ARE SUBJECT TO NATURAL HAZARDS.

Implementing actions:

4.17.1. Designate public areas and sites recommended in the "Juneau Area Recreation Plan" for permanent public access and use. Work toward acquiring such privately-owned land through

dedication, donation or purchase. Develop legal descriptions and revise the zoning map accordingly.

4.17.2. Acquire land or regulate its use as necessary to protect the public from natural hazards and preserve sensitive natural resources.

4.17.3. Encourage relevant state agencies to adopt open space management policies for state land and tidelands indicated in the “Juneau Area Recreation Plan.” Initiate cooperative management agreements proposed in the plan.

4.17.4. Where regulatory actions are inappropriate, acquire easements through dedication, donation, or purchase through privately-owned streamside lands and other areas indicated in the “Juneau Area Recreation Plan.”

4.17.5. Amend the Land Use Code relating to subdivision and planned unit development ordinances to strengthen open space requirements in residential development.

4.17.6. Revise the Land Use Code to establish special approval procedures to prevent conflict between water-dependent or water-related uses and areas designated as open space.

4.17.7. Designate corridors along streams and rivers on CBJ, state, and federal land as identified in Appendix B. These corridors may vary in size depending on topography and surrounding uses, but should be more than 50 feet and less than or equal to 200 feet from the ordinary high water mark on both sides of the stream or river.

4.17.8. Designate corridors along recreation trails on CBJ, state and federal land. These corridors may vary in size depending on topography and surrounding uses.

Historic And Cultural Resources

Juneau is rich in history. Tlingits lived in the area long before the city was founded by Richard Harris and Joe Juneau. The CBJ possesses historic and archeological resources from Native, Russian, early American, and other ethnic cultures which should be protected. Current documentation lists 300 to 400 buildings that were built before or during the first quarter of this century. Uncounted numbers of historic sites and structures throughout the borough await documentation. The CBJ has many commercial and residential structures that are significant turn-of-the-century architecture.

It is in Juneau’s best interest to preserve the historic and cultural diversity of the community. Juneau has been one of the most active communities in Alaska in its historic preservation efforts. The historic preservation program has been important in the development of Juneau as a tourist destination and for enhancing Juneau as Alaska’s Capital City. It is important for the visitor to Juneau and the local residents to have access to accurate depictions of the unique history of the area.

The existing policy on historic resources is a basic good start toward recognizing and protecting valuable historic resources. However, a Historic and Cultural Preservation Plan should be developed for the CBJ which would identify future preservation activities and integrate them into broader community and land use planning efforts. Such a plan would provide further direction for planning decisions and encouragement for enhancing the historic features of Juneau. Heritage tourism has been shown to be a viable economic asset to many communities. Juneau's Downtown Historic District is recognized around the state and regionally as a fine example of early twentieth-century northwestern architecture.

While the downtown Historic District is certainly Juneau's showcase, other parts of the community contain rich historic resources as well. The historic buildings of the original Juneau Townsite, Chicken Ridge, Starr Hill and Casey-Shattuck neighborhoods represent various periods in Juneau's history. These buildings are worthy of preservation. The general character of Juneau as a whole is enhanced by the very existence of these historic neighborhoods. Owners of historic buildings should be educated, encouraged, and assisted in the preservation of these important features in the community.

POLICY 4.18. IT IS THE POLICY OF THE CBJ TO IDENTIFY AND PROTECT HISTORIC AND ARCHEOLOGICAL RESOURCES; TO EDUCATE, ENCOURAGE AND ASSIST THE GENERAL PUBLIC IN RECOGNIZING THE VALUE OF HISTORIC PRESERVATION; AND TO PROMOTE HERITAGE TOURISM WHICH ACCURATELY REPRESENTS JUNEAU'S UNIQUE NATIVE ALASKAN, RUSSIAN, EARLY AMERICAN AND OTHER CULTURES.

Implementing actions:

4.18.1. Identify appropriate regulatory measures to protect identified historic resources. These may include special review of proposed changes, development standards, tax concessions and other measures.

4.18.2. Educate local citizens and visitors to the community about Juneau's unique and diverse ethnic heritage, through publications, museum development, interpretive exhibits, and other measures.

4.18.3. Encourage owners of significant historic properties to maintain them in the original character through tax incentives, recognition programs and other funding measures.

4.18.4. Assist owners of significant historic properties who wish to maintain the original character of the property with the development of design guidelines, design information, building code provisions and other measures.

4.18.5. Expand and improve the Historic District Standards to assure that the unique architectural character of the Downtown Historic District is preserved and enhanced.

- 4.18.6. Encourage property owners to take steps to lessen the threat of catastrophic fire.
- 4.18.7. Educate vendors of on-shore excursions about Juneau's unique heritage, including the Native Alaskan, Russian, and early American cultures, through workshops, publications, and other measures.
- 4.18.8. Reward vendors of on-shore excursions who participate in appropriate training workshops and demonstrate the ability to deliver accurate depictions of Juneau's unique and diverse ethnic heritage with recognition, official certification, and other measures.
- 4.18.9. Continue to support and maintain the Juneau Douglas City Museum as a repository for heritage materials and information held in the public interest.
- 4.18.10. Develop interpretive materials for placement throughout the community that inform locals and visitors about the unique and diverse ethnic heritage of the area.
- 4.18.11. Revise and expand the Juneau Historical Preservation Strategy to become a Historic and Cultural Preservation Plan that sets forth goals and objectives for organizing preservation activities and integrating preservation into broader community and land use planning efforts outlining tasks, area specific surveys, and grant funding sources.
- 4.18.12. Complete the inventory of historic resources and evaluate historical significance and relative value of each resource.

CHAPTER 5.

LAND USE

The land use policies implement important decisions relating to community form, housing, economic and community development, and natural resources and hazards (Chapters 2 and 3). They also are the basis for the land use maps in Chapter 6. In this section, land use policies are divided into two major categories: residential, and commercial/industrial. Policy for open space, recreation, parks and historic resources appear in the preceding chapter and also have effect on the land use maps in Chapter 6.

These policies should guide the CBJ in adopting appropriate regulatory measures, making consistent land use decisions, and investing in public facilities for residential and commercial/industrial development. The zoning code, subdivision regulations, permit processes, and capital improvements program (CIP) are the primary means of implementing these policies. Through the CIP, the CBJ can plan for and develop the necessary public facilities and services -- roads, streets, schools, utilities, and others -- in a timely and orderly manner. These land use policies also should assist the CBJ in its efforts to provide a variety of housing, pursue opportunities for suitable economic development, and promote conservation and rational development of natural resources.

There are about 57,600 acres of vacant land in the study area. Of this land, 6,200 acres are in private ownership, with 3,470 acres of the private holdings located within the more remote RR designation. With nearly level projected population growth in the next ten years, there is no shortage of developable land although these figures do not account for wetlands, steep slopes or other development limitations such as distance from urban infrastructure. The policies which follow are designed to guide decisions about its appropriate use--whether for near-term development, to be managed as long-term natural resource, to be retained as open space, or to be reserved for future uses.

RESIDENTIAL USE OF LAND

Residential Land Availability and Density

A substantial revision of land zoned for residential uses was accomplished in 1988 to bring the zoning map into conformance with the 1984 Comprehensive Plan.

Implementing actions:

5.8.1. Work with state and federal agencies to promote natural resource development that is compatible with the policies contained in this Plan.

5.8.2. Maintain the review process for state permit activities that affect land in the CBJ.

5.8.3. Formulate management plans for resource-related activities such as sand and gravel extraction, mining and timber harvesting on CBJ lands.

5.8.4. Review land use code provisions regarding timber harvesting. Consider exerting jurisdiction over parcels larger than 10 acres, adopting regulations to guide timber harvesting, and clarifying the code to distinguish between land clearing and timber harvest and to establish that logging operations of greater than 10 acres are allowed.

Waterfront Commercial and Industrial Development

Because of the CBJ's dependence upon waterborne transportation and commerce, careful development of waterfront areas for commercial/industrial uses is critical to the area's continued economic vitality. Adequate docks and harbors are critical to Juneau's future economic health. This subject is discussed more broadly under "Port Facilities" in Chapter 2. The CBJ should identify and reserve waterfront areas which are appropriate for such facilities based on their physical suitability and access to transportation modes on land and water. The CBJ should also undertake measures to protect important wildlife habitats and other sensitive coastal resources.

POLICY 5.9. IT IS THE POLICY OF THE CBJ TO DESIGNATE AND RESERVE WATERFRONT LAND WITH ADEQUATE SERVICES AND IN APPROPRIATE LOCATIONS FOR WATER-DEPENDENT OR RELATED COMMERCIAL/INDUSTRIAL ACTIVITIES WHILE PROTECTING IMPORTANT WILDLIFE, HABITAT, AND OTHER COASTAL RESOURCES.

Implementing actions:

5.9.1. Revise the Comprehensive Plan Maps and zoning code to reflect recommendations of the port development plan and feasibility studies described in Chapter 2, Port Facilities.

5.9.2. In addition to new or expanded public port facilities, zone suitable waterfront land for water-dependent and water-related uses.

5.9.3. Within the capital improvements program (CIP), identify special infrastructure needs for port and water-related development.

5.9.4. Maintain and improve design review procedures to assure that proposals for waterfront development are evaluated in regard to site design, building placement, parking, landscaping, exterior lighting, and other factors related to surrounding properties, land uses and public facilities.

Mixed Use Development

Downtown Juneau is the government, employment, tourist, historical and cultural center of the CBJ as well as a residential neighborhood and commercial area. A strong downtown commercial area is critical to the CBJ's social and economic vitality. Downtown Juneau, however, has seen the historic mix of small retail and residential uses eroded by commercial and government office use. As displaced uses move to suburban areas, other urban support components such as schools and churches follow. Urban centers gradually become one-dimensional. This trend can be reversed by promoting mixed uses.

Mixed use development is also seen as an avenue to implement several Comprehensive Plan policies, notably those pertaining to sustainability, transportation and housing. Locations outside of the downtown core suitable for mixed use development include downtown Douglas and an area in the Valley adjacent to the Racquet Club.

POLICY 5.10. IT IS THE POLICY OF THE CBJ TO PROVIDE FOR MIXED USE DEVELOPMENT THAT INTEGRATES RESIDENTIAL, RETAIL AND OFFICE USE IN THE DOWNTOWN AREA AND IN OTHER SUITABLE AREAS.

Implementing actions:

5.10.1. Maintain a category on the Comprehensive Plan and the zoning maps which allows high density residential and retail and office uses as mixed use developments.

5.10.2. Maintain and improve provisions in the Land Use Code which include performance standards which cover height, floor area ratio, parking and other design standards in the Mixed Use zones.

5.10.3. Maintain and improve design review procedures to assure that proposals for mixed use development are evaluated in regard to site design, building placement, parking, landscaping, exterior lighting, and other factors related to surrounding properties, land uses, and public facilities.

5.10.4. Investigate other areas in the CBJ which might be suitable for mixed use designation, and pursue such designation found to be appropriate for mixed use development.

5.10.5. Establish standards for mixed use areas outside of original downtown Juneau mixed use area.

CHAPTER 6.

COMPREHENSIVE PLAN LAND USE MAPS

INTRODUCTION

The Comprehensive Plan Land Use Maps, generally called the Comprehensive Plan Maps, display land use policy for the study area within the CBJ. The Comprehensive Plan Maps translate the policies of the preceding chapters into specific land use designations for residential, commercial, industrial, open space, and institutional/ public use.

The land uses shown are expressed in a range of development intensities. All zoning is required to be consistent with the Comprehensive Plan Maps and is generally more specific. In some cases, the Comprehensive Plan Map will provide a range of densities that can be allowed which means that the zoning classification could be one of several selections within that range. For example, an “Urban Low Density Residential” designation describes residential development with densities ranging from one to six dwelling units per acre. There are three residential zoning classifications which fall within this density range, and which could then be chosen as consistent with the Comprehensive Plan.

Encompassing over 3,000 square miles, the CBJ is difficult to depict unless its components are broken down into more easily mapped and displayed units. Thus, a study area was drawn from within the borough. The study area was in turn divided into subareas. The primary presentation of land use and related policies appear in Subarea Maps and related policies.

Methodology and Criteria

The Comprehensive Plan Maps were prepared after analyzing each subarea in terms of its relationship to the community form policies, existing development patterns, suitability for additional development, and other characteristics. The steps taken to prepare the subarea maps are discussed below.

For each subarea, the designated intensity of future development was determined in large part by whether the subarea is located in the urban area, that is, within the Urban Service Boundary, or in rural or new growth areas. For example, a key determinant for the use of land in the east Mendenhall Valley is its designation for urban development.

Vacant and potentially buildable land was located in each subarea and physical development constraints such as steep slopes and wetlands were evaluated. Existing development patterns were also analyzed. In most cases, existing patterns were reinforced with a compatible designation on the subarea maps. Most publicly-owned land within sensitive areas was designated for very low density development or open space in accordance with the Natural Resource and Hazards policies described in Chapter 3.

Designation of residential land was based on the level of existing or planned urban services, the pattern of existing subdivision, and compatibility with adjacent land uses. A high priority was given to the maintenance of existing low density (one to 6 dwelling units per acre) neighborhoods within the urban service area. Medium density (7 to 20 dwelling units per acre) residential uses were designated in areas which are unplatted, have convenient access and relatively central locations, and/or are currently developed at medium densities.

Commercial uses were generally designated in or adjacent to existing commercial areas if the latter are accessible to major population centers. Water-related and water-dependent commercial uses were designated for shoreline areas characterized by adequate services and marine access. Mixed Use development was designated in two areas in addition to downtown based on existing development patterns, access and location.

Industrial uses were designated according to the type of use. Existing industrial areas were designated to maintain that use. Waterfront areas were designated for water-related and water-dependent development, mixed with compatible commercial uses.

The public/institutional designations reflect existing uses; downtown they allow for expansion and redesign of the state capital complex. Public shoreline access is considered to be an important land use. Maps indicate existing public shoreline access points. The location of potential small boat harbors is shown as are potential roadway corridors.

Subarea Maps and Guidelines

The subarea Maps section describes subarea land use on maps and with text. It lists the particular guidelines which influenced land use designations for the maps. Resources and hazards are shown for each subarea and are intended to be informational. For each subarea there is also a discussion of factors which will influence the future direction of the subarea. Finally, guidelines for future subarea planning which have emerged from this Comprehensive Plan update process are listed.

Note: Refer to the subarea maps contained in Volume I, Chapter VIII.

Subarea 1: Eagle River to Berners Bay (Map 1)

Community Form: Rural, with potential New Growth Area

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Wildlife (Eagles Nests)	Echo Cove, Lynn Canal Shorelines
Stream and Lakeshore Corridors	Kowee and Davies Creeks, Eagle and Herbert Rivers, Peterson Creek, Salt Lake (Additional waterbodies are listed in Appendix B)
Gravel Resource	Eagle and Herbert River corridors, delta/estuary area
Wetlands/Tidelands	Eagle/Herbert River estuary, Echo Cove, Bridget Cove
Flooding	Kowee and Davies Creeks, Eagle River, Herbert River, Peterson Creek and coastal areas

Guidelines and Consideration for Subarea 1 Map:

1. Preserve valuable, publicly-owned recreation lands and wildlife habitat, including Lynn Canal shorelines areas, as public open space.
2. Provide opportunities for new growth area development, including a mixture of residential and water-related uses in Echo Cove.
3. Limit density or rural development north of Peterson Creek in response to the presence of sensitive areas; allow higher rural densities to the south.
4. Recognize Berners Bay and the river systems which feed it are important recreation and scenic areas which experience significant local usage and have potential for tourist use as well.

5. Develop a comprehensive, interagency plan for Tee Harbor to Berners Bay which recognizes, protects and enhances the multiple recreational and educational programs found in that area.
6. Evaluate development of hiking trail between Point Bridget and Point Bishop.
7. Develop a management plan for CBJ lands at Bridget Cove to complement the recreational opportunities on the state holdings at Bridget State Park.
8. Expect increased commercial use of public land for tourism.
9. Proposals are under consideration to extend Glacier Highway past Echo Cover to Sawmill Creek where there is potential to create a marine terminal that could serve mining, ferries, commercial watercraft and others.

Subarea 2: Lena Cove to Eagle River (Maps 2A & 2B)

Community Form: Rural

The Rural Dispersed Residential (1 dwelling per acre) and Rural Low Density Residential (1-3 dwellings per acre) designations predominate in this Subarea. This is primarily due to the absence of both public sewer and water in the area, and because there are no plans to have both services extended. The lands in the Auke Nu/Point Lena area were designated Rural Low Density Residential (1-3 dwellings per acre) primarily because of the established development pattern.

Resources and Hazards:

<u>Type</u>	<u>General Description</u>
Wildlife (Eagle Nests)	Lena Cove, Tee Harbor
Stream Corridors	Lena Creek, Tee Creek (Additional waterbodies listed in Appendix B)
Gravel Resource	Adjacent to road
Flooding	All coastal areas

Guidelines and Considerations for Subarea 2 Map:

1. Preserve shoreline areas in public ownership as public open space.
2. Continue rural residential development.
3. Encourage development of boat launch facilities at Lena Cove and South Tee Harbor.
4. Develop CBJ land at Point Lena as a neighborhood park.
5. Encourage development of a by-pass of the Auke Village Reservation area rather than making improvements to the existing roadway.

6. Develop a recreational facility including a ballfield in vicinity of Lena recreation site.
7. The public water system has been extended to the north entrance to Point Lena Loop Road. A feasibility study of expansion of the system to the Tee Harbor area is being completed. The preliminary findings are that the existing water system can be expanded to the South Tee Harbor area without the need for a new reservoir (\$2.7 million cost estimate). Extending the system further north will cost considerably more (an additional \$3.3 million) because of the reservoir requirement.
8. The subarea is not served by the public sewer system, and is outside of the Urban Service Boundary. There is little likelihood of public sewer reaching the subarea.
9. The state is considering expansion of the existing Ferry Terminal at Auke Bay by expanding the site both to the north and to the south in order to provide more staging area.

Subarea 3: Auke Bay, Mendenhall Peninsula, West Mendenhall Valley

Community Form: Urban for Auke Bay, the northerly part of the Mendenhall Peninsula, and that portion of the West Mendenhall Valley that is serviced by both sewer and water.
 Transition from rural to urban in the remainder of the West Mendenhall Valley.
 Rural for southerly Mendenhall Peninsula, and west of Waydelich Creek.

Land use designations on the Subarea map range from open space to industrial. Transition (“T”) designations predominate, indicating that higher density development will be considered once public water and sewer are available. Greenbelts are shown for Mendenhall River, Montana Creek, and Auke Lake.

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Wildlife (Eagle Nests)	Mendenhall Peninsula, Auke Bay
Stream and Lake Corridors	Mendenhall River, Montana Creek, Auke Creek, Lake Creek, Auke Lake, Auke Nu Creek (Additional minor waterbodies are listed in Appendix B)
Wetlands	West Mendenhall Valley, Mendenhall Peninsula, Montana Creek, Auke Nu Cove.
Gravel Resource	Montana Creek basin, Mendenhall River corridor, north side of Auke Lake
Flooding	West Mendenhall Valley, all coastal areas
Watershed	Montana Creek

Guidelines and Considerations for Subarea 3 Map:

1. Provide for continued water-dependent and water-related development at the Ferry Terminal and in Auke Bay.
2. Preserve valuable public tidelands, shorelines and stream corridors as public open space. Continue to acquire land for greenbelts along the stream corridors as necessary along West Mendenhall River and Montana Creek.
3. Limit density of development in Mendenhall Peninsula in response to proximity to flight paths into Juneau International Airport.
4. Provide for additional low and medium density residential development on CBJ lands with access to existing or planned urban services.

5. Limit density of development in West Mendenhall Valley to maintain wetlands, avoid flood hazards and provide open space.
6. Provide for expansion of the UAS campus, including student housing and athletic facilities.
7. Allow for increased neighborhood commercial development.
8. Retain trail access to Spaulding Meadows and to beaches.
9. Maintain transition area designation as shown on the Comprehensive Plan map for Auke Bay, Lower West Mendenhall Valley, and Mendenhall Peninsula to regulate development at lower density until public sewer and water are provided, at which time higher densities will be allowed.
10. Potential road corridors include the “Auke Bay Collector”, a potential bypass around Auke Recreation area from mile 14-17; and a possible corridor between Montana Creek Road and the Herbert/Eagle River area via Windfall Lake.
11. Acquire high-value wetland portion of “Montana Bill” property and designate as Open Space.
12. Acquire high-value University of Alaska Southeast (UAS) wetlands and designate as Open Space.
13. The public water system has been extended to serve all road-accessible lands in this subarea.
14. The sewer system should be expanded to include the industrial area in the southerly part of the West Valley. Although water service has been extended beyond the urban service boundary at Waydelich Creek, the boundary is considered the logical end point for public sewer for the long term.
15. The Auke Bay Waste Water Treatment Plant (WWTP) has a limited amount of excess capacity. This excess capacity could be used up with new development such as the UAS housing expansion. In addition, expansion of the service area is also being considered, with extension of the existing sewer line along Mendenhall Loop Road to the Goat Hill area. This expansion will deplete the excess capacity as these land areas develop. One solution is to expand the existing treatment plant at Auke Bay. A more long-term and effective solution is to eliminate the Auke Bay WWTP and tie into the proposed expansion of the Mendenhall Valley system which will serve the lower West Mendenhall Valley and Mendenhall Peninsula areas.
16. The Urban Service Boundary was amended in the 1995 update of the Maps, and now includes most of the Mendenhall Peninsula as well as the West Valley.

17. The general direction for development in the West Valley for over 20 years has been to enable residential development at densities of three to five units per acre. The transition designation was, and is, intended to address the need for public water and sewer and to limit development until those utilities are provided. Therefore:

A detailed land management plan for the West Mendenhall Valley area should be developed. Soils, water table, and other relevant data should be examined in order to identify appropriate locations for commercial and medium density residential development.

18. Public water and sewer have been extended to portions of the West Mendenhall Valley, allowing for an increase in the density of development. The Planning Commission will reconsider the zoning for this area after the Comprehensive Plan has been updated in 1995.

In translating the Subarea 3 Map into zoning districts, preserve the character of existing neighborhoods as much as possible, with graduated development, buffering and other techniques.

19. The concept of a roadway extending from Glacier Highway and running east of Auke Lake to the Mendenhall Loop Road emerged in 1995 from the CBJ's land management planning process. This roadway may develop as collector street that serves only the surrounding properties, but it may also be considered as a possible bypass of the Auke Bay area.
20. Encourage beautification and buffering along major roadways.
21. Reserve view corridors through height restrictions and building spacing requirements.

Subarea 4: East Mendenhall Valley and Airport

Community Form: Urban

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Wildlife (Eagle Nests)	Airport Vicinity
Stream Corridors	Mendenhall River, Duck, Jordan, Nugget, and Steep Creeks, (Additional waterbodies are listed in Appendix B)
Wetlands/Tidelands	Mendenhall Flats - Airport Vicinity
Gravel Resources	Mendenhall River corridor, upper part of valley
Flooding	Mendenhall River, Jordan Creek, all coastal areas
Watershed	Nugget Creek
Avalanche	Thunder Mountain

Guidelines and Considerations for Subarea 4 Map:

1. Maintain density of existing neighborhoods.
2. Provide opportunities for medium density development in undeveloped areas with adequate access adjacent to existing multifamily development or where land use conflicts can be minimized.
3. Provide for increased community commercial development close to existing commercial areas in lower valley.
4. Limit airport expansion to area designated in Airport Master Plan and amendments; maintain adjacent publicly owned wetlands and tidelands for public open space.
5. Utilize CBJ-selected lands for residential development, recognizing constraints of sensitive areas.

6. Maintain public access to the wetlands along the northern airport dike.
7. Allow for continued industrial development in existing industrial areas.
8. Provide for pedestrian access to schools, parks and shopping areas.
9. Establish a mixed use area in the Mendenhall Mall vicinity which incorporates general commercial uses and a mass transit node.
10. DOT&PF is working, during the 1995 period, on the Mendenhall Valley Transportation Plan. This plan will determine what improvements will be needed to the Mendenhall Loop Road and to the Riverside Drive and Loop Road intersections with Egan Drive in order to handle future growth. The concept of an interchange at Loop and Egan is being considered. DOT should monitor traffic and install lights when warranted at the intersection of Mendenhall Loop Road with Valley Boulevard and Mendenhall Boulevard.
11. The East Mendenhall Valley is entirely serviced by public sewer and water systems. Additional rehabilitation and enlargement of sewer lines will be required.
12. Drainage problems exist in the central East Mendenhall Valley. Incremental additions to a storm drain system are being made or are in the planning stages. Therefore:

Adopt a set of overall guidelines which address the treatment and placement of runoff.
13. The following road improvements have been identified: Riverside Drive should intersect Back Loop Road, replacing the connection via Tournure Street. Trinity Street needs some upgrading. Retain Mallard Street collector and Crest Avenue collector, both south of Egan Drive and in need of upgrades. Retain Airport Access Road collector between Airport and Glacier Highway. Upgrade the Mendenhall Boulevard collector.
14. DOT&PF has a long standing plan of much needed improvements to Glacier Highway from the McNugget Intersection to Del Rae Road. The pedestrian use of this area has increased and the provision of sidewalks is critical. Therefore: Encourage improvements to Glacier Highway. Substantial provision for pedestrian use should be made a high priority for this project.
15. A community park and a neighborhood park are needed in this subarea. Therefore:

The CBJ should proceed with the Dimond Park master plan for a community park.

The “bus barn” park site should be developed retaining, as much as possible, the natural condition, with maximum tree retention. Should the Miller house move, this property should be used as a park.

16. Encourage beautification and buffering efforts along major roadways and between conflicting land uses.

Subarea 5: Switzer Creek, Lemon Creek, Salmon Creek

Community Form: Urban

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Wildlife (Eagle Nests)	Vanderbilt Hill,
Stream Corridors	Lemon, Switzer, and Salmon Creeks; Creek at 7 Mile; Vanderbilt Creek (Additional waterbodies listed in Appendix B)
Wetlands/Tidelands	Mendenhall Flats, Lower Lemon Creek, Switzer Creek
Gravel Resource	Lemon Creek
Landslide/Avalanche	Upper Lemon Creek Valley, White Subdivision
Flooding	Lower Lemon Creek/Switzer Creek, all coastal areas
Watershed	Upper Salmon Creek.

Guidelines and Considerations for Subarea 5 Map:

1. Provide for additional low and medium density residential development in areas with access to arterial roadways and to municipal sewer and water services.
2. Restrict residential development in areas affected by sand and gravel extraction.
3. Protect access to Lemon Creek Trail, Salmon Creek Trail and Heinzelman Ridge Trail.

4. Encourage a buffer and beautification effort along all major roads.
5. Reserve wetlands and tidelands in public ownership for open space.
6. Designate area of Bartlett Memorial Hospital including adjacent municipal selection for institutional and public uses to accommodate expansion of hospital and related medical facilities as shown in the Hospital Area Master plan, 1994.
7. Allow for expansion of state office complex facilities adjacent to existing offices within public/institutional designation west of Switzer Creek.
8. Retain Lemon Creek collector to provide second access into the Lemon Creek industrial area but delete second, easterly crossing of Lemon Creek. Extend Glacier Highway beyond current endpoint northwest of Fred Meyer to reconnect at McNugget Intersection of Egan Expressway, and explore the possibility of a signalized intersection at Mapco and Sunny Drive.
9. Identify sufficient land to accommodate commercial and industrial uses. Adjust the boundary between commercial and industrial lands in the Vanderbilt-to-Lemon Creek area to account for current conditions.
10. The area is now entirely served with public water and sewer.
11. A middle school was completed in 1993, built on CBJ lands above the Switzer Village Mobile Home Park. The access road for this school also serves a CBJ water reservoir and could be used to access other lands.
12. The SSG and Glacier Industrial subdivisions offer several dozen acres of industrial building lots most of which are vacant.
13. All of the existing residential subdivisions are nearly built out. Less than one hundred vacant lots are left in this subarea. Several large parcels of residentially-zoned land are still unplatted but are located in hillside areas that are expensive to develop and, in some locations, difficult to serve with public water unless additional pumps are installed to boost water pressure at the higher elevations. Most of the undeveloped flat land remaining is wetlands.
14. Substantial private and publicly owned sand, gravel and rock resources remain and will continue to be mined for several more years.
15. The CBJ is developing a master plan to be implemented over the next ten years which would locate all CBJ public works functions on one site in this subarea.
16. Several waterbodies in the subarea are listed as “impaired.” Therefore:

Carefully review all future development which could affect the water quality of these streams.

Subarea 6: Juneau (Map 6A & 6B)

Community Form: Urban

Land use designations include a range from RR, Resource Reserve to WC/I, Waterfront Commercial/Industrial.

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Stream Corridors	Gold Creek upstream from Cope Park (Additional waterbodies listed in Appendix B)
Wetlands/Tidelands	Gold Creek Tidelands
Landslide/Avalanche	Mt. Juneau, Mt. Roberts, Gold Creek Basin
Flooding	Gold Creek
Watershed	Gold Creek

Guidelines and Considerations for Subarea 6 Map:

1. Provide for orderly expansion of central state government facilities in the vicinity of the state capital and the State Office Building.
2. Provide additional parking and alternative transportation opportunities.
3. Promote mixed uses downtown. Encourage small retail residential services and increased multifamily development within the urban center.
4. Provide for public access, open space and water-dependent and water-related uses on downtown waterfront via the “seawalk” and connections to the existing pedestrian system.
5. Limit development in landslide/avalanche hazard areas; designate publicly owned land in hazard area as open space.
6. Encourage use of downtown waterfront area as a mixed use waterfront serving recreational, tourist, and industrial uses. Encourage safe integration of industrial port

facilities.

7. Provide for redevelopment of downtown residential areas to accommodate higher residential densities in combination with retail and office uses. However, maintain existing densities in the single family neighborhoods of Star Hill, the highlands and the vicinity of the federal building.
8. Protect access to Mt. Juneau and Mt. Roberts trails.
9. Reserve view corridors through height restrictions and building spacing on downtown waterfront.
10. Virtually the entire Downtown and Highlands areas are served by the public water and sewer systems. Numerous improvements have been made over the past several years and more are needed to separate storm from sanitary sewer and to replace aging water and sewer lines.
11. Thane Road has become a major transportation corridor with development of the Rock Dump area and will become more critical with future development, such as the AJ Mine. Therefore:

Encourage DOT&PF to make reconstruction of Thane Road a high priority.

12. Parking areas in the downtown remain insufficient despite a parking garage constructed some ten years ago. Given the scarcity of downtown land and the cost of parking structures, it appears that Juneau has reached the point where serious effort is needed to address commuter transportation by alternative means. Therefore:

Consider the development of a convenient transportation terminal near downtown which would help to relieve traffic congestion in the downtown core, provide additional parking, and encourage the use of alternative transportation modes. The transportation terminal would feature shared longer term parking for residential and office uses while providing shorter term parking for retail, cultural, and recreational users.

The terminal would provide a hub for mass transit where commuter busses, and possibly a light rail system would connect to shuttle busses for localized distribution. Commuters could park their automobiles at the terminal, and catch a shuttle to the downtown core. The feasibility of the transportation terminal depends on finding a suitable site. A planning effort should be undertaken to study the transportation terminal concept. Two sites for consideration are the Bill Ray Center/Goldbelt area or the Federal Building/Old Tank Farm area.

13. A “fee-in-lieu-of” parking requirement should be considered to increase downtown development while encouraging alternatives to automobiles. The funds generated

would be used to develop alternative transportation options for the downtown area. Under such a program, a developer may pay a one-time fee based on the number of parking spaces needed. The fee would be put in an account and used to fund a downtown shuttle bus. Or, a developer may be required to pay an annual “fee-in-lieu-of” in an amount based on the number of spaces needed. This tax would be put toward operational expenses of a downtown shuttle bus. A “fee-in-lieu of system could enhance downtown development, therefore:

Establish a “fee-in-lieu-of” parking requirement for the downtown area for non-residential development, and implement following firm CBJ financial commitment to an alternative transportation option.

14. The lack of parking downtown is one of the primary impediments to additional growth in the downtown area, and may in fact contribute to the decline of the area. The Downtown Parking Advisory Committee recommends considering the construction of a 400 to 500 car parking facility at “Telephone Hill” to address the parking shortage. Therefore:

Consider construction of a 400-500 car parking facility at the Egan and Main area (“Telephone Hill”) to serve the downtown and future Capital Hill development. Such a facility should be designed so as not to interfere with the future use of the top of the hill for a new capitol building and related structure. An analysis of the current projected parking need should precede project design.

15. Other methods suggested to ease the parking problem downtown include construction of a light rail or similar system between the valley and town, supplemented with fast, efficient, localized shuttles; and development of high-density mixed use areas which would provide the opportunity for people to live near their work, shopping and recreation needs, thereby significantly reducing or eliminating the need for a private vehicle altogether.
16. Another suggestion related to parking is to eliminate the parking requirement for multifamily housing in the downtown core area. The intent is to move toward the mixed use concept, generating more downtown housing which would in turn create more demand for resident service businesses downtown. This concept may not work for all residential units developed, thus a “fee-in-lieu-of” or “tax-in-lieu-of” as described above may be more beneficial, especially for larger projects.
17. The Land Use Code requires that parking be provided for most new development. Downtown, the land area often does not exist to provide both the parking and the new development, therefore:

Re-examine the parking requirements for development of residential units and for tourist-related services in the downtown area.

Amend Land Use Code to provide an alternative for developers whose proposals do not meet on-site parking requirements. Provisions should be added to accommodate use of parking structures, shuttles, and other means to meet the parking need.

18. There are numerous transportation problems to address in the downtown area. They include congestion, pedestrian/vehicular conflicts, parking, transit, loading for tour operators, and crowded sidewalks. Problems exist year round but become acute during the summer tourist season.
19. There is a significant threat of fire in the Downtown because of the current condition and age of most of the structures in the area. Many of these buildings are built with virtually no fire resistant materials, are built too close to their property lines to allow a fire break or room for fire fighters to stop the spread of fire and have openings such as doors, windows and vents in their side walls which would allow fire to spread very quickly to adjacent buildings. Many are built on piling leaving a common crawl space which cannot be protected by fire fighters.

Loss of the downtown historic district in a fire would have significant negative impact to the economy of Juneau as one of its key tourist attractions is the history of the town. A fire could spread through these wooden buildings very quickly and despite the best efforts of fire fighters, probably could not be controlled. Therefore:

Develop a working relationship with downtown building owners and tenants as well as insurance, legal, design, and construction professionals for continuing education, policy development, and implementation of an economical and effective method of lessening the threat of structural fires in and near the downtown historic district.

20. Gastineau Avenue offers a location close to the downtown core, but development should only occur in concert with roadway improvements. Parking opportunities are scarce. Therefore:

Consider mechanisms to encourage and allow carless development on Gastineau Avenue.

Subarea 7: Gold Creek Watershed/ Last Chance Basin

Community Form: Rural

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Watershed	Gold Creek
Stream Corridors	Gold Creek (Additional waterbodies are listed in Appendix B)
Avalanche	Gold Creek Basin
Historic Site	Last Chance Basin

Guidelines and Considerations for Subarea 7 Map:

1. Protect watershed areas to assure clean, safe drinking water.
2. Identify and protect historic resources.
3. Implement the Watershed Control and Wellhead Protection Program -Gold Creek Source (1994).
4. Implement the 1994 Last Chance Basin Land Management Plan (LCBLMP).
5. The Gold Creek watershed is one of two water sources supplying the CBJ's drinking water. The protection of the water supply in the watershed is the highest priority. Therefore:

Only those activities that can demonstrate compliance with watershed protection objectives should be allowed in the Basin. Any permits issued for use of CBJ land above the wellheads should contain conditions to assure protection of the watershed.

6. The 1994 update of the LCBLMP, a component of the Comprehensive Plan, contains the following objectives for land use activities in the Last Chance Basin:
 - Protect the high quality of the municipal water supply obtained from Last Chance Basin's vital water resource.
 - Encourage and enhance resident and visitor appreciation of Last Chance Basin's rich historical heritage.
 - Maintain the wild, natural, and scenic qualities of Last Chance Basin.
 - Encourage and enhance resident and visitor enjoyment of casual recreational opportunities in Last Chance Basin.
7. Also in 1994, the CBJ adopted the Watershed Control and Wellhead Protection Program - Gold Creek Source. The protection program defines measures for protection of water quality in the Gold Creek watershed. The measures identified in this program were coordinated with the LCBLMP to be consistent and supportive of the land use objectives in the watershed.

8. There is increasing pressure to operate tourist related services in Last Chance Basin and the Gold Creek watershed. The CBJ must work toward controlling tourist-related services in the Last Chance Basin to protect the watershed. Therefore:

Undertake monitoring of the impacts of tourism to the area. The impacts to water quality and of the increased traffic on Basin Road should be analyzed in determining the carrying capacity of the area.

Develop a permit and fee system for tourist use of CBJ property.

Revise the Land Use code to recognize the particular importance of the Gold Creek Watershed and the Last Chance Basin. All commercial use of the Basin should be reviewed under the requirements of a conditional use permit.

Allow commercial activity of a medium or small-scale on a case-by-case basis under a permit and fee structure. Regulations should also prohibit structures or physical facilities associated with medium-scale visitor activity.

9. The historic buildings in the Basin are a valuable resource and offer a glimpse into the past development of the community. Therefore:

Maintain an awareness that significant historic buildings and artifacts in the Basin will further deteriorate unless they are maintained.

Devise an acceptable form of access so that a historic interpretive center may be developed. To be acceptable, the access method must avoid the use of Basin Road.

Encourage and assist if possible interim efforts of the Gastineau Channel Historic Society to maintain and stabilize the buildings.

Restore vehicular access to the site of the historic mining buildings at the Compressor Building level for the purpose of maintaining and preserving these historic facilities.

10. The existing Gold Panning operation is allowed to operate under the provisions of the LCBLMP. The operator should, however, be encouraged to ultimately relocate this operation out of the Gold Creek wellhead recharge area.
11. Vandalism and illegal dumping has increasingly become a problem in the Basin. In the winter, a severe avalanche hazard exists. Therefore:

Prohibit vehicular access to the Basin between midnight and 7am in the summer, and prevent vehicular access altogether in the winter. Signs should be posted informing people of the hours of access and that the gate will be locked during certain hours.

Subarea 8: Thane

Community Form: Rural with New Growth Area

Designations on the Subarea map are primarily Rural Dispersed Residential (one dwelling unit per acre) along Thane Road, and Recreation Resource inland of the RDR corridor.

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Wildlife (Eagles Nests)	Shoreline area
Stream Corridors	Sheep Creek, DuPont Creek (Additional waterbodies listed in Appendix B)
Habitat	Sheep Creek Valley
Gravel Resource	Sheep Creek
Flooding	Lower Sheep Creek
Avalanche	Along Thane Road

Guidelines and Considerations for Subarea 8 Map:

1. Allow for continued rural dispersed residential development along existing road corridor.
2. Provide opportunity for new growth area development at mouth of Sheep Creek.
3. Maintain recreational access to Sheep Creek Basin and minimize impacts on the existing recreational use of the area.
4. Designate a potential road corridor to Bishop Point.
5. Public sewer and water does not extend beyond the Little Rock Dump thus the entire Thane area is served by individual treatment systems and water wells. There are currently no plans for bringing the public services to Thane. The area is outside the Urban Service Boundary.

6. The CBJ approved a Large Mine Permit for the AJ Gold Mine in 1993, with surface facilities at Thane. As part of that permit, the CBJ stated its commitment to the following matters which relate directly to Thane:
 - The CBJ will work with the applicant [the permit holder] and the state to try to coordinate the improvement of Thane Road with the installation of an extension to Thane of the areawide water system.
 - The CBJ will continue to encourage DOT&PF to make the reconstruction of Thane Road between the Old Ferry Terminal and the Rock Dump a high priority.
 - The CBJ will recommend to DOT&PF that road improvements be planned for the Rock Dump to Sheep Creek section of Thane Road and that a standard road section be developed that takes into account the provision of a separated bike path. The Planning Commission commits to raise this issue to the Assembly to urge that the Thane Road upgrade take highest priority.
 - The CBJ will request a higher level of road maintenance for Thane Road consistent with the increase in traffic attributable to the mine.

Subarea 9: North and West Douglas Island (Maps 9A, 9B, SC)

Community Form: Rural predominately with New Growth Areas.
Urban near the Douglas Bridge.

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Wildlife (Eagles Nests)	Fritz Cove
Stream Corridors	Eagle, Peterson, Fish and Hilda Creeks (Additional waterbodies listed in Appendix B)
Wetlands/Tidelands	Shoreline between Fritz Cove and Kowee Creek, along and above North Douglas Highway
Gravel Resource	Small area on lower Fish Creek, area near Douglas Bridge, Eagle Creek area
Landslide/Avalanche	Hendrickson Creek, various hillside Areas
Flooding	Lower Fish Creek, Lower Peterson Creek, all coastal areas
Watershed	Upper Fish, Hilda, Middle Point and Peterson Creeks

Guidelines and Consideration for Subarea 9 Map:

1. Preserve shoreline and streamside areas in public ownership as open space.
2. Allow for rural residential densities along North Douglas highway corridor and resource reserve designation in upland areas.
3. Provide for low- and medium-density urban residential development in areas north of Kowee Creek which can be served by extending municipal sewer and water systems.
4. Protect access to Treadwell Ditch trail and beach trails.

5. Prevent development within the Fish Creek Road corridor.
6. Retain Fish Creek Park as designated recreational open space and restrict any development adjacent to the park which would significantly impact the valuable estuarine habitat and recreational use of the area. Designate transition area within which development will be allowed at a higher density once sewer and water are available.
7. Fritz Cove adjacent to the North Douglas boat launch facility may be a suitable location for a small boat harbor, barge docks, and other water-dependent industrial facilities. Careful attention needs to be paid to environmental, demographic, economic, social and engineering factors of such development.
8. Public water serves much of the North Douglas Highway, almost out to the CBJ boat ramp facing Fritz Cove.
9. Plans for public sewer are years, perhaps decades from fruition. Such a sewer would be extremely costly since most of the line would have little change in elevation and many pump stations would be needed. The Urban Service Boundary extends approximately four miles past the Juneau Douglas bridge.
10. North Douglas Highway has been upgraded over the recent years and is a wide, reasonably well-appointed roadway. It is also a local access residential street with hundreds of private driveways accessing directly to the highway. This creates dangers to the local users and those passing through. It also limits the use of the road as an arterial to serve potential new development further north and west.
11. Recognizing the growth potential of both North and West Douglas, it is important to also recognize the limitations of North Douglas Highway.

Two primary proposals have been studied to improve access in North Douglas. The first proposal is the development of a second crossing of Gastineau Channel in the vicinity of the Airport. The second proposal is the development of a “bench road” which would be a new route located parallel to the existing North Douglas Highway but uphill on a natural bench that is presently undeveloped. The bench road is viewed as technically feasible although the route is crossed by several creeks, small valleys, and wetland areas. It may be possible to route increased traffic associated with new development across a second crossing, thereby eliminating the necessity of a bench road, or both options will be required. Therefore:

A comprehensive traffic evaluation should be completed before either of the two alternatives is pursued in detail. The study should analyze the efficiency of each option, as well as combinations of the two, in solving projected transportation problems associated with increased development in North and West Douglas.

The preferred method of meeting transportation needs of North

Douglas in the future should undergo through review including environmental, economic, social and engineering factors.

If a second crossing is determined to be the preferred method of meeting future transportation needs, explore the possibility of using tolls to fund bridge construction and maintenance.

12. There has been a dramatic increase in commercial tourist use of the North Douglas area in recent years. Additionally, a 250-acre parcel of CBJ land is currently under review for the development of an 18 hole golf course.

In its undeveloped current state, north and west Douglas Island are a recreational resource for the whole community. In addition to Eaglecrest, there are miles of shoreline and many acres of unimproved park area. A unique feature is a mile-long stretch of waterfront roadway from the boat launch facility to False Outer Point. Therefore:

Minimize the impact of development upon the public's use of the publicly-owned shoreline and the scenic values of the area between Fish Creek and Outer Point.

With the exception of a boat harbor, prohibit commercial activities along the shore side of the road from Cove Creek to False Outer Point.

13. The un-roaded shoreline on the west side of Douglas Island has still further development potential, both for rural residential use and for port development. The westerly shoreline is owned almost entirely by the Goldbelt Corporation and the land immediately upland is owned by the CBJ. Goldbelt has considered any number of development scenarios. A new, joint-planning effort between Goldbelt and the CBJ started in 1995. Therefore:

Encourage and facilitate the development of a New Growth Area in West Douglas. Minimize adverse impacts on wildlife habitat. Coordinate the state, federal, CBJ, and Goldbelt involvement in development of new growth area.

**Subarea 10: Douglas and West Juneau
(Maps 10A & 10B)**

Community Form: Urban predominately
Rural, with a potential new growth area, south of Douglas

Resources and Hazards:

<u>Type</u>	<u>General Location</u>
Wildlife (Eagles Nests)	South of Douglas
Stream Corridors	Kowee Creek, Bear Creek, Lawson Creek (Additional waterbodies are listed in Appendix B)
Wetlands/Tidelands	South of Douglas

Guidelines and Considerations for Subarea 10 Map:

1. Provide for increased medium density residential development in areas with access to arterials and served by municipal sewer and water.
2. Maintain the “bridge requirement” for the transition area on upper Kowee Creek, to divert traffic away from Cordova Street.
3. Preserve publicly-owned, undeveloped shoreline areas for public open spaces.
4. Protect access to Treadwell Ditch, Dan Moller and Mt. Jumbo trails and to beaches.
5. Public sewer and water is available throughout the roaded subarea.
6. Douglas Harbor has been the focus of recent development proposals for expansion of the harbor, parking and other facilities for use by harbor and Savikko Park patrons. This harbor has historically been a hub for commercial and transportation activities for Douglas and local mines. Present use includes recreational and commercial boat moorage, park/recreational use, government lab and office (Mayflower Island), boat sales and repair shop, and residential. Therefore:

Consider expansion of the harbor for increased moorage, transient facilities,

grid and more parking, and the feasibility of accommodating cruise ship traffic.

7. The commercial core of Downtown Douglas includes an auto repair shop, gas/convenience store, bar and restaurant. Major public buildings include the Post Office, Douglas Fire Station/Library, Gastineau Elementary School, Mt. Jumbo Gym/service center, and the historic Mayflower School. The Perseverance Theater is a significant, and unique cultural facility.

A mixed use designation is shown for downtown Douglas. This designation reflects the current pattern of commercial development and will allow higher density residential development.

8. The area between the commercial core and Lawson Creek has been extensively developed over the 1980-1995 period. This development features a wide array of condominiums and apartment buildings above and below the highway with a smattering of single-family development nearer the shoreline. There are still several parcels of private land that could be further developed into multifamily structures.
9. The Cordova Street and Douglas Highway intersection has been the subject of many studies. Perhaps most notable of these was the West Juneau Traffic Study conducted by DOT&PF. These studies have documented the obvious: a problem currently exists weekday AM peak traffic. The traffic problem is likely to get worse as West Juneau, including the existing Blueberry Hill Subdivision and the proposed Island Hill development, are further developed. Therefore:

Actively encourage and work with DOT&PF to monitor the situation and develop a plan for future improvements. Invite DOT&PF to participate in the review of all future developments in the area.

APPENDIX B

CREEKS, RIVERS AND LAKES WITH ANADROMOUS FISHERY RESOURCES IN THE CBJ

<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Antler River	Berners Bay	115-20-10300
Gilkey River	Antler River Trib.	115-20-10300-2004
Unnamed Creeks	Berner's River Trib.	115-20-10100-2006 115-20-10100-2006-0010 115-20-10100-2009 115-20-10100-2015
Berners River	Berners Bay	115-20-10100
Lace River	Berners Bay	115-20-10200
Unnamed Creek	Lace River Trib.	115-20-10200-2016
Sherman Creek	Lynn Canal, North	115-31-10330
Sweeny Creek	Lynn Canal, North	115-31-10350
Unnamed Creek	Lynn Canal, North	115-31-10300
Taku Lake Creek	Taku Harbor	111-31-10050
Taku Lake	Unnamed Creek Trib.	111-31-10050-0010
Sawmill Creek	Berners Bay, East	115-20-10520
Johnson Creek	Berners Bay	115-20-10070
Bridget Cove Trib.	Bridget Cove	115-10-10230
Unnamed Creek	Echo Cove	115-20-10590
Cowee Creek	Echo Cove, West	115-20-10620
Cowee Creek, S. Fork	Cowee Creek Trib.	115-20-10620-2006
Davies Creek	Cowee Creek Trib.	115-20-10620-2003
Unnamed Creek	Lynn Canal	111-50-10600
Eagle River	Lynn Canal	111-50-10070
Boulder Creek	Eagle River Trib.	111-50-10070-2009

<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Unnamed Trib.	Eagle River Trib.	111-50-10070-2012
Unnamed Creek	Eagle River Trib.	111-50-10070-2018
Herbert River	Lynn Canal	111-50-10070-2004
Unnamed Lake	Herbert River	111-50-10070-2004-0010
Unnamed Creek	Amalga Harbor	111-50-10070-2004-3002
Unnamed Creek	Herbert River Trib.	111-50-10070-2004-3002-4007
Unnamed Creek	Herbert River Trib.	111-50-10070-2004-3002-4007-5004
Unnamed Creek	Herbert River Trib.	111-50-10070-2004-3002-4007-5010
Unnamed Creek	Herbert River Trib.	111-50-10070-2004-3002-4007-5010-6003
Unnamed Creek	Herbert River Trib.	111-50-10070-2004-3002-4007-5010-6009
Unnamed Creek	Herbert River Trib.	111-50-10070-2004-3002-4007-5010-6009-7003
Unnamed Creek	Herbert River Trib.	110-50-10070-2004-3002-4017
Unnamed Creek	Herbert River Trib.	110-50-10070-2004-3002-4017-5004
Unnamed Creek	Herbert River Trib.	110-50-10070-2004-3002-4017-5008
Unnamed Creek	Herbert River Trib.	110-50-10070-2004-3002-4017-5008-6011
Unnamed Creek	Herbert River Trib.	110-50-10070-2004-3002-4021
Unnamed Creek	Herbert River Trib.	110-50-10070-2004-3002-4021-5004
Windfall Creek	Herbert River Trib.	111-50-10070-2004-3006
Windfall Creek	Herbert River Trib.	111-50-10070-2004-3006-4003
Unnamed Creek	Herbert River Trib.	111-50-10070-2004-3006-4006
Windfall Lake	Windfall Creek	111-50-10070-2004-3006-0010
Peterson Creek	Amalga Harbor	111-50-10100
Unnamed Creek	Salt Chuck Trib.	111-50-10110
Shrine Creek	Near Shrine Island	111-50-10140
Tee Creek	Tee Harbor	
North Tee	North Tee Harbor	111-50-10200

<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Lena Creek	Lena Beach	111-50-10300
Unnamed Creek	Lena Beach Rec. Area	111-50-10310
Auke Nu Creek	Auke Bay	111-50-10350
Waydelich Creek	Auke Bay	111-50-10370
Bay Creek	Auke Bay, Inner	111-50-10390
Auke Creek	Auke Bay, Inner	111-50-10420
Auke Lake	Auke Bay Vicinity	111-50-10420-0010
Unnamed Creeks	Auke Lake	111-50-10420-2002
Unnamed Creeks	Auke Lake	111-50-10420-2006
Lake Creek	Auke Lake	111-50-10420-2010
Lake II Creek	Auke Lake	111-50-10420-2008
Unnamed Creek	Auke Lake	111-50-10420-2013
Unnamed Creek	Auke Lake	111-50-10420-2013-3003
Unnamed Creek	Auke Lake	111-50-10420-2015
Bessie Creek	Lynn Canal	115-10-10250
Unnamed Creeks (Casa del Sol Cr.)	Mendenhall Peninsula	111-50-10490-2013 111-50-10490-2020 111-50-10490-2020-3005
Montana Creek	Mendenhall River, North	111-50-10500-2003
McGinnis Creek	Montana Creek	111-50-10500-2003-3060
Unnamed Creek	Montana Creek	111-50-10500-2003-3060-4011
Mendenhall Lake	Upper Mendenhall Valley	111-10500-0020
Nugget Creek	Mendenhall Lake	111-50-10500-0020-2010
Steep Creek	Mendenhall Lake	111-50-10500-2006
Glacier Lake	Upper Mendenhall Valley	
Morraine Lake	Upper Mendenhall Valley	
QT Lake	Upper Mendenhall Valley	

<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Louie Lake	Upper Mendenhall Valley	
Norton Lake	Upper Mendenhall Valley	
Crystal Lake	Upper Mendenhall Valley	
Dredge Lake	Upper Mendenhall Valley	
Dredge Lake Creek	Upper Mendenhall Valley	111-50-10500-2004
Marshall Pond	Upper Mendenhall Valley	
Mendenhall River	North Gastineau Channel	111-50-10500
Unnamed Creeks	Montana Creek Trib.	111-50-10500-2003-3014 111-50-10500-2003-3018 111-50-10500-2003-3024 111-50-10500-2003-3042 111-50-10500-2003-3054
Unnamed Creeks	Dredge Lake Area	111-50-10500-2004 111-50-10500-2004-3011 111-50-10500-2004-3011-4003 111-50-10500-2004-3011-4003-5002 111-50-10500-2004-3011-4007 111-50-10500-2004-3011-4013 111-50-10500-2004-3020
Duck Creek	Lower Mendenhall Valley	111-50-10500-2002
Unnamed Creek	Duck Creek Trib.	111-50-10050-2002-3014
Unnamed Creek	Duck Creek Trib.	111-50-10050-2002-3030
Jordan Creek	Lower Mendenhall Valley	111-50-10620
Unnamed Creek (West Creek)	Gastineau Channel, NE	111-40-10050
Unnamed Creek (West Creek)	Gastineau Channel, NE	111-40-10060
Switzer Creek	Gastineau Channel, NE	111-40-10070
Unnamed Creek	Switzer Creek Trib.	111-40-10070-2001
Unnamed Creek	Switzer Creek Trib.	111-40-10070-2003
Unnamed Creek	Switzer Creek Trib.	111-40-10070-2006
Unnamed Creek	Switzer Creek Trib.	111-40-10070-2013

<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Lemon Creek	Gastineau Channel, NE	111-40-10100
Unnamed Creek	Lemon Creek Trib.	111-40-10100-2029
Vanderbilt Creek	Gastineau Channel, NE	111-40-10125
Twin Lakes	Gastineau Channel, NE	
Salmon Creek	Gastineau Channel, NE	111-40-10150
Salmon Creek Reservoir	Salmon Creek	
Gold Creek	Gastineau Channel, East	111-40-10200
Sheep Creek	Gastineau Channel, East	111-40-10280
Little Sheep Creek	Gastineau Channel, East	
Peterson Creek (Outer Point Creek)	Douglas Island, NW	111-50-10750
Unnamed Creek	Douglas Island, NW	111-50-10750-2027
Unnamed Creek	Peterson Creek Trib.	111-50-10750-2033
Unnamed Creek	Peterson Creek Trib.	111-50-10750-2035
Unnamed Creek	Peterson Creek Trib.	111-50-10750-2039
Unnamed Creek	Peterson Creek Trib.	111-50-10750-2042
Eleven-mile Creek	Douglas Island, North	
Cove Creek	Douglas Island, North	
Fish Creek	Douglas Island, North	111-50-10690
Cropley Lake	Fish Creek	
Nine-mile Creek	Douglas Island, North	111-50-10670
Johnson Creek	Douglas Island, NE	111-50-10660
Hendrickson Creek	Douglas Island, NE	111-40-10980
Neilson Creek	Douglas Island, NE	111-40-10960
Falls Creek	Douglas Island, East	111-40-10940
Eagle Creek	Douglas Island, East	111-40-10920
Grant Creek	Douglas Island, East	111-40-10910

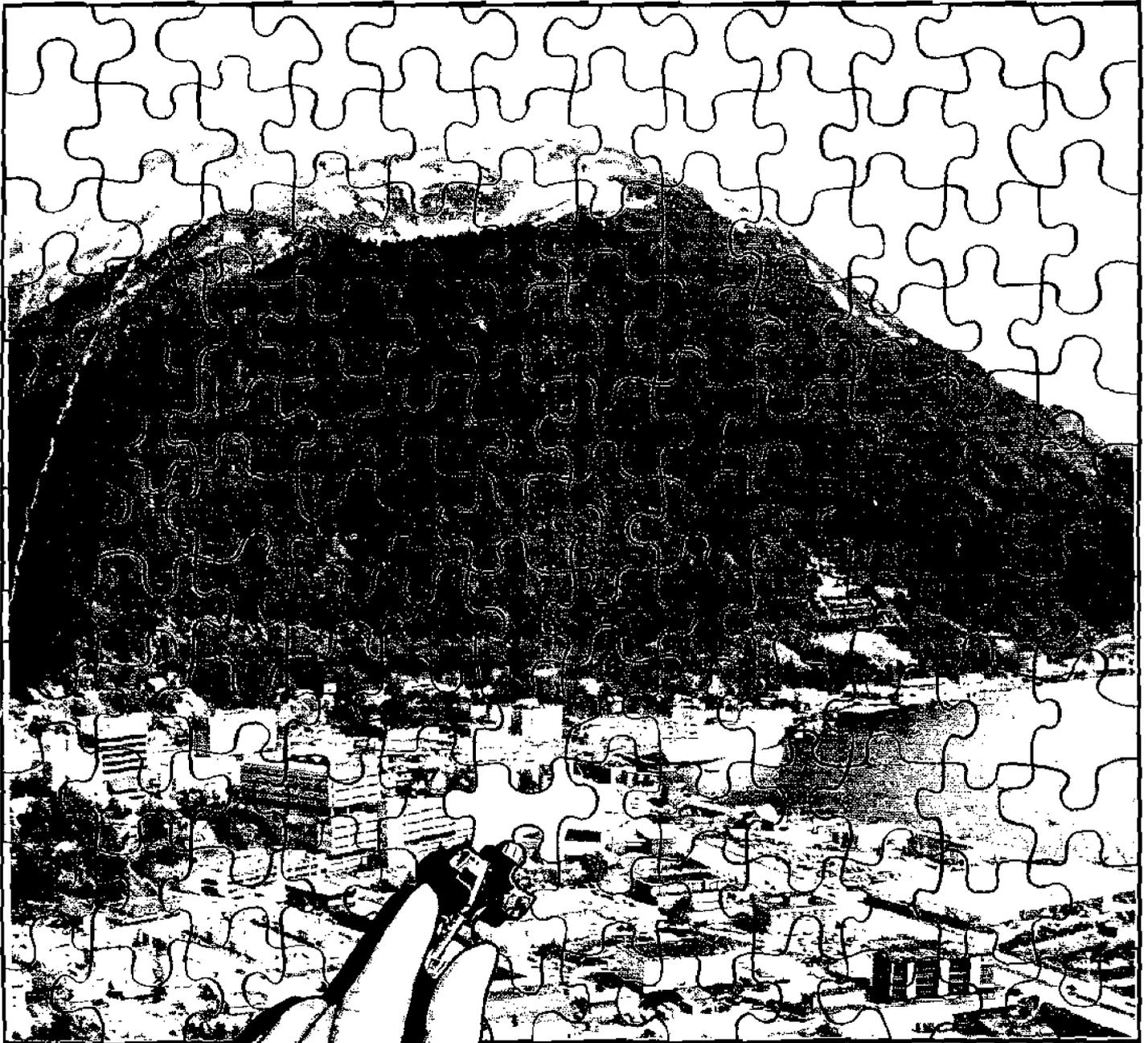
<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Kowee Creek	Douglas Island, East	111-40-10900
Lawson Creek	Douglas Island, East	111-40-10890
Bear Creek	Douglas Island, East	
Ready Bullion Creek	Douglas Island, West	111-40-10860
Bullion Creek	Douglas Island, West	111-40-10850
Nevada Creek	Douglas Island, West	
Middle Creek	Douglas Island, West	111-40-10600
Hilda Creek	Douglas Island, West	111-40-10700
Unnamed Creek	Douglas Island, West	111-40-10690
Unnamed Creek	Slocum Inlet	111-32-10990
Unnamed Creek	Unnamed Creek Trib.	111-32-10990-2005
Carlson Creek	Taku Inlet	111-32-10130
Unnamed Creek	Tracy Arm	111-21-10040
Whiting River	Port Snettisham	111-35-10050
Unnamed Creek	Port Snettisham	111-35-10050-2035
Crescent Lake	Whiting River	111-35-10050-2035-0010
Unnamed Creek	Whiting River Trib.	111-35-10050-2035-3007
Unnamed Creek	Whiting River Trib.	111-35-10050-2035-3013
Unnamed Lake	Crescent Lake	111-35-10050-2035-0020
Unnamed Lake	Whiting River	111-35-10050-2032-0010
Unnamed Creek	Whiting River	111-35-10050-2032
Unnamed Creek	Taku River	111-33-10080
Speel River	Tracy Arm	111-33-10300
Prospect Creek	Taku River	111-33-10100
Unnamed Creek	Speel River Trib.	111-33-10300-2014
Unnamed Creek	Speel River Trib.	111-33-10300-0010

<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Prospect Creek	Port Snettisham	111-22-10100
Unnamed Creek	Port Snettisham	111-34-10200
Unnamed Creek	Port Snettisham	111-34-10220
Unnamed Creek	Port Snettisham	111-34-10240
Unnamed Creek	Port Snettisham	111-34-10280
Limestone Creek	Limestone Inlet	111-90-10050
Unnamed Creek	Limestone Inlet Creek Trib.	111-90-10050-2005
Turner Creek	Taku Inlet	111-32-10800
Davidson Creek	Taku Inlet	111-32-10780
Unnamed Creek	Davidson Creek	111-32-10780-2010
Taku River	Taku Inlet	111-32-10320
Unnamed Creek	Taku River Trib.	111-32-10320-2004
Fish Creek	Taku River Trib.	111-32-10320-2052
Wright River	Taku River Trib.	111-32-10320-2032
Yehring Creek	Taku River Trib.	111-32-10320-2024
Unnamed Creek	Taku River Trib.	111-32-10320-2024-3004
Moose Creek .	Taku River Trib	111-32-10320-2021
Unnamed Creek	Moose Creek Trib.	111-32-10320-2021-3012
Unnamed Creek	Moose Creek Trib.	111-32-10320-2021-3008-4004
Unnamed Creek	Moose Creek Trib.	111-32-10320-2021-3008
Twin Glacier Creek	Taku River Trib.	111-32-10320-2019
Unnamed Creek	Taku River Trib.	111-32-10320-2019-3006
Twin Glacier Lake	Unnamed Creek	111-32-10320-2019-0010
Unnamed Creek	Twin Glacier Lake	111-32-10320-2010-0010-2006
Johnson Creek	Taku River Trib.	111-32-10320-2016
Unnamed Creek	Johnson Creek Trib.	111-32-10320-2016-3005

<u>Stream or Lake</u>	<u>Approximate Location</u>	<u>ADFG Catalog No.</u>
Sockeye Creek	Taku River Trib.	111-32-10320-2013
Unnamed Creek	Sockeye Creek Trib.	111-32-10320-2013-3004

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Vol. 2

The City and Borough of Juneau, Alaska COMPREHENSIVE PLAN



Volume Two Technical Appendix

THE COMPREHENSIVE PLAN and Coastal Management Program for the City and Borough of Juneau, Alaska

Volume Two: Technical Appendix

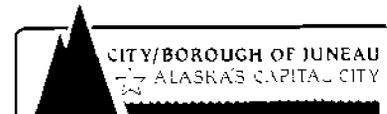
Note: Only those sections relevant to Coastal Management have been included.

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December 1983

TECHNICAL APPENDIX

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Section I

Introduction

Note: Maps presented in the Technical Appendix have not been reproduced in this scanned document in the interest of file size and because they have been updated in subsequent planning documents. Maps required for ACMP implementation are included in Juneau Coastal Management Plan Volume I, December 2005 and JCMP Volume II: Juneau Wetlands Management plan, December 2005.

I. INTRODUCTION

The information and analysis in this volume provides factual support for the Findings, Policies, and Implementing actions of Volume I. Adequate data is fundamental to deriving reasonable and consistent policies within the framework of an effective comprehensive plan.

In addition to its function as a foundation for the comprehensive plan, the Technical Appendix can be used as a reference for public and private users involved in planning, development and management of the land, resources, and facilities of the CBJ.

Although many studies of natural and manmade characteristics of the Juneau area have been completed over the years, some have fallen into disuse because they were intended for a single purpose or because they were not connected to policies or implementing actions. Applicable and relevant information in those documents, particularly in regard to natural resources and development activities, have been incorporated into this document and are identified in the References section of the Technical Appendix.

Other information, particularly in the sections concerned with land use, public facilities and services, and vegetation, was gathered specifically for this planning effort. The analysis combined work by the consultants with analysis contained in other reports. Reference is made in each section to methodology and sources of information and analysis.

Maps presented in the Technical Appendix are substantially reduced from their original scales. Base maps include the Study Area and Focus Area (Figure I-1) and individual focus areas. The respective scales of the original maps are 1:63,000; 1:36,000; and 1:15,000. The scale at which specific data was mapped is in relation to the area covered, the scale of the data, and its eventual use. Copies of the original maps can be obtained from the Planning Department of the CBJ.

The majority of the data in Volume II, Technical Appendix is 1982 or earlier data. Chapter XV provides available historical and current data tables for selected items such as population, employment, transportation and school enrollment taken from the Juneau Economic Study, Vol. 1, No. 1, January 1984.

Section II

Topography

II. TOPOGRAPHY

INTRODUCTION

Southeast Alaska is an area characterized by rugged relief. Steep forested slopes rise from tidewater to snowclad peaks; glaciers flow into narrow stream valleys from ice fields, sometimes reaching the sea; and waterfalls descend from thousands of feet. The area is dotted with many mountainous islands and interconnecting waterways. Some islands cover many hundreds of square miles while others, only a few acres. Typically, mountain slopes are steep and valleys are narrow, with areas of low flat land limited to several square miles.

Biophysical boundaries were established for the Alaska coastal zone by the Alaska Department of Fish and Game in 1978. The boundaries identify and define the landward and seaward limits of coastal physical and biological processes. The coastal boundaries are subdivided into three zones, each reflecting the degree of coastal interaction, and are defined as direct interaction, direct influence, and indirect influence.

Within the area of the CBJ, the zone of direct interaction includes all the marine waters of Lynn Canal and Stephens Passage, and extends landward to the region of bald eagle nesting, the extent of active coastal erosion, saltwater intrusion and tidal influence of the Mendenhall and Lemon Creek wetlands, and includes all of the CBJ to the 600-foot contour. The zone of direct influence is defined by the Sitka spruce-hemlock forest and extends from the landward edge of direct interaction to about the 2,500 foot contour. This zone includes freshwater systems where anadromous fish spawning and overwintering occurs. The zone of indirect influence extends landward to the regional snowline, or the average lower limit on glaciers of year round snow cover. This boundary is approximately 3,500 feet on the Herbert Glacier. Human activities in this zone may have a direct impact on coastal processes. The seaward limits of the zone of indirect and direct influence includes the zone of direct interaction, or all marine waters.

The topography of the Juneau area consists of adolescent rugged mountain ranges that have been deeply bisected by river erosion and modified by glacial action. Downtown Juneau is located at the mouth of Gold Creek on the Gastineau Channel. Mount Juneau and Mount Roberts, which rise abruptly to over 3,500 feet on the mainland, and the steep slopes of Douglas Island, give an almost tunnel-like appearance to the straight and narrow Gastineau Channel.

Some of the topographic features and geologic deposits indicate that the position of the land relative to the sea has changed greatly during the past 10 to 20 thousand years in the Juneau area. At present, the land is emerging and the change in land levels may be caused by one or more conditions. World-wide (eustatic) sea level changes occur from expansion and contraction of glaciers. Relative sea level changes exceeding 400 feet have been noted. The loss of the weight of glacial ice as it recedes also allows the land to rebound. Other major causes for relative sea level changes are tectonic uplifts of the land resulting from stresses between the North American Continental plate and the adjacent Pacific Ocean plate. Sudden tectonic uplifts of large areas of land is evident from the Alaska earthquake of 1964. Tectonic forces have been affecting Southeast Alaska for over the past 2-3 million years. In the Juneau area, marine fossils occur in glaciomarine deposits at an elevation of 750 feet above present sea level. Twenhofel (1952) notes that the Juneau area has undergone the greatest relative uplift in Southeast Alaska since glacial times.

The Mendenhall Valley and the tide flats around the airport and lower Lemon Creek are essentially the only flat ground in the Juneau area and are rapidly being converted to urban land use because they are easy to develop.

The steep topographic relief in the Juneau area is a major limiting factor for urban development. Resource data and analysis for the study area was compiled on standard U.S. Geological Survey Topographic Quadrangle maps, 15-minute series. The locations of shorelines and glacial termini has been corrected by using 1979 color infrared aerial photographs. Significant changes in the coastal zone can be noted in the airport-Mendenhall River delta area and Eagle Creek delta. Recession of glacier termini for the Mendenhall, Herbert, and Eagle glaciers has been more than 2,000 feet over the past 20 years. The contour interval on the USGS maps is 100 feet. A slope grid map was developed for the study areas below the 1,000-foot elevation (Figure II-1). This elevation was selected as a reasonable limit of urban development for the near future, other than special use areas such as Eagle Crest.

Slope categories using the Soil Conservation Service classification (Schoephorster & Furbush, 1974) are used to evaluate development limitations alone or in combination with other geologic hazards. The susceptibility of most soils to erosion, and the hazards of landslides generally are directly proportional to steepness of slope. Snow avalanches, in part, are also dependent on steepness of slope. Steep slopes also can limit urban development, due to restrictions on septic drain fields, roads, and utilities.

DEVELOPMENT CONSIDERATIONS

There are several potential hazards inherent in developing on steep slopes. Certain soil types are less favorable for development than others (Section III, Earth Resources). Slopes over 20% require detailed geotechnical site investigations and special construction techniques. Those exceeding 35% should be considered non-developable unless site-specific studies indicate that the significant natural hazards can be overcome through special design and construction.

Section III

Earth Resources

III. EARTH RESOURCES

INTRODUCTION

Geology is the study of the physical features of landforms and the processes that are responsible for the building up and wearing down of mountains and other natural formations. The major processes that have shaped the Juneau area are tectonics and weathering. Tectonics includes mountain building processes by uplifting, folding, and faulting of the rock strata. Weathering is a wearing away of the rock by glacial action, landslides, and erosion.

Geologic formations and surficial deposits (soils) have certain limitations which must be considered in land development. These limitations include soil characteristics, potential natural hazards, and resources. This section presents a background discussion on the bedrock geology of the area; a description of the soils and their development limitations; a discussion of natural hazards, including seismic, landslide-avalanche, and flood zones; a review of mineral resources; and a summary of how these factors can influence land use decisions.

Soils are the result of weathering and erosion of geologic materials. Factors that influence their formation are time, climate, and character of parent material, including slope. The degree of limitation for urban development is dependent on factors such as density, texture, and depth, particularly the groundwater table. These characteristics also influence the behavior of ground response during an earthquake. Earthquakes can cause ground fracturing, water or sediment ejection, and settlement, liquefaction, and possible landslides. Landslide susceptibility is dependent largely on slope and soil characteristics. Bedrock fracture patterns determine susceptibility to rock fall avalanches and can result in exposed steep mountain slopes where snowslide avalanches may be generated. Stream bank flooding occurs primarily during heavy fall rainstorms and when stream discharge is high from glacial melt. Coastal flooding can occur as a result of high tides combined with storm conditions or from sea floor disturbances during an earthquake. Sand and gravel and mineral resources occur only in specific localities. These physical constraints are analyzed with regard to requirements for land use planning.

EXISTING CONDITIONS

GEOLOGY

The geology of the area consists of Tertiary to Late Paleozoic metamorphic and plutonic rocks and surficial Quaternary glacial and alluvial deposits. This section presents a brief overview of the bedrock geology. The surficial deposits are described in the

following subsection with regard to the soils that have formed on them.

The rock units of southeastern Alaska are generally arranged in three bands of distinct types that extend northwest, roughly paralleling the coast. The Coast Mountains east of the study area are comprised of the Coast Range granitics. This granitic batholith is bordered on the west by a band of injection gneiss, which is approximately a few miles wide (Plafker, 1962, p. 127). To the west of the gneiss belt, which includes most of the study area, is the third belt of metamorphic rocks. These rocks generally grade from schist on the east to slate and graywacke on the west. Some volcanics, variously altered to greenstone, are located within the slate and graywacke band.

Rocks of the region have been metamorphosed and moved both by the intrusion of the Coast Range granitics and by other tectonic stress. Recrystallization of rock constituents, complex folding, and mixing of rock types increases toward the batholith. Folding and refolding occur at many scales and confuse bedding determination. Overall, however, bedding dips steeply to the northeast, becoming steeper nearer the granitic batholith (Buddington and Chapin, 1929, P. 292). Some chunks of the metamorphic suite are found within the batholith, and small granitic bodies liberally intrude the metamorphic rocks. The gold belt is contained in the mineralized zones within the metamorphic rocks adjacent to the granitics.

The foliation or strike of the bedding in the layered rock parallels the trend of the Gastineau Channel. These planar rock features project or dip northeastward into the mountainside at 30 to 75 degrees. Superimposed over the bedrock foliation are two joint sets which dip to the northwest and southwest, and break the bedrock into large blocks; they can become loosened and slide and fall off steep slopes.

Several major faults are mapped in the study area (Figure III-1). A northwest-trending fault is mapped from north of Berner's Bay and follows the alignment of Cowee and Montana Creeks to the Mendenhall Valley, continuing down Gastineau Channel. The easterly-trending Silverbow fault is mapped just north of Juneau and Sheep Mountain, entering Taku Inlet just south of Sunny Cove (Plafker, 1962, page 133). These faults postdate the metamorphic rocks, some of the granitics, and mineralization. Refer to Seismic Hazards for further discussion on faults and seismicity.

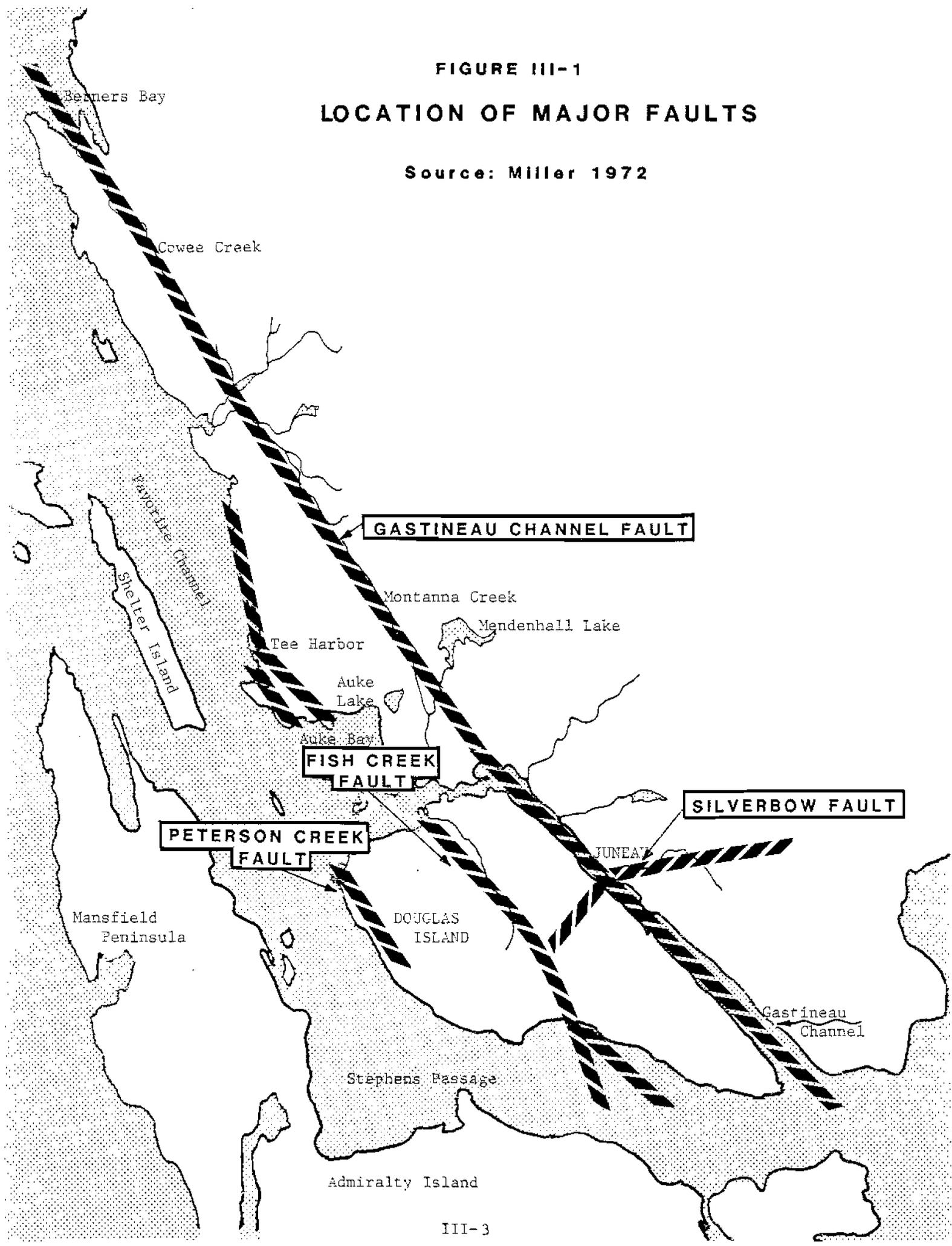
Summary

The bedrock characteristics of the area can influence land use development decisions with regard to resource extraction landslide and avalanche zones. Resource commodities include metallic minerals and rock for construction purposes. The increase in the number of filed mining claims as a result of higher values for gold and silver could produce a new economic base for the area.

FIGURE III-1

LOCATION OF MAJOR FAULTS

Source: Miller 1972



Geologic resources are further described in the Mineral Resources subsection.

The structural characteristics of the bedrock influence the stability of the mountain slopes and the potential land use at the base of the mountain. Several steep slope areas along the Thane-Juneau Road, Gold Creek, the west slope of Thunder Mountain, and Fish Creek Valley on Douglas Island are the source for large rubble rock piles and talus slopes at the foot of the mountain.

SOILS

As a means of identifying different soil types and describing their characteristics, the U.S. Soil Conservation Service (SCS) has developed a classification system based primarily on the parent material, texture, and slope of the soil. Although initially developed to assess the agricultural capability and erodability of the soil, the system has been expanded to describe other attributes, such as resource value, urban development limitations, and woodland suitability.

A soil survey of the CBJ was conducted by the U.S. Soil Conservation Service (Schoephorster and Furbush, 1974) with assistance from the City and Borough of Juneau and the U.S. Forest Service. The soils are described in this report as soil associations within the overall study area, and as soil series within the focus areas. Because of limited agricultural activities within the area, soil properties are described in terms of engineering uses and urban development limitations, such as foundations for small buildings, septic drainfield suitability, and construction and maintenance of roads and buried pipes.

Soil Associations

A soil association is a group of soil types consisting of one or more major soils and at least one minor soil that have formed on a particular landform distinctive of the geographic area. A generalized soil association map for this study area is shown as Figure III-2. Soil associations in the Juneau area include alluvial and outwash soils, upland soils formed in glacial till, and peaty soils or muskegs. A brief description of these soil associations and the landforms on which they developed follows.

Alluvial soils occur on the flood plains of the major river and stream valleys; they include silty and sandy alluvial soils and gravelly sandy outwash soils. The silty soils are characterized as very poorly drained; they have developed on low-lying, nearly level alluvial plains under mosses, sedges, and grasses, with patches of willow and alder. Stunted hemlock and spruce occur in better drained sandy alluvial soils. Included are areas of moderately deep peat, which are 20 to 50 inches thick. The water table is generally less than one foot below the surface, and

these soils are subject to periodic flooding. The West Mendenhall Valley consists of fine grained alluvial soils.

The gravelly soils consist of excessively drained soils that occur in outwash plains, terraces, and undulating to hilly moraines; these soils support hemlock and spruce forest. The water table is more than 4 feet below the surface. These soils are rarely flooded except during exceptionally high water or in low-lying areas, and are found primarily in the Herbert-Eagle River and East Mendenhall Valleys.

Most of the uplands consist of soils formed in glacial stony till that ranges from a few inches to many feet in thickness over bedrock. Bedrock outcrops and rocky cliffs are common. These soils vary from moderately well-drained very gravelly till to poorly-drained dense till with impermeable substratum. On benches and footslopes many of the soils are poorly drained due to the firm, compact slowly permeable or impermeable subsoil. These areas commonly include deep mucky peat soils and muskegs. A perched water table is usually very near the surface. Soils with granular subsurface materials are moderately well drained and support Sitka spruce and western hemlock forest. The Mendenhall Peninsula contains a typical assemblage of these soils.

Peat soils (muskegs) occur on the uplands, on benches and footslopes, and in alluvial valleys; they are very poorly drained and have water tables near the surface. The peat materials, which are in various stages of decomposition, are derived from mosses, sedges, and woody vegetation. Thickness of the peat ranges from about 2-3 feet to greater than 10 feet in some locations. These soils support a variety of vegetation types from sphagnum moss with scattered lodgepole pine to hemlock and spruce forest on shallow peat soils. North Douglas Island has an abundance of deep upland peat soils and the lower Peterson Creek-Salt Lake area consists of alluvial peat soils.

Soil Series Groups

Soil series are mappable soils which have developed from a particular type of parent material and have distinctive characteristics and arrangement of the soil profile. Those mapped by the Soil Conservation Service in the Juneau area include 21 soil series and land types. These soils have been assembled into 12 soil series groups which have similar physical and engineering characteristics and development limitations or constraints. Their location and distribution are shown on the soil series map for the focus areas (Figure III-3).

The mapped soil series groups may contain one or more associated soil series within the mapped boundaries. For example, Kogish peat may be included within Wadleigh soils. The soils map is not intended for detailed site-specific development considerations since slight variations in characteristics can be expected. Because SCS data are more generalized, specific geotechnical

evaluations of on-site soils should be made when development is considered. Descriptions of the soil series groups with a discussion on site development limitations follow.

The degree and kind of SCS soil limitations for urban development are intended to serve as a guide to the planning process. A slight limitation indicates that the soil properties are generally favorable for the specified use and that the limitations are minor and easily overcome. A moderate limitation indicates that the soil and site features have some unfavorable characteristics which can be overcome or minimized by special planning or engineering design. A severe limitation indicates that the soil or site properties are sufficiently unfavorable to require a major increase in construction effort, special design, or intensive maintenance. A rating of severe for a particular area does not mean that the soil cannot be used at all. It does mean, however, that for development purposes limitations must be considered. For example, specific control measures can reduce the potential erosion hazard, and suitable structural fill can be used to develop building sites in areas where native soils are unsuitable for direct building support.

Am Fine Sandy Loam (Am)

The Am series is formed in silty alluvial soils in broad valleys of the Herbert and Eagle Rivers (Figure III-2) and includes several small patches in the northern portion of the Mendenhall Valley (Figure III-3). These soils also occur on gently sloping alluvial fans along the eastern slopes of the Mendenhall Valley. The Am series soils are somewhat poorly drained. The valley areas include small streams, sloughs, and wet sandy and gravelly spots, and springs and seeps occur in the alluvial fans. These soils may be subject to overflow during periods of snowmelt or heavy rainfall. The water table is generally less than 2 feet below the ground surface. This soil is SM or ML in the unified Soil Classification System.

Am series soils severely limit development for septic drainfields and building foundations, due to the high groundwater table and susceptibility to flooding. Development in these areas requires drainage control measures and/or fill to compress the underlying soil and elevate the site to avoid flood hazards.

CFL Silt Loam (Co)

This group consists of Co, Fu, and Le silt loam and peat soils as mapped by the SCS. They consist of very poorly to poorly drained silty and organic soils that occur in level floodplains. They have formed in West Mendenhall Valley south of Glacier Highway and north of Montana Creek, in lower Lemon Creek Valley, and in the Salt Lake-Eagle Harbor area. The water table is generally at or less than 1 foot below the ground surface and very susceptible to flooding. Peaty soils range from 20 to 50 inches in thickness but may consist of thin seams in silty soils. These soils con-

sist of ML and PT in the Unified Soil Classification System. These soils have very severe development limitations for foundations, septic drainfields and shallow excavations due to their soft, highly compressible nature, the high groundwater table, and the hazard of flooding.

HAB Gravelly Loam (He)

This group consists of He fine sandy loam, Au very gravelly sandy loam, and Be very gravelly sand. These are well to excessively well drained soils that have formed in gravelly outwash material and elevated sandy terraces. These soils occupy the eastern portion of the Mendenhall Valley and the outwash terraces of the Herbert and Eagle River valleys. The substratum is composed of gravel and cobblestone, which make up 50 to 75% by volume of the soil. These soils are primarily classified GW, GP, and GM in the Unified Soil Classification System, but also contain SM or ML soils. The ground water table is generally greater than 4 feet below the surface, but may be near the surface in isolated low spots.

The HAB group is a good source of sand and gravel products and is well suited as a source of road fill; however, there may be excessive fines in the He soils that limit its suitability for those uses. Shallow excavations for utilities or basements may be difficult, due to the presence of coarse materials. Limitations for septic drainfields is slight; however, flood hazards and high permeability of the soil could contaminate groundwater.

Kogish Peat (Ko)

This mapping unit includes Kogish peat (Ko), Kaikli mucky peat (Ka) and Kina peat (Ki) soils that have formed from sphagnum mosses, sedges and decaying woody vegetation. Kogish peat is the most prevalent peat soil in the study area. These peat soils occur on broad benches and foot slopes of the uplands. The broad muskeg areas of North Douglas Island consist of deep Kogish and Kina peat soils. The peat is generally greater than 5 feet thick and may exceed 10 feet in some areas (Miller, 1972). The Kaikli series consists of shallow mucky peat over bedrock. Depth to bedrock ranges from 16 to 40 inches. Unified Soil Classification is predominantly PT, although some GM gravelly mixtures may be present.

These soils have very severe development limitations for septic systems, roads and foundations, due to their soft and compressible organic nature, the high water table, and the shallow depth to bedrock for the Kaikli series. Development in these areas requires removal of peat soil and drainage control, or pile-supported building foundations, and/or fill to compact the sub-surface soils.

Kupreanof Gravelly Silt Loam (Ku)

This mapping unit includes Kupreanof gravelly silt loam and Karta silt loam (Kt) soils. The series consists of well drained soils that have formed in very gravelly loamy till in the uplands. These soils are most extensive along west Douglas Island, and also occur in upper Lemon Creek Valley. The substratum ranges in texture from very gravelly to gravelly sandy loam (ML and GM in the Unified Soil Classification System). Stones and boulders are common. Depth to seasonally high water table is generally greater than 5 feet.

Areas with low to moderate slopes of less than 12% have slight to moderate development limitations for roads, foundations, and septic systems. Steeper slope areas have potential slide and slippage hazards and are not suited for septic drainfields. Shallow excavations are severely limited by coarse material in the subsurface.

Maybeso Peat (Ma)

The Maybeso series consists of very poorly drained mucky peat soils which are from 16 to 50 inches thick over glacial till. They occur on nearly level to sloping land surfaces on upland benches throughout the study area. This soil is generally less thick than Kogish peat (Ko). The ground water is perched above a compact substratum and seeps on sloping areas are common. Depth to seasonal high water is less than 2 feet. This series includes patches of Wadleigh, Kina and Kaikli soils. These soils are classified PT and GM in the Unified Soil Classification System. These soils have severe to very severe development limitations for foundations, shallow excavations, roads, and septic filter fields due to the high water table, organic soils and coarse materials in the substratum.

Mh Gravelly Sandy Loam (Mh)

The Mh series consists of well drained soils that occur on the low hilly moraines of the Mendenhall, Herbert and Eagle glaciers. The texture of the subsurface material varies from coarse sandy loam to gravelly silt loam (GM in the Unified Soil Classification System). The slopes are short and irregular and contain ponded depressions of fine sandy soils.

Development limitations are slight to moderate for foundations, septic drainfields and shallow excavations. These soils are a suitable source for road fill, and sand and gravel. Excessive fines may require separation for aggregate processing.

Modified Land (M1)

Modified land includes those areas which have been filled with coarse granular material of several feet to accommodate industrial, commercial, and residential uses. These areas include the

downtown Juneau waterfront, the former tidal flats of lower Lemon Creek, and the airport fill area. Mine waste dumps are also included in this category. Development constraints are highly variable due to the source and method of fill placement. Site preparation work is commonly required for building foundations.

Salt Chuck (Sa)

The Salt Chuck series consists of well drained very gravelly soils (GP-GM in the Unified Soil Classification System) that have formed in alluvial fans along the eastern Mendenhall Valley and north of Auke Lake. The water table is generally greater than 4 feet below the surface. The moderately sloping soils may be susceptible to overflow from streams during periods of melting snow or heavy rainstorms. Development limitations for roads, foundations, and septic systems are slight. Shallow excavations are severely limited due to the presence of coarse material in the subsurface. These soils are suitable for use as a source of road fill and sand and gravel.

Tidal Flats (Tf)

Tidal flats consists of nearly level areas in the Gastineau Channel area at the mouths of Salmon and Lemon Creeks and the Mendenhall River and are inundated by high tides. The substratum consists of silty to sandy material, but in some places they may be gravelly.

Tolstoi Complex (To)

This mapping unit includes the Tolstoi and McGilvery soil series. These soils consist of thin silt loam to stony sandy loam or forest litter that rest directly on bedrock (ML or PT in the Unified Soil Classification System). The depth to bedrock ranges from about 6 to 20 inches. Included with this mapping unit are Wadleigh, Maybeso, and Kaikli soils, and many sheer rocky cliffs and rock outcrops. Development is severely restricted in these areas because of the difficulty for excavations; however, bedrock provides excellent foundation supports.

Wadleigh Gravelly Silt Loam (Wa)

This series consists of poorly drained soils which have formed in compact glacial till along the lower mountain slopes of the uplands. Subsurface texture ranges from silt loam to very gravelly loam above a firm glacial till that impedes drainage at a depth of 15 to 25 inches below the surface. Shallow groundwater is commonly perched above this impermeable substratum. Because of the perched water conditions and seepage in the upper soil zone, development for building foundations and shallow excavations is severely limited. The limitation for septic drainfields is very severe because of the perched water table and low soil permeability. This soil is classified GM or SM in the Unified Soil Classification System.

Summary

The soil factors that most influence land development are the relative ease and expense of site preparation, the supply of water, and the ability to treat septic effluent through soil absorption. Where public water and sewer facilities are provided, the latter are not necessary.

Alluvial soils typically contain clay, silt and organic matter, and the groundwater is usually at or near the surface. Artificial drainage and soil compaction or fill is usually required for development, and heavy structures commonly require pile foundations. These areas are subject to occasional flooding. The gravelly soils are suitable as sand and gravel.

The shallow depth to bedrock or compact impermeable substratum of the upland till soils limits the ease of excavation for foundations and utilities. These soils commonly have a perched groundwater table that is susceptible to contamination from failed septic systems. The steep slope areas are prone to slope failure and erosion.

The organic peaty soils are highly compressible and cannot support roads or most structures without differential settlement. Compaction and fill or complete excavation is usually required to obtain stable conditions for roads or buildings. Deep peat areas may require pile foundations. Fill may also be required due to difficulty of drainage.

Development hazards are further described in the following hazards section. Water availability and septic suitability are discussed under Hydrology.

HAZARDS

Naturally occurring hazards are events that directly or indirectly affect the human environment and living conditions. Damages from natural processes, such as loss of property and life, increase when there is pressure for growth in hazardous areas and human alteration of the natural environment. These losses can be lessened or prevented by knowing what the hazards are and by planning development to avoid hazardous areas.

In the CBJ, the principal natural hazards are seismic hazards, landslides and avalanches, and floods. They are described in terms of location of occurrence; the predictive probability of occurrence, if known; and the expected effects of a given event.

Seismic Hazards

Faults

Southeast Alaska lies within the Circum-Pacific seismic belt, which has been seismically active since at least early Paleozoic time. Continued seismic activity, as well as glaciation, has been a major factor in shaping the present land forms. Long linear fjords and nearly straight alignments along stream valleys are evidence of structural control and erosion along fault zones. The major linear features in the Juneau area, shown in Figures III-1 and III-4, are the Gastineau Channel, the alignment of Montana, Windfall and Cowee Creeks, and the alignment of Lynn Canal and Chatham Strait. These have been mapped as major faults. The Lynn Canal-Chatham Strait is only 3 to 6 miles wide along most of its length and extends for over 250 miles from Skagway to the southern end of Baranof Island. Other inferred faults, which have been mapped by Barker (1957), and Twenhofel and Sainsbury (1958), are those in the Juneau area and along Fish and Peterson Creeks on Douglas Island. Possible faults have also been noted at the base of and parallel to Auke Mountain and from Lena Cove to near Point Louise on Auke Bau. The Silverbow Fault along Snowslide Gulch adjacent to Gold Creek was first mapped by Spencer in 1906.

Earthquakes result from movement and breaking of rocks along faults, which may or may not break the ground surface. Although the faults which have been mapped within the areas show no evidence of historical activity or movement since Pleistocene time approximately 2 million years ago, the area has experienced ground shaking from distant earthquakes (Miller, 1972). The nearest known active fault is the Fairweather Fault, located about 100 miles west of Juneau (Figure III-4). The Lynn Canal-Chatham Strait Fault, which passes near the northern portion of the study area, has had no historical activity associated with it; however, because of its relationship to other major faults in Southeast Alaska, it cannot be considered inactive (Miller, 1972).

Figure III-4 shows the location of earthquakes in Southeast Alaska between 1899 and 1975. Earthquakes commonly occur west of Baranof Island, southwest of Skagway, near the Fairweather Range, and northwest of Yakutat. These earthquakes are considered of shallow origin with properties similar to those of shallow focus earthquakes occurring elsewhere (Yehle, 1979). Only two earthquakes between Richter magnitude 5 and 6 was recorded within 100 km (62 miles) of Juneau, and 5 earthquakes greater or equal to magnitude 6 were recorded within 200 km (125 miles) of Juneau between 1927 and 1973 (Figure III-5). Earthquakes occurring beyond 200 km of Juneau probably would not result in serious damage to structures in the area (Miller, 1972).

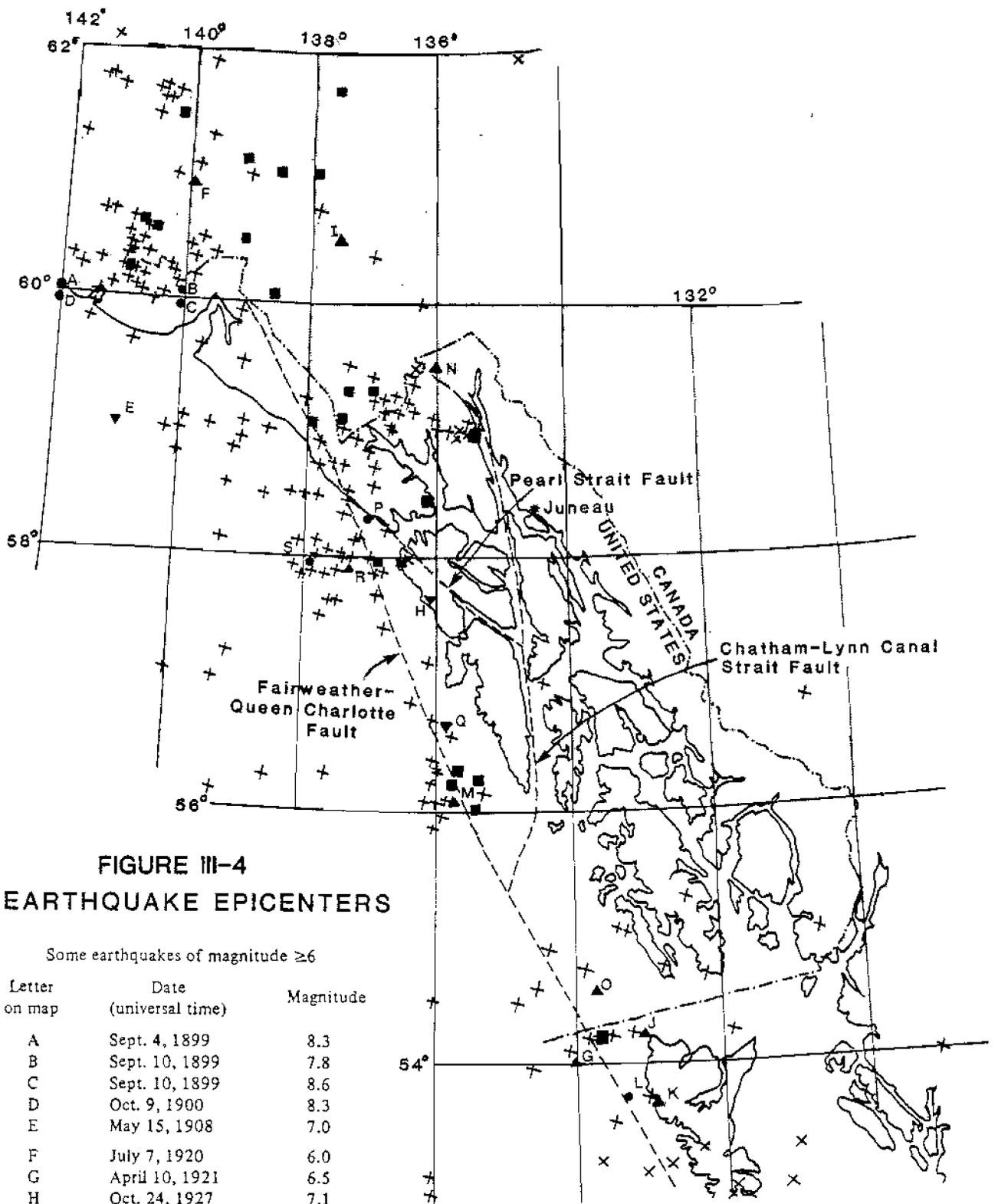


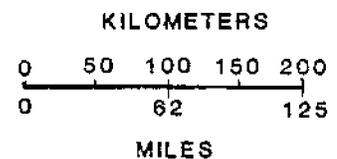
FIGURE III-4
EARTHQUAKE EPICENTERS

Some earthquakes of magnitude ≥ 6

Letter on map	Date (universal time)	Magnitude
A	Sept. 4, 1899	8.3
B	Sept. 10, 1899	7.8
C	Sept. 10, 1899	8.6
D	Oct. 9, 1900	8.3
E	May 15, 1908	7.0
F	July 7, 1920	6.0
G	April 10, 1921	6.5
H	Oct. 24, 1927	7.1
I	Feb. 3, 1944	6.5
J	Aug. 2, 1945	6.25
K	Feb. 28, 1948	6.5
L	Aug. 22, 1949	8.1
M	Oct. 31, 1949	6.25
N	Mar. 9, 1952	6.0
O	Nov. 17, 1956	6.5
P	July 10, 1958	7.9
Q	July 30, 1972	7.25
R	July 1, 1973	6.7
S	July 3, 1973	6.0

EXPLANATION

Magnitude	Symbol
≥ 8	●
$\geq 7 - < 8$	▼
$\geq 6 - < 7$	▲
$\geq 5 - < 6$	■
< 5 or not computed	×



Earthquake Potential

A general assessment for the earthquake potential in the area can be made on the basis of limited seismic data. Seismic risk maps predict the maximum level of shaking that can be expected for a given area based on analysis of historic seismic activity and the tectonic framework. These include the seismic zone map of the Uniform Building Code, 1976, and the seismic risk map prepared by the U.S. Army Corps of Engineers (1973). These maps delineate areas in which a given intensity or magnitude can be expected. The frequency of earthquake occurrences is not predicted.

The Seismic Risk Map of the Corps of Engineers relates possible damage during an earthquake to the magnitude of the largest probable earthquake. Earthquake magnitude is a numerical value that describes the amount of energy released by the earthquake. Magnitude is commonly expressed by the Richter scale, and a one-unit increase of magnitude represents an increase of about 32 times in energy released. Hence, a Richter magnitude 8.0 has over 1,000 times the energy released for a magnitude 6.0. The Juneau area is in Seismic Risk Zone 3 in which major damage to structures from an earthquake equal to or greater than magnitude 6.0 might occur.

The Uniform Building Code Seismic Zone Map relates one of four zones to the Modified Mercalli intensity earthquake expected to affect that zone. The intensity of an earthquake describes the physical effects from ground shaking. The Modified Mercalli intensity scale consists of 12 categories designated by Roman numerals (Table III-1). Intensities are general descriptions of the earthquake's impact at a given location and will vary depending on the magnitude of the earthquake, the distance from the epicenter, the nature of the geologic and soil conditions, and the quality of building construction. The CBJ is in Seismic Zone 2, for which moderate damage from an intensity VII event could occur.

Effects of Earthquakes

This evaluation of the geologic effects of future earthquakes is based on the assumption that earthquakes will continue to affect the area. It is important to know what can happen during an earthquake, and how best to minimize potential damages. Ground shaking is the primary effect of an earthquake; depending on local geologic characteristics, other possible effects include liquefaction, ground fracturing and water or slurry fountains, compaction and related subsidence, landsliding, and tsunamis and seiches. The following discussion on the effects of earthquakes has been obtained from Miller (1972) and Yehle (1979).

Ground Shaking

Ground shaking causes most of the damages to buildings and other structures during earthquakes. Shock waves are generated along a

Table III-1

MODIFIED MERCALLI INTENSITY SCALE

- I. Not felt except by very few under especially favorable circumstances.
- II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
- III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
- IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
- V. Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbance of trees, poles and other tall objects sometimes noticed. Pendulum clocks may stop.
- VI. Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
- VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.
- VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Disturbs persons driving motor cars.
- IX. Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.

MODIFIED MERCALLI INTENSITY SCALE (continued)

- X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with their foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (sopped) over banks.
- XI. Few, if any (masonry), structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipe lines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
- XII. Damage total. Waves seen on round surfaces. Lines of sight and level distorted. Objects thrown upward into the air.

fault and travel through rock materials, causing the ground to vibrate. The intensity of ground shaking is dependent primarily on the magnitude and duration of the earthquake, the distance from the fault, and the local geology. Damages sustained by a structure are largely a function of the building design and the material on which it is built. Shock waves traveling through less dense materials tend to decrease in velocity and increase in amplitude; accelerations become greater and ground motion lasts longer. Therefore, structures located on less dense material such as alluvial and water-saturated sediments generally suffer far greater damages than structures located on rock or compact glacial till soils.

Liquefaction

Liquefaction is defined as the transformation of granular material from a solid state into a liquified state as a consequence of increased pore-water pressure (Youd, 1973). This transformation is most likely in saturated, unconsolidated sedimentary deposits. Especially susceptible are deposits near the airport and Lemon Creek flats containing well-sorted, fine to medium grained particles such as coarse silt and fine sand. Liquefaction accompanies other earthquake effects such as ground-fracturing and water-sediment ejection.

When loose granular sands are subjected to ground vibrations from earthquakes, an increase in pore pressure occurs, resulting in movement of water to the ground surface. The development of high water pressure tends to turn the soil into a "quick" or liquified state. As liquefaction develops, automobiles, structures, and other objects gradually settle into the resulting quicksand, and lightweight buried objects tend to float to the surface. If liquefaction occurs on a gently sloping surface, the entire soil mass will tend to flow or move laterally with resultant cracks, fissures, and differential settlement.

Liquefaction potential is dependent on the soil type and its relative density, the intensity and duration of ground vibration, and depth to water table. Clay free granular delta and intertidal sands (Tf) near the airport and Lower Lemon Creek flats have the highest potential for liquefaction in the Juneau area. Detailed soils engineering and geologic investigation, especially density of underlying materials, are necessary to evaluate the potential for liquefaction on a site-specific basis.

Ground Fracturing and Water-Sediment Ejection

Ground fracturing and ejections of sediment slurries or water occur during large earthquakes where loose sand-sized materials are dominant in a deposit and where the water table is shallow and restricted by a confining layer, which can even be seasonally frozen ground (Yehle, 1979). Ground shaking increases the hydrostatic pressure as in liquefaction and, if the confining layer ruptures, the water and sediment erupt along ground fractures or

from point sources. Compaction and ground subsidence often accompanies ejection. Deposits within the area susceptible to ejection are moraine soils (Mh), outwash soils (He), alluvial deposits (Am) and tidal flats (Tf) (Figure III-3).

Compaction and Settlement

Settlement or compaction of loose soft sediments or improperly placed fills occurs from long-term stress due to loading by roads or structures, or by compaction during earthquake vibrations. The greatest amount of settlement occurs in loose, thick deposits consisting of silt to small pebble-sized material and areas of high groundwater, and where strong shaking persists for at least a few minutes (Yehle, 1979).

Differential settlement in buildings, where one portion settles more than another, can cause strains that substantially weaken the structure. During an earthquake, serious structural damage could result from additional compaction and settlement due to non-uniform soil or fill conditions. Flooding due to settlement could occur in low-lying areas. Soils susceptible to compaction during strong ground shaking from an earthquake include moraine (Mh), outwash (He), alluvium (Am, Co), alluvial fans (Sa), and peaty soils (Ma, Ko).

Landslides

Landslides are a common result of ground shaking from moderate to large earthquakes. Movements may consist of single or multiple slide events and may be subaerial and underwater landslides. Failures of delta fronts, small scale slumping, and rock falls are several types of landslides that could occur. Numerous geologically-recent slides conspicuously mark the hillslopes of Heintzleman Ridge, Gold Creek and Mount Roberts. Landslides and avalanches are further described in the next section.

Tsunamis and Seiches

Earthquakes can trigger large water waves that could cause destructive flooding to shore areas. These may be along coastal areas or in enclosed or partially-enclosed basins. Wave types include tsunamis, seiches and waves caused by landsliding.

Tsunamis, or tidal waves, are long-period water waves generated in the ocean by fault displacements or other abrupt ground movements on the sea floor. In the open ocean, tsunamis travel at speeds of 300 to 500 miles per hour, and may have wave lengths of many miles. As the tsunami approaches shore, the speed decreases and the height of a wave increases rapidly, depending on offshore topography, tidal phase, coastline orientation and configuration (Wilson and Tørum, 1968). Waves may reach tens of feet in height.

A seiche is an oscillation, or sloshing back and forth, of the surface water in an enclosed or semi-enclosed basin. Its period

is controlled by the length and depth of the containing basin. Seiches are initiated chiefly by local changes in atmospheric pressure, aided by wind and currents. The terminology was first applied to standing waves set up on Lake Geneva by these conditions. Seiches set up on rivers, reservoirs, ponds, and lakes can also occur due to passage of seismic waves from an earthquake. These are termed seismic seiches. Seiches can also be caused by other mechanisms such as landslides, submarine slides, tilting, and tsunamis.

Massive underwater and subaerial landslides related to shaking during earthquakes have caused small to very large waves in bodies of water. The July 10, 1958 earthquake triggered a landslide which generated a seiche with a wave runup of 530 meters in Lituya Bay, Alaska.

It is unlikely that tsunamis from the ocean would cause damage in the Juneau area because of the protection offered by its inland location. However, seiches with wave runups in excess of 5 feet have a low to moderate probability of occurring in Gastineau Channel, Auke Bay, the north Douglas Island area, Lena Cove, and Tee Harbor (Miller, 1972). Additional coastal flooding resulting from combined high tides and high winds will result in storm surges and wave runups. These coastal flood hazards are further described in the Flood Hazard section.

Landslides/Avalanches

Landslides occur in many different forms in the Juneau area from rockfall avalanches to debris flows. Landslides are widespread in the study area and occur as a result of many environmental factors. The debris and rubble (talus or colluvium) at the base of steep rock slopes consist of soil and rock materials which were deposited by slow erosional processes and/or by sudden large scale movements of snow, rock, or a mixture of the two. Snowslides are highly susceptible on steep, brushy or non-vegetated slopes. Snowslides or rockfall avalanches are likely to continue to occur on such steep rock slopes. The debris slopes and talus are also susceptible to continued downslope movements. Landslide and avalanche chutes are indicated with an "A" above the chute on Figure II-5. The location of major landslide deposits mapped by Miller (1972), avalanche zones identified by Daniel, Mann, Johnson, and Mendenhall (DMJM, 1972) and review of color infrared aerial photos were used to locate landslide/avalanche areas on the map. These maps should not be used for site planning purposes. Detailed avalanche zone maps, not smaller than 1:10,000 (1 inch = 800 feet) prepared by Frutiger (1972), and site specific investigations are more appropriate.

Landslides

Landslides or mass-wasting deposits include colluvium and talus, debris-flow deposits, and rockslide avalanche deposits. Gravity

and water and snow aid in their transport. Some deposits accumulate by falling through the air and bounding down the mountain slopes.

Weathering processes, especially frost action by freezing and thawing of water in rock fractures, greatly weaken the rock and increase the susceptibility to down-slope movement. The type of movement may be slow or fast and is dependent on the rock type, degree of weathering, slope, and moisture content. Movement can occur as creep, slide, flow, or fall. The mass-wasting deposits identified by Miller (1972) and the susceptibility to down-slope movement are described below.

Colluvium and talus represent the accumulation of rock and soil particles at the base of the steep mountain slopes. These deposits are formed by the slow down-slope transport of rock and soil aided by rainfall, snow or ice; by individual rock pieces that fall and bound down the slope; and by soil materials that accumulate as a result of snow avalanches. Several large talus and colluvial deposits have coalesced, forming continuous aprons at the bases of steep mountain slopes. Examples are south along the Thane Road, Upper Gold Creek Basin, the mountain slope between Salmon and Lemon Creek, and the eastern slopes of Fish Creek Valley on Douglas Island. These deposits range in thickness from a few feet near the upslope portion to more than 15 feet at the base. Colluvium and talus are unsuitable for structures because the loose unsorted deposits are susceptible to downslope movement and the hazard of occasional rock falls from above that may occur from time to time. These deposits are moderately susceptible to landsliding (Figure III-5).

Debris flow deposits represent water-saturated loose residual materials that moved rapidly down steep slopes. Their extent, as mapped by Miller (1972), is limited to Mount Roberts-South Franklin Street in Juneau and the Salmon Creek Valley. These flows occurred after sudden or unusual amounts of water were added to soil material forming on steep slopes. It is not known whether future flows will move exclusively along former debris flow paths or in material that has not previously exhibited debris flow. The recurrence rate of debris flows has not been determined. However, because heavy or prolonged rainfall preceded the former flows, it appears likely that future flows could occur in the fall; slope and geologic conditions suggest the South Franklin Street area would be the most susceptible location in the study area for future debris flows.

Rockslide avalanche deposits represent the extremely rapid down-slope movement of rock from steep bedrock cliffs. They may originate as one or several blocks that separate and slide off the mountain face. The rock tends to disintegrate as it falls and quickly becomes a mass of sliding, rolling, and bounding rock debris. Miller (1972) has identified five rockslide avalanche deposits in the study area. He describes the one outside Juneau as:

"...the rockslide-avalanche started on the side of Mount Juneau, where a large scar can be seen, crossed the Gold Creek valley, and rose more than 180 feet on the opposite slope where the deposit now partly covers a bedrock ridge that connects Mount Maria to Mount Roberts. Spencer (1906, page 83) recognized the large deposit in Gold Creek Valley as an ancient slide or avalanche that dammed Gold Creek. This deposit in Gold Creek valley is at least 38 feet thick and is so massive and the fragments so large that to the casual observer the debris looks like knobs of bedrock surrounded by surficial material. High on the bedrock ridge large scattered blocks form a deposit about 300 feet wide ...The leading edge of the avalanche projected off the Mount Maria-Mount Roberts ridge and continued down to the site of Juneau. Isolated angular fragments 2 feet or more in largest dimension provide evidence that the avalanche reached at least as far as the upper part of Sixth Street. Building and grading over the years probably removed or buried most of the fragments."

The cause of rock slides may be the weathering along joint fractures which weakens the rock over a long period of time and provides the necessary instability to initiate the rock fall. The freezing and thawing of water in rock fractures and the continued expansion of joint sets from stress release since deglaciation may also be a contributing factor in weakening of the rock mass. Ground vibrations from even small earthquakes could act as triggering mechanisms causing individual fragments or large masses of rock to dislodge from cliffs. Large earthquakes are likely to initiate some rock-fall avalanches. Steep unvegetated slopes are especially prone to rock fall and snowslide avalanches. These areas are indicated as high landslide avalanche potential in Figure III-5.

Snow Avalanche

Snow avalanches result from a combination of climatic factors and the characteristics of the mountain slope on which the snow accumulates. These factors include steepness of slope and the type and extent of vegetative cover, if any. The frequency or record of past events and terrain characteristics is used to define avalanche zones.

Climatic factors, including the temperature and snow quality, are important in determining the potential type and magnitude of avalanches for a given terrain unit. The climatic data in the CBJ, however, does not provide information concerning snow cover conditions. The type and extent of snow cover and strata of ice lenses within a snow deposit determines the type and potential magnitude of snow avalanche.

Avalanches are either dry snow, airborne powder type or wet snow slurry type that flows along the ground in natural gullies. The Behrends Avenue avalanche of March 1966 was a dry airborne powder avalanche. They are the most destructive and can attain speeds of 200 miles per hour. These avalanches are not restricted to existing gullies. A pressure wave or wind blast that precedes the snow avalanche is responsible for the most damaging effects. Wet snow avalanches, which also can be very destructive, are very prevalent in the area because of heavy, wet snow. These avalanches can also occur in the spring due to warming of the snow peak. These avalanches usually travel at slow speeds and follow the course of natural gullies.

Generally, large avalanches are prevented by the continual breaking of small and shallow slides. However, thick snow accumulations and triggering from falling cornices, rockfalls, animals, or earthquakes could initiate massive snow avalanches. People involved in wintertime recreational activities (skiing, snowshoeing) can also trigger, and are often killed by, avalanches.

The distribution of vegetation is a key indicator for the purpose of mapping avalanche zones. Brush covered slopes are possible indicators of past avalanche zones. The past record of avalanche occurrence can be approximately determined by dendrochronology. The age of the last destructive avalanche to occur in a given area cannot be younger than the oldest tree that grows in its path. Areas of old trees (+200 years) could be susceptible to avalanches, however, the probability of avalanche occurrence is greater in areas of younger (<25 years) trees or slopes covered in brush.

Because of the limited climatic records for determining avalanche occurrences in the area, topography and vegetation patterns were used to delineate avalanche zones (Frutiger, 1972). Snow avalanche starting zones and avalanche paths are indicated on the landslide-avalanche map (Figure III-5) as high hazard area. These areas are exposed to frequent and powerful avalanches and are sources of rockfall avalanches and talus slopes.

Flood Hazards

Floods are a result of climactic related factors and urban development that alter natural flow conditions in flood prone areas. Warm rainfall on a heavy snowpack contributes to high base stream flows and may result in flooding. The most serious flooding results when peak stream flows occur simultaneously with high tides. The flood hazard is exacerbated by urban development in stream valleys. The creation of impermeable surfaces results in increased volumes and rates of storm runoff, and numerous stream crossings and undersized culverts can become blocked by stream debris or ice, which restricts the passage of storm flows. Damage by flooding occurs because of urban development in the floodplain. Coastal flooding can occur as a result of combined

high winds and high tides that will create storm surges and wave runups.

A Flood Insurance Study (Corps of Engineers, 1980) was conducted for the City and Borough of Juneau through the U.S. Department of Housing and Urban Development, Federal Insurance Administration, to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study includes maps, profiles and descriptions of flood hazards associated with stream and coastal flooding. The flood zones shown in Figures III-6 and III-7 were developed from the Flood Insurance Rate Maps (FIRM), February 1981. This study supersedes the floodplain information reports prepared by the Corps of Engineers in 1967 and 1971.

Principal Flood Problems

Records of past flooding are limited. The greatest known floods were in 1927 and 1943, with most of the damage occurring along the Mendenhall River. The primary cause of flooding was rapid runoff during heavy rains. Because stream gauges were not installed in Lemon Creek until 1954, or in the Mendenhall River and Montana Creek until 1965, it is impossible to determine the frequency of these past floods. The greatest recorded flow for Lemon Creek was in August 1961 and in September 1967 for the Mendenhall River.

Stream gauge records indicate that the peak annual discharge occurs in the fall months when average monthly precipitation is highest. Summer and fall floods can result from extreme rainfall in short periods of time. Stream discharges of Montana and Lemon Creeks correlate with the amount of rainfall; however, runoff from the Mendenhall River is masked by glacial melt during the summer months. About 90% of the runoff from the Mendenhall River occurs during the summer, indicating that glacial melt accounts for a substantial amount of the flow (COE, 1980). Runoff patterns of most streams in the study area are similar to those of Montana Creek.

The streams in the Mendenhall Valley flow through fairly dense residential developments which have resulted in construction of numerous culverts and bridges. Many culverts and some bridges on Duck and Jordan Creeks are inadequate and result in backwater flows. Blockage by debris and ice, high velocity flows, and siltation of culverts are principal causes of flooding in the area. The Old Glacier Highway bridge in Lemon Creek Valley was a major source of flooding, because of stream flow restrictions. Annual dredging on both sides of the bridge undermined the bridge and caused extensive damage, but combined with installation of larger culverts have reduced the likelihood of flooding (COE, 1980). Deepening the channel by annual dredging to present levels is required to retain the 500 year flood within the stream banks. Other flood control measures in the area include the construction of the flood control channel in Gold Creek in 1958,

which has reduced its flood hazard, construction of the airport on fill to protect it from stream flooding, and dikes to protect it from coastal flooding.

Coastal flooding was analyzed by the Corps of Engineers (1980) for the 10 and 100 year frequency floods, using tidal elevation data and determination of storm driven wave runups. Wave runup is the distance the combined tidal and storm-generated wave will move up the shoreline. This distance is considerably less for steep sloping beaches than for shallow beach fronts. Detailed analyses were conducted for downtown Juneau, Douglas, Juneau airport, Auke Bay, Point Lena and Lena Cove, and Eagle Harbor. The extent of coastal flooding and flood elevations are shown in Figures III-6 and III-7 and in Table III-2. The fetch, or the unobstructed area over water that the wind can blow, and wind speed are the most critical factors in determining wind and wave setup elevations. Storm setup is then added to the tidal frequency to obtain the highest possible water surface elevations. The maximum wind setup is about 0.2 feet, due to the relatively short fetch and low wind speeds, and the highest wave setup calculated for Lena Cove is 1.5 feet. The major coastal flooding areas are along the low bank shorelines adjacent to the airport.

Floodplain Management Applications

To assist in sound floodplains management, the Federal Insurance Administration (FIA) has adopted the 100-year flood as a national standard. The floodplain boundary shows the limit of expected flooding but does not indicate the potential hazard or depth of flooding in a given area.

To determine the flood hazard potential of various sites, the Federal Insurance Administration uses the Flood Hazard Factor (FHF) to:

"...correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHF are used to set actuarial insurance premium rate tables based in FHF's from 005 to 200. After the determination of reaches and their respective Flood Hazard Factors, the entire incorporated area of the municipality was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zone A: Areas subject to 100-year shallow flooding where average depths are not known; determined by approximate methods only.

Zone AO: Special flood hazard area inundated by types of 100-year shallow flooding where depths are between 1.0 and 3.0 feet; FHF's are not determined.

Table III-2

SUMMARY OF COASTAL FLOODING ELEVATIONS

<u>Flooding Source and Location</u>	<u>Elevation (feet)</u>			
	<u>10-Year</u>	<u>50-Year</u>	<u>100-Year</u>	<u>500-Year</u>
GASTINEAU CHANNEL				
Juneau Bridge to Douglas Harbor	20.5	--	23.0	--
Douglas Harbor to Bullion Creek	23.0	--	26.0	--
Mendenhall River to Juneau Airport extended	21.0	--	23.0	--
Juneau Airport extended to Sunny Point	22.5	--	23.5	--
AUKE BAY				
Auke Cape to Spuhn Island	20.0	--	22.0*	--
STEPHENS PASSAGE				
Point Lena to Auke Cape	23.0	--	25.0	--
FAVORITE CHANNEL				
Point Lena to Lena Cove	27.5	--	30.5	--
Lena Cove to Tee Harbor	24.0	--	26.5	--
Huffman Harbor to Eagle Harbor	22.0	--	24.5	--

*This is the highest tidal elevation, which is approximately equal to the 100-year elevation and designated as flood zone A. The 100-year storm surge and wave runup elevation is 21.0.

Zones A1, A2 ...A5: Special flood hazard areas inundated by the 100-year flood with base flood elevations determined and zone designations assigned according to FHF.

Zone V: Special Flood Hazard Areas along coasts inundated by the 100-year flood, as determined by approximate methods, and that have additional hazards due to velocity (wave action); no base flood elevations shown or FHF's determined.

Zone V2, V4, V5, V6: Special Flood Hazard Areas along coasts inundated by the 100-year flood as determined by detailed methods, and that have additional hazards due to velocity (wave action); base flood elevations shown, and zones subdivided according to FHF's.

Zone B: Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also, areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.

Zone C: Areas of minimal flooding.

(Flood Insurance Study, 1980).

Summary

Groundshaking from earthquakes centered on distant faults can cause damage to structures on the loose, saturated alluvial soils and can dislodge rock, soil, or snow from steep slopes and damage structures at the base of slopes. The groundshaking responses for each soil type to a given earthquake has been rated from poor to best by Miller (1972). Soils with poor foundation conditions include alluvial soils, tidal flats, and muskegs. Ground responses can result in ground fracturing, liquefaction, or differential settlement, or induce landslides, rock falls, or avalanches. Landslide and avalanche zones identified as high hazard zones (Figure III-5) do not necessarily require groundshaking from earthquakes to act as triggering mechanisms.

The debris and rubble at the base of steep slopes consist of soil and rocky materials which were deposited by slow erosional processes and/or sudden large-scale movements of snow and/or rock. These areas, characterized by steep brushy or non-vegetated slopes, are highly susceptible to continued impact from snow avalanches and landsliding. The debris or talus slopes at the base of the mountains are generally unstable and may be subject to downslope movements.

Floods occur as a result of several natural and development related factors. Flood hazard is greatest during the fall months during intense periods of rainfall and when base flow from glacial melt is highest. Development that encroaches onto floodplains, floodway obstructions, and restrictions to flow at culverts and bridges can increase the flood hazard in urban areas. Coastal flooding can result during combined high tides and storm events.

MINERAL RESOURCES

Mineral commodities within the CBJ consist of metallic minerals, primarily gold and silver with associated lead and zinc; non-metallic minerals including garnet, graphite, marble, and possibly mica; and sand and gravel, sand, and quarry rock for construction purposes. The occurrence of garnet, graphite, marble, or mica is not considered to be of economic importance and, therefore, is not described in this section. Information regarding metallic minerals was obtained from published U.S. Geological survey reports and from the Alaska Department of Natural Resources. Information on sand and gravel resources was obtained primarily from an R & M consultants (1978) report.

Metallic Minerals

The study area is located entirely within the Juneau gold belt, which extends from just north of Berners Bay to just south of Windham Bay. The first metalliferous deposits of the gold belt were found near Juneau in 1880. Prospecting was most intense around 1900-1910, but mining dwindled away by World War II. Mines on the mainland near Juneau and on Douglas Island have produced more than 6.5 million ounces of gold, several million ounces of silver, and more than three-quarters of the lead produced from Alaska (Berg and Cobb, 1967). Another 23,000 ounces of gold was produced by mines between Berners Bay and Auke Bay (Berg and Cobb, 1967).

Recent interest in mining has revived as gold and silver prices have risen. Although prices have dropped in the last two years, they are expected to rise again. In late 1981, mining was Alaska's fourth largest industry and the fastest growing industry (Conwell and Eakins, 1982).

The gold belt is contained in a thin belt of metamorphic rocks adjacent to the coast range granitics. Most of the ore occurs in quartz veins or veinlets within slate; however, other host rocks for the quartz veins are known (Berg and Cobb, 1967). On Douglas Island, the veins are within granitic bodies cutting slate and greenstone (volcanic). A prospect along Carlson Creek is located in schist and gneiss. Occurrences on the upper Lemon Creek are in a gneissic granitic body. Between Berners and Auke Bays host rocks include slate and graywacke, with some granitic and gabbroic occurrences.

Although metalliferous deposits are usually noted for their gold content, other metals are often associated. Silver, lead, and zinc commonly occur with gold, and in some ore bodies, copper is found. Metalliferous minerals typically include pyrrhotite, sphalerite, galena, pyrite, arsenopyrite, chalcopyrite, and tetrahedrite (Berg and Cobb, 1967). Douglas Island deposits also contain molybdenite and magnetite, with some scheelite, arsenic, realgar, and orpiment (Berg and Cobb, 1967).

In some places, metals other than gold may occur in economically feasible quantities. Active mining claims which list mineral commodities in the Juneau area are on file with Alaska Division of Geological and Geophysical Surveys (1982). Active silver claims occurred at Mount Adolph Knopf, along upper Lake Creek, near Silverton Basin, and near Thane in 1981. Older silver claims were filed on Douglas Island across from Thane. Copper claims are located on Lincoln Island and the upper Eagle River. Lead claims have been filed west of Eagle glacier, near Stroller White Mountain, near Silverbow Basin on the gold Fork of Carlson Creek, and on eastern Douglas Island across Gastineau Channel from Thane and Dupont. Zinc, arsenic, zirconium, tin, and iron may be occasionally obtained as well.

About half the gold is in native form; the rest is combined with sulfides (Buddington and Chapin, 1929). Generally, the higher the sulfide content of a deposit, the higher the ore's value. In particular, large quantities of arsenopyrite and galena have been associated with highest gold tenor (Berg and Cobb, 1967). Similarly, high galena and sphalerite contents have been associated with higher silver tenor (Buddington and Chapin, 1929).

The ore tends to be neither high grade nor extensive. Berg and Cobb (1967, page 155) report that:

"Few of the ore bodies mined in the Juneau gold belt would have been considered rich by ordinary standards; much of the ore produced from the major mines contained less than a dollar's worth of gold and silver per ton, and most of the ore bodies were bounded by assay rather than geologic limits. The Alaska-Juneau mine, the last to close, could not reopen after World War II because the margin between the fixed price of gold and rising operating and labor costs had disappeared."

Mining activity has been sporadic in the City and Borough of Juneau (Alaska Department of Natural Resources (DNR), 1982). The most active periods were 1900-1912, 1935-1937, and the mid-1970's to present. Increasing numbers of claims have been recorded in the past decade. In particular, a record amount were filed in 1980 and 1981. About half the claims from the early 1900's have been restaked recently (Judy Sigler, personal communication, 1982).

Valid claims are annually leased mineral rights on state or federal land. A claim can only be staked after discovery of a commodity at the site and can only be renewed if time and money have been actively invested in mining activities.

Much of the City and Borough of Juneau is accessible by road, making small-scale mining operations viable. Most of the claims have been filed by small groups of people or by individuals (Judy Sigler, personal communication, 1982). Big mining companies are also staking many claims, but generally in less accessible areas.

Mining claims are scattered across the study area. They tend to be widespread where bedrock outcrops (Southeast Alaska Regional Profiles). Claims tend to be concentrated in certain localities: north and west of Eagle River and Glacier; north and west of Mendenhall River and Glacier; along Lemon Creek; Juneau-Thane-Clark Peak area; and the southeast half of Douglas Island (Alaska DNR, 1982). The highest concentrations of current claims occur near the upper Eagle River, upper Lake Creek, Peterson Creek, and southeastern-most Douglas Island.

Most claims are for lode deposits, where ore is contained within bedrock. However, there are some placer (streambed) deposits being mined. (Recent glacial erosion and steep terrain preclude extensive placer deposits.) Also, old mine tailings are being worked with new technology for fine-grained metal not obtained earlier.

Sand, Gravel, and Rock Products

Non-metallic mineral deposits used for construction purposes are classified as sand and gravel, sand, and quarry rock. Their value is dependent on location, the quality and quantity of the material, and the relative accessibility. These factors determine the expense of extraction and transport, and, ultimately, the cost of the product. The primary use is for construction aggregate as concrete or pre-stressed concrete products, road surfaces, and fill material for roads and building pads. Increased growth in the Juneau area has placed greater demand on the resources for use as fill, foundation, and roadway construction.

Sand and gravel are generally considered non-renewable resources, however, resource extraction on a limited basis can be obtained from river bars. They are derived from erosion and weathering processes by glacial and stream action, and their distribution is generally limited in a given area. Sand and gravel deposits occur in outwash plains, terraces, and alluvial valleys, river and stream beds, and glacial moraines. Existing and former gravel or rock quarries are shown in Figure III-2. The most extensive deposits occur in the valleys of the Mendenhall and Herbert-Eagle Rivers and Lemon Creek. Utilization of the Herbert-Eagle valley deposits for areas other than in the immediate vicinity is uneconomical because of transportation cost. Not all alluvial deposits are suitable for

use because of the abundance of fines (silt and clay) or not enough coarse material for use as aggregate. The terrace deposits of Lemon Creek and the Lemon Creek flats have high quality aggregate reserves. Utilization of Mendenhall River bars and extraction in Lemon Creek to maintain the hydraulic floodway provide a limited annual resource. Other suitable sources of sand and gravel are precluded from use due to ownership restrictions and urban development. Upland glacial till may provide limited sources of fill material. These deposits, however, are not good sources of aggregate due to the abundance of fines.

Sand

Sources which are classified under this heading produce or are likely to produce material having 70% or more of its total dry weight passing the No. 4 (4.75 mm) U.S. Standard sieve and less than 10 percent passing the No. 200 (.074 mm) U.S. Standard sieve. The material is generally free draining and has a low frost susceptibility rating. Primary sources of sand are obtained from alluvial deposits within the Mendenhall Valley and adjacent to the Gastineau Channel. Sand also has been extracted extensively in the past in the vicinity of the Juneau Airport at the float pond borrow pit and Joe Smith's Mendenhall River pit on the west side of the river. The Smith-Honsinger pit northeast of the airport and south southwest of Egan Expressway is the last remaining large source sand pit in the valley. Sand is primarily used as fill where it is not subject to heavy loads. Where heavy loading is anticipated or if it is to be used for roads, armoring with a suitable top coarse is required.

Gravel

Gravel consists of deposits with more than 30% of their total dry weight retained on the No. 4 (4.75 mm) U.S. Standard sieve. At the lower end of the scale, no more than 10% of the dry weight should pass the No. 200 U.S. Standard sieve size. Gravel products are primarily used as asphaltic paving material and Portland cement concrete, and where compacted free draining fill for roadways and foundations is required. Sources of gravel occur as channel fill and bars in the Mendenhall River and alluvial and terrace deposits of the smaller streams such as Lemon and Salmon creeks. The major source of gravel is the Lemon Creek pit. Gravel products from alluvial fans and terraces require preprocessing such as screening, crushing, and washing to obtain the required grading for use as aggregate products.

Rock

Rock products are produced by quarrying to reduce rock to a manageable size appropriate for its intended use. Rocks within the area consist of greenstone and metavolcanic rock which is highly variable in its durability for use as construction material.

Rock products are used for a variety of purposes, varying from large sized riprap to concrete aggregate. The use of rock products as fill or aggregate is usually not justified because of the high cost of processing compared with sand and gravel products (R & M Consultants, 1978). Riprap is their primary use.

Estimated Reserves

R & M Consultants (1978) have identified existing and potential sites for sand and gravel production. Their report indicated that the Lemon Creek valley had the best source of aggregate products and an estimated reserve of about 4.98 million cubic yards. About 1.5 million cubic yards of good aggregate reserves are estimated to occur between Mendenhall Valley and Juneau, including North Douglas Island, excluding state and federal ownership. This does not include estimated reserves of common or select borrow which may exceed 3 million cubic yards.

Records of past production of sand and gravel resources in the area have ranged between 2,500 cubic yards to over 1 million cubic yards annually (R & M Consultants, 1978). Additional production is likely to result as growth and development occur on the low lying alluvial soils of the Mendenhall Valley and Lemon Creek. It also should be noted that the soils which are generally well suited for septic drainfields and consequently urban development are also good source material for use as fill material or as sand and gravel aggregate products.

As growth and development continue in these areas, pressure increases to close existing pits. Development can preclude potential sources of sand and gravel from further use. This exclusion of nearby sources results in greater costs, due to transportation from more distant sources. Other than limited resources within gravel bars and sand production from the Smith-Honsinger pit, there are few remaining potential sources of sand and gravel within the Mendenhall Valley.

DEVELOPMENT CONSIDERATIONS

Much of the CBJ urban area is subject to natural hazards of one form or another. Their constraints can limit or seriously affect land developments. Certain developments may be more suitable in one area than another, or land characteristics at a particular area may favor non-compatible urban uses. The following land capability analysis discusses these limitations and hazards.

A basic factor used to determine site development suitability is soil characteristics. Important soil properties are permeability, shear strength, drainage, and texture. Depth to consolidated material or bedrock and topography (slope) are other important considerations. Site development capability assessment includes variables such as slope, response to groundshaking from earthquakes (foundation conditions), landslide/avalanche hazard, and flood hazards (Figure III-8). Development hazards can be differentiated into three categories (high, moderate, and low) based on the degree of severity or likelihood of groundshaking, slope failure, or avalanches from occurring as a result of an earthquake. Hazard areas, such as landslide or avalanche zones, may not be intuitively obvious to the general public. A qualified expert is needed to evaluate the risk potential with design considerations. The hazard areas shown have a high probability of occurrence due to physical site conditions. Land suitability for septic drain fields and importance for groundwater supplies or recharge areas is discussed in the Hydrology section.

HIGH LAND USE HAZARD ZONE

High land use hazards include soils with poor foundation conditions (Figure III-8); areas with high landslide and avalanche potential (Figure III-5); and 100-year flood zones (Figures III-6 and III-7). Soils with poor foundation conditions identified by Miller (1972) are based on the anticipated groundshaking response due to an earthquake. Within the study area, this has been rated from poor to best. Soils with a rating of poor are included in the high land use hazard zone. These include tidal flat (Tf), alluvial (Co), and all peat soils (Figures III-3 and III-8).

The fact that groundshaking in the area will occur from earthquakes centered on distant faults is important. Groundshaking can cause damage to structures on the loose, saturated alluvial soils and can also dislodge rock, soil, or snow from steep slopes and damage structures at the base of the slopes. The ground responses that can occur in poorly rated soils include ground fracturing, liquefaction, differential settlement or differential compaction and ejection of water and/or sediment. These soils include soft alluvial soils of lower Mendenhall Valley near the airport, the freshwater wetlands of west Mendenhall Valley and the soils of Lower Lemon Creek flats. They typically contain clay, silt, and organic matter or loose granular fine sand. The

groundwater table is usually at or near the surface. Artificial drainage and soil compaction or fill is usually required for development in these soils and heavy structures commonly require pile foundations. The fill placed along the downtown Juneau waterfront has poor foundation characteristics and is rated as a high hazard zone (Figure III-8).

The accumulation of debris at the foot of mountain slopes in the area is evidence of unstable slopes and future landslides and avalanches. Known snow avalanche zones and areas of high landslide probability identified by Miller (1972) are included in the High Hazard zone (Figure III-5). These slopes are considered so unstable that future occurrences could occur even without the triggering action from earthquakes.

The 100-year floodplain (Zone A) and the coastal flood hazard area (Zone V) are designated as high land use hazards. Urban development should be designed to minimize the risk of flood damage and comply with federal insurance regulations. Certain developments or land uses, such as parks and open space, or gravel extractions, may be permitted within the 100-year floodplain. It should be noted that the 100-year floodplain generally includes soils with poor foundation conditions. Developments in these areas not only need to consider flood control measures and drainage provisions but also soil stabilization measures for building foundations may be necessary.

MODERATE LAND USE HAZARD ZONE

These hazards include soils with marginal foundation conditions (Figure III-8); potential landslide and avalanche zones (Figure III-5); slopes that exceed 35% (Figure II-1); and the 500-year floodplain (Figures III-6 and III-7).

Soils rated as having marginal foundation conditions (Figure III-8) (Miller, 1972) would react severely during an earthquake. They include saturated granular outwash (He, Am), moraine (Mh) soils, and alluvial fans (Sa) (Figure III-3). The reaction to groundshaking depends on the earthquake magnitude, distance, wave length, and amplitude and the duration of shaking. Ground response could result in differential compaction and settlement, ground fracturing, ejection of water and/or sediment, and could initiate any number of landslides in colluvial or talus slope material, or rock falls or snow slide avalanches. The accumulated debris (talus, colluvium) at the toe of the slopes are also potentially unstable and could fail during an earthquake because of the loose unsorted nature of the slope. Areas on slopes that exceed 35% that are not designated as having high landslide or avalanche hazard are included in the moderate hazard zone.

Moderate land use hazard areas include the 500-year floodplain as indicated in the flood zone maps (Figures III-6 and III-7). The depth of flooding has not been determined. These areas also

include certain types of shallow flooding where depths are less than 1.0 foot.

LOW LAND USE HAZARD ZONE

Areas with acceptable foundation conditions (Figure III-8), low landslide hazard potential (Figure III-5), and slope between 20% and 35% (Figure II-1) are rated low land use hazards. Bedrock has the best foundation suitability, and dense well compacted glacial till (diamicton) soils respond well to ground shaking and sustain relatively the least damage during a large earthquake. The glaciomarine diamicton, third phase of Miller (1972), consist of laminated sand, silts, and clays with occasional gravel. This diamicton deposit has been mapped primarily as Wadleigh soils and may also be included as Kupreanof soils and may also underlie Maybeso peat. This deposit is extremely moisture sensitive. If disturbed material becomes wet or saturated, flowage can result and heavy excavating equipment can become bogged down. The soil will, however, become hard and firm in dry weather. Because of moisture sensitivity, these areas have poor to fair foundation suitability. Local site conditions, depending on soil density and moisture or degree of slope, react to earthquakes by compaction, settlement, and fracturing. The hazard of stream and coastal flooding is negligible.

RESOURCE CONSIDERATIONS

Increased production of sand and gravel resources is likely to occur as growth and development in the valley areas continue. Urban expansion can exert pressures for closing existing operations or precluding extraction of potential reserves. The exclusion of nearby sources results in greater costs, due to transportation from more distant sources. Present reserves of high quality sand and gravel are limited to the Lemon Creek Valley, upper Mendenhall Valley in National Forest Service Land, and in the Herbert-Eagle River valleys.

Despite the great number of active claims in the study area, little is known about the mining future of the area. Alaska's Department of Natural Resources has no projections or forecasts for the City and Borough of Juneau (Jim Degan, personal communication, 1982). Many persons are looking for and finding gold; however, there are no confirmed reports of any major discoveries.

Section IV

Hydrology

IV. HYDROLOGY

INTRODUCTION

Water supplies for domestic, commercial, and industrial uses are obtained from the public water supply system and individual or community well systems. The public water supply system is described in the Public Facilities and Services section. This Hydrology section deals with the sources, location, viability, and potential uses of water resources for individual and/or community systems and describes the potential hazards of contamination of water supplies due to poorly designed or installed septic drain field systems. Areas which are most and least suited for individual and community wells and septic drainfields are discussed below. This analysis is based on water resource information published by the U.S. Geological Survey and soil characteristics (see Earth Resources) and is intended for general planning purposes only. Detailed site-specific investigations are required to determine the suitability of particular sites for development.

EXISTING CONDITIONS

SOURCES OF WATER

Three sources of water are used for domestic supplies: precipitation, surface water, and groundwater. The use of rain water catchments for domestic sources is not extensive in the Juneau area. Water is generally obtained by direct withdrawal of surface water from lakes, streams, and springs or shallow collectors. Groundwater is obtained primarily from drilled wells and occasionally shallow dug wells.

Surface Water

The area has an abundance of year long flowing streams. Most of the larger streams originate as glacial meltwater; however, several are non-glacial. The Mendenhall River is the largest stream in the area; most of its flow is melt water from the Mendenhall Glacier. Additional sources of flow into the Mendenhall River include stream runoff from Nugget, Steep, and Montana Creeks. Other streams in the Mendenhall Valley are Duck and Jordan Creeks which receive runoff from the steep slopes of Heintzleman Ridge. Lemon, Salmon, Gold, and Sheep Creeks, and the Herbert and Eagle Rivers to the north of Juneau, all originate from the Juneau ice field. Several smaller streams which drain into Auke Bay and Auke Lake, Peterson Creek, and the streams on Douglas Island are non-glacial streams.

By comparison of stream flow hydrographs to temperature and precipitation records, a relationship between flow, temperature, and precipitation is shown to exist for both glacial and non-glacial streams (Barnwell and Boning, 1968). In the winter months, flows of both non-glacial Montana Creek and the glacial Mendenhall River are controlled by temperature, because variations in precipitation are not reflected in stream runoff. The summer flows of non-glacial streams react readily to rainfall. Warm summer temperatures, however, result in glacial melt, which may contribute up to 50% of the annual runoff from the Mendenhall River (McConaghy and Bowman, 1971). Nearly 90% of the annual runoff to the Mendenhall River occurs during the summer months. This is in response partly to the summer heavy rains and glacial melt. Minimum flows for both glacial and non-glacial streams usually occur in the winter months.

Groundwater

Groundwater is available throughout the area, but is extremely variable in quantity and quality. Unconsolidated alluvial and glacial outwash soils can yield adequate supplies for community and public supply systems. Consolidated glacial till and bedrock will generally supply only enough water for a single family and water obtained from these sources may occasionally dry up during extended cold winter or dry summer periods.

Unconsolidated alluvial deposits, in particular the Mendenhall and Lemon Creek Valleys, contain sufficient groundwater supplies for community and public supplies (McConaghy, 1971). These deposits consist of gravel, sand, silt, and clay. Gravel and sand/gravel are the best deposits for yielding groundwater. Silts and clays are the poorest because of their small pore spaces and low permeability. Textural variability in alluvial soils occurs horizontally as well as vertically and will consequently affect the potential yield of a given area. Yields from wells only several hundred feet apart may vary considerably. Geologic mapping (Miller, 1972) and water resource investigations (Barnwell, 1968) indicate that the east side of the Mendenhall Valley is best suited for a large-yield public well system. More than 300 gallons per minute could be pumped from wells without significant drawdown in this area (Balding, 1982).

Bedrock in the area consists of several different rock units, each with distinct physical characteristics (refer to Geology section). The availability of water in bedrock is limited to fractures and joint sets, because primary porosity and permeability are absent. Yields are dependent on the rock unit and the degree of fractures and closeness of joint sets. Well yields are generally limited to about 3 gallons per minute (gpm) but may be as high as 20 gpm (Barnwell, 1968).

Groundwater is recharged principally by precipitation. Fluctuations in water table levels respond to the differences between

recharge and discharge. Discharge occurs from pumping, evapotranspiration, and outflow to saltwater, streams and lakes during low water periods. The rate of groundwater outflow generally remains constant; however, the groundwater levels will respond to the amount of rainfall. Recharge of the aquifer and a consequent rise in water table levels, occurs after periods of extended rainfall.

Water Quality

The quality of the surface and groundwater depends on the source and location. Surface water is of good chemical quality and is soft; however, glacial-fed streams often contain objectionable amounts of sediment (glacial flour). Compared to surface water, groundwater is of poor quality, contains iron, and is moderately hard (Barnwell, 1969). Groundwater is of the calcium bicarbonate type.

Fresh surface water has a very low dissolved solids content; groundwater generally contains somewhat higher concentrations. Most (95%) of the groundwater, however, is within the recommended limits of 500 milligrams per liter (mg/l) for human consumption (McConaghy, 1971).

Except for high iron concentrations, the groundwater is of excellent chemical quality. An iron content of more than 0.3 ppm (parts per million) is considered unacceptable for domestic use by the U.S. Public Health Service Standards. High iron concentrations can cause stains on household fixtures unless it is specially treated before use.

Nitrate is present in groundwater at concentrations of 5 mg/l or less (McConaghy, 1971). Higher concentrations could indicate groundwater pollution from septic systems.

Salt or brackish water occurs in shallow deposits near the Gastineau Channel and in deep wells in the central portion of Mendenhall Valley (Barnwell, 1969; Balding, 1982). Groundwater pumping, particularly near the airport, could cause saltwater intrusion upvalley and contamination or an increase in chloride content of water in wells.

DEVELOPMENT CONSIDERATIONS

Important concerns in planning future growth in the CBJ include whether there are sufficient sources of water to meet the projected demands and whether the soils are suitable for disposal of septic effluent without contaminating water supplies. Sources of water for the public supply system are described in Public Facilities and Services section. Figure IV-1 shows those areas which are most and least suited for individual septic drainfields and correspondingly, the potential for groundwater contamination. This assessment is based on soils and hydrologic units, and flood zones. Soils and hydrologic units reflect the degree of suitability for installation of septic drainfields and the potential yields for groundwater supplies. Developing drainfields in floodplains could result in groundwater contamination and system failure. Additionally, steep slopes can restrict the placement of individual or community systems.

The Earth Resources section includes a review of the soils in the area and their limitations for septic suitability. The soil features which limit the suitability of soil absorption systems are low permeability, seasonal high water table, susceptibility to flooding or inundation by high tides, and shallow depth to bedrock or impermeable soil horizon. Most of the soils in the area have at least one of these limitations.

The soils which are most suited for septic drainfields are coarse alluvial and outwash soils and alluvial fans that occur in east Mendenhall Valley and Lemon Creek (Figure IV-1). They also have the greatest yield of groundwater to wells. The potential contamination to groundwater supplies is slight to moderate because of the excessive permeability of the outwash soils and the flood hazard (for areas within the 100-year floodplain).

Gravelly sandy loam glacial till soils of the Kupreanof series (Ku) have moderate limitations for septic absorption fields because of the relatively low soil permeability. However, well designed systems can operate adequately in those soils. The depth to seasonal high groundwater is greater than five feet. These soils occur in scattered locations on the uplands and hill slopes from Tee Harbor to Auke Bay and Mendenhall Peninsula, and along the Gastineau Channel. More extensive deposits occur in upper Lemon Creek and along Gold Belt property on western Douglas Island. These soils potentially store large volumes of water and may be adequate to supply community systems.

The remaining areas of the CBJ contain soils that have low permeability, high seasonal water tables (less than two feet below the surface), or shallow depth to bedrock or impermeable soil substratum. These soils are unsuited for conventional drainfields and could result in failed systems or contamination to the groundwater. Soils consisting of clays and silts transmit water very slowly; consequently, wells are impracticable for

these areas. Drilled wells completed in bedrock underlying these soils generally provide about 3 gpm, an amount adequate for single-family domestic use. Site-specific engineering studies are necessary to determine the suitability for single-family residential development using individual or community drainfields.

Soils that are located within the floodplain may be expected to be inundated occasionally. Some of these areas may also have high groundwater tables. Soil absorption fields should be excluded from the 100-year floodplain because of the hazard for system failure and groundwater contamination.

Slopes can limit the location of drainfields in certain soils. Generally, drainfields should not be designed for slopes greater than 15%, unless there are no restrictive layers in the soil and appropriate engineering design is provided.

Section V

Vegetation Habitat Types

V. VEGETATION HABITAT TYPES

INTRODUCTION

Plant species typically prefer certain combinations of physical and ecological conditions. An association of plants with similar tolerances and preferences is a vegetation community. On a regional scale, similar vegetation communities can be grouped into habitat types. A habitat type may include several vegetation communities which share certain plant species, have similar vegetation structure, and occur under similar physical and ecological conditions.

The classification of habitat types is helpful in identifying the functional role of vegetation. In particular, wildlife is often associated with particular habitat types which provide nesting, shelter, or feeding areas. In any habitat type wildlife utilization can be predicted. Certain habitat types support other habitat types; examples of this include the export of nutrients or the retention of surface water. Thus, habitat type identification can be used to identify ecological relationships.

This section presents a description and mapping of the major habitat types of the CBJ. Habitat type descriptions were developed from several major data sources. Selkregg (1975) contains general plant lists and habitat descriptions for Southeast Alaska. More detailed information on certain vegetation associations was derived from Viereck, et al. (1980). Hulten (1958) was utilized as the nomenclature authority for plant species. Habitat type and vegetation association descriptions for intertidal wetlands is derived from Watson (1979) and from site reconnaissance of several areas in the City and Borough of Juneau.

General small-scale habitat type mapping is available in Selkregg (1975) but was not useful in this study. Two sources of existing data were used in habitat type mapping. Color infrared aerial photographs (scale 1:60,000) were used to derive the habitat type map for the study area and as a secondary source for the focus areas. The primary source of data for the focus areas was U.S. Forest Service Timber Type maps at a scale of 1:31,680. These maps indicate habitat types indirectly from forest types and potential forest productivity (USFS, n.d.).

EXISTING CONDITIONS

The City and Borough of Juneau is located in the Coastal Mountains Physiographic Province of Southeastern Alaska (ADF&G, 1978). The province is dominated by the massive, glacier-covered mountains of the Boundary Range. Foothills, straits, and islands west of the range exhibit many textures of glacier controlled

topography. Much of the area is characterized by shallow soils on glaciated bedrock or alluvial deposits. The thin soils generally exhibit heavy leaching of nutrients due to heavy rainfall.

The maritime climate of the area is characterized by moderate temperatures, high precipitation and frequent overcast. Large snow accumulations occur at higher elevations. Although most slopes are heavily forested, snow accumulations may limit vegetation. Microclimatic variation can also be radical in places due to abrupt elevation gradients.

Lush forests dominate much of the area, in response to high rainfall, providing much of Alaska's merchantable timber. Evidence of geologic, as well as climatic, impacts on vegetation is common. Avalanches and landslides often disrupt vegetation. Erosion and sediment deposition due to flooding are also significant. In contrast, human disturbances are generally restricted to localized areas, although the level of impact may be more intense.

Ten major habitat types have been identified and mapped for this study (Figures V-1 and V-2). While a more detailed classification of vegetation types is possible, and in some areas has been completed, this classification is appropriate to the requirements of this study. Habitat types which are recognized in the CGJ include:

- . Forest
- . Shrubland
- . Alpine Tundra
- . Muskeg
- . Freshwater Marsh
- . Salt Marsh
- . Intertidal Flat
- . Marine Waters
- . Rivers and Lakes
- . Urban

Depending on localized conditions of soils, hydrology, and vegetative composition, all vegetative habitat types (Forest, Shrubland, Alpine Tundra, Muskeg, Freshwater Marsh, and Salt Marsh) can be either entirely or partially wetlands--a form of waters of the United States. The bodies of water described as a habitat type (Intertidal Flat, Marine Waters, and Rivers and Lakes) are waters of the United States and/or navigable waters of the United States. Depending largely on the condition of maintenance and the location of Urban Habitat Type some urban habitat type may include waters of the United States or navigable waters of the United States.

A detailed description of each habitat type follows.

FOREST

Coniferous forest is the climax habitat type in the region and a common habitat type at low elevation in the CBJ. Western hemlock is the dominant species, with Sitka spruce sub-dominant throughout most of the region; in moist sites and floodplains, Sitka spruce may dominate. Western red cedar is common in poorly drained areas and mountain hemlock may dominate near timberline. Lodgepole pine, Alaska cedar, birch, and black cottonwood may also be found in scattered sites. The poorly drained and moist forested areas may be swamp, bog, or riparian wetlands. The understory generally consists of a dense growth of devil's club, mountain ash, and mountain maple, with numerous ferns, herbs, grasses, mosses, and lichens at ground level. Stands of forested habitat are heavily interspersed with muskeg habitat (Figure V-1). The areas of forest habitat type within the CBJ include the Lemon Creek and Salmon Creek Valleys; much of low elevation coastal belt and valleys of Douglas Island, and all low elevation areas from the Mendenhall Valley.

Removal of the original stands of coniferous forests, either by logging or natural mechanisms reinitiates succession in the forest community. Typically even-age stands of trees develop from young seedlings and mature at similar rates for several hundred years. During this period, the conifers form a dense canopy that reduces the light in the understory which remains sparsely vegetated. Old growth forests are mature in terms of successional stage, but over-mature with regard to merchantable timber. As individual trees in the forest grow older, more young conifers are found in the understory and midstory, where openings from dead or fallen trees provide light.

Deciduous forest stands are not prevalent, but they do occur throughout the study area, primarily in the Herbert River, Eagle River, and Mendenhall Valleys. Alder and black cottonwood are the dominant species. They are also common on recently exposed moraines.

SHRUBLAND

Dense brush is usually indicative of disturbance or new land in areas where forest would otherwise be expected. Shrub habitats are generally defined as woody vegetation less than 20 feet in height. In old clearcut or burn areas, brush represents a successional stage preceding the reestablishment of forest. In river valleys, brush may represent an early successional stage following flooding or realignment of the river channel. Often these successional stages along streams and rivers are riparian shrub-scrub wetlands. In these areas, either evergreen or deciduous forest may be the climax habitat type. Brush marks avalanche and landslide chutes on steep slopes; in these areas regular disturbance here precludes the establishment of forest habitat. Shrubland is the predominant habitat type in the Gold

Creek Valley, an area south of Juneau, steep valley walls on Douglas Island, and other locations.

In cutover or burned forest lands, immature forest tree species such as western hemlock and Sitka spruce form a shrubland habitat type. Disturbed places where new substrate has been deposited, such as landslide areas, recent alluvial deposits, or recently glaciated areas, are usually colonized by alder or willow. Black cottonwood and Sitka spruce are often the next invaders. Similarly, in recurrent snowslide areas, alder colonizes open soils and survives the physical stress of avalanches. Some small conifers, mostly mountain hemlock and Alaska cedar, may survive in more protected areas of slide zones and are common in subalpine zones. These areas also are vegetated by a variety of shrubs, including Sitka alder and blueberry.

ALPINE TUNDRA

At high elevations, generally above 2,500 feet, the climate is too harsh and often the soil too shallow to allow establishment of forest vegetation. The areas generally are covered by snow for most of the year. In these alpine areas, a variety of low growing shrubs, perennial grasses, and herbs occupy the thin, rocky soils, blooming quickly during the short summer. Dwarf willow and birch are common, along with crowberry, blueberry, and mountain heather. Meadow areas may contain saxifrages, gentians, and other herbaceous species, while wet sites may be dominated by a variety of sedges.

MUSKEG

Scattered throughout the forest and alpine areas are local patches of muskeg, the most prevalent and widespread wetland type in the region (Figures V-1 and V-2). High rainfall and low temperatures inhibit the decay of organic material in poorly drained sites. The resulting wet organic soils support communities usually dominated by mosses and sedges. Labrador tea, skunk cabbage, and other saturation-tolerant species may also be prevalent. When trees are present, scattered lodgepole pine and Alaska cedar occur. Numerous patches of muskeg occupy a large portion of the coastal belt of Douglas Island, and are also found in the forested elevations along the coast from the Mendenhall Valley to Echo Cove.

Important ecosystem functions are attributable to muskeg wetlands as a result of their soil characteristics and water retention capacity. The highly organic, acid soil supports an unusual flora and fauna that are adapted to muskeg conditions. Certain wildlife may forage in muskeg and specialize in this habitat in certain seasons. Because muskeg retains water within the peat substrate, it may have the effect of releasing water and

maintaining stream flows in certain watersheds. Development in these wetlands are regulated by the U.S. Army Corps of Engineers.

FRESHWATER MARSH

The predominant physical characteristic of this habitat type is frequent to seasonal inundation. Freshwater marshes often form large meadows on flat terrain near rivers and lakes; examples of this wetland type are found in the Mendenhall Lake, Mendenhall River and floodplain area, the Herbert-Eagle River area, Salt Lake, and Echo Cove. Sedges, bulrushes, common maretail, and horsetail are common. In shallow ponds, bladderwort, pondweeds, and ditchgrass may be found. Many of these species will tolerate brackish conditions and may occur where tidal action affects groundwater conditions. The productive vegetation and the aquatic habitat of freshwater marshes provide for a variety of mammals such as furbearers and birds, particularly certain species of waterfowl that nest and feed in and around marshes. In some locations, freshwater marshes may fulfill important hydrological or water quality functions by detaining and storing storm water flows and acting as a filter for water contaminants.

This habitat type is classified as a wetland according to the definition used by the U.S. Army Corps of Engineers.

SALT MARSH

This habitat type includes both saline and brackish marshes of estuarine areas. Frequent tidal inundation and saline or brackish conditions are key factors which control the distribution of the marsh vegetation. These areas are commonly referred to as estuarine grassflats, but the term marsh is used in this report to emphasize that these areas are wetlands. The most extensive salt marshes are found at the mouth of the Mendenhall, Eagle, and Herbert Rivers where intertidal areas have been formed by the deposition of sediments. Many of these salt marsh areas are dominated by brackish conditions due to the influence of freshwater from rivers. Other salt marshes are found at Echo Cove, Salt Lake, Lemon Creek, and along the north shore of Douglas Island (Figures V-1 and V-2).

A distinctive pattern of vegetation zonation occurs in salt marshes in response to elevation gradients, and the consequent variations in salinity and frequency of inundation. Under saline conditions, seaside arrow-grass, saltwort, seaside plantain, alkali grass, and spike rush are the lowest marsh species. Hairgrass, redtop, reedgrass, and common silverweed occupy higher elevations. Above these is the sedge meadow, which may be the most common salt marsh type in the study area; much of the Mendenhall estuary is dominated by this community (Watson, 1979). A community of hairgrass, redtop, reedgrass, and silverweed is often referred to as high marsh. The transition zone between

high marsh and grassland may be dominated by ryegrass, especially in areas of sandy substrate.

Certain salt and brackish marshes in estuarine areas have been noted for their high vegetative productivity, important contribution to the marine habitat, and extensive use by both aquatic and terrestrial animals. High productivity creates a dense vegetative cover in many marsh types, and senescent vegetation contributes vast amounts of essential detritus to marine food webs. Bear, waterfowl, deer, other birds, and many species of commercially important fish utilize this habitat type at various times of the year.

This habitat type is classified as a wetland according to the definition used by the U.S. Army Corps of Engineers.

INTERTIDAL FLAT

Flats of silt, sand, and mud occur at elevations below the salt marsh habitat type in estuarine areas. Deposition of sediments at the major river mouths has led to the accretion of delta fronts. The instability of the substrate and the low elevation restricts vegetation communities. Often only sparse algal communities colonize the intertidal flats. In some protected bays, eelgrass communities occupy subtidal and very low intertidal elevations. Eelgrass beds are found in Auke Bay and may occur in other shallow subtidal locations.

MARINE WATERS

The marine habitat type includes the open water of bays, channels, coves, and shorelines where narrow intertidal beaches occur. Thus, all intertidal and subtidal habitat, with the exception of intertidal flats at river mouths and salt marshes, are considered part of the marine habitat type.

The shallow water and shoreline portions of this habitat type may be vegetated with algal communities and, in places, eelgrass. Gravel and sand substrate on the moderate-to-high energy beaches in the study area are generally devoid of macroalgae. However, on rocky or large cobble intertidal and shallow subtidal substrate, algae can attach and withstand moderate-to-high wave energy.

As in salt marshes, tidal fluctuation results in zonation of attached species. At the highest levels, rockweed predominates; at lower elevations a variety of red, green, and brown algal species may dominate. Perhaps the most notable algal communities occur at depths of greater than 25 feet and less than 60 feet of these are predominantly large brown kelp.

A very important part of the marine community are the unattached phytoplankton. These microscopic algal species form the base of many marine food webs. Diatoms are the predominant phytoplankton and are typical of the open ocean community of the North Pacific. These plants can be highly productive, particularly in coastal inlets and fjords where winds induce mixing and nutrient replenishment of the upper water column. They are responsive to a variety of local conditions and species composition may vary in different areas. Seasonal variations in population are extreme since many phytoplankton have high growth periods in spring and through the summer. High production in one species (Gonyaulax catenella) results in the "red tide" phenomenon which may lead to accumulation of a toxin in shellfish (Selkregg, 1975).

RIVERS AND LAKES

Lakes in the area exhibit a wide range of physical conditions. The lakes at the toe of glaciers, such as Mendenhall, are highly turbid from glacial suspended sediment. This restricts plant growth except in the very shallow lake marshes. Several small lakes that are unaffected by glaciers occur within the forested area. The clarity and chemistry of these waters result in very different plant and animal communities.

Lakes contain phytoplankton, attached algae, submerged plants, and emergent marsh plant communities. In glacial and non-glacial lakes, emergent plants such as those described in the section of freshwater marshes may occur along shorelines composed of fine sediments. This vegetation type is contained within the lake designation where it is not of sufficient size to be mapped separately. In non-glacial lakes, a dense community of pondweed, yellow pond lily, and water milfoil may occur at moderate depths.

Like the lakes in the study area, the rivers exhibit two types of physical characteristics. Glacial fed watersheds, such as the Mendenhall, Herbert, and Eagle drainages, are characterized by short, turbid rivers. Streams and rivers where glacial input is insignificant are less turbid and have a lower discharge than the glacial fed rivers. These include Fish Creek on Douglas Island, and Lemon, Salmon, Montana, Cowee and Davies Creeks on the mainland. Each of these types of watercourses have different biotas; the fish populations are discussed in the Fisheries and Wildlife section.

URBAN

This habitat type is comprised of residential, commercial, and industrial areas. In the CBJ, the centers of urban habitat type are Juneau, Douglas, West Juneau, Lemon Creek, and the Mendenhall floodplain (Figure IV-1). Scattered residential development occurs along coastal areas elsewhere within the study area. Port and harbor structures, mines and gravel pits, and unvegetated

scraped or filled areas are also found. Generally, native vegetation is absent with the exception of scattered large trees and weedy plant species. Vegetation is often sparse, non-native, and managed primarily for aesthetic purposes.

ENDANGERED SPECIES

The Endangered Species Act of 1973, administered by the U.S. Fish and Wildlife Service, states that federal agencies must carry out programs to preserve endangered species. No known Alaskan plants are included on the list of actual and proposed endangered and threatened plant species developed under the act. A list of candidate threatened and endangered species has been developed by the state (Murray, 1980). Plant species on this list are recognized under the Act for listing as threatened or endangered plants and, therefore, are not afforded any protection under federal legislation. They may be included after further study.

Murray (1980) lists a sedge (Carex plectocarpa) as a candidate species for Alaska. It grows in alpine meadows and has been collected on Mt. Robinson within the study area; it also occurs in Montana. A recent survey, however, did not verify this species in the locality (Emeral, personal communication, 1982). It is generally found at high elevations outside of the CBJ.

DEVELOPMENT CONSIDERATIONS

A prevalent habitat type and important economic asset in the CBJ is the coniferous forest. Much of this habitat is within the Tongass National Forest where the harvest is controlled by the U.S. Forest Service. The scale and location of the harvest could have some influence on infrastructure needs such as port facilities, housing, and others. Timber harvest can also influence downstream habitats and other resources within the CBJ with increased runoff and sedimentation, or other negative impacts of logging.

Shrub habitats indicate that secondary succession has been initiated by a major disturbance to the climax forest habitat type. Certain disruptive events recur, but with unpredictable frequency. Shrub habitats in recurrent avalanche, landslide, or flood zones indicate the need for careful consideration of possible unstable conditions which should be evaluated prior to development. Shrub habitats which also occur where disturbance is not recurrent, such as on glacial moraines and logging areas, do not necessarily indicate an area unsuitable for development.

Freshwater marshes and salt marshes are both unique and limited habitat types commonly known as wetlands within the CBJ. Muskeg and bogs are generally more prevalent. Traditionally considered wastelands, their valuable contributions to both aquatic and

upland ecosystems have been recognized in recent years. These include wildlife habitat, food web contributions, and water quality enhancement. State and federal regulations attempt to minimize losses associated with development activities within wetlands. Physical limitations associated with saturated soils and ecosystem values also lead to the conclusion that these habitats should be avoided as sites for development. Wetlands commonly occur in the estuarine and floodplain areas of the CBJ but muskegs are more widespread on level terrace areas.

Several large patches of muskeg are found along the coastal belt of Douglas Island and north of the Mendenhall Valley. The saturated, poorly drained soils associated with this habitat type severely limit development in regard to supporting foundations or drain fields. In certain watersheds, the hydrological function of water detention and release may maintain or increase stream flows in dry seasons. An assessment of the importance of muskeg in maintaining water supply requires detailed hydrological studies of watersheds. Muskeg also provides a diversity of vegetation within the more expansive forest area, and thus may provide habitat for some unusual or highly specialized wildlife species.

Intertidal flats form a closely interacting ecosystem with adjacent marine waters, and support a diversity of fish and waterfowl, marine mammals, and other aquatic life. Due to the relative scarcity of these flats, and their importance to commercial and sport fisheries, development activities should be carefully evaluated in relation to their potential costs, impacts, and benefits.

The importance of estuarine salt and brackish marshes and intertidal shorelines has been recognized by various resource agencies within Alaska. Under Phase I and II of the Juneau Coastal Management Program Studies, Berners Bay and Sweetheart Flats were proposed as Areas Meriting Special Attention (AMSA). While these areas are outside the study area, a brief review of existing data supports this suggestion. Other estuarine areas in the CBJ such as Eagle-Herbert River Delta, Echo Cove, Auke Bay, and portions of the Gastineau Channel, are important areas that merit consideration of habitat and natural resource values prior to development.

Evaluations of wetlands should be made on a site-specific basis to identify ecosystem values. Where wetlands or other habitat types demonstrate a significant value, development proposals should be considered carefully. A wetlands habitat evaluation should include an investigation of such aspects of ecosystem function as vegetation productivity and density, diversity of wildlife utilization, wildlife abundance, hydrologic interactions, including groundwater or surface water recharge, and water purification. Cultural values such as recreational, land use development patterns, and aesthetic values should also be considered.

Discharges of dredge or fill material into waters of the United States, including wetlands, are regulated by the U.S. Army Corps of Engineers. Under the jurisdiction of Section 404 of the Clean Water Act, a Department of the Army Section 404 permit must be obtained before any discharge of dredge or fill material can legally occur. In certain waters and for specific activities, nationwide 404 permits have already been issued in Corps of Engineers regulations for the discharge of dredged or fill material into wetlands and other waters of the United States. If no specific nationwide permits or other general permits exist, then an individual 404 permit is required. Before the application of a developer (public or private) can be processed, a precise delineation of the wetland boundaries must be made to determine the limit of Corps' jurisdiction. As part of the "public interest review" of the permit application, a site-specific analysis of the ecological functions and cultural values described above must be performed. As part of the review, a "Notice of Consistency" with the Coastal Zone Management Act must be made prior to issuing a 404 permit. The purpose of this notice is to assure the proposed development is consistent with federal and state coastal management policies. After the CBJ develops a District Coastal Management Program consistent with the guidelines of the Alaska Coastal Management Program, it will serve as the basis for the consistency review.

Section VI

Fish and Wildlife

VI. FISH AND WILDLIFE

INTRODUCTION

This discussion focuses on commercial, game, and other socially and economically important species of fish, shellfish, birds, and terrestrial and marine mammals in the CBJ. Each species or group of species uses certain habitat types for reproduction, feeding, and resting; these may vary throughout the year. Some animals with general habitat type requirements are found throughout the area, while others have specific requirements which restrict their movements. Critical habitat areas are those which are: (1) essential for the continuation of that species in the area by providing nesting or feeding habitat; (2) known to support a high population density and to be heavily used by the species; and/or (3) essential for an "economic" important species. Economic importance includes subsistence, sport, and commercial values. Many species also exhibit non-quantified values in terms of aesthetic or ecological importance and may be protected by federal or state laws.

Two maps have been prepared to illustrate the fish and wildlife resources and facilities in the area.

- Wildlife (Figure VI-1)

- . Mountain goats - general winter range
- . Sitka blacktail deer - high density winter range
- . Humpback whales - area of occurrence in normal years
- . Waterfowl - wintering/nesting/molting areas
- . Sea lions - haulout area
- . Bald eagles - nest locations

- Fisheries (Figures VI-2 and VI-3)

- . Salmon, steelhead trout, and Dolly Varden species - approximate distance of upstream migration and lake occurrence
- . Important resident fish populations - lake and stream of occurrence
- . Coastal shore fishing - general location along shore
- . Herring spawning - general location along shore
- . Herring overwintering - general area of maximum abundance
- . Clam beds - frequently harvested beds
- . Boat launching and mooring - facility locations
- . Hatcheries - facility locations

Primary data sources on the fish and wildlife resources in the CBJ include previously mapped information prepared by the Alaska Department of Fish and Game for the Alaska Coastal Management Program; other mapped data (which uses the above maps as primary

source); reports and documents prepared by state and federal agencies (i.e., Alaska anadromous stream catalog); and personal communications with numerous individuals directly involved with the management, harvest, and protection of fish and wildlife resources in the Juneau area. These sources are listed in the References section of this document.

Not all resources are identified on the maps. For certain wildlife species having broad distribution in the CBJ, such as black and brown bear, locations of critical or important habitat have not been identified. Also, there are smaller streams and limited areas which provide important habitat for many other fish and wildlife forms. In addition, many fish and wildlife species not shown on the maps or discussed in this section have ecological and indirect economic value because of their relationships to other plants and animals. Resources in this category are finfish, shellfish, waterfowl, seabirds, and marine mammals in salt and fresh water environments, and terrestrial birds and mammals. These are reviewed below with reference to habitat type, resource type, and resource utilization in the CBJ.

EXISTING CONDITIONS

RESOURCE TYPES

Fish and Shellfish

Marine Fish and Shellfish

General Description. Numerous fish and shellfish (invertebrates) are found in the marine waters and intertidal areas of the CBJ. Bottom fish, such as rockfishes, sablefish, lingcod, and greenlings, reside in predominantly rocky bottom areas and are taken in the commercial and sport fisheries. Rockfish or snappers are found over rock piles and reefs at depths to about 60 fathoms. The common varieties are the yelloweye (red snapper), canary, and quillback. They are not as abundant in the area as other species (Squire and Smith, 1977).

Other common marine finfish occurring in the CBJ are surf perch, sculpins, smelt, flatfish, and herring. The largest flatfish species, the Pacific halibut, occurs over fairly smooth bottom areas at depths from 25 to 35 fathoms. Halibut are taken by sport fishermen off the southern tip of Shelter Island, in the Stephens Passage area and at other locations along the coastline. Herring spawn and overwinter in the area as shown on the fisheries maps (Figures VI-2 and VI-3). Herring spawn demersal eggs which adhere to eelgrass, kelp, and sometimes rock and trash; intertidal and shallow subtidal habitats are important to their spawning success.

A number of salmon and trout species occur in the marine waters of the Juneau area. All are anadromous (migratory) species which make extensive use of the coastal waters as juveniles or smolt and pre-spawning adults. Some species such as Dolly Varden char, cutthroat trout, and chinook and coho salmon are found in the coastal waters of the area year-round. Estuaries and intertidal flats are critical habitat to pink and chum salmon. These species spend much of their first year after hatching in shallow nearshore waters (Kron, 1982).

The marine shellfish or invertebrate species that inhabit the area include a large number of groups ranging from sponges and sea anemones to crabs, octopus, and sea urchins. Two of the groups are particularly significant because of their direct economic importance: decapod crustaceans (crabs and shrimp) and pelecypods (bivalves). These and other species comprise a necessary food source for fish and shellfish and constitute essential links in the marine ecosystem in the area.

Crabs, scallops, and clams are also common; shrimp are uncommon. Areas where crabs and scallops are seen in near-shore waters include:

- . Auke Bay Recreational Area - Dungeness Crabs
 - . Tee Harbor and Amalga Harbor - King Crabs
 - . Sunshine Cove - Scallops, King and Dungeness Crabs
- (O. Clair, 1982)

Nearshore flats and channels are important rearing areas for the juvenile phases of crabs and shrimp.

The intertidal bivalves such as little necks (Protothaca staminea), butter clams (Saxidomus giganteas), pink necks (Spisula polynema) and softshell clams (Mya truncata and Mya arenaria) occur in many beach areas; the most well known areas are near Indian Point and Auke Nu Cove, and Amalga Harbor. Bay mussels (Mytilus edulis) are found in rocky areas or attached to piling. There are no oysters in the area.

Critical Areas. All estuaries, intertidal flats, and island and mainland intertidal shorelines are critical habitat areas for many marine species. A large number of the fish and shell fish taken in the commercial, subsistence and recreational fisheries use these areas for spawning, and larval and juvenile development. Some animals (e.g., clams and mussels) remain in estuaries and intertidal regions as adults. Others (e.g., salmon and herring) make seasonal migrations. Other critical habitat types are subtidal rocky bottom areas and kelp beds. These areas may support substantial populations of bottom fish and generally have higher plant and animal diversity than sand or mud-covered bottoms. No specific bottom or kelp habitat types have been mapped.

Freshwater Fish

General Description. The fisheries resources of the lakes and rivers of the area include the following: sockeye salmon (Oncorhynchus nerka), coho salmon (O. kisutch), pink salmon (O. gorbuscha), chum salmon (O. keta), Dolly Varden char (Salvelinas malma), steelhead/rainbow trout (Salmo gairdneri), cutthroat trout (Salmo clarki), stickleback (Gasterosteas aculeatus), and sculpin or cottids (Cottus spp.)

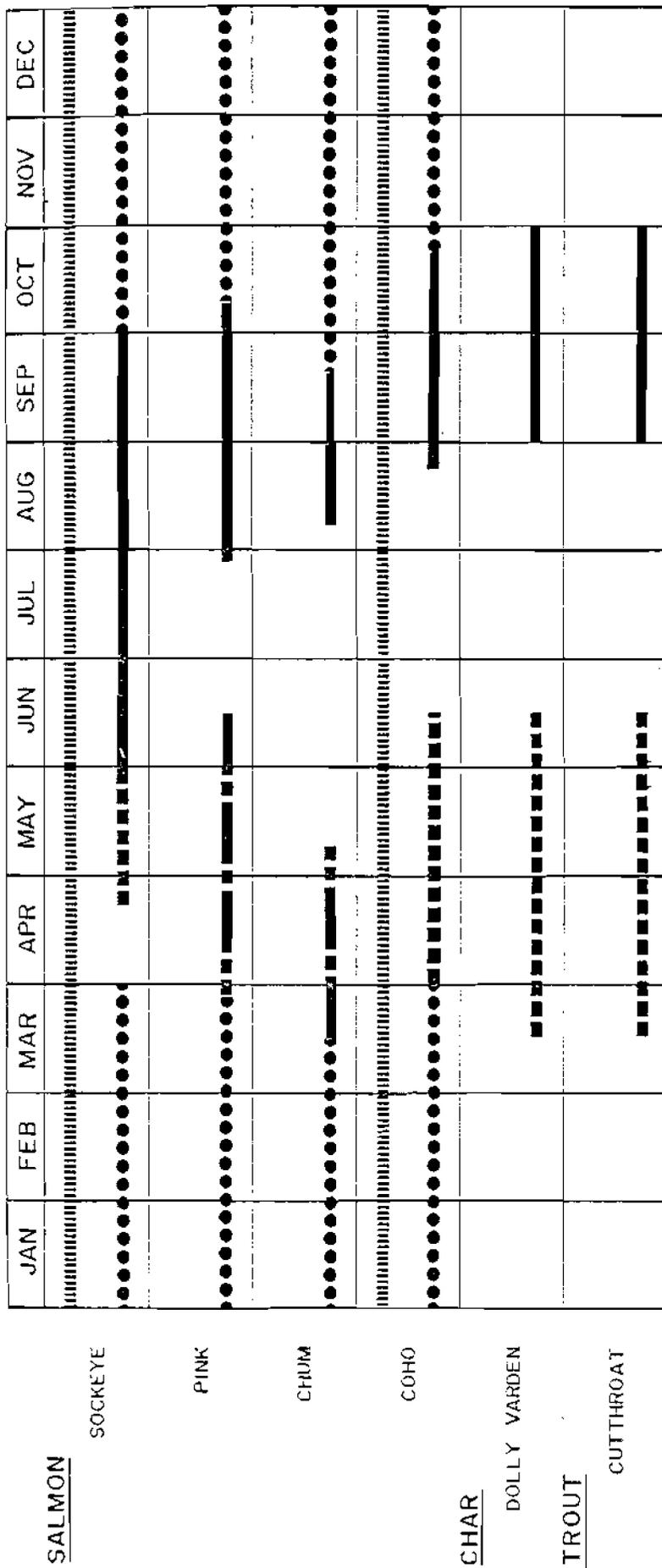
Coho, pink and chum are the most common species, and pink salmon probably occur to some extent in all streams. Sockeye generally are found only in those systems which have tributary streams to lakes, although they will spawn in lake gravels. Sockeye occur within the area in the Mendenhall, Auke and Windfall lake systems. Salmon spawning streams, streams with significant resident fish populations, and lake fisheries are illustrated in Figures VI-2 and VI-3.

Dolly Varden char are found in about every stream and lake in the Juneau area (Reed and Armstrong, 1971), and cutthroat trout are nearly as common. A large wild stock population of steelhead trout occurs in Peterson Creek (north of Auke Bay) (Jones, 1981). This species is found infrequently in other streams in the area. Small numbers of chinook salmon (O. tshawytscha) are found in some streams. In addition, the state has planted brook trout (Salvelinas fontinalis) in the Salmon Creek reservoir (Marriott, 1982).

Certain anadromous fish species are afforded protection under the State of Alaska Anadromous Fish Act (AS 16.05.870). These include the five species of Pacific salmon, Dolly Varden, steelhead trout, Arctic char, sheefish, and whitefish. These species are the highest portion of Alaska's commercial, sport, and subsistence fisheries for anadromous fish.

The duration of the freshwater phase for anadromous fish is species-specific. Timing of spawning, incubation, and rearing is generally similar between streams. An example for Auke Creek is shown in Figure VI-4. Pink and chum salmon migrate to salt-water immediately after emerging from incubation gravels. Coho salmon and steelhead trout remain in fresh water for one to two years before migrating to the sea. Sockeye salmon spend one, two, or three years in fresh water; in some cases, they may become permanent lake residents or kokanee. Windfall, Auke, and Mendenhall Lakes are also important habitat for overwintering populations of Dolly Varden char. Other lakes which are blocked to anadromous fish by barriers such as waterfalls often support good populations of resident or introduced fish (i.e., rainbow and cutthroat trout, Dolly Varden char, and Eastern brook trout). Shelter Lake on Shelter Island and Peterson Lake at the headwaters of Peterson Creek are landlocked lakes identified as prime candidates for further study and possible stocking with coho salmon (Smith and Kron, 1980).

FIGURE VI-4 ACTIVITIES OF ANADROMOUS FISHES IN AUKE CREEK



LEGEND

- ADULT MIGRATION
- INCUBATION
- ||| LAKE REARING
- FRY MIGRATION
- - - SMOLT MIGRATION

Critical Areas. Certain water bodies contain critical anadromous and resident fish resources. They are included in this study if they meet the following criteria:

- . Water bodies with diverse salmon stocks
- . Lake systems
- . Water bodies with high fish population potential
- . Water bodies with special fisheries resources (e.g., a fish species uncommon in other areas)

Special resources judged by ADFG staff to be particularly important in the Juneau area include:

- . Fish Creek - one of the largest freshwater sport fisheries in the CBJ.
- . Auke Creek - large sockeye salmon run, as well as other species. Water is used to support NMFS hatchery and laboratory.
- . Montana Creek - a diverse salmon fishery and a good Dolly Varden char run.
- . Steep Creek - moderate to good salmon runs.
- . Peterson Creek (mainland) - only sizable steelhead run accessible to sport fisherman.
- . Windfall Lake - productive salmon runs.
- . Cowee-Davies Creeks - moderate to good salmon runs.

Urban development, mining activities, and water withdrawals or diversions have altered a number of streams in the area. Seriously degraded streams include the following:

- . Gold Creek - once supported a large chum salmon run. The most suitable spawning area is now channelized.
- . Lemon Creek - landfill and sand and gravel removal have reduced and disturbed available fish habitat; stream still supports small runs.
- . Jordan and Duck Creeks - portions of both were dry during the summer of 1982; coho runs have been very good, although loss of stream flow eliminates rearing habitat of this species.

Other streams and lakes also support anadromous fisheries and contribute to the total economic value of these resources. They are also afforded protection under the State Anadromous Fishery Act (Kron, 1982; Reed, 1982).

Fisheries Development

General Description. Hatcheries and stream enhancement programs have been established in the area to augment natural production; they include Salmon Creek (Northern Southeast Regional Aquaculture Association), Kowee and Sheep Creeks (Douglas Island Pink and Chum), and the Auke Creek Hatchery (NMFS in cooperation with the Territorial Sportsmen Association and ADF&G). These facilities are shown in Figures VI-2 and VI-3.

Fish holding and rearing facilities also have been operated on Fish Creek and the upper Mendenhall Valley (Marriott, 1980 and 1982). The Mendenhall facility, however, is still considered to have potential for production of Dolly Varden char and trout (Kron, 1982).

Hatchery production consists of chum, pink, and Coho salmon. At the Salmon Creek hatchery, the Twin Lakes pools are used to hold coho and chum salmon prior to release. This is a joint NMFS, ADF&G, and Salmon Creek hatchery effort using NMFS developed "floating raceway" technology. Under this agreement, the hatchery will also produce fish for a recreational fishery in Twin Lakes (Fetters, 1982; Heard, 1982).

Various attempts are underway to augment natural anadromous stocks in certain streams with introductions of steelhead and cutthroat trout. Steelhead smolt were planted in Montana Creek in 1976, and the wild stocks in Peterson Creek are considered good for hatchery production (Jones, 1980 and 1981).

Most of the effort to manage and enhance fisheries resources has been directed at controlling the use of the resource and managing the habitat. Habitat management has focused on three major areas:

- Designation of the most important areas which should be set aside for fish production only;
- Minimization of impacts on salmon systems where other land uses occur; and
- Protection and maintenance of existing natural anadromous fish stocks.

There are no specific regulations to protect stream and lake resources in the area other than a general authority of state officials to oversee projects affecting streams or lakes (Northern Southeast Regional Planning Team, 1982). The Alaska Department of Fish and Game has the primary authority for monitoring construction in stream and lake beds, and limited authority in shoreline areas. The latter is mainly to recommend actions related to development activities prior to construction and enforcing fisheries and statutes after development (Reed, 1982). Other state agencies with jurisdiction in related facets

of fisheries resource management are the Departments of Environmental Conservation and Natural Resources; federal agencies with permitting or review authority include the National Marine Fisheries Service, Fish and Wildlife Service, Environmental Protection Agency and the Army Corps of Engineers.

Critical Areas. Salmon and trout hatcheries require substantial volumes of high quality freshwater. Water resources in the area that are critical to the operation of existing hatcheries include Cowee, Sheep, Salmon, and Auke Creeks, and Auke Lake.

Maintenance of adequate flows and exceptional water quality characteristics are important.

Habitat management is the principal tool of agencies to maintain stream, lake and marine resources. They pay particular attention to protecting estuaries and wetlands, and freshwater shoreline and bottom areas. Critical habitat areas are managed on a site-specific basis. Areas meriting special consideration are identified in a vegetation and habitat types summary of this report.

Commercial, Subsistence, and Sport Fisheries

General Description. Fish and shellfish are harvested in commercial, subsistence and recreational fisheries. In general, the catch and effort in the area are moderate and there are few well-defined critical fishing areas. The following fisheries occur in the nearshore area:

- Salmon
 - Gill Net - high intensity north of Benjamin Island
 - Troll - low to moderate intensity north of Tee Harbor
 - Purse Seine - little to no activity
- Herring
 - Auke Nu Cove to Echo Cove
- Bottom fisheries (except halibut)
 - Rocky bottom areas in entire area (mainly sport catch)
- Halibut
 - Entire area
- King and Tanner Crab
 - North of Auke Nu Cove into Berners Bay, including Shelter Island
- Dungeness Crab
 - Coastal embayments north of Auke Bay

(Source: Landingham, 1982; O'Clair, 1982; and Squire and Smith, 1977)

Principal sport shore and nearshore fishing areas, and a major clam harvest site in Auke Bay, are shown on the fisheries maps (Figures VI-2 and VI-3). Shore and skiff fishing is popular in the area. Most shore fishing is for Dolly Varden char, although some cutthroat and steelhead trout, and pink, coho, and chinook salmon are also taken. Most of the fishing occurs around the mouths of streams and accessible beaches. One distinction of the area's sport fishery is the large number of sport fishermen who also fish commercially.

Most of the rivers and lakes in the area are open to sport salmon and/or trout fishing. Those with fisheries for resident species are shown on the fisheries maps (Figures VI-2 and VI-3). The Juneau-Douglas Island road system provides access to many of the streams.

Commercial/recreational boating facilities have been constructed at a number of locations (Figures VI-2 and VI-3). Boats are docked at public or private marinas, moored in front of private residences, or trailered.

Wildlife

Birds

Waterfowl (Geese, Ducks, Swans)

General Description. The diverse waterfowl population utilizes all aquatic habitat areas throughout the year. Protected bays, rivers, streams, lakes, and wetlands provide their habitat needs. In marine and estuarine areas, most waterfowl feed in the zone that occurs between the high tide line and a depth of 60 feet; thus the shoreline is an important component of waterfowl habitat. Large numbers of migrating waterfowl pass through southeast Alaska in spring and fall. Migrant species depend on resting and feeding habitat along the migration route. This habitat is particularly critical in years when conditions for migration are difficult (Selkregg, 1975). Many species are represented by both resident and migratory populations. A total of 16 species of waterfowl breed in the region (Table VI-1). The nesting habitat for most species consists of wetland and riparian habitats such as found in the Mendenhall Valley, Auke Lake, and other lakes, streams, and marshes (King, personal communication, 1982).

Critical Areas. Nesting, wintering, molting, and feeding and resting areas are critical habitat needs for waterfowl. In the CBJ, these include Echo Cove, Eagle River Delta, Mendenhall Flats, Gastineau Channel, and the waters along the west coast of Douglas Island (Figure VI-1).

TABLE VI-I

EXPECTED WATERFOWL BREEDING IN CBJ*

mallard	gadwall	red-breasted merganser
American widgeon	greater scaup	common golden eye
green-winged teal	bufflehead	Barrow's golden eye
pintail	canvasback	Canada goose
shoveler	harlequin	trumpeter swan

*Note: These species are known to breed in mainland areas of southeast Alaska and, therefore, can be expected to nest in appropriate habitats in the CBJ.

Source: ADF&G, 1973.

In addition, ADF&G (1973) has proposed the Gastineau Channel and Mendenhall Flats complex as key waterfowl habitat areas that are of state and national concern which should be identified as critical wildlife habitat.

Activities of the timber industry may be detrimental to waterfowl. The accumulation and decomposition of wood wastes in bays has been known to alter aquatic animal populations on which certain waterfowl often forage. Pulp mill effluent has been linked to waterfowl mortality.

The marsh between Sunny Point and the Juneau Airport provides an important feeding habitat for a resident Canada goose population. This population of about 400-500, ranges in certain months to Glacier Bay, but winters and nests in the vicinity. In the winter and spring, the vegetation of the Mendenhall Flats near Sunny Point provides an important food source to the geese after the harsh winter. These birds are an aesthetic as well as a hunting resource (King, personal communication, 1982).

Bald Eagles

General Description. Bald eagles are year-round residents in southeast Alaska. During the breeding season, which begins in spring and continues through the summer, they nest in large, old growth trees near the marine shoreline and feed in open water and intertidal flats. Eagles are also commonly seen in sanitary landfills. Headlands and points are preferred nest locations where large areas of feeding habitat can be observed (Robards & Hodges, 1976). During their lifetimes, bald eagles build or maintain several nests but use only one each year. In the winter, they occupy marine shoreline areas, but many migrate to coastal rivers to feed on salmon carcasses.

The bald eagle is the national bird and an important attraction to tourists. The U.S. Bald Eagle Protection Act of 1940 protects

the birds, their nests, and eggs from human exploitation or disturbance. Under the Endangered Species Act, this species is not listed as an endangered or threatened species in Alaska, as it is in most other states

Critical Areas. The area critical to bald eagles is the nesting and wintering habitat. Nesting areas include islets, headlands, and other marine shorelines with old growth forest within 200 yards of the water. Known sites are shown on Figure VI-1. High density nesting areas include the shoreline from Echo Cove to Eagle River and the west coast of Douglas Island. Intertidal areas and open water are important feeding areas in summer (Robards and Hodges, 1976), and salmon spawning rivers are valuable in winter. Important feeding areas heavily used by bald eagles include the Mendenhall Wetlands and intertidal areas (Hodges, personal communication, 1982).

Their nesting habitat is susceptible to disturbance and is decreasing, due to logging and shoreline development. Suitable nest trees and roosting sites are lost as old-growth forests are removed. The presence of humans in shoreline areas also may deter nesting or feeding, and bald eagles are sometimes forced to nest in less preferred habitat.

Eagles are particularly sensitive to noise, although minor auditory disturbances alone do not seem to disturb them. Construction equipment, chainsaws, and other equipment have been known to cause them to abandon specific locations. Timing and proximity to eagle habitats of noise-generating activity are matters to consider when development occurs.

Peregrine Falcon

General Description. Three subspecies of the Peregrine falcon are recognized. Two nest in the Alaskan interior and winter in southern latitudes. Their migration route is not well established but may follow the coastline. The third subspecies, Peale's peregrine falcon, nests in seacliff areas in southeast Alaska, wintering within and just south of the breeding range. The Peale's subspecies nests on the outer coast and islands and feeds primarily on seabirds (ADF&G, 1978).

While the Peale's peregrine is not endangered, the other two subspecies are listed as endangered under the Endangered Species Act (Emeral, personal communication, 1982). Alaska is the only state where significant numbers of peregrine falcons are known to nest.

Critical Areas. No critical areas have been identified for peregrine falcon nesting or wintering in southeast Alaska for the two endangered subspecies (Emeral, personal communication, 1982). For the Peale's peregrine falcons, important nesting and foraging habitat also are areas where seabirds and waterfowl concentrate.

Terrestrial Mammals

Furbearers

General Description. The furbearing mammals of commercial significance in the CBJ include mink, land otter, and marten. Beaver, muskrat, wolves, and wolverine are also sought under certain conditions. Most trapping is done to supplement incomes of residents of the CBJ, as few people depend on this activity for subsistence (Zimmerman, personal communication, 1982; Selkregg, 1975).

Of the most important furbearers, land otter and mink are most closely associated with aquatic habitats. Most mink populations occur within a narrow band of habitat which includes the forest-beach interface. Denning habitat consists of rock crevices and root cavities above suitable beaches. Land otter inhabit streams, lakes, and coastal shorelines. They forage extensively in marine intertidal communities on invertebrate and bottom fish. Land otter denning sites occur on forested points of land around shallow bays (ADF&G, 1978).

Marten are residents of coastal forests where they forage for small mammals. Marten are also known to forage on intertidal shorelines for marine invertebrates. Wolverine and wolves are widely distributed and will occur in all areas of the CBJ.

Critical Areas. Because furbearers are a diverse group, several habitat types are important to these animals. Shoreline areas where suitable denning sites occur are critical habitat for both land otter and mink. For marten, coastal forests are important for breeding and feeding. Logging activities can be expected to reduce marten habitat, and reduce marten densities as a result (ADF&G, 1978).

Coastal areas, and stream and lake shorelines appear to support the highest density of furbearer populations. No specific critical areas have been identified; however, denning sites for mink and land otter could be adversely affected by road construction and other development-related activities in shoreline areas.

Mountain Goats

General Description. Mountain goats are a game species that are taken by sports hunters throughout their range. The habitat of mountain goats extends from sea level to ridge tops. During summers, goats frequent the high elevations of local mountains and feed on grasses, sedges, and low shrubs of alpine tundra and meadows. In winter they migrate to low elevations where winter food sources such as shrubs are available. In some cases, goats utilize areas near sea level for winter foraging (ADF&G, 1973).

Critical Areas. The wintering range of the mountain goat is the most important portion of their habitat. Development in low

elevation areas has the potential to impact the wintering range of goats. The location of important wintering ranges has not been precisely determined, although studies are in progress to determine goat wintering areas that may be critical to the survival of certain populations (Zimmerman, personal communication, 1982). Generally, goats winter between the 1,000 foot elevation and timberline and as low as sea level from Berners Bay to Mendenhall Glacier (ADF&G, 1979). Other goat winter range occurs between Mendenhall and Bishop Point (Zimmerman, personal communication, 1982).

Sitka Black-Tailed Deer

General Description. This important game species ranges from high elevation habitats in the summer to sea level in winter. The summer range includes alpine tundra and timberline meadows. In the winter, deer depend on forested areas at low and high elevations for winter forage which consists of shrubs and herbs. Severe winter conditions affect mortality and population fluctuations (ADF&G, 1973). Recent studies (for example, see Wallmo and Schoen, 1980) have shown that old growth, serally mature forests provide the optimum combination of forage and cover to sustain deer populations in severe winters when habitat resources are limited. Neither clearcuts nor second-growth forests provided adequate cover or forage during winters of mild to severe snowfall. During winters of lower snow accumulations, the distribution of deer is more extensive; this provides for the recovery of browse plants in serally mature forests.

Critical Areas. The maintenance of winter habitat is critical to deer populations. In order to sustain deer populations in mild to severe winters, old-growth serally mature forests are important. Sufficient areas of old-growth forests are required to prevent over-concentration of deer in winter ranges which may lead to habitat deterioration and increased predation (Matthews and McKnight, 1982). Deer winter throughout the coastal area in the CBJ. The upper elevation limit of this winter range is about 1,000 feet, but may be higher in winters of light snow accumulation (Zimmerman, personal communication, 1982). Population densities in old growth coastal forest would be greatest during high-snowfall winters; with lower snowfalls, the winter distribution of deer would be more dispersed.

Douglas Island supports a large deer population, due to the combination of extensive high elevation habitat and forested winter range. The total available acreage and quality of the winter range are major factors which control the population.

High density winter habitat use is known to occur on the west slope of Douglas Island (Figure VI-1) (ADF&G, 1973). Also noted as valuable winter range is the remaining unpopulated portion of the Douglas Island coastline at low elevations; only the presence of people restricts deer winter use (McKnight, personal communication, 1982).

On the mainland, one major wintering area which supports a large deer population is the south facing slopes of low elevation forest in the Lemon Creek Valley. It provides the appropriate wintering habitat for animals in the Lemon Creek watershed and Heintzleman Ridge.

Black Bears

General Description. These animals use a variety of habitat types throughout the year, as their movements coincide with the seasonal appearance of food resources. Herbaceous vegetation found in marshes and other low elevation grasslands are important forage in the spring. Later in the summer, black bears move to high elevation alpine areas to eat berries; salmon are an important food source in the fall.

Critical Areas. The range of black bears extends throughout the area from sea level to the alpine tundra and thus it is not delineated on Figures VI-2 and VI-3. No critical habitat areas for black bear have been identified.

Black bears are attracted to garbage. Within the CBJ, the effect of development has been to increase the interaction and conflicts between humans and black bears. The conflicts could be largely eliminated if proper garbage disposal practices were employed.

Brown Bears

General Description. Nearly all habitat types are used by brown bear during the year. In early spring, skunk cabbage is an important food source found in low, wet sites. Estuarine habitats, such as fresh water and salt marshes, are used extensively in late spring and early summer. Brown bears rely heavily on spawning salmon populations in fall but may also forage on berries and other alpine vegetation. Thus, marshes and salmon spawning streams are critical components of brown bear habitat.

Critical Areas. Brown bears are disinclined to use acceptable habitat near human settlements. They are, however, known to occur throughout the CBJ, and are occasionally observed in Lemon Creek, Montana Creek, Cowee-Davies, and Herbert River (Zimmerman, personal communication, 1982). Their population density is low, and no critical areas are known (McKnight, personal communication, 1982).

Marine Mammals

The waters from Berner's Bay to Bishop Point are extraordinarily rich in marine mammals. In various seasons, a relatively large number and high density of Dall porpoise, harbor porpoise, harbor seals, Stellar sea lions, minke whale, killer whale, and humpback whales occur in the waters of the CBJ. A variety of other species also inhabit these waters at lower densities; the most notable species are the humpback whale and stellar sea lion.

Humpback Whales

General Description. The humpback whale is an endangered species under the Endangered Species Act. A large proportion of the eastern Pacific Ocean humpback whale population inhabits south-east Alaska in the summer. About 100 humpback whales summer in the waters of Lynn Canal and Stephens Passage. Most of these animals spend at least some portion of the year in the waters of the CBJ (Brooks, personal communication, 1982). They feed in the marine waters of Lynn Canal, Favorite Passage, Auke Bay, and Stephens Passage. A small number of this group also spends the winter in the area and has been observed feeding on herring schools in Gastineau Channel as far north as the bridge (Brooks, personal communication, 1982).

Critical Areas. The extent of critical habitat as determined by the National Marine fisheries service (NMFS) is indicated on Figure V-1. NMFS considers the area inhabited by humpback whales to be critical habitat.

A significant risk to whales is posed by hydrofoils, particularly through collisions (Brook, personal communication, 1982). The location of hydrofoil transportation routes should consider whale habitat.

Conventional marine traffic has been implicated in recent years as affecting humpback whale behavior. Some researchers believe that noise from tour boats in Glacier Bay National Monument is responsible for fluctuations in the level of their utilization of the bay. Studies are being conducted to assess these factors.

Stellar Sea Lions

General Description. This species has been observed throughout southeast Alaska and is common within the waters of the CBJ, including Auke Bay and Gastineau Channel. Open waters near river and stream mouths (i.e., Eagle River), all shoreline areas with herring spawning, and herring wintering grounds are important feeding habitat for sea lions. Many of these animals are part of the approximately 300 to 500 sea lions that utilize a hauling area on Benjamin Island. This haul out (not a breeding rookery) is stable and has a long history.

Critical Areas. The sea lion haul out on Benjamin Island is a critical habitat for the stellar sea lion (see Figure VI-1). It represents a high population density of this species and one of only 19 known sea lion haul outs and rookeries in southeast Alaska (ADF&G, 1973). Coastal regions in the CBJ will be critical feeding habitat for sea lions, particularly in locations where herring, salmon, and other fish become concentrated during spawning and overwintering.

HABITAT TYPES

Aquatic

The major aquatic habitat types in the CBJ are coastal marine waters, estuaries, intertidal flats, fresh and saltwater wetlands, rivers, lakes, and streams. (Also see vegetation habitat type descriptions in Section V.)

Marine waters support diverse populations of fish, shellfish, marine mammals, and birds, and contain a large number of specific habitats ranging from narrow intertidal sand to rocky bottom areas to open waters subdivided by salinity or temperature gradients.

Estuaries in marine waters are influenced by the runoff from streams and rivers. They exhibit marked fluctuations both in salinity and tide level, and often contain large wetland areas drained by tidal channels. Estuaries provide a protected nursery for the young of many species of finfish and shellfish. They also are important staging areas for salmon and searun trout migrating in and out of river systems.

Intertidal flats provide an interface between the sea and the land. They support a wide variety of organisms ranging from seaweeds and eelgrass, barnacles, and clams to gulls and shorebirds. Deer and mountain goats may occasionally forage on the intertidal shorelines.

Wetlands are those aquatic lands which are either intermittently covered by water or strongly influenced by adjacent waters. They may include freshwater marshes on flat terrain near rivers and lakes and brackish intertidal marsh lands. The muskeg is the most common of the non-tidally influenced freshwater wetlands, with a restricted source of drainage and little inflow or outflow. Wetlands are important for several reasons. They provide habitat for many plant and animal species and serve as a pollution filtration system, and in some cases as a natural flood control system.

Rivers, lakes, and streams are major features of the CBJ uplands. Most of the drainages are small, and some have headwater lakes. These resources are discussed in detail in the Geology/ Hydrology section. Anadromous and resident fish species are found to some extent in all streams and lakes. Streams and lakes with anadromous fisheries identified by the Alaska Department of Fish and Game (ADFG) in the Juneau area are listed in Table VI-2.

Migration data have been plotted for salmon species found on the lakes and streams, and were derived from Coastal Zone Management maps completed by the Alaska Department of Fish and Game in 1978-1979. The approximate limits of upstream migration are indicated for each species. Migration barriers include water-

See Comp Plan, App B., pp. 174 - 181 for updated list of anadromous resources.

falls and dams, extreme stream slopes, lack of suitable spawning habitat, and insufficient flow.

Pink salmon are particularly abundant and occur in nearly all freshwater drainages. Other salmon species, such as sockeye, coho, and chum also are found. Many types of plants and animals other than fish are also dependent on fresh water. Examples include beaver, muskrat, waterfowl, some shore birds, and song birds.

These habitat types have been identified on the vegetation maps (Figures V-1 and V-2), the fisheries maps (figures VI-2 and VI-3), and the base maps (Figure VIII-1 and VIII-2).

Terrestrial Habitats

A complete description of terrestrial vegetation and habitat types is found in Section V, Vegetation Habitat Types. The purpose of this discussion is to indicate wildlife utilization of each vegetation habitat type as mapped in Figure V-1.

An important aspect of wildlife habitat is the ecotone or edge where two habitat types interface and intergrade. This often is called the edge effect and is valuable to many animals that utilize different habitat types to fulfill different life functions. The diversity of animals which use both habitats is greater than in either habitat type. An example of the edge effect is provided by furbearers, such as mink, which live in forest areas near water and forage at the shoreline. The most important habitat type boundaries in the CBJ are shoreline and riparian areas where forest or other habitat types adjoin marine, river, or lake habitats.

Forests are used by most of the game non-game animals in the region. Resident mammals of forests include certain rodents and shrews, bats, and some furbearers such as marten. Large game mammals such as deer, bear, and mountain goat, live in forests at some time during each year. A wide variety of birds, including hawks and owls, woodpeckers, swifts, swallows, and numerous small perching birds, is also found.

Following a disturbance such as fire, logging, or natural geologic events, forest types undergo succession. Variation in successional stage is an important factor in habitat quality; species composition and diversity may be different through succession. Certain species rely on old-growth, serally mature forests (Section V). Sitka black-tailed deer and mountain goat winter in forests where old-growth forests provide optimum conditions. Bald eagles require old, mature trees in shoreline forests for nest site. Certain perching birds and spotted owls are dependent on old-growth forests. Forests of the Douglas Island coastal belt and Lemon Creek (Figure V-1) have been identified as important deer wintering habitat. Eagle nest sites

(see Figure VI-1) occur in forested coastlines throughout the CBJ.

Shrublands habitat types, dominated by deciduous shrubs and herbaceous vegetation, provide abundant browse for deer, goat, and a variety of small mammals and furbearers. Deciduous shrublands support a large number of passerine species that forage among the shrubs for insects and fruits. Due to avalanches and other geologic disturbances, shrublands often are interspersed with forests. In these areas, there is a notable diversity of habitat types and the extent of edge is generally great.

Alpine tundra is inhabited by several resident taxa such as small mammals, marmots, furbearers (wolverine and ermine), and ptarmigan. Most animals spend only summer months in the alpine zone; these include black and brown bear, Sitka black-tail deer, mountain goat, and a variety of passerine birds. The alpine tundra-forest edge is important to many of these species that forage in the alpine vegetation but seek cover in the forest.

Muskeg, like shrublands, is widely interspersed with the forest habitat type; as a result, the extent of edge effect and habitat type diversity is greater than that in unbroken forests. Within the muskeg, occasional open water, shrubs, and herbaceous vegetation fulfill the habitat needs of a number of animals. Most notably, black and brown bear and Sitka black-tail deer forage on muskeg vegetation in various seasons, and certain bats feed extensively in muskeg (Selkregg, 1975). Much of the muskeg habitat type in the area occurs on federal lands. Within the CBJ, extensive muskeg is found within the coastal belt of Douglas Island and between Mendenhall Valley and Echo Cove.

Freshwater marshes support waterfowl nesting and feeding; other birds, such as swallows, red-wing, blackbirds, and long-billed marsh wrens; several specialized small mammals; and certain furbearers like mink, muskrat, and beaver. Deer occasionally feed in marshes. The combination of aquatic conditions and high plant productivity creates an abundant habitat resource for herbivores and insectivores, thus providing the basis for extensive food webs. Freshwater marshes occur in the Herbert, Eagle and Mendenhall floodplains, and other scattered locations.

Salt marshes, which include all vegetated intertidal communities typical of estuaries, are one of the most important habitat types in the CBJ. These areas are important components of the habitat of many waterfowl species, brown bear, black bear, and certain small mammals. Numerous other species use salt marshes extensively in some seasons, including Sitka black-tailed deer, shorebirds, bald eagles, and passerine birds. A productive environment for invertebrates, marshes attract many insectivorous bird species, bats, and shrews. Salt marshes indirectly support portions of marine food webs because of their high productivity and interaction with marine waters via tides.

Intertidal flats are used extensively by waterfowl and shorebirds, especially during seasons of migration. These birds are highly dependent on this resource and are its most conspicuous inhabitants. Bald eagles also forage along shorelines and in intertidal flats. The invertebrate community in the sediments is probably the most important component of this habitat type. At low tide shoreline, foraging species include mink, land otter, and weasels. At high tide, many animals of the marine system forage in intertidal zones and, in turn, support marine mammal populations of seals, sea lions, and porpoises.

Marine waters contain a wide range of plant and animal species. The productive planktonic community supports a food web of small fish on which the marine mammals and fish prey. Land otters also forage on benthic organisms and fish in shallow marine habitats. A large diversity of waterfowl and seabirds utilize marine waters extensively for feeding and resting. For many species of waterfowl, the shallow (less than 60 feet in depth) marine waters are most important for feeding. Seabirds are found throughout the marine environment, feeding and resting.

Rivers and lakes are freshwater bodies that support invertebrates and fish. These animals provide the basis of a food web that includes terrestrial mammals and birds. Waterfowl are dependent on lakes and, for some species, rivers for feeding and resting habitat. Some seabirds, such as gulls and terns and several shorebirds use freshwater bodies or their shorelines extensively. Of the mammals that rely on lakes and rivers, muskrat and beaver inhabit these areas during all stages of their life cycles. Land otter and mink also use lakes and rivers in addition to marine areas. Brown bear and, to a lesser extent, black bear are dependent on rivers in the fall salmon runs as a critical food resource. Major habitats in the CBJ include Auke and Mendenhall Lakes, and the Eagle, Herbert and Mendenhall Rivers.

Shoreline and riparian habitats include the interface of upland with wetland and salt and freshwater habitat types. Such edge areas are very diverse and abundant in animals. Many species are tied closely to shoreline and riparian habitats as they nest or seek protective cover in upland habitat types but forage in marine, intertidal, or freshwater lake and river types. Waterfowl are dependent on shorelines of lakes, streams, and wetlands for nesting; this provides accessibility to aquatic feeding and brooding habitats. Mendenhall and Auke Lakes, and the riparian areas of the Mendenhall and Herbert-Eagle floodplains, are productive freshwater riparian areas. In marine environments, the shoreline and adjacent areas to a depth of 60 feet are important feeding areas. Shorebirds feed at the shoreline of water bodies, but do not utilize either the upland or aquatic habitats extensively. Bald eagles and peregrine falcons nest only near shorelines and prefer locations with visibility over large, marine expanses. Bald eagles feed on marine organisms of open water and shoreline areas. The Mendenhall Flats have been identified as important bald eagle, shorebird and waterfowl habitat. Many

passerine birds nest in nearshore upland areas and forage on insects and vegetation of productive aquatic habitats. Of the mammals, furbearers depend extensively on shorelines. Land otter, mink, and, to a lesser extent, marten forage in shoreline areas of both marine and freshwater. The shoreline from Echo Cove to Eagle River is used extensively by furbearers. In the fall, at nearly every salmon spawning river or stream, black and brown bears forage for salmon along the shoreline and in the water.

Urban areas with human and domestic animal populations are low quality habitat for many of the animals discussed in this section. In particular, Sitka black-tailed deer, bald eagles, and brown bear are adversely affected by the proximity of urban areas. Black bear are a potential nuisance to human populations since they are attracted to garbage and may become dangerous. In contrast, some species thrive in urban areas where potential predators have been eliminated or feeding habitat has been enhanced; these include certain perching birds and rodents.

Terrestrial Habitat Areas - VCU Rating

The ADF&G has recently evaluated U.S. Forest Service lands in the Tongass National Forest to identify units of habitat and rank their value to fish and wildlife. The purpose of this effort was to provide information for timber harvest planning in light of the dwindling old-growth forest resource. Individual drainage-size compartments were formulated; they included upland and neighboring waters and were called Value Comparison Units (VCU). Each VCU was evaluated using biological, human use, land and forest type diversity, and percentage of high volume timber. The scoring of each criteria was summed for each VCU, and three management classes were created by dividing the range of scores. The recommended management strategies for each class are as follows:

- Class I - no further timber harvest activity
- Class II - moratorium on timber harvest until field evaluations can be completed
- Class III - those areas of relatively low value in which timber harvest can occur with the least perceived impact.

Table VI-3 relates the VCU wildlife score and recommended management class to each VCU in the study area.

The highest VCU wildlife scores are given to the shoreline and adjacent coastal forest from Echo Cove to Eagle River and south to the Mendenhall Valley. The Herbert and Eagle River Drainage are assigned a moderate value. High wildlife scores are also noted for the coastal forest from Lemon Creek to Point Salisbury. Concentrated populations or prime habitats are identified for marine mammals, water birds, and black bear in these areas. Bald

TABLE VI-3

ALASKA DEPARTMENT OF FISH AND GAME VCU RATING AND
MANAGEMENT RECOMMENDATION FOR THE TONGASS LAND MANAGEMENT PLAN

<u>VCU</u> ¹	<u>Wildlife</u> ² <u>VCU Score</u>	<u>Recommended</u> <u>Management</u> ³ <u>Class</u>
<u>MAINLAND</u>		
Cowee-Davies Drainage	Low	I
Echo Cove to Eagle River	Very high	I
South Fork Cowee-Boulder Creek	Low	II
Herbert and Eagle River	Moderate	II
Eagle River to Mendenhall Valley, including Peter Creek Drainage	High	I
Montana Creek Drainage	Low	I
Mendenhall Lake Drainage	Low	III
Heintzleman Ridge	Low	III
Upper Lemon Creek	Low	III
Lemon Creek to Point Salisbury	High	I
Grindstone-Rhine Drainage	Low	III
<u>DOUGLAS ISLAND</u>		
East Shore, Douglas Island	Low	II
Fish Creek Drainage	Very low	I
Northwest Shore, Douglas Island	Low	II
Hilda Creek	Moderate	II
Southwest Shore, Douglas Island	Low	II

¹ These descriptions are generalized from a small-scale mapping of the recommended management classes for the Tongass National Forest (available from Don McNight, ADF&G, Juneau)

² Rating based on wildlife use of each VCU

³ Includes non-wildlife criteria such as human use and timber volume. Class II areas include all areas not assigned to Class I or III.

eagle and furbearers are important populations in the area from Eagle River to Echo Cove. On Douglas Island, a moderate score is assigned for the Hilda Creek area in the central west coast of the island.

The recommended management classifications depend on other criteria, and do not correspond exactly with VCU wildlife scores. In general, the mainland shoreline, coastal zone, and adjacent lowland forested zones are recommended for Class I. Exceptions are the Eagle-Herbert River Drainages, South Fork Cowee and Bolder Creek drainages, Mendenhall Lake Drainage, Heintzleman Ridge, Upper Lemon Creek, and Grindstone-Rhine Creeks. On Douglas Island, only the Fish Creek drainage is considered Class I with the remainder recommended as Class II.

DEVELOPMENT CONSIDERATIONS

FISH AND SHELLFISH

Stream and Lake Resources

Most streams and lakes in the CBJ contain anadromous fish. Provisions of the Anadromous Fish Act (AS 16.05.870) apply to any development affecting these streams. The act gives the state authority to review plans and procedures to ensure that proposed development will have no harmful effect on the fishery or habitat. Procedures to mitigate potential harmful impacts can include the timing of construction to avoid interference with the fish, or practices which would have minimal effect upon spawning and rearing areas.

The State of Alaska places great emphasis upon the maintenance of stream habitat for fish spawning, incubation, and rearing, rather than the use of hatcheries. Planting of hatchery-reared stocks to augment depleted natural stocks is generally not an accepted method, and is rigidly controlled and monitored.

Some streams in the Mendenhall Valley and urban areas have been degraded by development which has filled, graded and channelized waterways, and intercepted ground and surface water supplies. This has led to loss of fish habitat and drainage and flooding problems in streams such as Gold, Jordan, and Duck Creeks.

The potential for upland development and water withdrawals have an impact on the degree of habitat monitoring and protection required for any water body. Certain resources which supply high quality water for hatcheries (e.g., Auke Lake, and Sheep, Cowee, and Salmon Creeks) also could be adversely impacted by such development.

State fisheries laws do not protect stream resources from land practices that may, indirectly, adversely impact the fisheries. Maintenance of a conservation easement for building setback is a possible approach, especially when combined with measures to insure minimum stream flows, reduce siltation and sedimentation, and prevent blockage of runs. Measures to control storm water quantity and quality, in particular, need better definition (Marriott, 1982).

All stream alterations, such as channelizing, diversion, and streambed changes, are reviewed, approved and monitored by the ADF&G and the City and Borough of Juneau. This includes plans for gravel and water removal, filling floodplains and wetlands, and development that may lead to erosion and sedimentation problems in waterways.

Maintenance of streamside vegetation and application of methods to control erosion and sediment have beneficial impacts on the quality of water and the availability of food for juvenile salmonids. The habitat that borders streams and lakes also provides a unique resource for water-dependent animals, such as many furbearers and waterfowl. Protection of this habitat is possible by imposing development restrictions or designating management areas within a defined width of the stream corridor and surrounding lakes. The State of Alaska provides no guidelines for defining stream corridor widths or lake shoreline buffer areas. As an example, the Shoreline Management Act of the State of Washington (RCW 90.58) defines a management zone which extends landward for 200 feet in all directions from the ordinary high water mark of streams and lakes, and the associated wetlands. Development is not prohibited within this zone, but guidelines are included which may specify the sizing and density of projects and construction methods. The stream and lake shoreline habitats of the CBJ are similar to many of those included within the State of Washington shoreline designation and may be applicable.

Development restrictions may be necessary to prevent continued loss of habitat for Auke, Montana, Steep, Peterson, and Cowee-Davies Creeks, and Windfall Lake, as well as the west bank of the Mendenhall River.

Water withdrawals from streams or associated groundwater resources can cause flow deficits and adverse impacts on instream fishery use. This has been documented in a water supply study for the University of Alaska Auke Lake Campus (KCM, 1978) and in recent low flow conditions observed in Jordan and Duck Creeks (Kron, 1982; Reed, 1982).

Marine Resources

Many intertidal flats and island and mainland intertidal shorelines are important spawning and rearing habitats for economically valuable fish and shellfish. Particularly productive areas

are adjacent to stream mouths, in protected embayments and channels, and inshore from shallow and/or rocky bottoms. Development in these areas should be limited to those activities which have a minimal impact on intertidal bottoms and which are water dependent.

Shellfish harvesting and shorefishing is somewhat restricted in the Juneau area by the lack of well-defined public access, particularly in Auke Bay. The timing of clam harvests is greatly restricted by paralytic shellfish poisoning (PSP)--a recurring natural biological event (Synder, 1982). Regardless of the problem, proper methods of water quality control (especially for septic tank discharges) are critical if the shellfish harvest is to expand.

Conflicts in boat moorage and launching facilities occur in the following areas:

- . Auke Bay. The issue is the recommended construction of a breakwater to expand the number of slips; problems identified include increased pollution in an important spawning, rearing, and migrating area for finfish and shellfish (Landingham, 1982).
- . Echo Cove. This area is popular with sportsmen. The main issue is development of the Cove which may preclude boat launching and easy access to Berners Bay.

Development considerations in subtidal areas are usually minimal unless dredging or dredge material disposal occurs. Marine disposal of dredged material occurs infrequently in the Juneau area --most is used as upland fill. Dredge spoil disposal would not be allowed in shallow protected areas, mouths of streams, and important algae or shellfish beds (Reed, 1981).

WILDLIFE

Important Wildlife Resources

Because of their federal protection, bald eagles require special consideration in development planning. They are sensitive to human activity and noises and require adequate buffer zones. The U.S. Fish and Wildlife Service recommends nonbuildable buffer zones of at least 330 feet around known eagle nest sites and retention of shoreline habitat in their vicinity to a depth of 1/8 mile. This is affected negatively by heavy pressure to log old-growth forests. Shoreline development in the CBJ also has raised the concern of resource agencies as eagles now are forced to choose suboptimal nesting habitats near expanding developed areas. Development in estuaries and wetlands, such as the Mendenhall Flats, also may adversely affect eagle feeding habitat.

Black bears pose a different type of problem for development. In addition to the potential adverse impacts of development on their

habitat, dangerous conflicts between black bear and humans have resulted from the attraction of black bears to garbage in populated areas. Development should minimize the intrusion of sources of conflict and to minimize the destruction of bear habitat.

Waterfowl use extensive portions of the marine, estuarine, and freshwater habitats and adjacent upland. Concentrated use and breeding occur in the wetlands and shorelines (to 60 feet in depth) of Echo Cove, Eagle River Delta, Mendenhall Flats, Auke Bay, and Gastineau Channel. The principal threat to waterfowl is development in wetlands and shorelines. A substantial portion of the Mendenhall Flats is designated as a wildlife reserve. This area also receives heavy recreational use by local hunters. Other locations such as the Eagle River Delta and Auke Lake provide resting areas during hunting season.

Sitka black-tailed deer is an important game species whose populations are limited by wintering habitat. Optimal wintering areas have been defined on Douglas Island and around Lemon Creek. These areas are important in sustaining populations at existing levels. Old-growth forest is a critical component of wintering habitat. Its loss or the intrusion of human activities and domestic animals into this wintering habitat will reduce the population levels of deer. Development in deer wintering habitat must be carefully considered due to the significant effect on deer populations that results from human activities.

Marine mammals are common in the CBJ. Development of the marine environment, or in areas connected to marine waters, has an impact on this resource. There are two species of particular importance. Of principal concern is the population of humpback whales, an endangered species, which has been observed in all marine waters of the CBJ. In the absence of a precise definition of habitat needs, the entire area should be considered critical habitat for this species. Humpback whales may be affected by excessive noise from marine traffic. Actual physical injury to the whales and potential danger to humans is posed by hydrofoil vessels that are being considered as a future transportation mode. Planning for cultural development and affecting the marine ecosystem should consider the potential conflict with humpback whale habitat needs and areas of concentration.

Also of concern is a population of Stellar sea lions which ranges throughout the CBJ and has a major haulout area on Benjamin Island. This location should be protected from the direct impact of human development. Indirect effects on the marine ecosystem, such as a reduction in food prey species (fish), also affect sea lions.

Important Wildlife Areas

Phases I and II of the Juneau Coastal Management Studies have recommended specific locations within the CBJ as Areas Meriting Special Attention (AMSA) which are noted for their wildlife

resource and habitat value. Sweetheart Flats and Berners Bay are proposed as AMSAs. Each area supports abundant wildlife resources such as waterfowl, marine mammals, and terrestrial mammals.

As noted previously, in the recent ADF&G evaluation of the Tongass National Forest, fish and wildlife values were assigned to units of habitat (Value Comparison Units or VCU) to provide background for timberland management planning. The CBJ was divided into 15 VCU's, of which three received high or very high scores and two received moderate scores. The area of Echo Cove and south to the Eagle River Delta was rated very high because of the presence of bald eagles, black bears, waterbirds, marine mammals, and furbearers. From Eagle River south to Lemon Creek (including Peterson Creek and the Mendenhall Valley) and from Lemon Creek to Point Salisbury, high ratings were also assigned. Marine mammals, waterbirds, and black bears were identified. The Eagle and Herbert River Valleys and the Hilda Creek area on Douglas Island received a moderate VCU score. Based on wildlife values and other criteria such as human use and timber volume, each VCU was assigned to one of three management classes. Much of the mainland coastal forest was recommended as a Class I area. This is the most restrictive class (Table VI-3), where further timber harvest activity would be prohibited. On Douglas Island, the Fish Creek Drainage received a Class I recommendation.

Estuarine habitat should be protected from development throughout the study area. This habitat is recognized for its importance to black bear, brown bear, waterfowl, bald eagles, other terrestrial mammals and birds, and fisheries resources. The biological productivity of estuaries forms the basis for complex marine and terrestrial food webs. Much of the Mendenhall Flats, one of the major estuarine areas in the CBJ, is within an ADF&G Game Refuge. All salt marsh and intertidal flats within this area not currently protected within the refuge should be subject to development standards. In addition, careful consideration of development in neighboring and ecologically-connected areas such as the Mendenhall Valley, Auke Bay, and Gastineau Channel is important to prevent secondary impacts to the ecological functioning of the Mendenhall Flats. Activities in and near other major estuarine areas such as Echo Cove and the Eagle River Delta should also be carefully controlled to insure against alteration of important resources.

Coastal beaches, shorelines and riparian habitat areas are of particular importance to wildlife; they are edge areas for different habitat types which simultaneously provide critical components of wildlife habitat. Shoreline areas are particularly important to waterfowl, furbearers, and bald eagles. The importance of the shorelines of Auke Lake, Mendenhall Lake, Mendenhall River, from Eagle River to Echo Cove and on the west shore of Douglas Island have been noted previously. Development in intertidal or inundated portions of shorelines and in adjacent upland areas should be carefully considered to avoid conflicts between

human activity and resource values. Buffers of restricted development to minimize direct and indirect impact of shoreline zones should be observed.

Old-growth (mature) forest is a critical habitat for species such as the spotted owl. Recent studies have demonstrated the importance of this habitat type to sustaining Sitka black-tailed deer populations in moderate to heavy winters. The retention of old-growth forest for game and non-game wildlife should be considered in areas where wildlife values are particularly high, such as in deer wintering and bald eagle nesting habitat. Important areas within the CBJ include Lemon Creek, the Douglas Island coastal belt, and shoreline forests with high density eagle nests. Logging in association with timber harvest, and urban development with attendant human activities and domestic animals would reduce the habitat values of old-growth forest.

Data Requirements

Much of the information for wildlife in the CBJ is general and exists only for a few species. Areas critical to the maintenance and survival of many species are not known. Until such data is gathered, planning for development in concert with wildlife values will depend on site-specific studies or general development policies.

The need to understand the role of muskeg in the hydrology of stream and rivers is underscored by the potential effect of muskeg development on minimum stream flows and fisheries resources. General information on hydrologic relationships between muskeg and ground and surface water availability, and specific information on watersheds of particular concern should be generated.

Research is needed to determine the extent of old-growth forest habitat required to maintain species that are dependent on this disappearing resource. Management requires better information on aspects of habitat quality for key species, including minimum patch size, optimum percentage of old growth versus second growth, and total extent of habitat required.

3. THE LONG RANGE WATERFRONT PLAN

Good plans shape good decisions. That's why good planning helps to make elusive dreams come true.
Lester R. Bittel

3.1 LONG RANGE PLAN OVERVIEW

The long range vision for Juneau's Downtown waterfront is presented in Figure 28. This vision represents the synthesis of ideas and design concepts generated through the public involvement process and the analysis of study area opportunities and constraints outlined in Chapter 2. While the Plan is discussed in greater detail in this chapter, the following section lists of several key organizing elements and themes associated with the Plan:

- **Expanded Recreation and Open Space Area.** The Plan supports substantial expansion of recreation and open space areas through the creation of a 1.8 mile costal seawalk running the length of Juneau's Downtown waterfront. The seawalk is accentuated by a series of parks, each a special destination for active and passive recreational pursuits. A total of 6.1 net new acres of recreation and open spaces stretching from the Juneau-Douglas Bridge to the South Franklin Street Dock is provided in the Plan. Increased water recreation areas are also offered, including the introduction of two new marina facilities, small boat and kayaking zones, and an environmental education/enhancement area.
- **Redevelopment of the Subport and Juneau-Douglas Bridge area for Year-Round Utilization.** Introduction of new mixed-use districts through redevelopment of properties south of the Juneau-Douglas Bridge and found at the Subport is an important objective of the Plan. Mixed-use districts include residential housing, office, and other commercial development geared for year-round occupancy and activities.
- **Cruise Facility Growth.** The Plan presents expanded capability to accommodate cruise ship operations through the development of a fourth fixed cruise berth facility as part of the Jacobsen Trust Property as well as the reconfiguration of CBJ cruise facilities Downtown to accommodate the simultaneous berthing of two, 1,000 foot cruise vessels. Tendering facilities are also reconfigured to allow for improved capacity to accommodate cruise vessels at anchor.
- **Greater Cultural Venues for Residents and Visitors.** A greater size and variety of cultural and historic venues, inclusive of expansion to the State Museum and Centennial Hall and introduction of a new Aviation and Waterfront History Center is proposed under the Plan. Redevelopment of the AEL&P building as a mixed-use cultural, educational, and commercial venue is also envisioned.
- **A Strengthened Heart of Downtown and the Waterfront.** Reconfiguration of the Downtown waterfront area from the present day Seadrome building to the CBJ Public Library and Parking Garage to allow for expansion of Marine Park as a new people's green. This area is programmed to showcase Juneau and Alaska's heritage and provide an important park space and zone for community and visitor events year-round.
- **Expanded Transportation Mode Choice.** While vehicle circulation and parking conditions are improved, the Plan also expands pedestrian areas, bike paths, and

encourages the introduction of a privately operated water taxi linking the Subport, Downtown, and cruise facilities located proximate to the South Franklin Street Dock and Jacobsen Trust Property.

- **Strengthening of Waterfront Linkages.** Preservation, and where possible, opening of new street ends to provide for unimpeded views of the waterfront from Downtown and along South Franklin Street. New circulation points are also introduced to bolster Downtown and waterfront interaction.
- **Dimensional standards.** Standards presented in the following sections are intended to provide guidance in developing project designs. Innovative proposals which incorporate amenities desired by the community should be evaluated on their merits and not be specifically restricted by the standards presented. Dimensional standards developed for the Land Use Code should be developed as part of a public process and should not adopt the standards presented in this plan without further public review.

Combined, these and other elements to be discussed strive to create a balanced and diverse waterfront intended to greatly improve the quality of life of community residents. Many Plan elements also work to increase the appeal, number of available activities, and transportation mode choice of visitors to Downtown and the waterfront.

corridor under Egan Expressway to the Subport area. Other public or quasi-public facilities in this area might include a relocated City Museum possibly in combination with a floatplane-maritime transportation museum, a Visitor Center, a Native cultural center, and a new City Hall.

Varying Building Facades



On the 'land' side of Egan Expressway are two new parking garages, one next to the expanded State Museum-Library, and the other at Telephone Hill next to the State Office Building (where the State Archives is currently located).

Key views of Gastineau Channel will be maintained through view and waterfront access plazas, parks and corridors while varying building heights and urban densities create a city skyline and feel to the area. Dense mixed use development in 3-7 story buildings also ensures that this valuable, relatively high-priced waterfront land is able to sell, rent, and lease, at rates that are not higher than what the market can bear.

Buildings have individuality – there is no unifying design theme. Instead, design continuity is established with street furnishings, building awnings and canopies, lighting, connecting pedestrian links including the seawalk, and art, murals and signage that celebrate the area's rich history.

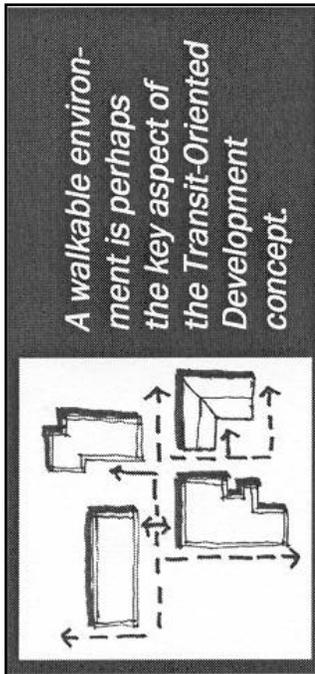
Park Overlooking Marina in Downtown Sitka



● Develop a Marina.

The Subport Marina will help meet Juneau's need for private and public moorage and enhance marine transportation. It will cater to mid (30 ft.) to large (100+ ft) sized vessels for which there is a shortage of moorage. The presence of the Marina and its location as part of the Subport District is integral to the success of area revitalization. People are drawn to the water and love to look at harbors, boats, and associated activity. The presence of a marina and dock with an adjacent park and promenade so close to the urban center of downtown, hotels, convention areas, and major work places will draw people to this area as well as becoming Juneau's main destination for the purchase of fresh seafood.

④ Focus on the Pedestrian Environment – Extend the Seawalk, Link Parks and Public Plazas.



Visually and physically, the Subport District's seawalk, pedestrian links, and public space will connect and join it together with surrounding areas. A seawalk extension, sidewalks and walking paths will connect from the existing seawalk, and continue through the mixed use retail/office streetscape to the marina and new park. Awnings and canopies will flank buildings that about public plazas providing continuous covered walking paths, and in places the seawalk will also be covered to encourage use regardless of the weather.

Egan Drive is a substantial obstacle to greater pedestrian mobility in the area, limiting the mutual benefits of greater pedestrian movement between the Subport District, the State Museum, Centennial Hall, the Goldbelt Hotel and other future attractions that straddle either side of Egan. Revitalization will stress multiple pedestrian crossings of Egan Drive, including a broad, well-lit underpass at the Prospector Hotel (already partly in place to accommodate old AL&P pipelines), overpasses, and crosswalks.



After revitalization, downtown will "start" at the Gold Creek Bridge where traffic is slowed due to street and sidewalk design and features such as wider sidewalks, different colored street and sidewalk pavement, street landscaping, crosswalks and a traffic signal at Whittier Street.

⑤ Create More Public Space on the Waterfront

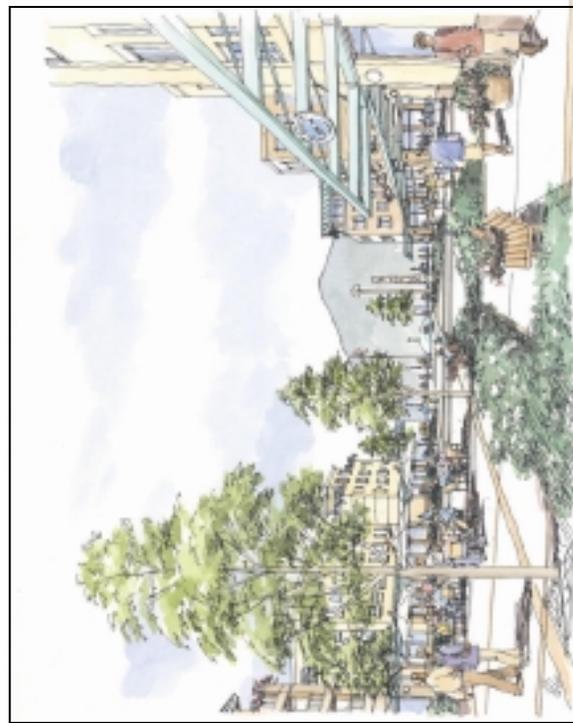
Area residents, workers, those taking pleasure in the waterfront open space and views, and those seeking local art, museum and cultural entertainment, will set the area's year-round 'tone,' with visits by cruise, destination, convention and other independent travelers adding vitality. An extended Juneau seawalk and other pedestrian paths will tie the area together and link it to our cruise ship area and across Egan Expressway to nearby museums and residential areas, historic downtown, and the

Capital. A public park with picnic shelters overlooks the marina will serve as a community gathering place.

Revitalization in the Subport District emphasizes open space and public access to the waterfront. This Subport Vicinity Revitalization Plan calls for 3.5 acres of combined green park space and adjacent landscaped urban plaza. Public space, parks and landscaped urban plazas on the Subport District waterfront draw the public to enjoy a festive urban waterfront scene. In order to provide public space (which also complements private development) and still allow private and quasi-private landowners to use their Subport land to generate a profit requires tideland fill between the current Subport building and the Gold Creek Protection Zone.

2.3 Development Vision

The Subport Vicinity Development Vision and this Plan, define the end result that area redevelopment will accomplish.



Subport District Public Plaza

- **The strategic location of the Subport vicinity and its buildings, streetscapes and character welcome all to Alaska’s Capital City.**
- **The revitalized Subport vicinity is a vibrant mixed-use environment that celebrates Juneau, its waterfront, and its vitality.**
- **Buildings have urban development densities, varied heights, balanced by attractive public gathering spaces, and access to the waterfront.**

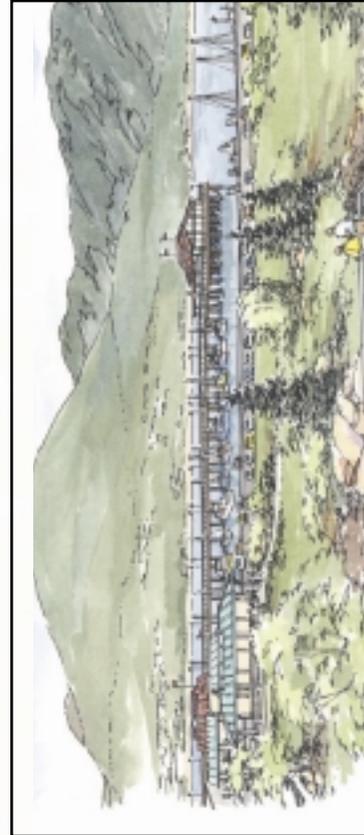
■ Public facilities, festivals and entertainment, that are the heart of Juneau's civic, convention, arts, museum, and cultural life, are concentrated in this vicinity.

■ A public park overlooks the marina and serves as a community place. It is linked by pedestrian paths to public plazas, pocket parks, and public facilities within the Subport revitalization area, to attractions across Egan Expressway, and to downtown.

■ A Subport Marina and dock with moorage for mid-size vessels and day boats complements adjacent mixed-use commercial, retail and residential development, all of which benefit from proximity to the waterfront and the views of Gastineau Channel.

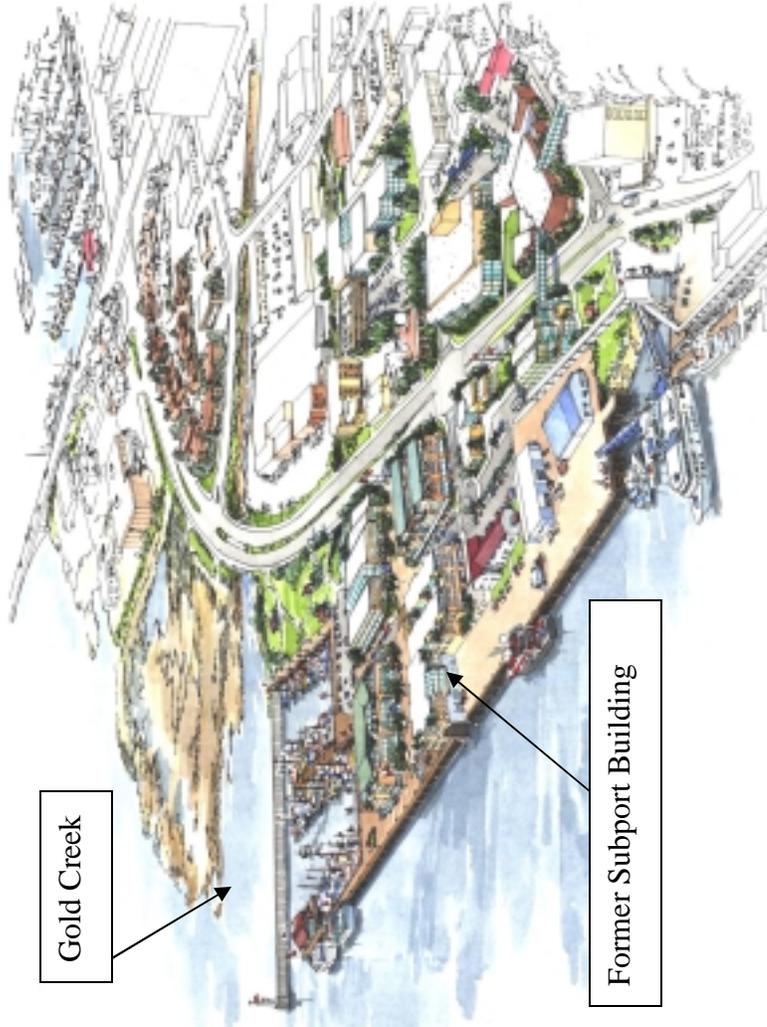
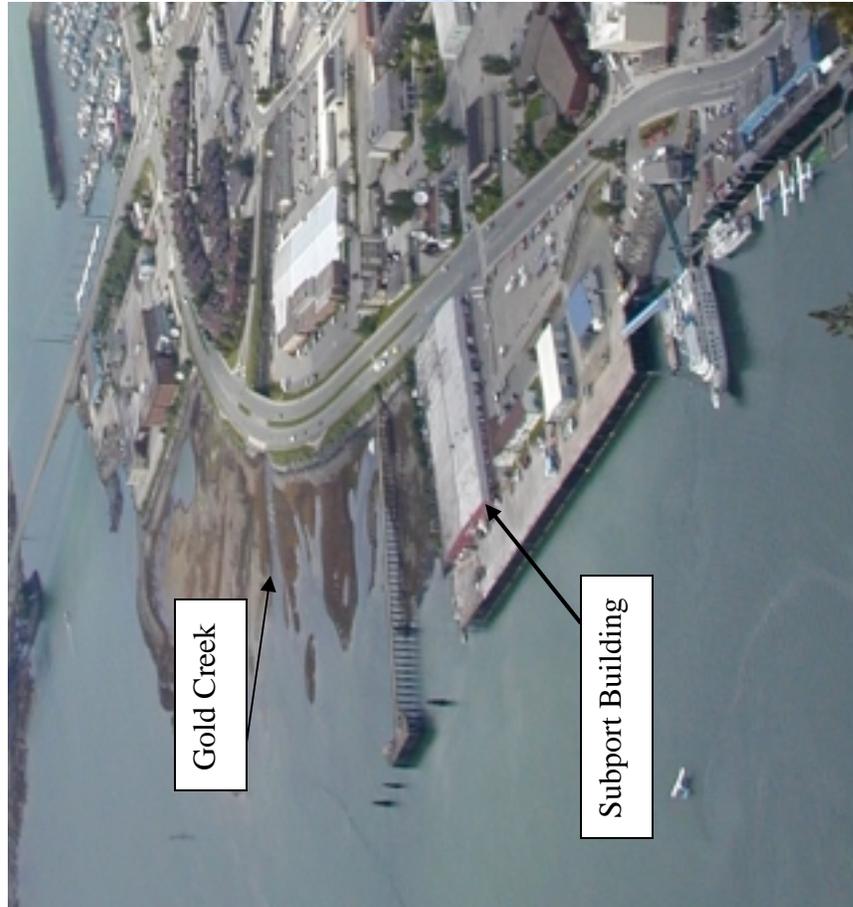


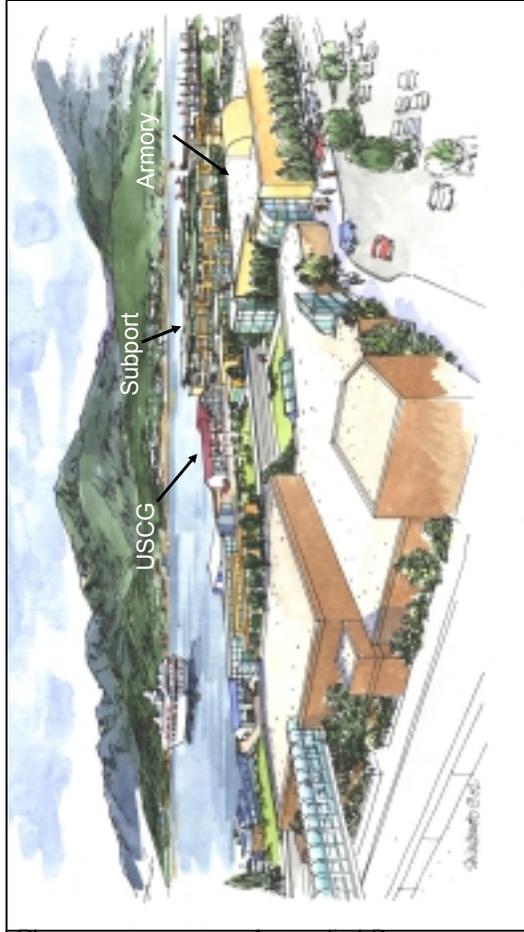
Expanded Centennial Hall
Convention Center, skybridge



Subport Park overlooking Marina

Subport Vicinity - Now and After Redevelopment





Middleground views are from:
 1 – from the Terry Miller Legislative Building park (former Capital School)
 2 – from the Capital, down Main Street
 3 – from Calhoun Avenue overlooks, Governor’s House
 4 – from the State Office Building 8th floor outdoor plaza

Middleground views 1 and 2 are not affected at all as other buildings are between these sites and the Subport area. Middleground views 3 and 4 will see a change as the Subport area and waterfront beyond is viewed. The before and after views to the left shows the impact to these middleground views. Rather than overlooking the current Subport Building and Gastineau Channel and Douglas Island behind it, the view will overlook new buildings, public plaza and a marina with Gastineau Channel and Douglas Island in the background.

Foreground views are from:
 5 – Park Shore condominiums, rounding the bend on Egan Expressway
 6 – Egan Expressway, Juneau Racquet Club
 7 – Prospector Hotel, Egan Expressway
 8 – Whittier Street, Government Dock
 9 – Centennial Hall, Armory Building

Impact to middleground views as seen from Calhoun Ave and State Office Building Plaza

Foreground views are those from the street or water level that are immediately in front of the viewer. This is the type of view shed that will be most affected. The layout of parcels available for development as well as the placement of open space in the form of the park and public plazas was dictated in part by viewshed considerations.

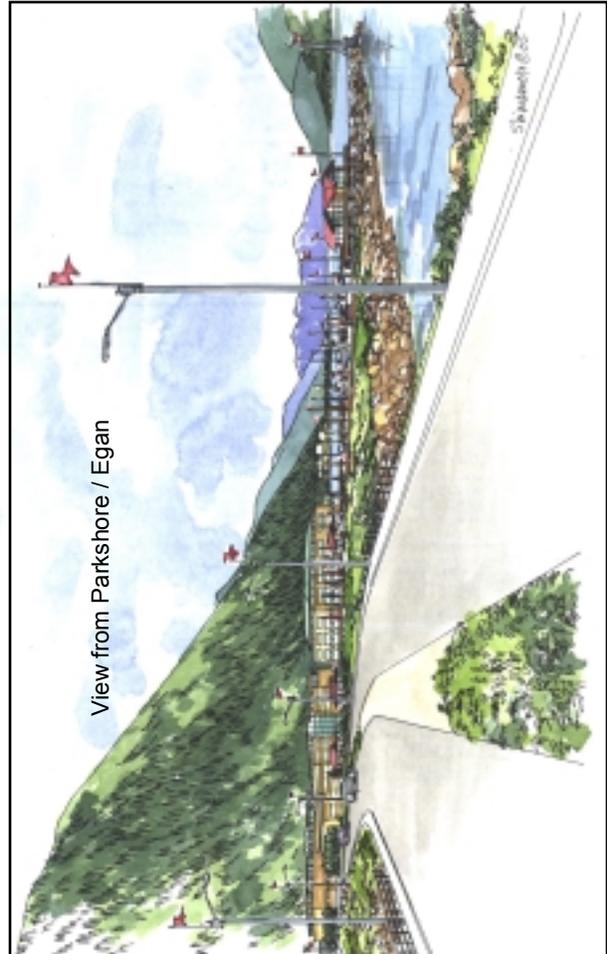
The view of the waterfront from 9-Centennial Hall and the Armory, is already obstructed by buildings. This will not change although the buildings obstructing the view will change. Regardless, the activities in these buildings are meetings in rooms without windows and not view-dependent.

The view from Egan and Whittier Streets is currently a "corridor view" between the Subport Building and the USCG. This will still be a corridor view but will change in that there will be a new building in front of the USCG and the buildings will be higher at the Subport area. From the street level the view in this vicinity is already, and will remain, obstructed. The view from the government dock will remain open waterfront.



Before and After Foreground View

The foreground view from Park Shore condominiums and rounding the bend on Egan will be impacted. Now the Subport Building is currently in the foreground with Mt Roberts and Gastineau Channel in the middle and background. The before and after graphic to the left show that the new buildings in the Subport area will be higher, so more of the lower mountain mid-foreground view will be obstructed, and also the foreground view will primarily be of the new marina. Rounding the curve on Egan is the primary place where the effect of varying building heights (3 to 7 story lowering toward the water, rather than all 3 story) on the skyline will be observable, creating a 'city' skyline rather than a flat roof skyline.



View from Parkshore / Egan

The foreground views from 6-Egan Expressway, Juneau Racquet Club, and 7-Prospector Hotel and Egan Expressway will be impacted in the same manner. The current view is of the old Chevron dock, tidelands and the Subport Building. With an unobstructed view of Gastineau Channel in part. After revitalization, the foreground view will be of landscaped public plaza, new (higher) buildings where the Subport Building is now, and the Subport Park and Marina with Gastineau Channel in the background. The before and after photo on the next page depict this change, which while different., is arguably more aesthetic and interesting.

Before and After Foreground View



3.3 Public Elements (Figure 6)

As the Subport Vicinity Revitalization Plan is realized, Downtown Juneau's role as the civic-arts-cultural-theater focal point of the community will be enhanced. Investment in public facilities is key to realizing this vision. The Plan's public sector elements are described in this section and a three-phase Capital Improvement Program is outlined on Table 2 in Chapter 4 (pages 53-59).

A. Parkland and Public Plazas

The Subport Vicinity Revitalization Plan contains a hummocky 1.9 acre Subport Park which overlooks the marina, and two landscaped urban plazas that add another 1.7 acres of public

space. These features are seen as “W” and “V” on Figure 5, and as the green space and public plaza on Figure 6. The Subport Park has public restrooms (“V” on Figure 5) and picnic shelters (“L” on Figure 5) whose use will be shared with marina patrons.



Many Juneau residents are familiar with the Sitka waterfront that features a green park and paths adjacent to the waterfront and their Convention Center that overlooks a marina. Juneau’s Subport Park will be three times as wide (but not as long) as the waterfront park in Sitka which overlooks their marina. The Juneau Subport Park will be 150-200 feet wide, compared to Sitka’s waterfront greenbelt which is 50-65 feet wide. Another comparison is to picture the Terry Miller Legislative Building (former Capital School) Park, which at 0.64 acres, is two-thirds smaller than the proposed new Subport Park. These green and public spaces complement and add value to nearby developed space.



Sitka’s Waterfront Park Overlooks Marina. The Subport Park will be 3x wider.

There will also be two pocket parks in the area (see Figure 6, and “S” on Figure 5), one by the Goldbelt Dock (off seawalk) and the other across from Centennial Hall’s lawn. These will provide resting places and visual interest along the seawalk and into the subport area. These public spaces are contiguous, and further connected by the community seawalk. This network of public areas and pedestrian paths complement and add value to nearby developed space.

Any required mitigation for dredge and fill activities should be met onsite to the extent practical as Gold Creek habitat enhancement and construction of salmon viewing platforms and areas at mouth of and along Gold Creek.

B. Public Facilities (including Parking Garages)

Expand Centennial Hall Convention Center so Juneau can capture a greater share of the meeting and convention market. This facility is depicted on Figure 5 as Building A. The CBJ should acquire the Armory and put an addition on Centennial Hall to include flexible space for trade shows, meeting break-out rooms, and possibly a 200-700 tiered seating space for meeting presentations as well as performing arts space etc. The estimated cost for this facility is \$16.5 million.

Multi-Tenant Visitor-Oriented Facility. Building B on Figure 5 is situated on a site with space for parking, good motorized and non-motorized access, and near other public facilities and attractions. This site is between the cruise-oriented waterfront on one side and the office-residential-commercial-independent visitor-oriented waterfront on the other side, allowing whatever facility is constructed on site to connect and benefit from both types of users. This parcel is a good site for a public facility/attraction such as a multi-tenant city and transportation museum¹, visitor center, Native cultural center, performing art centre, offices for CBJ, JCVB, and for non-profits affiliated with USCG lighthouses, an IMAX theater, other interpretative information with space for CBJ, USFS, NPS, and AMHS information providers, space for selling tours and displays (similar to Tongass Center in Ketchikan), etc. The facility will be an area attraction, adding to the activity and excitement in the vicinity. Estimates for construction of a facility like this are from \$8.5-\$15 million, which could be shared among facility tenants.



The "Discovery Center" a visitor center welcoming all to the Tongass Forest, in Ketchikan Alaska

State Museum, Library, Archives Expansion and Parking Garage. This is depicted on Figure 5 as Building N. This 65,000 sq.ft. addition to the State Museum also includes a relocated State Library and State Archives. This will free up 8th floor space in the State Office Building for Capital and Legislative purposes, and also allow demolition of the current, structurally deficient, State Archives building. Archives and the Museum both need climate controlled storage and have discussed collocation for several years. Next to the State Museum expansion is a new parking garage that will serve the needs of the expanded State Museum-Library-Archives and also have about 75 "extra" parking stalls.

City/State Parking Garage. Demolition of the Archives Building will allow construction of a new 375 stall State/City Parking Garage ("O", Figure 5, next to the State Office Building) buried into the hillside of Telephone Hill to support Centennial Hall expansion, current State offices in the area, a future Capital Complex on Telephone Hill, and growth in the Subport area. The excavated material could be used as fill for the nearby tideland fill project. This \$10 million dollar parking facility will have retail space on the first floor. Development costs will be shared

¹ Interesting area transportation history includes floatplanes, the military/USCG presence, Native and non-Native maritime transportation, steamers to modern day cruise ships in the area, commercial fishing vessels and history, and so on.

by the State of Alaska, CBJ, and private sector (through payment of lieu-of-parking fees for an increment of the Subport District's required parking on the 'waterside' of Egan.)

C. Transportation Improvements

Marina. A new Subport Marina will be constructed to provide approximately 78 stalls to moor 35 ft to over 100 ft pleasure craft, fishing vessels, and other transient boats. This will help meet the pent-up demand in Juneau for mid-size vessel moorage. Three 200-500 foot class dayboats can also tie up along the 800 foot long breakwater-dock. Some have suggested reserving two slips in the marina for fishing boats to temporarily tie up and offload fresh seafood to facilitate this area becoming the consistent, easily-accessed place in town to purchase fresh seafood.

A platform off the breakwater at the Gold Creek side of the marina will be a good location for a water taxi between town and Douglas to pull in and drop-off or pick-up commuters and tourists. The Intermediate Float Vessel could also be relocated to this area as part of marina development if appropriate.

The estimated cost for the dredge and fill that is the foundation for the Subport Marina and Park, development parcels 5 and 6, and the landscaped public plaza between the marina and these parcels is \$8 million, with development of the Marina facility (pilings, piers, ramps, floats, electrical, medium duty mooring dolphins, etc.) and the Park estimated to cost another \$14.2 million.

Pedestrian Circulation and Better Waterfront Access. A seawalk extension, sidewalks and walking paths will connect from the existing seawalk, and continue through the mixed use retail/office streetscape to the marina and new park. All pedestrian paths are depicted on Figure 6, and the seawalk extension is "R" on Figure 5.

Pedestrian crossings of Egan Expressway. A well-lit, broad pedestrian underpass ("X", Figure 5) will connect to a landscaped pedestrian adjacent to the Prospector Hotel, State Museum, Foodland complex, and residential neighborhoods beyond. This path features a creek promenade making use of water from the AEL&P spillway. Other crossings will be a signalized intersection at Whittier Street, a crosswalk/median at Willoughby Avenue, and through a sky

bridge ("Q", Figure 5) from a 2nd floor addition on Centennial Hall to the Goldbelt Hotel and across Egan to a new public facility.

Seawalk Extension. Phase I - Extend the City's seawalk from Merchants Wharf to the edge of (current) Subport building and work with NOAA and US Coast Guard to develop and install murals, signage and other materials to inform and interpret the NOAA and USCG missions in Southeast Alaska and the area's military history. Estimated cost \$130,000. Phase II - Extend the seawalk from the Subport Building, along the marina and connecting to the widened separated sidewalk by Gold Creek along Egan Expressway. Estimated cost \$150,000 (piers part of harbor development). The seawalk will be a minimum of 14 feet wide (in places it merges seamlessly with public dock or plaza and is thus a wider overall width) and partially covered.



Juneau residents jam the seawalk to see Olympic Torch

Roadways. An approximately 800 ft long, by 20 ft wide local street will be constructed from the current road's end at the entrance to the USGC lot. It will run west to the new marina, and east to the entrance to NOAA. Angled on-street parking adjacent to Buildings D, E, F and G will be constructed on this low speed neighborhood street.

Transit. Use of public transit services and alternative transportation modes such as biking and walking is an important part of Subport redevelopment. Mixed use buildings promotes pedestrian and transit oriented development. Pedestrian and bike paths link this area's residences and commercial uses with nearby neighborhoods and the waterfront to encourage multi-modal transport through the area. A Capital Transit bus pull-out off Egan ("T," Figure 5) next to the new park, will be constructed to facilitate transit access to and from the area.

3.4 Public Need

If revitalization of the Subport District proceeds as described in this Plan, in accordance with the goals outlined on Figure 3, and as depicted on Figures 5 and 6, then several community goals will be accomplished and important public needs in Juneau fulfilled. This section reviews this analysis of meeting public need. Subport revitalization will:

1. Fulfill Juneau's vision and plan for a mixed-use urban waterfront.
2. Diversify and strengthen Juneau's local economy.

- Revitalization will significantly increase Juneau's tax base.
 - Increase revenues to the Docks and Harbors Board enterprise fund.
 - New businesses and revenue will cater to the private pleasure craft visitor market.
3. Increase public access, use, and enjoyment of the downtown waterfront.
 - Enhance pedestrian use by extending the downtown waterfront seawalk, and link it to lively waterfront public plazas, parks and multi-use development.
 - Facilitate transit use and multi-modal transportation.
 4. Increase public space on., and access to, the waterfront.
 5. Create marine moorage and enhance marine transportation.
 - Support Juneau's fishing fleet.
 6. Maintain the Gold Creek Mouth Protection Zone.

● **Fulfill Juneau's Vision and Plan For A Mixed-Use Urban Waterfront**

The Subport Revitalization District features mixed-use buildings, which combine vibrant public use areas, waterfront access., a marina, park, and busy office and retail spaces with downtown housing.

The Subport Revitalization District features mixed-use buildings, which combine vibrant public use areas, waterfront access., a marina, park, and busy office and retail spaces with downtown housing. Encouraging downtown housing as part of a mixed-use development is a fundamental and successful strategy of many community's urban revitalization efforts. Downtown residents create a demand for year-round and after hours shopping, restaurants, entertainment, shops and more – all of which contributes to a lively, prosperous urban core.

Juneau's adopted plans and policies for its downtown strongly support mixed use urban development. The CBJ Comprehensive Plan (1995) highlights mixed-use development as an avenue to implement Comprehensive Plan policies pertaining to sustainability, transportation and housing. Specifically, CBJ Comprehensive Plan Policy 5.10, states:

POLICY 5.10. It is the policy of the CBJ to provide for mixed use development that integrates residential, retail, and office use in the downtown area and in other suitable areas (pg 133).

For Downtown Juneau (Subarea 6), the Comprehensive Plan provides specific direction to:

GUIDELINE AND CONSIDERATION 4. Promote mixed-uses downtown. Encourage small retail, residential services, and increased multifamily development within the urban center (pg 171).

Juneau's revitalized Subport District could support 100+ dwelling units, most likely on upper floors of mixed-use buildings. Many units will enjoy commanding views of the waterfront and the new marina. Interest in downtown living is strong in Juneau. Even in soft housing markets, Park Shore condominiums sell and the Marine View Building continues its trend to convert offices to sought-after downtown housing.

People will be drawn to businesses and facilities that are water-related or offer enjoyment of the waterfront. The Capital City Visioning project (adopted as an appendix to the City's Comprehensive Plan) expresses this vision for the future of Juneau's downtown waterfront and harbors:

WATERFRONT AND HARBORS VISION – The [downtown] waterfront and adjacent waterway is a diverse area that accommodates and incorporates a variety of interests, including recreational, tourist, fisheries, commercial, government, and residential uses. It features generous public gathering spaces and uninterrupted public access along, as well as to and from, the waterfront. The landscape and architecture of Juneau's waterfront maintains the natural, historical, cultural and aesthetic values of the area, and the sweeping and historic views both to and from Gastineau Channel. (pg 42)

Juneau's Waterfront Strategic Plan – Step 1 (August 2001) specifically addresses the Subport area. It suggests that Juneau:

WATERFRONT PRIORITY Make the Waterfront More Interesting Year-round. (pg 6) ;
and its suggested action to:
COMMUNITY SUGGESTED ACTION Redevelop the subport with mixed-use development. (pg 6)

The 1986 Juneau Coastal Management Program (JCMP) adopted a special downtown waterfront designation to foster mixed use development on the waterfront; allowing and encouraging a variety of water-related, water-oriented and water-enjoyment uses on the waterfront. The JCMP intended to facilitate mixed use development on the downtown waterfront, by answering the question "up-front" about what types and mixes of uses would be allowed. The JCMP lists land and water uses that are permissible in the special downtown waterfront area and states that these uses are deemed to meet the water-relevancy requirements of the Alaska Coastal Management Program (JMC at §49.70.960 (b)(1)). The following uses, among others, are listed:

The 1986 Juneau Coastal Management Program adopted a special downtown waterfront designation to foster mixed use development on the waterfront.

- **Maritime activities** including private boating, commercial boating of all types, visitor industry, including cruise ships and transient pleasure vessels, commercial fishing, charter fishing and boating, floatplane activity, and any other activity not involving a structure for the use of waterbodies for sport, recreation, or commerce.
- **Boats, docks, jetties, groins, bulkheads, ramps, shore defense works, piers, wharfs, dolphins, and other structures** needed to provide access between shore and waterbody or to protect and stabilize the shoreline.
- All forms of public, private, and **commercial moorage**.
- **Public access facilities**, including boat ramps, parks, promenades, sidewalks, viewing areas, benches, plazas, and other forms of public open spaces.
- **Research and education facilities** related to the waterbody they abut.
- **Offices** which are related to and a necessary part of permissible uses.
- **Hotels, motels** and other types of transient lodging which are designed to take advantage of the shoreline amenity and which will result in increased visual or physical public access to the shoreline.
- **Restaurants, cafes, and other food or beverage facilities** which are designed to take advantage of the shoreline amenity and which will result in increased visual or physical access to the shoreline.
- **Gift shops, entertainment facilities, ticketing agencies, and other visitor industry services.**
- **Retail services directly linked to a maritime clientele**, such as gear and supply stores, boat sales, and laundries.
- **Retail establishments and restaurants** catering to the needs of persons working in the special waterfront areas when close proximity is important to the function of permissible uses.
- **Water-oriented retail and/or office complexes** where the value and income potential from retail or office uses will enable provision of public access and other water-related amenities for use by the public. Such amenities must be provided at the same time as the facilities are completed, or earlier in time. An overall plan for the entire development must be presented with the permit application showing spaces and features that will be available to the public.
- **Residences**

● **Diversify and Strengthen Juneau's Economy**

A combination of public and private sector investment in the Support District will revitalize the area to allow higher and better use of some 23 acres of very visible, prime waterfront property. Juneau residents seem to intuitively know as they drive past the dilapidated, WWII era, red and white metal warehouse building on their downtown waterfront that this area could be a much livelier, active and vital part of downtown. Both private land owners, and the community

through several adopted plans and policies, have expressed a strong interest in seeing this occur.

Revitalization will significantly increase Juneau's tax base. The Seadrome Building, Goldbelt and Prospector Hotels, and the old Chevron dock are the only properties within the Subport Revitalization District boundary that are currently taxable. The assessed value of these properties is \$14,682,800, which, at the current 11.47 mill property tax rate, will generate \$168,412 in CBJ property tax in 2003.

Revitalization will add downtown residences, jobs, an estimated \$90 million to the taxable land base, and bring in about \$613,000 annually in marina revenue.

As revitalization, land sales, and leasing proceed in Subport District parcels 1 to 6, the land will be better utilized and property tax revenue will begin to accrue to the CBJ from five mixed-use buildings. If these areas were fully built-out today with the concept, uses, parking, densities, and heights proposed in this Plan, the estimated assessed value of the buildings and land (at today's prices) would be \$90,384,120, which at 11.47 mills, would generate \$1,036,706 in property tax revenue. This, added to current taxable property value in the area, would significantly increase the total value of taxable property within the Subport Revitalization Area boundary to about \$105 million, in today's dollars. Additional CBJ revenues would accrue from personal and business property taxes and sales taxes.

Increase revenue to Docks and Harbors Board enterprise fund. As currently envisioned, the Subport Marina would have approximately 78 slips for 32-125 foot marine vessels, as well as space for 1-3, 200 to 500 foot day boats to tie up. The marina could reasonably be expected to generate \$613,500 in annual moorage and docking fees, and another \$36,700 in sales tax, at today's rates. (This assumes 40 stalls are for year round moorage, 36 are for transient moorage that is in use 250-325 days/year, and two stalls are reserved for fishers to off load product.

New businesses and revenue will cater to the private pleasure craft visitor market. The Subport Marina and related upland development will greatly enhance the Juneau experience for the mid-size pleasure vessels and passengers that regularly travel the oceans and visit ports. Moorage facilities in Juneau are currently limited for mid-size transient pleasure crafts, and neither the intermediate vessel float nor Statter Harbor has nearby uplands where services and amenities can develop for these visitors to enjoy.

Use of the Subport Marina slips by pleasure craft will create a demand for marine-related services downtown -- services that provisioners of private yachts in Juneau note their clients' want and need. Demand for nearby services could include car rentals, fresh flowers, hiring top-notch private guides, naturalists and historians for personal tours, purchasing groceries, and engaging services such as carpet cleaning, recycling, phone and cable. As a marina and nearby businesses develop to serve transient mid-size vessels, the number of these boats and travelers in Juneau and their associated spending will increase.

● **Increase Public Access, Use, And Enjoyment Of The Downtown Waterfront**

The Juneau community is interested in increasing access, use, and enjoyment of its downtown waterfront. In the Subport Revitalization District this will occur as pedestrian linkages and bike paths to and through the area are developed, as the community's seawalk is extended, and as the Transit Center and local transit stops are constructed.

In the CBJ Comprehensive Plan, Downtown Juneau (Subarea 6) provides specific direction to:
GUIDELINE AND CONSIDERATION 5. Provide for public access, open space and water-dependent and water-related uses on downtown waterfront via the "seawalk" and connections to the existing pedestrian system. (pg 171)

Linked sidewalks, the seawalk, an Egan Drive pedestrian underpass, sky bridges, and nearby public plazas and pedestrian oriented 1st floor businesses will further implement the CBJ Comprehensive Plan Transportation Action 4.47 for Downtown:

POLICY 4.4.7. Maintain and improve design standards for new developments which facilitate pedestrian movement, particularly in the waterfront and retail core areas. Explore the possibility of providing a network of pedestrian skyways connecting major office buildings and new developments.

The JCMP and Juneau zoning code specifically identify the community's interest in extending the seawalk.

JMC §49.70.960(T)(c)(6) SEAWALK. A pedestrian access easement and walkway intended to provide a continuous pedestrian path along the entire downtown

waterfront area, shall be included with all future development or redevelopment along the downtown waterfront shoreline. This walkway, to be known as the seawalk, shall be a continuous path along the entire downtown waterfront with the following exceptions: (A) The seawalk may depart from the shoreline in areas where government security or public safety are significant concerns.

Enhance pedestrian use by extending the seawalk, and link it to lively waterfront public plazas, parks and multi-use development. The Subport District's revitalization specific goals for pedestrians are to:

- Encourage multiple ways to get to and enjoy the Subport area (walking, bikes, transit, and cars).
- Create a "critical mass of pedestrians" in this mixed-use, museum-convention-civic center district that boosts visitation to the area, nearby museums, and increases local spending.
- Extend the community seawalk along the downtown waterfront.
- Ease pedestrian crossing and use of Egan Drive in this area by providing safe crossings and slowing traffic.

Accomplishing these goals will help implement the CBJ Area-wide Transportation Plan (July 9, 2001) solution #19 for Downtown:

EGAN DRIVE-GOLD CREEK TO MAIN STREET IMPROVEMENT. Maintaining existing Egan Drive right-of-way and four lanes of traffic, implement roadside visual cues or physical treatments to develop a safe and efficient roadway for pedestrian, bicyclists, and motorists. Treatments may include narrowing travel lanes, extending sidewalks, adding bicycle lanes, installing curb extensions, street furniture and landscaping. (pg 13)

Pedestrian and transit-friendly infrastructure will make it easy for people to come to and enjoy the Subport waterfront – bringing people, activities and businesses to the area. Juneau's growing waterfront promenade will be enhanced by the Subport District's expanded seawalk and its connections to:

- a) The Centennial Hall Convention Center, State Museum, and nearby hotels and retail business via a pedestrian-bike underpass of Egan Drive;
- b) A widened sidewalk along Egan Drive;
- c) A sky-bridge from a 2nd floor addition on Centennial Hall Convention Center to a

Support District public facility across Egan (such as a maritime transportation and city museum, visitor center, or new City Hall);

- d) The Support marina;
- e) Neighboring residential areas, stores, the cruise ship docks, landscaped public plazas, and a natural park-like environment at the mouth of Gold Creek and overlooking the marina.

Linked sidewalks and bike paths, the Subport District's proximity to the planned Downtown Transit Center, to major work areas, and the nearby transit stops will all encourage transit use.

Since there currently are no regulatory mechanisms to encourage the private sector to create pedestrian-oriented development, we hope to accomplish this by establishing an innovative 'bonus point' system that will allow Subport District buildings that are not in protected view shed areas to add extra floors in exchange for uses that encourage pedestrian activity and attractive building design. The bonus system will encourage:

- Establishing ground floor businesses with services and products that are pedestrian-oriented (e.g., drug stores, grocery stores, fresh fish markets, florists, card shops, beauty shops, post offices, bars and clubs, gaming centers, gift stores, movie theatres, restaurants, etc).
- Businesses with doors that open onto adjacent public plazas (in addition to building interiors).
- Developers to install public plaza amenities such as bike racks, covered canopies, planters, and plaza furnishings.
- Creation of attractive buildings by using building modulation.

Facilitate transit use and multi-modal transportation. In addition to linked sidewalks and bike paths, the Subport District's proximity to the planned Downtown Transit Center and nearby transit stops will encourage transit use. Subport revitalization will help implement CBJ Comprehensive Plan Transportation Action 4.4.1 for Downtown:

IMPLEMENTING ACTION 4.4.1. Encourage alternative modes of transportation to downtown Juneau such as more buses (including a shuttle service), vanpools and carpools, walking and bicycling for commuters (pg 95).

4 Increase Public Space On The Waterfront

Public space, parks and landscaped urban plazas on the Subport waterfront will draw the public to enjoy a festive urban waterfront scene. Revitalization plans for the Subport District call for a 1.9 acre public park overlooking the new marina, which connects to about 1.7 acres of landscaped public plaza adjacent to the marina and surrounding mixed-use buildings. The park and plazas are connected by the community seawalk, sidewalks and paths. It is anticipated that both the plazas and the park will become focal points for community festivals, events and spontaneous gatherings. Adding this connected open space along the waterfront will address the growing call for more public areas along Juneau's urban waterfront.

Juneau's Waterfront Strategic Plan–Step 1 (August 2001) identifies five policy priorities for Juneau's waterfront. One is to:

WATERFRONT PRIORITY. Improve public access and recreation opportunities to and along the waterfront. (pg 5)

To implement this priority, the suggested action is:

COMMUNITY SUGGESTED ACTION. Develop various amenities along the downtown waterfront, including water access points and park areas. (pg 5)

Similarly, the Capital City 20/20 Vision Plan, under Pedestrian Access and Movement, calls to: Plan for a continuous seawalk from the Rock Dump to Aurora Harbor, and, Provide generous public opens spaces as pedestrian focal points. (pg 20)

A combination of fill, piers and decking will allow these public sector improvements that both complement adjacent mixed-use development and also fulfill important needs in Juneau.

5 Create Marine Moorage And Enhance Marine Transportation

The Subport Marina will help meet Juneau's need for private and public moorage and enhance marine transportation. A major element of the Subport District Revitalization is development of a marina with slips for approximately 78, 30-100+ ft. vessels as well as dock space for intermediate-sized day boats and ferries to tie-up. Depending upon the split between permanent and transient moorage, some of Juneau's significant unmet demand for permanent

moorage for vessels 32' or greater could be met. There are currently 226 individuals waiting for slips to permanently moor vessels 32' or greater in Juneau. And, those waiting for slips 42' or greater are advised that their wait may be seven to more than 10 years.

The new marina will help address existing, unmet demand for this type of moorage. It will also implement CBJ Comprehensive Plan, Port Facilities Policy 2.14:

POLICY 2.14. It is the policy of the CBJ to facilitate availability of sufficient and suitable acreage for port facilities, and to work closely with the public and private sectors to facilitate commerce and enjoyment of the waterfront through development of well designed port facilities. (pg 35):

**The Subport
Marina's location
near work
centers,
residences, tourist
areas, and close
to public transit
makes it a good
location to
support the
fishing fleet's
interest in having
an identifiable
and easily
accessed location
for fisherman to
regularly sell their
fresh catch.**

Further, a Juneau's Waterfront Strategic Plan – Step 1 (August 2001) priority will be accomplished: Improve and Expand Facilities to Support Boat Owners (pg 5).

The presence of the marina and its location as part of the Subport District is integral to the success of area revitalization. People are drawn to the water and love to look at harbors, boats, and associated activity. The presence of a marina with an adjacent park and promenade so close to the urban center of downtown, hotels and convention areas, and major work places will draw people to this area. And that is important to making area revitalization successful. In a sense, the marina is one of the areas' anchor tenants. None of Juneau's current marinas could serve these purposes because they are not located in the urban center of town where its presence will help to stimulate the economy and a festival atmosphere.

The Subport Marina would also be an excellent and desired location for a water taxi landing that ferried residents and visitors between Douglas and downtown Juneau.

Support Juneau's fishing fleet. In addition to the benefits of increased moorage and marina development discussed above, Subport revitalization will also benefit Juneau's fishing fleet in several ways. Residents and visitors enjoy watching fishing boats and fisherman, and buying fresh fish. The Subport Marina's location near work centers, residences, tourist areas, and close to public transit makes it a good location to support the fishing fleet's interest in having an identifiable and easily accessed spot for fisherman to regularly sell their fresh catch and provide it to local restaurants. Suggestions are to reserve a slip or two for fisherman to pull in, off-load, fillet, and ice their catch for local purchase. Regular use of the marina by fisherman will also

create a demand for fishing and marine fleet support and services at nearby businesses, such as electronic repair and sale of ice, bait and tackle.

● **Maintain The Gold Creek Mouth Protection Zone**

Subport development will maintain the Gold Creek Mouth Protection Zone. The Juneau Coastal Management Program requires that in the Gold Creek Mouth Protection Area:

JMC §49.70.960 (c)(2). No structures or activities shall be allowed in this area except as needed by the U.S. Coast Guard for its purposes or as allowed by the state department of fish and game for habitat maintenance and enhancement. (pg 561-107)

The Subport Revitalization Plan adheres to this policy, and envisions further work to support efforts to enhance habitat at the mouth of Gold Creek, such as projects recently completed by the Docks and Harbors Board. Residents and visitors enjoy salmon viewing (and related eagle and seagull action). Enhancing viewing opportunities and the aesthetics of the creek mouth supports pedestrian visitation and use of the area.

Improvements to Gold Creek will implement the Capital City 20/20 Vision Plan under "Livability and Quality of Life," to:

PLANNING ACTION. Redesign Gold Creek with fish habitat. (pg 66)

c) Will require a variance from one of the development rules outlined in this Plan (and codified in Title 49).

Then, the proposed development may be considered through a Conditional Use Permit review and related procedures (JMC §49.15.330); however, the Planning Commission may require a Comprehensive Plan amendment first, at its discretion.

4.2 Proposed Comprehensive Plan Policies, Implementing Actions, and Guidelines

Comprehensive Plan policies, implementing actions, and guidelines for Subarea 6 (downtown Juneau) are developed in this section.

This Subport Vicinity Revitalization Plan will become an element of the CBJ Comprehensive Plan, as such it becomes the long range blueprint for how this part of the community will develop. Comprehensive Plan 'policies' are key direction statements and 'implementing actions' give the marching orders for what needs to be done to accomplish the policies. Further, the Comprehensive Plan divides the CBJ into 10 Subareas for which specific growth and development 'guidelines' are created. The Subport District is part of Subarea 6.

Proposed new CBJ Comprehensive Plan policies, implementing actions, or guidelines are underlined. Language proposed for deletion shows a strike-through. The part of the CBJ Comprehensive Plan where each belongs is noted.

Coastal Resources Planning (pg 17 Comprehensive Plan)

Policy 2.6. It is the policy of the CBJ to incorporate its district coastal management program with its comprehensive plan and, in planning for use of coastal areas, to place highest priority on water-dependent, ~~and~~ water-related, and water-enjoyment uses.

Implementing Actions:

2.6.1. Assure that all requirements of the state and federal coastal zone management program are addressed within the comprehensive plan and its implementing ordinances and regulations.

2.6.2. Maintain, implement and improve Juneau's state and federally approved coastal management program including the incorporation of general coastal management goals and policies in this Plan and including the maintenance of enforceable coastal management policies as requirements in the CBJ Land Use Code.

2.6.3. Designate areas for water-dependent and related uses on the Land Use Code Maps. Where appropriate, designate publicly-owned shoreline areas for open space and recreational use.

2.6.4. Maintain limited authority for the granting of U.S. Army Corps of Engineers Section 404 permits by the CBJ for wetland areas specified in the Juneau Wetlands Management Plan.

2.6.5. Use the following definitions for coastal management terms in this Plan and in subordinate matters:

1. Coastal Development is defined to include industrial, port and harbor, commercial and residential development.
2. Water-dependent is defined as a use or activity which can be carried out only on, in, or adjacent to water areas because the use requires access to the body of water.
3. Water-related is defined as a use or activity which 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 water, would result in a public loss of quality in the goods or services offered.
4. Water-oriented is defined as a use which is water-dependent, water-related or water-enjoyment.
5. Water-enjoyment is defined as a recreational or other use that facilitates public access to the shoreline; or a use that provides for recreational or aesthetic enjoyment of the shoreline for a substantial number of people as a general characteristic of the use and which through the location, design and operation assures the public's ability to enjoy the physical and aesthetic qualities of the shoreline.

Recommendations for Land Use Zoning and Development Standards

One of the primary responsibilities of the CBJ is to facilitate future growth by insuring that adequate land is available when needed, and that growth promotes the public health, safety and convenience. The Comprehensive Plan provides guidance and policies relating to the CBJ's future land use patterns in terms of physical form, housing, economic development and community development. The CBJ Land Use Code outlines the various requirements for development.

Juneau's future community form depends on transportation and the amount of land that is available to meet projected demand for residential, commercial, open space and industrial uses. Compact urban development is preferable to urban sprawl and is called for in the Comprehensive Plan. As well, the results of the Visioning Workshop verified that compact development is preferred for Juneau. By concentrating development, the CBJ will limit the number of acres dedicated to urban uses and minimize the per-unit cost of extending lines for sewer, water and utilities and for improvements to the transportation system. Significant reductions in travel, energy consumption and pollution will result by encouraging the development of residential uses in relative proximity to shopping, employment and facilities for recreational and cultural uses.

As discussed below, work efforts associated with the AWTP have highlighted land use designations and development standards that warrant consideration and possible refinement to:

- support the mission statement of the AWTP,
- implement projects listed as recommended deficiency solutions, and
- facilitate envisioned growth patterns.

Land Use Controls and Zoning

With the development of the Existing Land Use Opportunities and Constraints Report, a series of windshield field inventories of the CBJ were conducted in 1998 and 1999 to map how land in the community was being utilized. The location of sensitive natural resources and hazard areas were also added to the maps. The report concludes that based on forecast population and employment growth, the land base of the community, and the Comprehensive Plan guidance for future development, there is a buildable land supply that is anticipated to meet the 20 year development demand. The report allows for several conclusions to be drawn that, if implemented, would appear to support aesthetically pleasing, compact development that is proximate to urban services. These considerations are presented on a sub-area basis.

Downtown/Thane - The focus of new development in this sub-area will be associated with the waterfront and the Rock Dump. At the time the AWTP was drafted, a planning effort for the Downtown waterfront area was underway. The redevelopment of Willoughby Avenue into a mixed-use area will best be accommodated through an articulated vision or plan for development that is specific to the corridor. This exercise should include design standards for buildings, landscaping and parking and specify land use preferences.

The community can implement the plans and visions for both of these areas by offering incentives that are too beneficial for private developers to pass on. This concept is also known as "carrots as sticks". Examples include decreased parking, increased density, tax adjustments, increased building height, and streamlined land use reviews.

In order to encourage new downtown development, parking will need to be accommodated by public and private entities so as to mitigate the constraint. Consistent with the Visioning

Workshop, development requirements should direct parking to be incorporated with the various downtown settings in a manner that is considerate of the surrounding land uses and promotes the function and appearance of the area.

Douglas- With the installation of public sewer lines and construction of the recommended improvements to the transportation system, significant opportunities for development will be provided for all land use types. The implementation of smart growth concepts is recommended for development opportunities that exist at the north and south ends of Douglas. Typically, smart growth development includes clusters of housing that have multi-modal links to employment and activity centers. Smart growth development retains more open, or undisturbed, space than standard development practices and usually costs less to build and maintain.

Twin Lakes/Lemon Creek - In response to forecast growth in this sub-area, the AWTP recommends that a corridor management plan be developed through Lemon Creek. With the development of the corridor plan by state and local agencies, articulate a vision for Lemon Creek that is incorporated into the Comprehensive Plan and land use zoning. Comments provided during the Visioning Workshop suggested that a “downtown” Lemon Creek should be established in the school area.

There are a significant number of dwellings that will reach their design lives during the 20 year planning horizon of the AWTP. Through land use zoning, the CBJ should translate redevelopment opportunities into increased housing density, variety and supply. The CBJ has public land holdings in this sub-area that are likely to be developed for housing during the planning period. As well, the CBJ has stated a desire to develop a consolidated Public Works facility and possibly another school in the Lemon Creek area. Of all the sub-areas, Lemon Creek offers the most potential for evolution and change. With change comes the opportunity to implement smart growth concepts and realize the vision of the area. Change will likely be accelerated as transportation constraints related to access and circulation in this sub-area are addressed.

To improve health care service in the region and to diversify Juneau's economy, the Comprehensive Plan states that there is a desire to expand the services and medical facilities in the vicinity of the hospital. The developable land surrounding the hospital is not currently zoned to accommodate a substantial expansion. In the near future, consider rezoning rural lands to a commercial designation. To promote compact and thoughtful growth in this area, develop a specific parking strategy that supports the function of the hospital complex and allows for additional buildings, or expansions, and for the retention of quiet, open spaces that are consistent with a campus setting and a convalescent environment.

Airport/West Mendenhall Valley - There are a significant number of dwellings and commercial structures in the lower valley that will reach their design lives during the 20 year planning horizon of the AWTP. Through land use zoning, translate residential and commercial redevelopment opportunities into increased density and supply. Several of the oldest commercial areas are developed with single story structures that occupy large tracts of land. A more efficient and economical design of these commercial properties would mix land uses, including housing, and building heights. To encourage the private sector to include a mix of land uses and structures on large properties, and to provide, or promote, multi-modal access and circulation, offer “carrots as sticks” through substantial development bonuses (including increased density, decreased parking and tax adjustments), streamlined land use reviews, and tax adjustments.

East Mendenhall Valley (Back Loop/Industrial Blvd/Engineer's Cutoff/Fritz Cove Rd) - The majority of this sub-area is not served by the public sewer system. Land use and development pressure will intensify when sewer is provided. Development on public land in the Peterson Hill area provides a prime opportunity to implement the concepts of smart growth. As stated above, smart growth development includes clusters of housing that have pedestrian, bicycle, transit and vehicle links to employment and activity centers. Smart growth development retains more open, or undisturbed, space than standard practices and usually costs less to build and maintain. Development of this type will be more consistent with the green belts that are established along

the Mendenhall River and Auke Lake, and could easily integrate with the trail system and the Dimond Park pedestrian bridge. Development in this sub-area may necessitate the provision of another public school. Consider the location of a school site that can be easily accessed by students and provides a quality of life benefit to the surrounding neighborhood.

Auke Bay to the End of the Road - As the majority of this sub-area is outside of the public sewer service boundary there will be constraints to the patterns of development that are typical in other sub-areas. Rather in this sub-area, increased local and tourist use of recreation and scenic areas is likely to increase the pressure for related public facilities/services and for development related to water uses along the shore.

Expanded service at the Auke Bay ferry terminal and more offerings at the UAS campus will also affect the demand for service provisions and associated commercial land uses. The AWTP and comments from the Visioning Workshop recommend a “main street” treatment in the vicinity of the Auke Bay School and Statter Harbor to calm traffic, provide for multi-modal access and circulation, and to create a “downtown Auke Bay”. Currently there are four small multi-family land use designations in the vicinity of Auke Bay, several of which are developed similar to single family subdivisions. Consider designating additional multi-family zoning in the vicinity of Auke Bay to increase the supply of housing that is proximate to commercial, educational and recreational services. The capacity for public wastewater treatment will be a constraint to development that will need to be addressed in the near term.

Land Use Code Revisions

To correspond with the recommended transportation projects in the solution lists, several land use code requirements will need to be aligned. The following list contains recommended changes and a starting point for code amendment discussions:

- 1) In all areas of the borough, with major subdivision development, require sidewalks on public streets. Allow the Planning Commission the discretion of determining if sidewalks are required on one or both sides of a street or if alternate provisions would satisfy non-motorized access and circulation.
- 2) In all areas of the borough, with major developments, require the construction, or plat identification, of pathways to connect existing and potential developments, land uses and activity areas. Provide incentives to developers to construct pathways that reduce or eliminate vehicle conflict points. Pathways may serve as an alternate to sidewalk construction at the discretion of the Planning Commission.
- 3) With the development of a land use that will attract a significant number of users, provide a substantial incentive to install bus shelters, bicycle racks and/or lockers. Require these facilities for significant public projects.
- 4) Develop basic access management policies for primary road corridors, including consolidated access points for subdivisions and developments.
- 5) Provide incentives to encourage redevelopment, in-fill development and compact development. Incentives may include reduced permit fees, streamlined review processes, density bonuses, reduced parking and tax adjustments. Review the benefits and detriments of establishing improvement areas, or zoning overlay areas, where specific, articulated requirements and review processes would apply.
- 6) In the Downtown area, allow parking requirements to be consolidated for small developments with joint use/maintenance agreements. To preserve the character of mixed-use and historic areas, develop design and location criteria to promote the appearance and function of these parking facilities.

City and Borough of Juneau

DOWNTOWN WATERFRONT PLAN

An area meriting special attention in the Juneau Coastal Zone

PLACED INTO EFFECT NOVEMBER 20, 1986

PREFACE AND AUTHORITY

This is the approved Downtown Waterfront Plan for the City and Borough of Juneau. This plan was submitted to the Alaska Coastal Policy Council and the National Ocean Service for approval and incorporation into the Alaska Coastal Management Program, along with the main Juneau Coastal Management Program (JCMP). After these approvals, the plan was adopted by ordinance. The plan was developed in tandem with Juneau's Comprehensive Plan, and is now a component thereof. Chapter 4, "Master Plan Implementation" contains a number of policies which are intended to be enforced through municipal review of development proposals. These "enforceable policies" were included in the main JCMP when it was adopted and are now being administered along with the other enforceable policies of the JCMP.

This document serves as a policy guide to the City and Borough of Juneau in managing the downtown waterfront, which is why it is designated as a segment of the Comprehensive Plan. Ordinance 86-62 incorporates this document into the City and Borough of Juneau Comprehensive Plan. Ordinance 86-62 is twenty-four pages long and included in whole in the JCMP. The first and last pages are shown immediately following along with documentation showing that the Downtown Waterfront Plan has been approved at state and federal levels. Also included is a copy of Resolution 1129, adopted in late 1985 by the City and Borough of Juneau Assembly. This was the first step of the year-long approval process which culminated in Ordinance 86-62 and availability of this document in its present form. This plan took effect on November 20, 1986. Older copies of the plan were updated with information to bring them current, as November 20, 1986, during January of 1988. Renewed interest in waterfront development is expected to lead to further updating and revision of this plan during 1988 and 1989. The participation of local, state and federal agencies, civic groups, and the public is gratefully acknowledged.

Murray R. Walsh

January 1988

Department of Community Development

Presented by: The Manager
Introduced: 08/04/86
Drafted By: M.R.W.

ORDINANCE OF THE CITY AND BOROUGH OF JUNEAU, ALASKA
Serial No. 86-62

AN ORDINANCE ADOPTING PART TWO OF THE COMPREHENSIVE PLAN FOR THE CITY AND BOROUGH OF JUNEAU, ALASKA, WHICH PART CONSISTS OF THE COASTAL MANAGEMENT PROGRAM FOR THE CITY AND BOROUGH OF JUNEAU AND ADDENDUM NO. 1 THERETO, THE DOWNTOWN WATERFRONT PLAN AND ADDENDUM NO. 1 THERETO, AND MAPS CORRESPONDING TO SAID PROGRAM AND PLAN; AND AMENDING THE PLANNING AND ZONING CODE TO ADD A NEW CHAPTER 49.55 PROVIDING FOR ENFORCEABLE POLICIES OF THE JUNEAU COASTAL MANAGEMENT PROGRAM.

WHEREAS, Ordinance Serial No. 84-06, as amended by Ordinance Serial Nos. 85-10, 85-71, 86-23, and 86-46, adopted as the Comprehensive Plan of the City and Borough of Juneau Part One of Volume I of that publication entitled "The Comprehensive Plan and Coastal Management Program of the City and Borough of Juneau, Alaska", dated April 30, 1984, including certain maps, addenda, changes, additions and amendments, and further adopted for the purpose of interpreting the Comprehensive Plan, Volume II of said plan entitled "The Technical Appendix" dated December 1983, with certain addenda, changes, additions and amendments, and

WHEREAS, the Assembly, by Resolution Serial No. 1129, gave conceptual approval to the Coastal Management Program and Downtown Waterfront Plan for the City and Borough of Juneau, and

WHEREAS, Part Two of the Comprehensive Plan, entitled "Juneau Coastal Management Program" and "Downtown Waterfront Plan," including addenda and maps corresponding thereto, has now been finalized for adoption as the second part of the Comprehensive Plan;

NOW, THEREFORE, BE IT ENACTED BY THE ASSEMBLY OF THE CITY AND BOROUGH OF JUNEAU, ALASKA:

* Section 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the city and borough code.

* Section 2. Amendment of Section. CBJ 49.20.032(a) is amended to read:

(a) Comprehensive Plan. There is adopted as the Comprehensive Plan of the City and Borough of Juneau, Part One [1], entitled "Comprehensive Plan," of Volume I of that publication titled "The Comprehensive Plan and Coastal Management Program of the City and Borough of Juneau, Alaska," prepared by the City and Borough of Juneau, Cogan/Shapiro and Comarc, dated April 30, 1984, and Part Two of said Volume I, which part consists of that publication titled "Juneau Coastal Management Program" and Addendum No. 1 thereto, prepared by the City and Borough of Juneau, dated November 1985, and that publication entitled "Downtown Waterfront Plan" and Addendum No. 1 thereto, prepared by the City and Borough of Juneau, dated Fall 1985, including the following maps, addenda, changes, additions and amendments:

* Section 3. Amendment of Subsection. Subsection (1) of CBJ 49.20.032(a) is amended by adding new subsections Q, R, and S, reading:

occupancy which ascertains the existence of the nonconforming uses. For a property owner to claim nonconforming use rights, the property owner shall furnish the factual information upon which the rights are claimed. The certificate will be issued based on the information supplied by the owner.

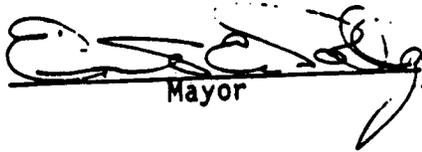
(f) Notice of Abatement or Required Conformance. When any nonconforming condition exists which is the subject of abatement or conformance the official administering this chapter shall notify the owner or occupant, or both, of the intent to abate and shall provide all pertinent data in connection therewith. The owner or occupant, or both, shall be provided an opportunity to present evidence on the issue of a proposed abatement or conformance requirement. The administering official shall establish the facts upon which a decision to require such property owner to abate or make the use conforming is made, and shall notify the owner of record and the occupant in writing of the decision and date by which such use must be abated or made conforming. Such notification shall be by certified mail to the property owner and a copy mailed to the occupant. In the event the nonconforming condition is not abated or made conforming within ninety days of such mailing, the owner or occupant, or both, shall be deemed in violation of this chapter, and subject to the penalties herein.

(g) Maintenance. Normal repairs and maintenance may be made to a lawful nonconforming building, provided that no structural alternations shall be made, except those required by law.

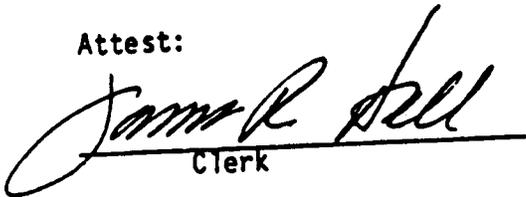
(h) Change in Regulations. This section shall apply to buildings, land, or uses which, after the effective date of this chapter, become nonconforming due to any subsequent change in the provisions of this chapter.

* Section 5. Effective Date. (a) This ordinance shall become effective thirty days after its adoption or upon filing of the Juneau Coastal Management Program by the Lieutenant Governor of the State of Alaska, whichever occurs later.

Adopted this 20 day of October, 1986.


Mayor

Attest:


Clerk

#1024

RECEIVED OCT 6 1986



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Washington, D.C. 20235

SEP 30 1986

OFFICE OF
MANAGEMENT & BUDGET

OCT 1 - 1986

Mr. Robert L. Grogan
Associate Director
Division of Governmental Coordination
Office of Management and Budget
Juneau, Alaska 99811

GOVERNMENTAL
COORDINATION

Dear Mr. Grogan:

This is in response to your August 28, 1986 letter resubmitting the Juneau Coastal Management Program (JCMP) and the Downtown Waterfront Plan (DWP) Area which Merits Special Attention (AMSA) for incorporation into the Alaska Coastal Management Program (ACMP).

As you know, we received comments from both the U.S. Fish and Wildlife Service (USFW) and the National Marine Fisheries Service (NMFS) expressing reservations about the Special Waterfront Designations. We have reviewed their comments and find that the JCMP is consistent with the ACMP and agree with your findings that they further detail the ACMP and are not substantial changes. However, we strongly encourage the City and Borough of Juneau and the State to work closely with these agencies during implementation of this program. OCRM will seek the views of the NMFS and the USFW when we evaluate the ACMP during the Fall of 1987.

We approve these changes as "routine program implementation" under 15 CFR 923.84. Federal consistency shall apply to these programs after filing with the Lieutenant Governor, and after you publish notice of our approval.

Sincerely,

Peter L. Tweedt
Director

cc: Mr. Robert McVey, USFW
Mr. Robert Gilmore, NMFS

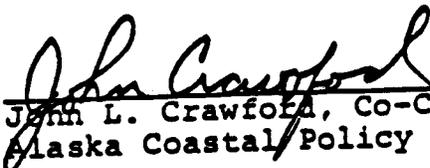


Order Approving the
Juneau Coastal Management Program
and Downtown Waterfront Plan
by the
Alaska Coastal Policy Council

The Juneau Coastal Management Program and Downtown Waterfront Plan, submitted on November 9, 1985, is hereby approved by the Alaska Coastal Policy Council under the authority vested by AS 46.40.060 and AS 46.40.070 with the stipulations recommended by the Division of Governmental Coordination, dated April 7, 1986, in its final findings and conclusions on the program and in the attachment to this order of approval.

The Juneau Coastal Management Program and Downtown Waterfront Plan take effect upon filing of this Order by the Lieutenant Governor, as provided in 6 AAC 85.180(a).

Date: May 22, 1986
Anchorage, Alaska


John L. Crawford, Co-Chairman
Alaska Coastal Policy Council


Robert L. Grogan, Co-Chairman
Alaska Coastal Policy Council

Attest: Cynthia Meyer

Presented by: The Manager
Introduced: 08/19/85
Drafted by: M.R.Walsh

RESOLUTION OF THE CITY AND BOROUGH OF JUNEAU, ALASKA

Serial No. 1129

A RESOLUTION GIVING CONCEPTUAL APPROVAL OF A COASTAL MANAGEMENT PROGRAM AND DOWNTOWN WATERFRONT PLAN FOR THE CITY AND BOROUGH OF JUNEAU, ALASKA.

WHEREAS, the Alaska legislature determined that the coastal resources of our state are very important and in need of direct management attention and passed the Alaska Coastal Management Act of 1977 in order to create an Alaska Coastal Management Program, and

WHEREAS, that Act provides that the primary managers of coastal resources should be local governments using management tools of their own making, and

WHEREAS, the City and Borough of Juneau Planning Commission and Planning Department, assisted by many members of the public, have now brought forward a draft coastal management program for Juneau and a Downtown Waterfront Plan which is a part thereof concentrating attention on the downtown waterfront, and

WHEREAS, the Alaska Coastal Management Program approval process calls upon local governments which have reached this point to give "conceptual approval," to the program and thereafter to submit the program for state and federal approval in a process which culminates with final approval by ordinance at the local level, and

WHEREAS, the Assembly supports the policy, approach and direction of the documents submitted to us in August of 1985 which are entitled "Juneau Comprehensive Plan - Coastal Management Program - City and Borough of Juneau - June, 1985" and "Downtown Waterfront Study - Spring 1984" as amended by the Juneau Planning Department submittal entitled "Downtown Waterfront Plan, Insert for Phase 4, Implementation," dated August 13, 1985, and

WHEREAS, the Assembly has considered these documents and this resolution in public meeting following a public hearing held on August 19, 1985;

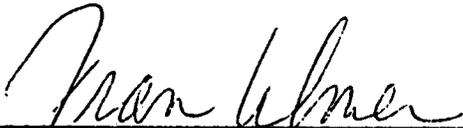
NOW, THEREFORE, BE IT RESOLVED BY THE ASSEMBLY OF THE CITY AND BOROUGH OF JUNEAU, ALASKA:

1. That conceptual approval, meaning approval as to policy, direction and approach is herewith given to the above-referenced draft coastal management program including the downtown waterfront plan.

2. That the Juneau Planning Department is instructed to prepare final copies in sufficient quantity to submit to the Alaska Coastal Policy Council for their review and approval and then to the federal National Ocean Service for its review and approval.

3. That the Planning Department is empowered, in the course of preparing the subject documents for submittal, and in the course of the state and federal approval processes to edit and refine the language of the documents to assure clarity of intent but not to modify policy, direction, or approach.

Adopted this 9th day of September, 1985.



Mayor

Attest:



Clerk

ACKNOWLEDGEMENTS

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	Seawalk on Grade
	Gold Creek Site Access

Introduction

BACKGROUND

From its beginning, Juneau has depended upon marine transport and waterfront facilities in its downtown area for personal travel and the handling of goods and materials. As the population expanded, so did the demand for land in the downtown vicinity. Developable land, however, was limited by the steep mountainsides and Gastineau Channel. Mine tailings were used to fill tidal areas and create substantial quantities of land in the downtown vicinity, thereby allowing a wide range of activities to locate there. Downtown Juneau has remained the economic, civic, and cultural center of the community. There have been and will continue to be changes affecting activities and land use on the downtown waterfront and adjacent area. Among the most important influences are:

- o The decision to retain the capital in Juneau will lead to employment and population increases, construction of new State facilities, relocation of some State offices from present leased space to new State-owned facilities, increases in government-related visitors, and general expansion of economic activity.
- o The numbers of tourists and cruise ship visits have been increasing rapidly; in recent years, the annual increase has been approximately 10 percent.
- o Marine transport and related storage facilities on South Franklin Street are limited by available upland area, and traffic to and from these facilities is contributing to

heavy traffic in the downtown area. Alternative locations for marine transport facilities are viewed as a serious possibility.

- o Juneau's increasing population and tourism are contributing to demand for greater public access to the downtown waterfront. The popularity of the waterfront park and the general support for the Gold Creek Development Plan (adopted by the City and Borough Assembly, May 1983) is a reflection of attitudes concerning public access and use of the waterfront ascertained during the public review process.

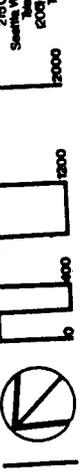
- o Some development has occurred that is seen by many as inconsistent with the uses and quality of design that are desirable for the downtown waterfront.

Policies of the draft Comprehensive Plan and Coastal Management Program recognize the distinctive role of the downtown and its waterfront. The plan designates the downtown waterfront as an "Area Meriting Special Attention" (AMSA) because of its scenic and historic values and the range of development possibilities for the area. The plan also recognizes the need for compatibility and interrelationships of development on the waterfront with development of the Gold Creek site and throughout the downtown. The plan for the downtown waterfront AMSA is intended to follow the Comprehensive Plan and provide detailed policies concerning development of the waterfront area.



The Study Area boundaries above are also the AMSA boundaries, or "geographical location" of the AMSA required under 6 AAC 80.160 (a)(2).

Figure 1



DOWNTOWN WATERFRONT STUDY | Study Area
 City and Borough of Juneau |

STUDY AREA

The study area extends from Aurora Harbor at the north end of the city and extends south along the Gastineau Channel to include the A. J. Mine Tailings area. It extends upland, towards town approximately one block. However, this upland boundary will be flexible depending on site specific conditions and will be more clearly defined as the analysis progresses and recommendations are developed. The study area generally coincides with the "Area Meriting Special Attention" (AMSA) identified in the City and Borough of Juneau Coastal Management Program.

ISSUES

Major issues to be addressed by the Downtown Waterfront Plan and which form the basic context for the planning process include:

- o The plan must be consistent with AMSA requirements and the guidelines and standards of the Alaska Coastal Management Plan.
- o The plans must be consistent with the policies and implementing actions of the Comprehensive Plan.
- o The planning process must be attentive to the status of the Comprehensive Plan and Coastal Management Program and the State review of the coastal management element.

- o The expansion of State facilities, the Gold Creek project, and other development in the downtown area should be anticipated in the development of the Downtown Waterfront Plan.
- o Market demand for potential uses on the waterfront should be determined and there should be an analysis of the economics of water-dependent and water-related uses with references to the distinctive circumstances of the downtown waterfront. Future economic activity that may affect demand for use of land on the downtown waterfront should also be addressed.
- o Water-dependent and water-related activities on the waterfront should be inventoried and evaluated. Developable land and sites and buildings suitable for redevelopment should also be examined.
- o Transportation characteristics of industrial and warehousing activities, retail uses, office employment, and visitor-related activities should be carefully studied. The relationships of automotive transportation and pedestrian travel along the waterfront and the industrial/warehouse area, the historic district, Gold Creek, and the remaining area of downtown must be considered. Parking is a major related issue.
- o The potential Gastineau Channel crossing and new port facilities on Douglas Island must be taken into consideration in the transportation, economics, and land use elements of the downtown waterfront study.

- o Any potential use of the AJ "rock dump" should be investigated and its relationship and effects on the downtown area and waterfront identified.
- o The opportunities for public access to the waterfront and connections between different areas of the waterfront and other parts of downtown should be considered.
- o Design characteristics of the downtown waterfront as it presently exists and as it might exist should be a major element of the study. The design relationship of the waterfront area to other major centers, such as the historic district and State facilities, must be addressed.
- o The plan should reflect the unique characteristics, history, and environmental setting of downtown Juneau.

GOALS AND OBJECTIVES

The City and Borough of Juneau Planning Staff and the Downtown Waterfront Advisory Group outlined the following goals and objectives to be achieved by the Downtown Waterfront Plan.

Goal: Increase public access to the waterfront.

Objectives: o open up and respect existing views to the water and establish new ones where possible.

- o establish pedestrian access routes from downtown activity areas.
- o create public waterside access points and transient moorage areas.
- o create weather protected access routes.
- o establish appropriate public use areas for all segments of the resident population.

Goal: Maintain a balance of uses along the waterfront.

- Objectives:
- o continue the harbor as an active working waterfront.
 - o encourage uses uniquely suitable to downtown Juneau.
 - o encourage appropriate private commercial development wherever feasible.
 - o respect existing downtown residential neighborhoods.

Goal: Integrate the waterfront with downtown.

- Objectives:
- o connect the waterfront with existing and proposed activity areas in the downtown.

- o remove obstacles and hard edges between downtown activities and the waterfront.
- o respect the proposals and criteria of the downtown historic district plan.
- o increase and reinforce pedestrian connections.

Goal: Create a unified image for the downtown waterfront.

- Objectives:
- o establish a series of interconnected activity concentrations along the waterfront.
 - o establish a system for continuous pedestrian circulation along the waterfront.
 - o maintain the visual interest and diversity now existing along the waterfront.
 - o create a visual consistency to all public improvement items.
 - o provide for the integration of private developments through visual and functional design standards for public use.

- Goal:** Maintain the downtown as the center of economic activity for Juneau.
- Objectives:**
- o maintain adequate utilities, services and amenities within the downtown.
 - o respect appropriate existing uses and activities presently playing a vital economic role in Juneau and provide for their growth.
- Goal:** Enhance tourist trade as a major industry.
- Objectives:**
- o expand visitor related facilities and activities.
 - o improve public transportation opportunities in the downtown.
 - o improve public information distribution and orientation in the downtown.
- Goal:** Enhance Juneau as the Alaska State Capital.
- Objectives:**
- o integrate the capital complex with downtown waterfront activities.
 - o encourage uses and activities complementary to State office facilities.

Goal: Create a workable framework for new development.

Objectives: o assure consistency with CBJ Comprehensive Plan Coastal Management Program and its proposed actions.

o establish zoning, procedural and other regulatory approaches necessary to implement a preferred plan.

o Establish criteria and guidelines to assist public and private sector designs and developments.

o Create positive inducements to encourage private sector participation and support.

Traffic and Transportation

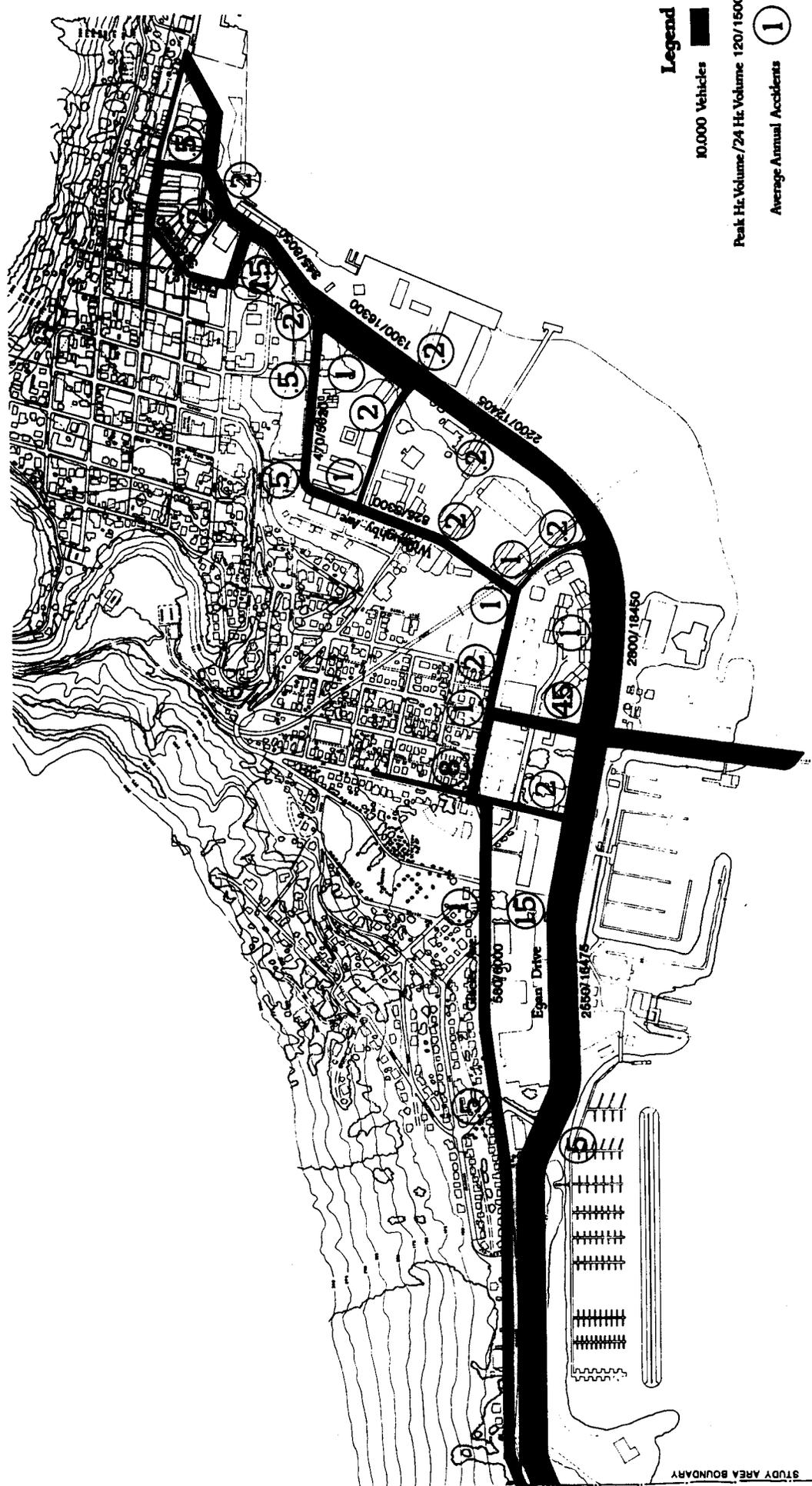
This section concerns existing traffic conditions in the Juneau Downtown Waterfront corridor. Traffic and transportation were researched in a recent study for the proposed Gold Creek Development and reported in a February, 1983 traffic report.¹ Traffic count information was updated to include 1982 data, not previously available. In addition, the study area was expanded to cover intersections from northwest of Highland Drive on Egan and Glacier Avenue to southeast of South Franklin Street on Admiral Way.

EXISTING TRAFFIC CONDITIONS

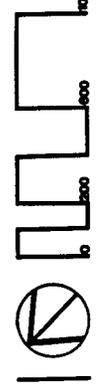
Traffic Volumes

Existing (1982) skyline (typical) turning movement data were obtained from the Alaska Department of Transportation/Public Facilities (ADOT/PF) and from field counts conducted by the consultant in August 1982. Figure 1-8 shows average daily and peak hour traffic on streets in the study area. Peak hour flow is generally as much as 16 percent of daily traffic. This sharp peak results in heavy volumes within the peak hour with only moderate or low volumes during off-peak periods.

¹Egan Drive/Gold Creek Study Area Traffic Analysis, TDA Inc., February, 1983.



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DOWNTOWN WATERFRONT STUDY | 24 Hour Traffic Volumes
 City and Borough of Juneau | Source: TMA

Figure 1-8

The "Downtown Transportation Plan"², identifies an historic growth rate of 10.1 percent per year for Juneau Central Business District traffic flow. Traffic volumes on Egan Drive between 1959 and 1980 are shown in the "Annual Traffic Volume Report"³, also indicating a recent growth rate of around ten percent per year. Rapid growth combined with heavy peak flow has resulted in capacity deficiencies along Egan Drive during the peak hour.

Traffic Operations

Level of service analysis was performed according to the procedures outlined in Transportation Research Circular #212.⁴ Level of service (LOS) is a measure of operating condition and indicates the probable delay to drivers as they travel along the street system. A critical measurement of this delay for signalized intersections is the proportion of loaded cycles that occur within the peak hour (a loaded cycle occurs when all cars waiting at a red light are unable to pass through during the next green phase on that approach). Unsignalized intersection levels of service are a measure of the reserve capacity available on critical traffic streams. All movements from the minor road and left turns from the major road are identified as critical streams. Through and right movements on the major road are considered to be independent of the effects of conflicting traffic on the minor road.

²Draft Downtown Transportation Plan; Kramer, Chin & Mayo, The Transpo Group; September, 1978.

³Annual Traffic Volume Report, ADOT/PF, 1980.

⁴Interim Materials on Highway Capacity, Transportation Research Circular #212, Transportation Research Board, 1980.

Outbound through traffic on Egan Drive is very heavy during the afternoon peak hour. This large volume results in lengthy delays for vehicles entering or turning across through traffic. Table 1-1 below shows levels of service for intersections in the study area during the peak period. For unsignalized intersections, level of service for the worst individual movement through the intersection is shown. See Appendix 1 for definitions of the levels of service.

The analysis indicates severe capacity deficiencies for intersections along Egan Drive. This is mainly due to a lack of sufficient gap between oncoming vehicles to allow unrestricted movement of cross-traffic. Operating problems at some intersections occur only within the peak hour; sufficient capacity is available to accommodate flows during most periods. For example, Egan at 10th Street operates at LOS "A" in the midday but reduces to LOS "E" in the evening peak. A reduction in the concentration of traffic within the peak hour may reduce operational problems with minimal roadway improvements.

Transportation System Management (TSM) techniques help to reduce traffic flow by removing vehicles from the street system and lengthening the peak flow period effecting a reduction in hourly volumes. Procedures which could be used in connection with roadway improvements include carpooling, flextime and staggered work hours.

Figure 1-9

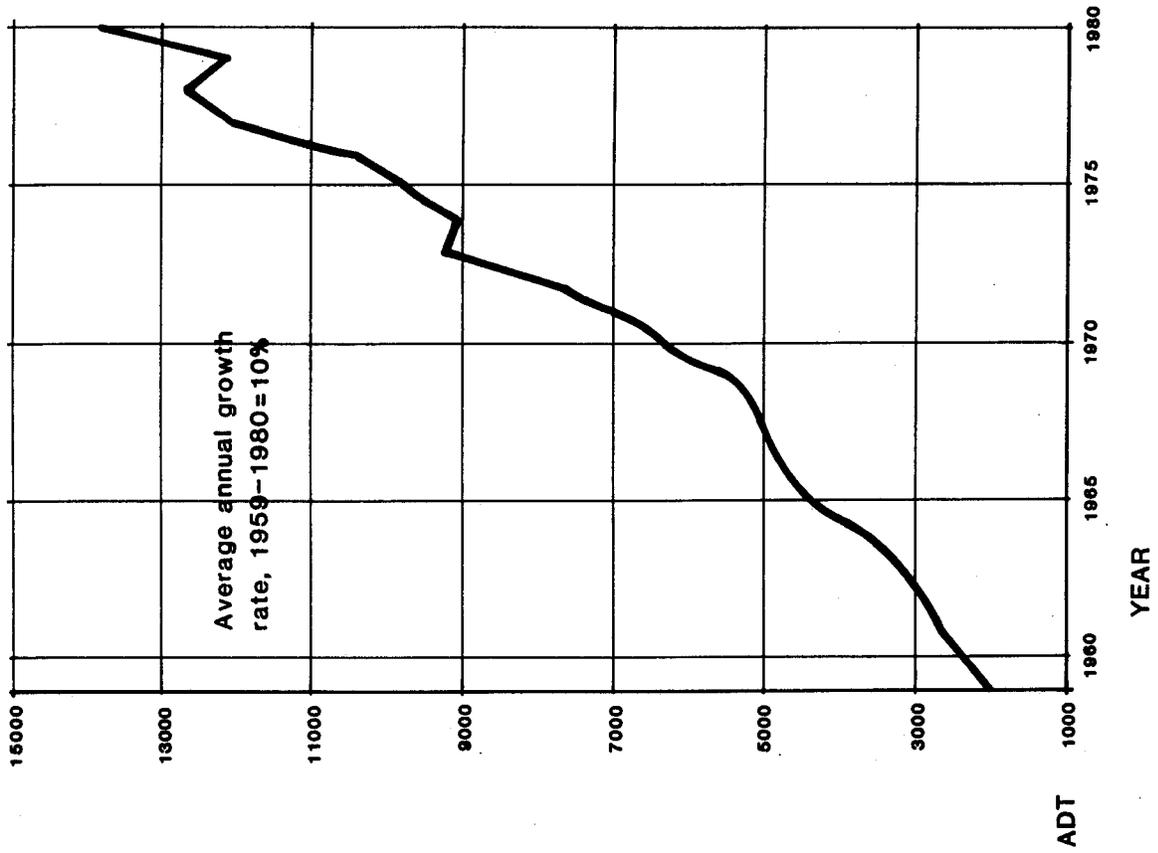


TABLE 1-1

EXISTING INTERSECTION LEVELS OF SERVICE

	<u>P.M. Peak LOS</u>	<u>Control</u>
Egan and Highland ¹	E-	Stop minor
Egan and 12th	E-	Stop minor
Egan and 10th	E	Signal
Egan and 8th ¹	E-	Stop minor
Egan and Glacier Ext ¹	E	Yield minor
Egan and Whittier ¹	E-	Stop minor
Egan and Willoughby ¹	E-	Stop minor
Egan and Main	B	Signal
Egan and Seward	B	Stop minor
Egan and Ferry/Shattuck	B	None
Admiral and South Franklin	A	None
Glacier and 10th	E-	Stop minor
Glacier and 12th	B	4 way stop

SOURCE: TDA Inc.

1. For comparison, operating levels of service for all critical movements at these intersections are shown below:

	<u>Egan at:</u>	<u>Highland 8th Street</u>	<u>Willoughby Glacier</u>
Right turn from minor street	E	B	E-
Left turn from major street	E-	A	D
Left turn from minor street	E-	E-	E-
			N.A.

Parking Characteristics

Parking utilization was sampled for on- and off-street locations in the study area. Parking demand generally exceeds supply in downtown Juneau. Parking facilities operate at capacity during most of the day. Parking facility areas (Figure 1-10) included in the sample that are southeast of Whittier all exhibited capacity deficiencies.

Construction of a proposed parking garage in downtown Juneau would create some additional supply.⁵ Short-term parking may potentially be increased by restricting on-street duration but compensation with additional long-term facilities would be necessary.

Accidents

Traffic accident information for 1979 through 1982 were obtained from ADOT/PF computer records. Annual average accident statistics at intersections and mid-block locations in the study area have been documented (Figure 1-8). Generally, most locations experience one and two accidents per year. The intersections of Egan Drive at Highland and 10th Streets experience four to five accidents per year while Glacier at 10th experiences eight average annual accidents. These represent the highest occurrence locations in the study area. The large number of accidents at Glacier and 10th Street indicates a potential location for signalization based on standard

⁵City and Borough of Juneau, Request for Proposal. Parking Structure with Commercial and/or Office Space, April 30, 1982.

safety warrants (MUTCD Warrant #6, Accident Experience)⁶. Right angle accidents occurring at intersections were most common, representing about 25 to 30 percent of total reported accidents. However, right angle accidents account for up to 50 percent of those reported at Egan and Highland and Egan and 10th Street.

Several pedestrian-related accidents were noted in the vicinity of Whittier Street indicating a need for improved pedestrian facilities. No fatal accidents were indicated during the study period.

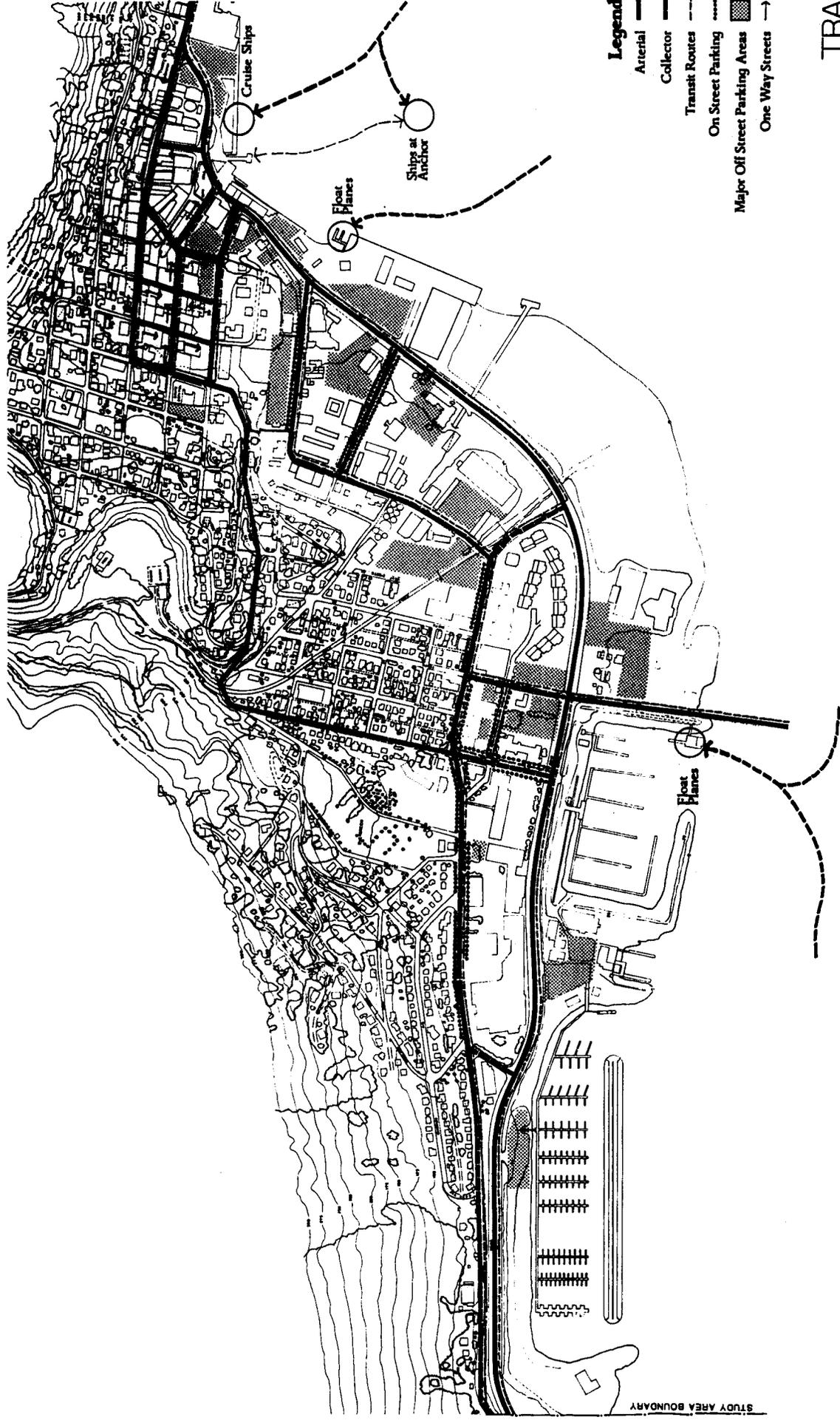
Access Constraints

Generally, intersections and other entrances reduce the quality of flow along the arterial system due to conflicting movements between through traffic and turning vehicles. For this and related operational reasons, the Federal Highway Administration has required restricted access to Egan Drive.

BUS SERVICE

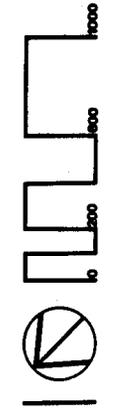
Transit service in the City and Borough of Juneau is provided by Capital Transit. Service is available on weekdays and Saturdays between Downtown Juneau, Mendenhall Valley, Lemon Creek,

⁶ Manual on Uniform Traffic Control Devices, USDOT Federal Highway Administration, 1978, Page 4C-6.



- Legend**
- Arterial
 - Collector
 - Transit Routes
 - On Street Parking
 - Major Off Street Parking Areas
 - One Way Streets

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DOWNTOWN WATERFRONT STUDY | Transportation
 City and Borough of Juneau | Source: TDA

Figure 1-10

and Douglas Island. Capital Transit buses operate between approximately 7:00 a.m. and 12:00 midnight. In addition to the scheduled stops (Figure I-10), transit buses may be hailed at any safe location along the route. The base ridership fare is 50 cents for the single zone serving Juneau and Douglas Island; an additional 25 cents fare is charged for second zone service to or from the Mendenhall Valley.

Transit service in the downtown waterfront area is available every hour to Douglas Island and each two hours to Mendenhall Valley and Auke Bay. Express service is also available between Auke Bay and the Juneau Federal Building; this service is available every hour (each half hour during the afternoon peak period).

Environmental Evaluation

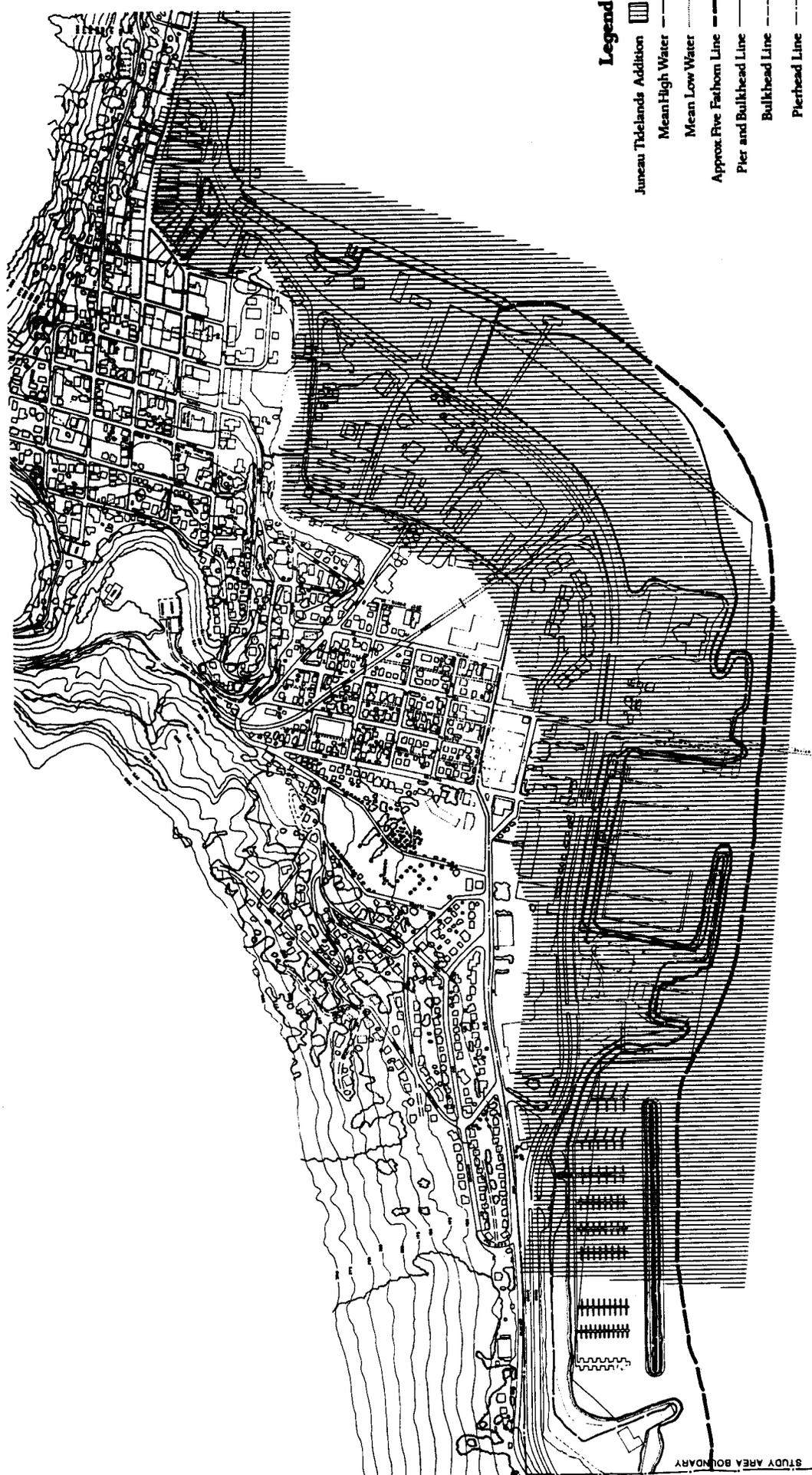
MARINE HABITATS

The recently adopted Comprehensive Plan for the City and Borough has not identified any of the areas within the downtown waterfront study area as consisting of critical marine habitats. Even though Gold Creek once supported a large chum salmon run, channelization has severely reduced its desirability as a spawning area. In order to avoid alterations of this nature, the Alaska Department of Fish and Game currently monitors stream alterations; encouraging the maintenance of streamside vegetation and application of methods which not only control erosion but improve the habitat. Intertidal flats support a wide variety of organisms from seaweeds and eelgrass to barnacles and clams. Approximately 15 acres of intertidal flats are situated at Gold Creek.

With regard to wildlife, the shoreline south of the Juneau Cold Storage provides a suitable habitat for furbearers though only mink has been observed. Bald eagle nesting might also occur in this area, although such nesting habitats are highly susceptible to disturbance, particularly noise.

TIDELANDS AND LEVELS

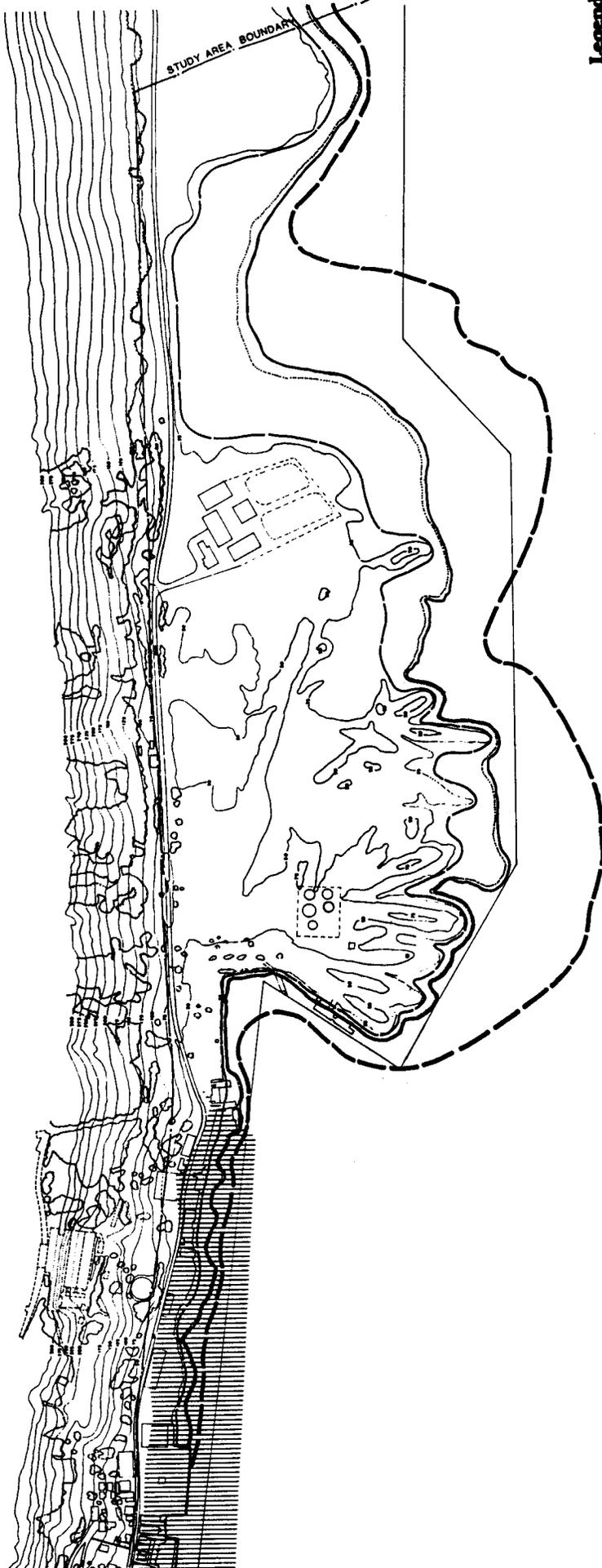
Figure 1-11 portrays the location of mean low water at +1.6 feet and mean high water at + 15.4 feet. The highest observed water level along the downtown waterfront is +22.6 feet and the lowest observed water level is -5.8 feet. Such tide differentials create constraints for development of water access facilities such as boat ramps and moorages. An approximate 5



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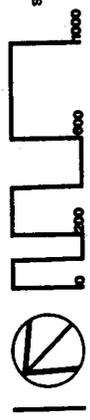
DOWNTOWN WATERFRONT STUDY | Tidelands
 City and Borough of Juneau | Source : 1962 City of Juneau Tidelands Addition

Figure 1-11 A



- Legend**
- Juneau Tidelands Addition [hatched box]
 - Mean High Water [dashed line]
 - Mean Low Water [solid line]
 - Approx. Five Footboom Line [dash-dot line]
 - Pier and Bulkhead Line [solid line]
 - Mean Lower Low Water [dotted line]

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 2008



DOWNTOWN WATERFRONT STUDY | Tidelands
 City and Borough of Juneau | Source : 1982 City of Juneau Tidelands Addition

Figure 1-11 B

fathom line and the pierhead and bulkhead lines are also noted on the map. The bulkhead line limits the extent of fill and the pierhead line limits the extent of structures. The platted tidelands addition to the City and Borough of Juneau are also noted.

SOILS

Upland soils within the downtown waterfront planning area are predominantly lands which have been modified by either filling with coarse granular material of several feet to accommodate development, or tailings from the Alaska-Juneau and Alaska-Gastineau mine sites consisting of angular rock fragments and fine to coarse sand with angular gravel. Development constraints are highly variable in filled areas, dependent upon the source and method of fill placement. Site preparation work is commonly required for building foundations.

A representative situation of submerged soils exists at a deltaic deposit located at the discharge of Gold Creek into Gastineau Channel. Underlain by loose, sandy material to depths of 130 feet, submarine landslides are a possibility along the face of this fan as it drops rapidly into deep water. These soils are susceptible to liquefaction, or the loss of their ability to withstand superimposed loads. The depth of liquefiable sands extends from 50 to 60 feet. The consequences of liquefaction may vary. Surface ground settlements ranging from a few inches to several feet are a possibility. An extreme case would be the complete loss of bearing capacity within the upper portion of the alluvial fan and a translatory or lateral spreading of the surface in the direction of Gastineau Channel (this situation is similar in some respects to that at Valdez or Seward at the time of the 1964 earthquake). Dames and Moore, in their geotechnical investigation for the Gold Creek reclamation project, make recommendations for two alternative levels of stabilization of underlying soils on the Gold

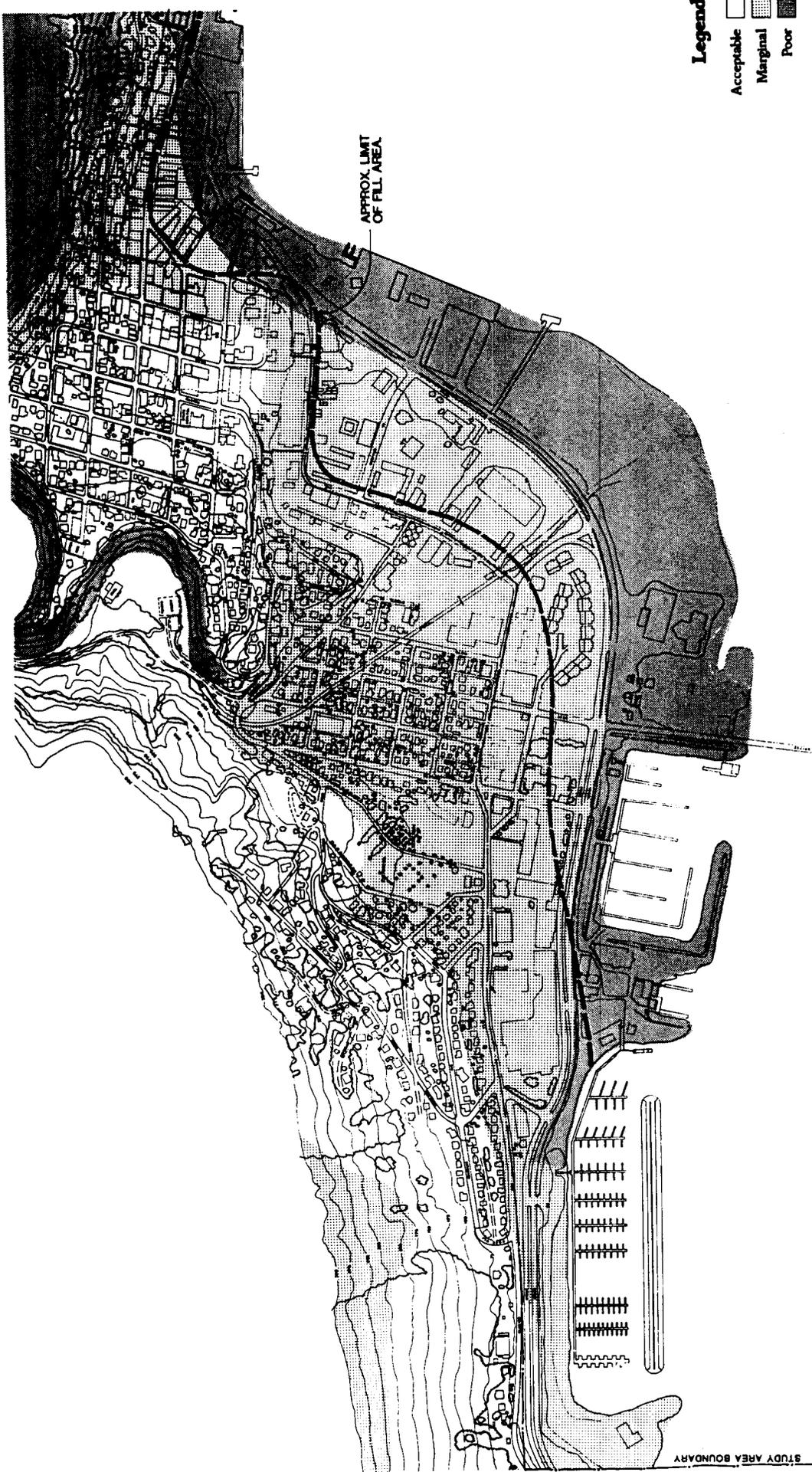
Creek alluvial fan. These alternatives consist of either stabilizing the fan beneath the containment dikes, or stabilization of the entire area, adding significantly to land development costs.

FOUNDATION LIMITATIONS

Areas of poor, marginal and acceptable geologic foundation materials are delineated in Figure 1-12 based on their anticipated behavior under seismic stress. (Source: Geophysical Hazards Investigation, 1972). Areas of acceptable foundation condition include bedrock, dense or well compacted soils. Local conditions will govern reaction to earthquakes. Compaction, fracturing, and some isolated water and/or sediment ejection is a possible occurrence.

Areas of marginal foundation conditions include soils where a severe local response to a differential compaction, ground fracturing, ejection of water and/or sediment is likely to occur during an earthquake. Reaction to seismic shaking depends on earthquake magnitude, epicentral distance, seismic wave length and amplitude, and duration of shaking. Depth to water table and density and thickness of geological units also bear on the ground reaction.

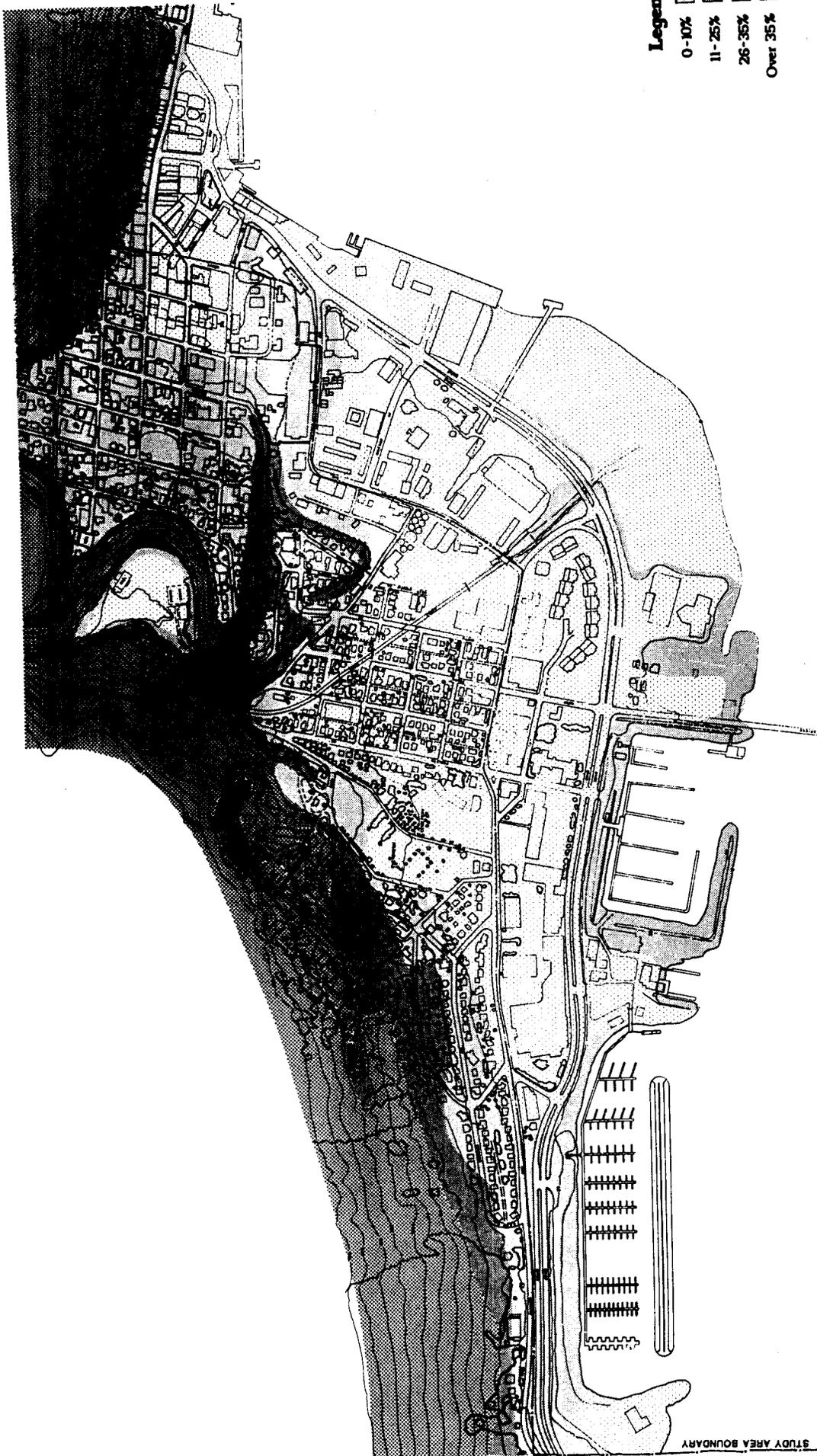
Areas of poorest foundation conditions include soils where differential downslope movement, compaction and differential settlement, ejection of water and/or sediment, and local sliding toward unsupported faces of deltas will likely occur during an earthquake.



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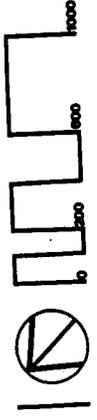
DOWNTOWN WATERFRONT STUDY | Foundation Suitability
 City and Borough of Juneau | Source : Geophysical Hazards Investigation by DMJM 1972

Figure 1-12 A



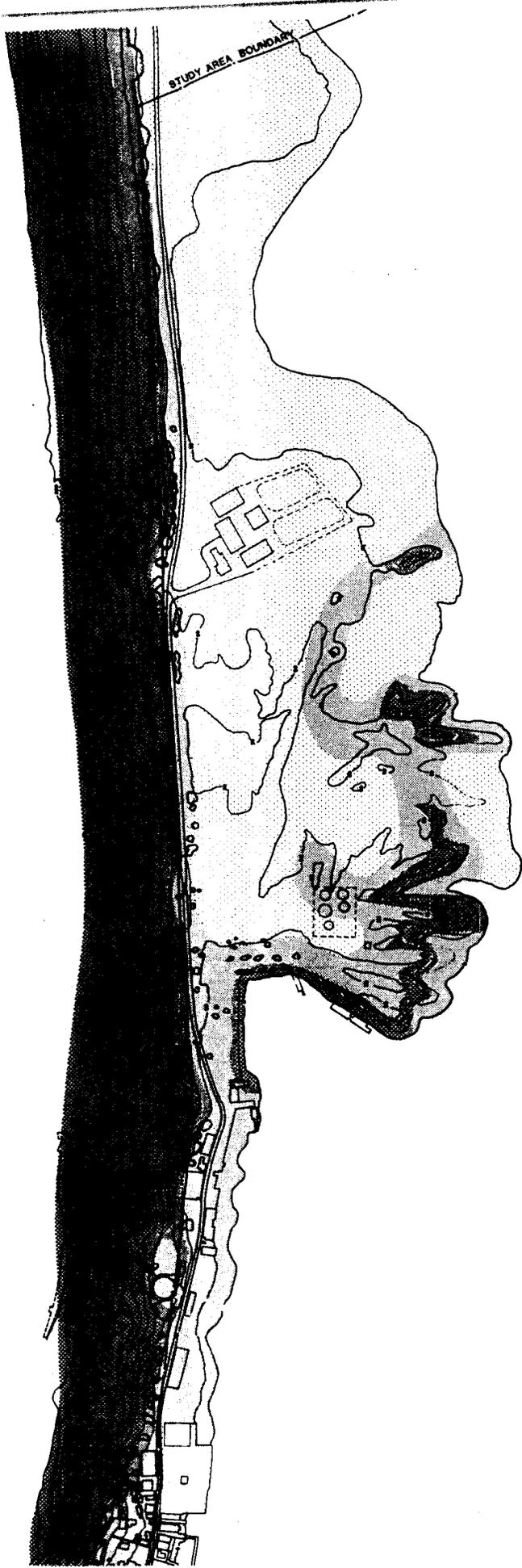
- Legend**
- 0-10%
 - 11-25%
 - 26-35%
 - Over 35%

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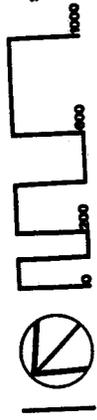
DOWNTOWN WATERFRONT STUDY | Slopes
 City and Borough of Juneau

Figure 1-13 A



- Legend**
- 0-10%
 - 11-25%
 - 26-35%
 - Over 35%

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DOWNTOWN WATERFRONT STUDY | Slopes
 City and Borough of Juneau

Figure 1-13 B

VEGETATION

Western hemlock is the dominant species within and around the downtown waterfront study area. Development patterns have left an environment which is predominantly devoid of vegetation. Other species indigenous to the area are the Sitka spruce on moist sites and western red cedar in poorly drained areas. Lodgepole pine, Alaska cedar, birch, and black cottonwood are evident in the Thane Road area.

The shoreline portions of the area may support algal communities and, in places, eelgrass (especially in the intertidal flats).

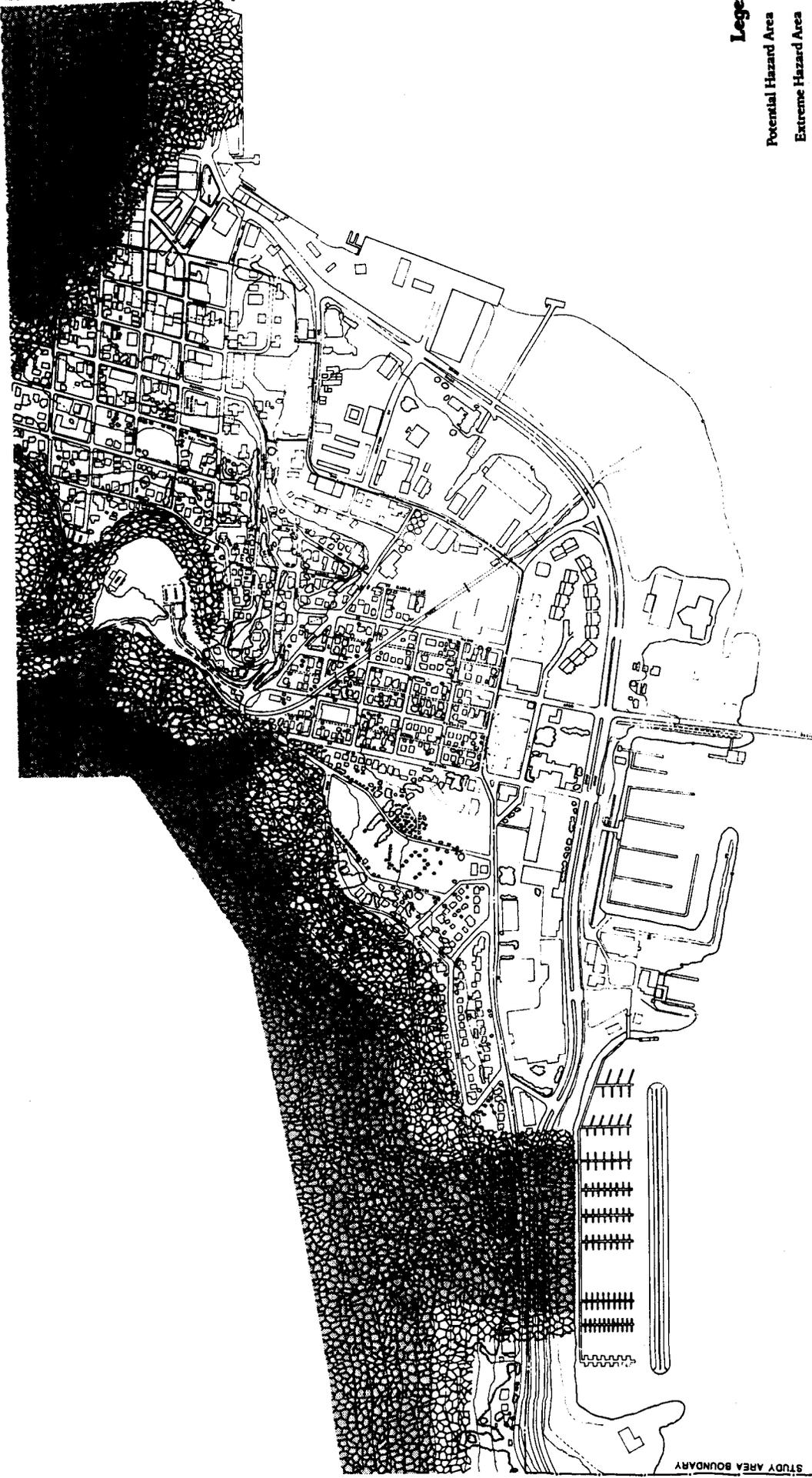
TOPOGRAPHY

The susceptibility of most soils to erosion, and the hazards of landslide and avalanches are directly proportional to steepness of slope. The only area of major concern in the downtown waterfront study area is the stretch along South Franklin Street south of Juneau Cold Storage and extending to the mine tailings area (see Figure 1-13). On the landward side of South Franklin slopes not only exceed 35 percent but are within a severe landslide/avalanche zone (refer to Figure 1-14). The Aurora Harbor area is the only other area within the waterfront study area subject to a similar condition. Aurora Harbor is located at the base of Mt. Juneau and South Franklin at the base of Mt. Roberts, both reaching heights above 3,500 feet. The remainder of the waterfront study area, aside from the shoreline which generally drops to the channel abruptly, contains land areas which are relatively flat since they are situated primarily on modified lands. The soil characteristics and depth to bedrock are overriding constraints to development in the modified lands areas (see Soils).

HAZARDS

Land use hazards evident in the downtown waterfront study area include landslides and avalanches. Another hazard associated with the study area is the soil's susceptibility to ground fracturing, liquification, differential settlement or compaction and ejection of water and/or sediment by ground shaking (see Soils). It is reasonable to predict that earthquakes strong enough to affect Juneau will occur along the Fairweather-Queen Charlotte Island Fault. From 1898 to the present, sixteen earthquakes with magnitudes ranging from 6.0 to 8.6 on the Richter scale have been recorded.

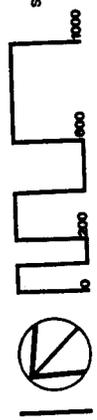
Figure I-14 is a composite of mass wasting (land slides) and snow avalanche hazard areas to illustrate where one or the other or both may occur. Areas along South Franklin Street beginning approximately at Ferry Way and continuing southward the entire length of the study area are susceptible to these hazards. Only the mine tailing area is out of this hazard zone. Another area of concern is Aurora Harbor which is situated at the base of a major avalanche track down the side of Mt. Juneau. While careful study of the hazard has not been made, casual observation will note the lack of sizable trees above the harbor thereby indicating a major slide to tidewater in the not too distant past. The hillside above the harbor is also developed with homes which are also exposed to this danger. Aurora Harbor is the City's largest harbor, protecting the greatest amount of personal property, and is favored by live-aboards. The harbormaster shack and employees are in the center of the main avalanche path. While no detailed assessment has been made, an avalanche reaching tidewater could result in major tragedy.



Legend

- Potential Hazard Area
- Extreme Hazard Area

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DOWNTOWN WATERFRONT STUDY | Slide/Avalanche Hazard
 City and Borough of Juneau | Source : Geophysical Hazards Investigation by DMAAM 1972

Figure 1-14 A

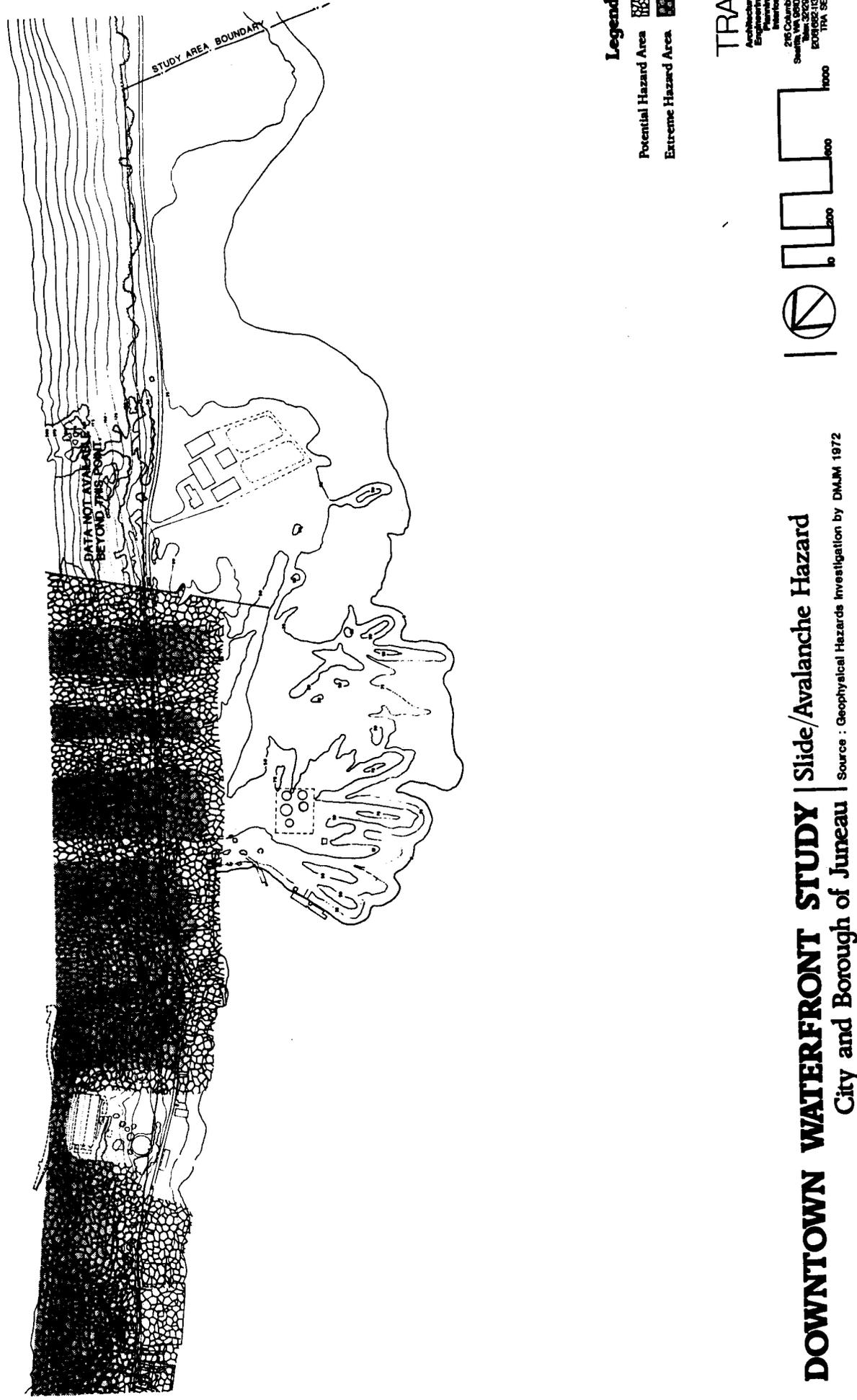


Figure 1-14 B

MICRO CLIMATE

Situated within the path of most storms that cross the Gulf of Alaska and subject to Southeastern Alaska maritime influences, Juneau has little sunshine, abundant precipitation and relatively moderate temperatures. The rugged terrain creates variations in temperature, winds and precipitation within relatively short distances. (In 1982 annual precipitation totalled 41.12 inches at the airport and 72.17 downtown.) Variations between maximum and normal daily minimum temperatures range from as little as 9 degrees in December to around 18 degrees in June. Variations on a seasonal basis range from a monthly normal temperature of 25 degrees in January to 55 degrees in July. Extremes of record cover a range of 112 degrees from the maximum of 90 degrees in July to the minimum of -22 degrees in February. Extreme maximum readings above 80 degrees have occurred in May through August. Low temperature extremes of around -20 degrees have occurred in December, January, and February.

Within the waterfront area only about one day each year reaches below zero due to its proximity to the mountains, whereas the airport averages about ten days per year within minimum readings below zero. The growing season is also longer in the downtown waterfront area with an average of 181 days from April 22 to October 21 (compared to 146 days at the airport from May 4 to September 28).

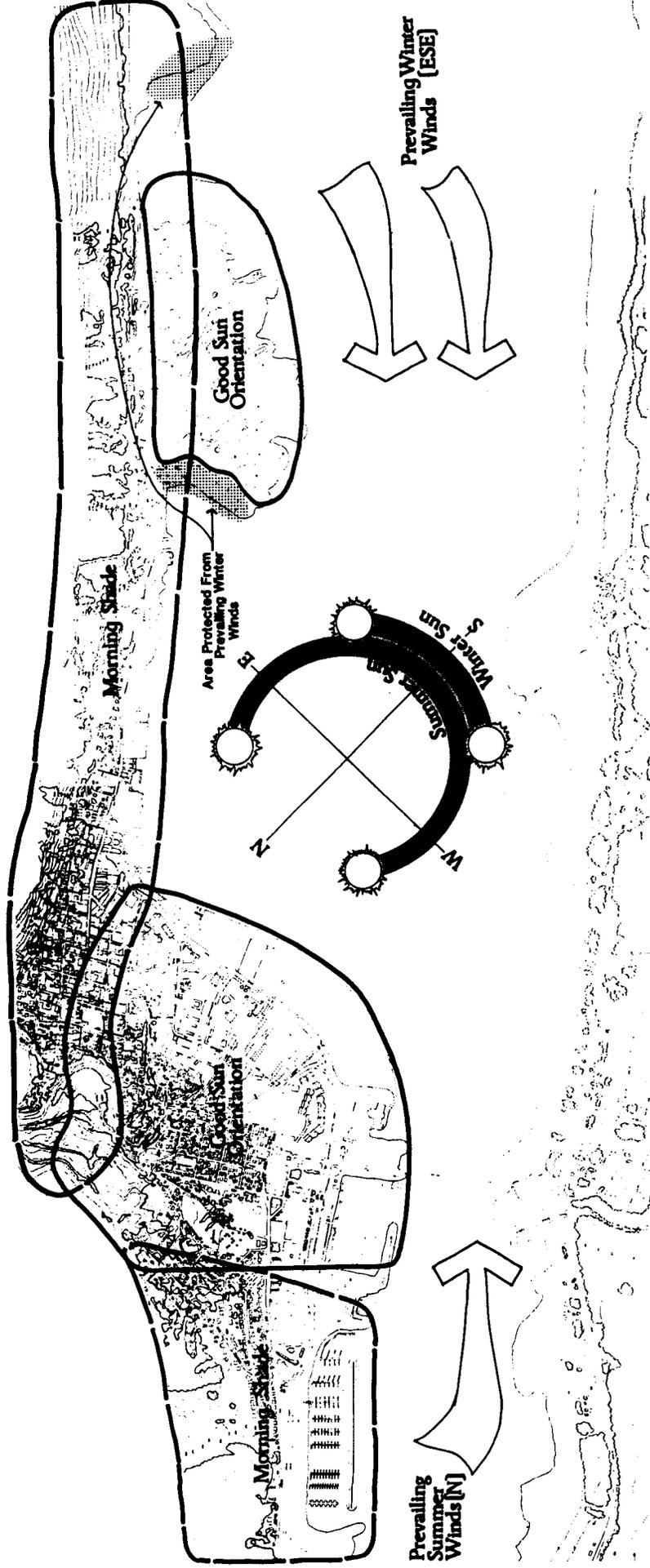
Periods of comparatively severe cold, which usually start with strong northerly winds, are most often caused by the flow of cold air from northwestern Canada through nearby mountain passes and over the Juneau ice field, and are generally of brief duration. During such periods gusty

winds, known locally as "Taku Winds," often occur within the downtown waterfront area to the northwest and southeast and are sometimes strong enough to cause considerable damage. Winter winds are predominantly from the southeast up Gastineau Channel while summer winds are predominantly from the north.

The months of February to June mark the period of lightest precipitation, with monthly averages of about three inches. After June, the monthly amounts increase gradually, reaching a maximum during October and averaging over seven inches. The maximum yearly amount received in the downtown waterfront area is almost double the maximum received at the Juneau Airport.

Based upon civil twilight (where sun is six degrees or more below the horizon) total sunlight hours vary from twenty in June to eight in December. The downtown waterfront area is partially shaded in the morning by Mt. Roberts. As shown in Figure 1-15, the south facing slope of Mt. Juneau and the distance away from Mt. Roberts combine to provide the sunniest areas on the Waterfront in the Gold Creek vicinity. The mine tailings area is exposed to prevailing harsh winter winds.

Although a trace of snow has fallen as early as September 9 in the Juneau area, first falls usually occur in the latter part of October, and sometimes not until the first part of December. On the average, there is very little accumulation on the ground in the downtown waterfront area until the last of November. Higher elevations are usually covered with snow by early October. Snow accumulation usually reaches its greatest depth during the middle of February when it averages around ten inches at the airport. December, January, February and March have the largest amounts of snowfall, averaging from 18 to around 26 inches per month. Individual storms may produce heavy falls as late as the first part of April and light falls as



DOWNTOWN WATERFRONT STUDY | Microclimate
 City and Borough of Juneau | Source: NOAA

Figure 1-15

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late as the first half of May. However, snow cover is usually gone before the middle of April. During some winters, when temperatures are above normal, there is a great deal of thawing which causes slush that later freezes. Rain which freezes into glaze ice on contact with the ground occurs occasionally during the winter.

Market Analysis

The Juneau downtown waterfront accommodates a variety of water-dependent and water-related uses as well as some which do not require proximity to the water. The purpose of this portion of the planning process is to forecast future demand for expansion of existing uses, and potential new uses as well as opportunities for reuse of already developed areas.

Several recent studies have concentrated on specific uses of specific geographic areas and the results of those studies are included in this report. In particular, the Juneau Small Boat Harbor Development Plan considers the need for boat harbors, dry storage and boat ramps. The Gold Creek Development Plan considers uses appropriate for the Gold Creek area of downtown. The approach of this report will be to incorporate these plans into the overall analysis of downtown Juneau. Therefore, the market analysis is divided into four additional sections:

- o General Economic Conditions
- o Review of Gold Creek Study Market Analysis
- o Review of Small Boat Harbor Study
- o Market Analysis for Other Uses

GENERAL ECONOMIC CONDITIONS

Demand for specific land uses is dependent upon such general economic conditions as population, employment, and income. Historical conditions provide a basis for projecting future conditions. Both historical conditions and projections of future conditions are presented in the remainder of this section.

Historical Conditions

o Population

The population of the City and Borough of Juneau increased significantly over the last decade as shown in Table I-2. The 3.7 percent annual growth rate greatly exceeded the 2.8 percent rate of the State as a whole.

TABLE I-2

JUNEAU BOROUGH POPULATION
1970-1980

	<u>1970</u>	<u>1980</u>	<u>Annual Rate of Growth</u>
City & Borough of Juneau	13,556	19,528	3.7%
State of Alaska	302,583	400,481	2.8%

Source: U.S. Census
Williams-Kuebelbeck & Associates

o Employment

The growth in Juneau population mirrors the growth in employment. Over the same time period, total civilian employment has experienced a 5.2 percent annual growth rate, as

shown in Table 1-3. The historical pattern for Juneau appears comparable to the nationwide trend. As more women have entered the labor force, labor force participation has increased, and growth in population has been somewhat less than that for employment.

TABLE 1-3
JUNEAU BOROUGH EMPLOYMENT
1970-1980

	<u>1970</u>	<u>1980</u>	<u>Annual Rate of Growth</u>
State Government Employment	2,163	3,851	5.9%
Federal Civilian Employment	1,198	1,212	.1%
Other Government Employment	<u>650</u>	<u>949</u>	3.9%
Sub-total Government Employment	4,011	6,012	4.1%
Private Sector Employment	<u>2,486</u>	<u>4,792</u>	6.8%
Total Civilian Employment	6,497	10,804	5.2%

Source: Alaska Department of Labor

The economy of any area can be understood in terms of its basic and non-basic sectors. The basic sectors provide goods and services for export outside the local area. The non-basic sector provides goods and services in support of the local area itself. It is an accepted economic principle that growth in any local area or region is dependent upon growth in the basic sector. In the case of Juneau, the major basic sector is central State Government.

State Government workers represent a third of total civilian employment and two thirds of basic sector employment. Basic sector and non-basic sector employment is shown in Table 1-4.

TABLE 1-4
JUNEAU EMPLOYMENT DISTRIBUTION F02

	<u>State Government</u>	<u>Total Basic Sector</u>	<u>Total Non-Basic Sector</u>	<u>Total</u>
Employment	3,926	6,232	5,795	12,028
Percent of Total	32.6%	51.8%	48.2%	100.0%
Percent of Total Basic Sector	63.0%	100.0%	--	--

Source: Cogan/Shapiro
Williams-Kueibelbeck & Associates

Overall growth in Juneau's employment can be attributed to the growth in State government employment.

o Income

From 1970 to 1980, the total payroll of Juneau area increased from \$69,665,000 to \$240,325,000. As shown in Table 1-5, this represents a 13.2 percent annual rate of increase. However, most of this increase can be attributed to inflation which averaged over 8 percent per year over the period. The real rate of growth of 4.5 percent per year exceeded the rate of population growth of 3.7 percent. Thus, real income actually increased on a per capita basis.

TABLE 1-5
JUNEAU INCOME
1970-1980

	<u>1970</u>	<u>1980</u>	<u>Annual Rate of Growth</u>
Total Payroll (in 1,000's of inflated dollars)	\$69,665	\$240,325	13.2%
Total Payroll (in 1,000's of 1970 dollars)	\$69,665	\$108,272	4.5%

Source: Alaska Department of Labor, Statistical Quarterly, 1970, 1980.

o Forecast Conditions

As described above, employment and population in Juneau are closely related to growth in central State employment. Past forecasts in Juneau have depended heavily on whether or not the State capital is to be moved to Willow. Projections in this report are based on the recent decision that the capital will not be moved. Forecast future conditions under the "No-Move" assumption are shown in Table 1-6. Generally, forecast growth rates over the next five years exceed those for the next fifteen years. Because of the risk and uncertainty in recent years over the capital move question, investment in the local economy has been less than it otherwise would be. Since the issue was resolved in favor of retaining Juneau as the capital, investment should increase rapidly in an attempt to "catchup." Thus the economy should experience a short term stimulus before returning to a more stable rate of growth.

TABLE 1-6

POPULATION & EMPLOYMENT PROJECTIONS

BASIC SECTOR

	1982	1987	1997	1982-1987 (%)	1982-1997 (%)
State ¹	4,207	4,877	6,274	3.0	2.7
Federal ²	1,008	1,075	1,223	1.3	1.3
Other Basic ³	973	1,242	1,648	5.0	3.6
Subtotal	6,188	7,194	9,145	3.1	2.6

SUPPORT SECTOR

Government ⁴	1,131	1,338	1,687	3.4	2.7
Private ⁵	4,810	6,139	8,058	5.0	3.5
Subtotal	6,131	7,477	9,745	4.0	3.2

Total	12,321	14,671	18,890	3.6	2.9
Employment	22,687	27,014	34,782	3.6	2.9

Source: Homan-McDowell; Williams-Kuebelbeck & Associates

Footnotes on following page.

Footnotes

¹According to Alaska Department of Labor, total State employment for Juneau (basic as well as support) showed:

3/83	4,550	3.4% over previous year
3/82	4,401	4.5% over previous year
3/81	4,210	7.5% over previous year
3/80	3,917	

The reduction in anticipated oil revenues leads to further reduction in growth rate. A 3.0% and 2.7% growth rate for the short and long-term, respectively, would reflect this trend.

²Homan-McDowell show 1.3% growth rate from 1974 to 1982.

³Other basic consists of about one-third tourist-related, one-third fishing-related, and some native corporations, tribal government and others.

The growth rate is the weighted average of the rates applicable to each portion of this category. Tourist and visitor oriented is projected to grow at about 9% over the next five years but lower rates are expected for other areas. New mining activity would replace the loss in fishing employment. The result is 5.0% in near term and less overall as tourism continues to grow at a more gradual rate.

⁴Support sector government employment includes population-related services such as education, medical care and local government. These categories are expected to grow with population but at a slightly lower rate to reflect declining relative importance of government in the economy and some economies of scale in government operations.

⁵Relatively higher growth rates for private support sector employment reflect a boom in construction for the short-run and continued growth in other areas as the Juneau economy becomes more self-sufficient. New types of employment become available as minimum efficient scale is reached after further increases in the Juneau economy.

⁶Population estimate for 1982 provided by City and Borough of Juneau. Forecast population is assumed to grow with employment.

REVIEW OF GOLD CREEK MARKET ANALYSIS

Methodology

In 1982 a market analysis was completed as a part of the Gold Creek Development Analysis. It considered the demand for the following uses:

- o Retail
- o Restaurant
- o Housing
- o Hotel
- o Marine Facilities

The demand forecast for these uses was based on:

- o Identification of historical development in terms of growth and market share.
- o Forecasts of future rates of growth and market shares based on competitive conditions.
- o Application of future rates and shares to determine potential demand for project site.

Table 1-7 summarizes the results of the Gold Creek Plan (GCP). The amount of each use which could be accommodated downtown was projected as well as the recommended development for the Gold Creek area. The purpose of this section was to adapt the results of the previous analysis to the current study by:

- o Revising growth rate or market shares to reflect downtown Juneau waterfront rather than just Gold Creek.
- o Adjusting forecasts based on recent development under construction or being planned.
- o Adjusting forecasts to reflect revised population and employment forecasts.
- o Applying forecast to uses for downtown Juneau waterfront with or without Gold Creek developing according to plan.

TABLE 1-7

FORECAST INCREMENTAL DEMAND & RECOMMENDED DEVELOPMENT

	<u>Downtown Juneau 1982-1987/1988-1997</u>	<u>Gold Creek Development</u>
Retail (square feet)	36,000/72,000	42,000
Restaurant (square feet)	43,000/53,000	26,000
Office (square feet)	225,000/330,000	140,000
Housing (units)	385/560	0
Hotel (rooms)	158/253	300
Cruise Ship Berth	1/1	1
Transient Moorage Dock	1/0	1

Source: Gold Creek Development Plan Market Analysis; Williams-Kuebelbeck & Associates, Inc.

Retail

The GCP forecast demand for additional specialty retail of 7,200 square feet per year for the Juneau downtown area. This implies 36,000 square feet of additional space in the next five years. However, 42,000 square feet is planned for Gold Creek. Therefore, other development is not expected in the near term for downtown but another 66,000 square feet would be needed by 1997.

In addition to specialty retail, there is demand for general retail. Since the GCP was prepared, general retail development has been growing but primarily outside the downtown area. For example, Fred Meyer is constructing a 110,000 square foot facility across from the airport. Nugget and Mendenhall Malls are planning to expand. In the downtown area, renovation of the Juneau Drugstore is expected to add some general retail to the second floor of the building.

Since downtown Juneau is hampered by parking limitations and Mendenhall Valley has a concentration of population, this trend for general retail is not likely to change. Most new development of general retail will be located in Mendenhall Valley rather than downtown. To the extent that there is additional employment located downtown, the additional workers will support a limited expansion of general retail. However, general retail must compete more on the basis of price and quality with similar goods offered elsewhere. Waterfront location would probably command higher rents which add to the costs. Therefore, the additional general retail development downtown would be primarily located in upland areas such as Juneau Drugstore and the forecast for specialty retail applies to waterfront areas. The forecast for general retail would increase if significant new housing and population develops downtown since this would change some of the analysis above.

If Gold Creek is not developed as planned, the retail space recommended there could be constructed elsewhere along the downtown waterfront if a similar site is available. If Gold Creek is developed, then a portion of the 66,000 square feet forecast for downtown could be located on the waterfront. Depending on the available site and surrounding development, 30,000 to 40,000 additional square feet would be appropriate by 1997. This level of demand would be sufficient to support another small specialty retail mall.

Restaurant

The GCP may have been optimistic concerning the amount of restaurant space needed downtown. The original forecast estimated 43,000 square feet downtown in the next five years and 53,000 from 1988 to 1997. This was based on an assumption that the share of future expansion would be equal to the current share. Current trends indicate that share is likely to decline for the downtown area. As noted under the analysis for retail, new development or expansion is under construction closer to the population in the Mendenhall Valley area. This concentration of retail activity naturally attracts local residents. Restaurants provide complementary activities and will be developed as part of the new malls. Furthermore, family oriented restaurants would be closer to where most of the people live. Downtown restaurants must appeal relatively more to workers by day and visitors or tourists at night. Recent trends indicate that Mendenhall Valley is the growing market.

More conservative restaurant space projections based on 40 percent rather than 57 percent share for downtown yield 30,000 square feet needed by 1987 and an additional 38,000 by 1997. Since 26,000 feet is planned for Gold Creek, that would account for a large share of total expansion, especially the higher price market segment. After Gold Creek is developed, the downtown could

absorb one or two additional major waterfront restaurants but this would depend on the specific project location. For comparison purposes, a major restaurant would be similar in size to Latchstring Restaurant of the Baranof Hotel. Alternatively, the downtown waterfront could accommodate five to six smaller restaurants instead if they were comparable in size to Dinghy Dave's or Belleza E La Festa.

Office Development

Although the GCP considered the likelihood of a construction boom if there was a favorable vote on the capital move issue, the extent of the pent-up demand may have been underestimated. As shown in Table I-8, about 139,500 square feet of new office space has been developed or is currently undergoing construction. In addition to new construction, other buildings are undergoing remodeling such as the Senate Building, Filipino Hall and Juneau Drugstore. These projects are not entirely office space developments, however. The Filipino Hall includes 30,000 square feet of office. The ANB Building also includes a meeting hall or conference area. Nonetheless, these projects exceed the 94,000 square feet projected for the entire 1982-1987 period. This current rate of construction is not indicative of the longer term demand. Until the space is actually leased out, it may not be indicative of the short run demand either.

TABLE 1-8

OFFICE SPACE UNDER CONSTRUCTION
DOWNTOWN JUNEAU

<u>Project</u>	<u>Size</u>
TH-ANB Building	38,700
Court Plaza	35,000
Willoughby Business Center	35,000
5th & Franklin	14,000
Endicott Building (completed)	12,000
Seadrome Annex (completed)	<u>4,800</u>
Total	139,500 Gross Leaseable square feet

Source: City & Borough of Juneau, Building Permit Records, Planning Department; Williams-Kuebelbeck & Associates, Inc.

Under the assumption that new construction corresponds to actual need and some pent-up demand remains, the rate of absorption for 1983 to 1987 would be 90,000 square feet per year for the entire Juneau market. This higher figure is based on absorption rates for 1977 to 1982. From 1988 to 1997, the forecast remains the same as before whereby the demand for office space corresponds to the growth in employment. Under these conditions, the 25 percent market share for private downtown office space implies a need for 90,000 square feet by 1987 and an

additional 137,500 by 1997. Together, Phase I and II of Gold Creek would provide 140,000 square feet. In the short run, any demand for waterfront-view office space could be accommodated by Gold Creek. By 1997, another smaller building of 35,000 to 50,000 square feet could also be accommodated with the remaining development further upland. The conclusion would change drastically if the State wanted an office on the water. Otherwise demand for waterfront office space is met by Gold Creek.

Housing

As shown in Table 1-9, average household size declined from 2.99 to 2.55 from 1970 to 1980. This is consistent with the trend common to the nation as a whole. However, 1982 statistics indicate a substantial reversal of this trend by the increase in average household size. To a large extent, this is a temporary phenomena caused by a slowdown in new construction until a favorable vote on the capital issue became clear. However, at least part of the discrepancy may be attributed to a difference in the way population is estimated by CBJ as compared with the U.S. Bureau of Census.

If population estimates are consistent with 2.55 as the desired average household size, then housing stock would have to be 13,640 to accommodate the additional population by 1997. Net new construction would be 2,507 over the next five years and another 3,046 between 1987 and 1997.

In 1982, downtown housing represented 27 percent of the total housing for the CBJ. During the last ten years, multifamily housing has been about 37 percent of new construction. New housing downtown is likely to be multifamily due to land costs. Since downtown housing would be

TABLE 1-9

HISTORIC & FORECAST HOUSING DEMAND

	1970	1980	1982	1987	1997
Population ¹	13,556	19,528	22,687	27,014	34,782
Housing Stock ²	4,529	7,656	8,087	10,594	13,640
Household Size ³	2.99	2.55	2.81	2.55	2.55
Additional ⁴ Requirements	-	-	-	2,507	5,553

¹From Table 1-6.

²Historical estimates from U.S. Census and CBJ Accessors Office.

³Population divided by housing stock.

⁴Additional housing units required compared with 1982 base.

Source: U.S. Census, CBJ, Williams-Kuebelbeck & Associates, Inc.

attractive to many people because it is within walking distance of work, perhaps half the new multifamily housing would locate downtown. Waterfront amenities would add to the attractiveness, but also to the price. Therefore, about a third of the total multifamily could locate on the downtown waterfront if costs were reasonable. This would be about 12 percent of total new housing units, or 300 units from 1982 to 1987 and another 366 units by 1997.

Hotel

Currently, the Driftwood Lodge is expanding its accommodations by 14 units. Adjusting the previous forecast to reflect this development leads to 144 more units required downtown by 1987 and an additional 245 downtown by 1997. Since development of Gold Creek would add 300 rooms, there would be sufficient supply for several years. The potential expansion of Cape Fox would fill any additional demand through 1997.

As long as Gold Creek is developed, there is no need for another waterfront hotel. A waterfront hotel appeals to the high price end of the market. Without Gold Creek, a hotel of comparable size should be considered elsewhere.

Cruise Ship Berth

Conditions affecting the demand for cruise ship berths have not changed since the GCP. One berth is needed now and could be developed as planned at Gold Creek. With continued growth in tourism and vessel calls by cruise ships, a second berth would be needed by 1997.

REVIEW OF SMALL BOAT HARBOR REPORT

Although the Small Boat Harbor Development Plan considered several options directly affecting areas of downtown Juneau, the projects recommended to the Assembly are limited to the expansion of Aurora Harbor. Plans developed by the Army Corps of Engineers recommend removing the existing rubble mound breakwater and using this material to extend the north and south jetties. A floating breakwater would replace the existing rubble mound. This would add 372 additional stalls.

The other projects involve areas removed from downtown Juneau and are beyond the scope of this study. Launching ramps are recommended for:

- o Echo Cove
- o Amalga Harbor
- o South Tee Harbor
- o Lena Cove
- o Auke Bay

Small boat harbors in addition to expansion of Aurora Harbor are anticipated for:

- o Auke Bay
- o South Tee Harbor

Dry boat storage is a desired use, but its development was left for the private sector.

In addition to these planned improvements, a tug mooring facility has been identified as a needed improvement. Currently, tug boats are concentrated in an area of Aurora Basin but the space is not designed for their use.

The tug boats serving Juneau are from 40-105 feet in length with 85 feet as the average. Tug boats are somewhat larger and less maneuverable than other boats of the same length. The larger size and weight causes damage to the float and pilings. The maneuvering room for tug boats in the boat basin is limited and there is potential for accidents. There are usually ten boats in the area. Since tug boats assist cruise ships in the harbor, a tug boat mooring facility should be located near the cruise boat moorage area. Tug boats are sturdier than typical vessels so that a breakwater may not be necessary.

MARKET ANALYSIS FOR ADDITIONAL USES

There are several uses not considered in either the GCP or Small Boat Harbor Plan. These potential uses for the Juneau downtown waterfront include:

- o Marine Cargo Facilities
- o State Ferry Terminal
- o Float Plane Docks
- o Commercial Fishing Related Uses
- o University of Alaska

This section considers the potential requirements of each.

Marine Cargo Facilities

o Historical Development

Since Juneau is inaccessible by road, marine transportation is the primary mode for cargo movement. The Port of Juneau has two types of marine cargo facilities which specialize in either petroleum or non-petroleum products. From south to north, these facilities are:

Union Oil - Fuel pier and about eight acres of land with storage tanks on portion of the rock dump area.

Foss Alaska - Barge loading area including four and one-half acres of land between Union Oil and State Ferry Terminal.

Standard Oil - Fuel pier and three acres on both sides of Egan Expressway south of Gold Creek.

Southeast Barge - Barge dock and two and one-half to three acres of land on Douglas Island adjacent to bridge.

Historic cargo volumes shown in Table 1-10 for 1975 to 1981 indicate a seven percent growth rate for overall throughput. Throughput is the sum of both inbound and outbound cargo. In the case of Juneau, most cargo is inbound from Seattle. Outbound cargo to the south consists

primarily of fish products. Outbound cargo to the north is approximately five to ten percent of inbound cargo and is being transhipped from Seattle to Haines or Skagway via Juneau. Therefore, inbound cargo for the Juneau area is probably over 80 percent of total throughput.

The distinction between petroleum products and non-petroleum products is important because different types of facilities are used for each. The fuel pier is used for petroleum products and storage tanks are nearby. Non-petroleum cargo is shipped by barge in containers or on platforms. Petroleum has shown a negative growth rate of 3.8 percent per year from 1975 to 1981. In contrast, other cargo has grown 16.8 percent per year during the same period.

If fish products are excluded from non-petroleum products, the remaining cargo may be categorized as either consumption oriented or construction oriented. For Juneau, capital investment projects require construction materials. Construction materials would include most of the forest products and building materials which accounted for less than a third of non-petroleum cargo in 1975 to 45 percent in 1981. Therefore, the rate of growth in construction is responsible for most of the rapid growth in overall cargo throughput.

At this time, both barge operators indicate that they are approaching the limit of their capacity given their current space limitations. Foss Alaska operates on a weekly cycle which it feels may accommodate 15 to 20 percent more cargo before significant inefficiencies become a constraint. Southeast Barge also maintains a weekly cycle but only three weeks each month. Therefore, they could increase their capacity by a third without increasing their space requirements if they added another trip each month.

- o Demand for Marine Cargo Facilities

The demand for fuel pier facilities depends on the demand for petroleum which is influenced by the following factors:

- o Growth in population and income.
- o Number of visits by cruise ships and other vessels.
- o Price of oil.

Although population, income, visits by cruise ships, and number of pleasure boats have all increased over time, petroleum consumption is down. Apparently, the oil price shock has led to conservation efforts by Juneau as it has elsewhere. However, the petroleum figures are somewhat erratic and any trend may be misleading. Furthermore, continued growth in population will eventually equal and outweigh reduction in petroleum consumption due to conservation. Therefore, there is neither expansion nor contraction expected for fuel pier facilities. This result is consistent with statements made by representatives of the respective fuel companies.

Although there is sufficient land available at the rock dump to accommodate Standard Oil, it would not be an attractive site. If both oil companies had oil storage tanks in that area, traffic congestion would be increased significantly. Standard would also be further from its customers located in Mendenhall Valley. In addition, a second tanker terminal on the rock dump site would be in a more exposed location relative to wind and weather. Therefore, consolidation of oil storage at the rock dump does not seem likely nor desirable. Since other sites are ruled out by environmental concerns, physical limitations or priority of other uses, North Douglas may be the lone remaining alternative.

TABLE 1-10

PORT OF JUNEAU CARGO THROUGHPUT
(in short tons)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	Annual Growth Rate 1975 - 1981
1. Food Products Except Fish	21,676	21,602	25,371	26,603	27,007	29,550	29,081	5.0%
2. Fish Products	2,254	6,600	2,742	2,934	12,584	5,892	7,999	23.5%
3. Metal Products	2,142	4,932	3,604	5,853	7,253	8,183	6,130	19.2%
4. Manufactured Goods	5,425	6,207	5,626	7,849	6,126	11,405	15,121	18.6%
5. Forest Products	8,930	11,505	13,970	14,569	19,841	24,246	49,747	33.1%
6. Building Material	8,967	9,580	10,396	12,032	19,964	14,304	19,309	13.6%
7. General & Other	<u>11,191</u>	<u>16,594</u>	<u>14,943</u>	<u>18,454</u>	<u>15,564</u>	<u>20,189</u>	<u>26,778</u>	<u>15.7%</u>
Subtotal	60,585	77,020	76,652	88,294	108,339	113,769	154,165	16.8%
8. Petroleum Products	<u>88,575</u>	<u>90,095</u>	<u>74,888</u>	<u>76,121</u>	<u>109,837</u>	<u>65,850</u>	<u>70,080</u>	<u>-3.8%</u>
TOTAL	149,160	167,115	151,540	164,415	218,176	179,619	224,245	7.0%

Source: Corps of Engineers; Williams-Kuebelbeck & Associates, Inc.

Footnotes

**Commodity
Codes**

Forest Products:

Timber, Posts, Poles, Piling
Lumber
Veneer, Plywood, Worked Wood
Wood Manufactures, NEC
Standard Newsprint Paper
Paper and Paperboard
Pulp and Paper Products

2414
2421
2431
2491
2621
2631
2691

Building Materials:

Gypsum, Crude and Plasters
Asphalt, Tar and Pitches
Building Cement
Sand, Gravel, Crushed Rock
Cut Stone and Stone Products

1494
2951
3241
1442
3281

If the causeway is constructed connecting North Douglas Island, Standard Oil would consider relocating to Fish Creek but it would depend on the cost of relocation and the price of land there. This would lead to potential redevelopment opportunities for the Standard Oil area. Union Oil is not interested in North Douglas because its market favors the rock dump site.

The demand for barge loading facilities will be influenced by the following factors:

- o Rate of growth in population and income.
- o Changes in the level of construction.

Consumption-oriented goods are those products that people buy on a relatively regular and steady basis. Even though this cargo may be the majority of the total inbound, construction related cargo causes most of the capacity problem. Construction projects favor warmer weather and most activity is during the summer. Most construction material is shipped at the same time of the year which leads to a peak-load problem.

Although cargo used in construction has been growing faster than other cargo in the past, most construction in the Juneau area is for either housing, office space or commercial. In the long-run, the rate of new construction must be related to the change in employment and population. Otherwise, there is either too little or too much space. Therefore, overall cargo will eventually grow at the same rate as population and income.

Noranda Mining is planning to develop resources on Admiralty Island. This would increase shipping requirements for the area in general but would not affect the Port of Juneau directly.

Marine cargo is expected to use Hawk Inlet on Admiralty Island as a staging area. No transshipment through existing facilities would be required.

If the historical rate of per capita real income growth of 0.8 percent is added to the population forecasts of 3.9 percent from 1983 to 1987, then total real income increases by 20 by 1987. At that point, Foss would be at or slightly above capacity. Southeast Barge would be able to handle its increase with an additional barge each month. By 1997, there would be an additional growth of 35 percent. Since Foss Alaska and Southeast Barge have about seven to seven and one-half acres together, about two and one half additional acres would be needed under cramped conditions. In order to improve the efficiency of their respective operations, both barge operators would be interested in two and one-half additional acres each.

If the causeway is constructed, Foss would also consider relocating to North Douglas. Since Foss has a five year lease at present and the causeway is several years away, any move would be speculative.

Alaska State Ferry Terminal

There are two ferry terminals in use at this time for the Juneau area. The Auke Bay facility is about 14 miles north of downtown Juneau and the downtown facility is only a few blocks from the Municipal Building. As shown in Table 1-11, passenger volume has been increasing at over five percent per year. From 60 to 65 percent of the ferry passengers use Auke Bay rather than downtown.

TABLE 1-11
PASSENGER VOLUME FOR ALASKA STATE FERRY SYSTEM THROUGH JUNEAU

	<u>Embarking</u>	<u>Disembarking</u>	<u>Total</u>
1978	41,027	41,935	83,562
1979	44,513	45,622	90,135
1980	49,078	51,942	101,020
1981	49,392	51,898	101,290
1982	53,365	55,591	108,956
ANNUAL GROWTH RATE	5.1%	5.8%	5.5%

Source: State of Alaska Department of Transportation and Public Facilities.
Williams-Kuebelbeck & Associates, Inc.

In addition to State ferries, the downtown ferry terminal is used by cruise ships. During 1982, 58 out of 159 vessel calls were scheduled to use the ferry terminal.

Whenever there is a cruise ship in the harbor, Auke Bay is used by the ferry to avoid conflict. Since cruise ships call during the summer which also corresponds to the peak in ferry service, most passengers use Auke Bay.

According to the Division of Marine Highways, they would prefer consolidation of their operations at Auke Bay. Their costs would be less because:

- o less cost for maintenance of only one facility,
- o lower operating cost for ferries using Auke Bay because the downtown site requires retracing route around Douglas Island since Mendenhall Bar prevents use of the Gastineau Channel.

The disadvantage of consolidation at Auke Bay would be less visitor traffic through downtown Juneau. However, this may be a minor consideration. Overnight visitors will utilize downtown Juneau since that is where the accommodations are. Other visitors only spend an hour on shore before the ferry leaves. Therefore, they have little time to affect the local economy.

If Gold Creek is developed as planned, a cruise berth will be available on that site. The State ferries could consolidate their operations at Auke Bay which would allow redevelopment of the downtown site. Without Gold Creek, the facility would still be needed by the cruise ships.

University of Alaska

The University of Alaska is currently developing a center for marine and fishing technology on land it currently occupies between Aurora and Harris Harbors. New buildings are planned which will provide both classrooms and offices. Instruction will be offered in welding, and auto and diesel mechanics. An overpass has been constructed over Egan Expressway to the high school.

When the University completes its development, access to the adjacent boat ramp will not be possible across the University property. The current easement is temporary. In addition, development plans may require acquisition of the site currently used by Grasle Electric.

Float Plane Facilities

During the summer, sightseeing in a float plane is a popular activity. Float planes depart from downtown Juneau near Merchant's Wharf. Channel Flying may have 16 to 18 planes in service but only three to four planes are typically stationed at the downtown dock. The remaining planes are stored at various locations including the airport, between the airport and downtown and north of the Douglas Bridge. If necessary, there is dock space for six to eight planes. The Harbormaster reports plans for construction of a public float plane ramp for up to eight planes. Current capacity and planned expansion would more than adequately meet the needs of commercial float planes through 1997.

Fishing Related Uses

o Background

Compared with Sitka or Ketchikan, Juneau is not considered to be a fishing port. Although Juneau may have 579 commercial vessels using moorage nearby, the main fishing activity does not utilize Juneau. During the peak season, 20 gillnetters and 150 trollers may operate in Lynn Canal. Otherwise, commercial fishing is limited and fishermen often transfer their catch to larger refrigerated vessels for shipment to processors.

The higher-valued species such as the various types of salmon and crab are being harvested to the maximum capacity now. Although there is substantial growth potential for bottomfishing, the impact on Juneau would be minimal because the primary fishing grounds are further to the west. Therefore, the fishing industry of Juneau is not expected to grow.

- o Cold Storage

Juneau Cold Storage is located near the downtown State Ferry Terminal. It handles a variety of fisheries products such as salmon, crab, halibut and black cod. Limited processing may be provided as well. Crabs may be sectioned and cooked before freezing.

Since the Juneau fishing industry is not growing, there is no demand for additional space. To the contrary, the Juneau Small Boat Harbor Report forecasts a decline in commercial fishing vessels in the area. If that trend continues, redevelopment of the existing cold storage site must be considered in the long term.

- o Other Distribution Outlets

If Juneau Cold Storage is redeveloped into another use, this would significantly hamper the ability of fishermen to sell their product in the area. Direct sales to the consumer would be an alternative. This might include a "Fishermen's Terminal" type area as a possibility. Fresh fish products could be sold from the dock. Since the GCP recommends development of commercial transient moorage on its site, this concept could be readily combined with that facility. If possible, the small transient moorage dock would include some space for net repair. Local residents would have convenient parking when buying fish. Visitors would be attracted to the Gold Creek area as a whole and the transient moorage could enhance the appeal. This use would be consistent with the objectives of the GCP and would mitigate the effect of redeveloping the cold storage area.

SUMMARY

The demand for individual uses is summarized below for the Juneau downtown waterfront.

	<u>1983-1987*</u>	<u>1988-1997</u>
Retail	0	30,000-40,000 s.f.
Restaurant	0	10,000-15,000 s.f.
Office	0	35,000-50,000 s.f.
Housing	300 units	366 units
Hotel	0	0
Cruise Ship Berth	0	1 berth
Barge Terminal	0	2.5 acres
Fuel Pier	0	0
Float Plane	0	0
University of Alaska	1 add. parcel	
Commercial Fishing Related	0	potential redevelopment
Ferry Terminal	0	potential redevelopment

*These amounts represent incremental amounts for each period which are in addition to development at Gold Creek.

The forecasts have a set of common assumptions for all uses:

- o Gold Creek is developed as planned.
- o Small boat harbor improvements are developed as recommended to the Assembly.
- o A causeway to Douglas Island is not constructed during the forecast period.

Opportunities and Constraints

The analysis of development potential involves consideration of both opportunities and constraints. Together they represent a synthesis of the various physical environmental and economic factors that affect the development potential of the site.

PLANS, POLICIES AND MANAGEMENT

This section summarizes the preceding analysis of existing plans and policies and the coastal management context to identify related opportunities and constraints.

- o The Comprehensive Plan strongly emphasizes the importance of the downtown and its role as the civic, cultural, and economic center of the CBJ and the desire to maintain that role. The decision to retain Juneau as the State capital gives additional impetus to this objective. There are numerous areas and sites in the downtown and along the downtown waterfront with potential for development or redevelopment.
- o Tourism has been growing rapidly and is an increasing contributor to the economy of Juneau. Tourist activity has many implications for uses along the downtown waterfront, including cruise ship facilities, restaurants, public areas, and retail facilities. While there is widespread support for tourism, both the Comprehensive Plan and the Gold Creek Development Plan indicate that there is a desire to assure that activities and development in the downtown and along the downtown waterfront are attractive to both local residents and visitors. Business visitors are also significant users of commercial facilities and other attractions in the downtown area.

o The desire for increased public access to the waterfront is very strong. The success of Marine Park and the public views expressed concerning the Gold Creek Development Plan underscore the importance of this element.

o The Comprehensive Plan and Coastal Management Program recognize the limitations of the existing Port facilities on the south waterfront and the need for expansion of these facilities. The Downtown Waterfront Plan must consider as a major contingency the possibility that existing Port facilities may be moved to Douglas Island or elsewhere within the CBJ. It must also consider, if these facilities are to remain on the downtown waterfront, that suitable land be reserved for this purpose and that transportation problems associated with the Port facilities be resolved. Major public projects such as the expansion of State facilities and the Gold Creek Development project will have a major influence on the remainder of the downtown waterfront. The planning process for the Gold Creek Development Plan indicated a strong public interest in improving the design of public and private development in the downtown area. It was also emphasized that pedestrian connections within and between the various areas in the downtown area be developed. The Historic District sidewalk and street improvements and the plans for the Gold Creek sites are initial steps toward improvement of pedestrian facilities.

o Retention of the capital in Juneau is also contributing to an increase in private development activity, including new office developments and renovation of older structures. Public improvements such as the Historic District sidewalk and street improvements, the Gold Creek Development Plan, and the Downtown Waterfront Plan can further stimulate this activity and provide a strong aesthetic context for this development.

o The Comprehensive Plan and Coastal Management Program emphasize the priority for water-dependent and water-related uses along the entire waterfront of the CBJ. Recognition is given, however, to the unique circumstances of the downtown waterfront. Existing development in this area is the most intense in the CBJ. The definition of water-dependent and water-related activities should probably be expanded to be consistent with the mixture of activities found in the downtown area. The water relationship of these activities should continue to be emphasized along with the desire to increase public access to the waterfront area. This constitutes a major issue of this study.

o Because the Downtown Waterfront Plan as an AMSA plan will become a part of the CBJ Coastal Management Program, appropriate State and federal agencies must be consulted during its development. The U.S. Coast Guard, State Ferry System, U.S. Fish and Wildlife, State Fish and Game, Office of Coastal Management, and DOT-PF are the most prominent examples.

PHYSICAL FEATURES

Physical features which present opportunities and constraints for development in the downtown waterfront area are shown in Figure 1-16. Existing conditions have provided the basis for dividing the study area into the following segments/subareas: (1) Boat Basin, (2) Gold Creek, (3) Central Port Area, (4) Willoughby, (5) South Franklin Street, and (6) Mine Tailings area (refer to Land and Water Use Inventory).

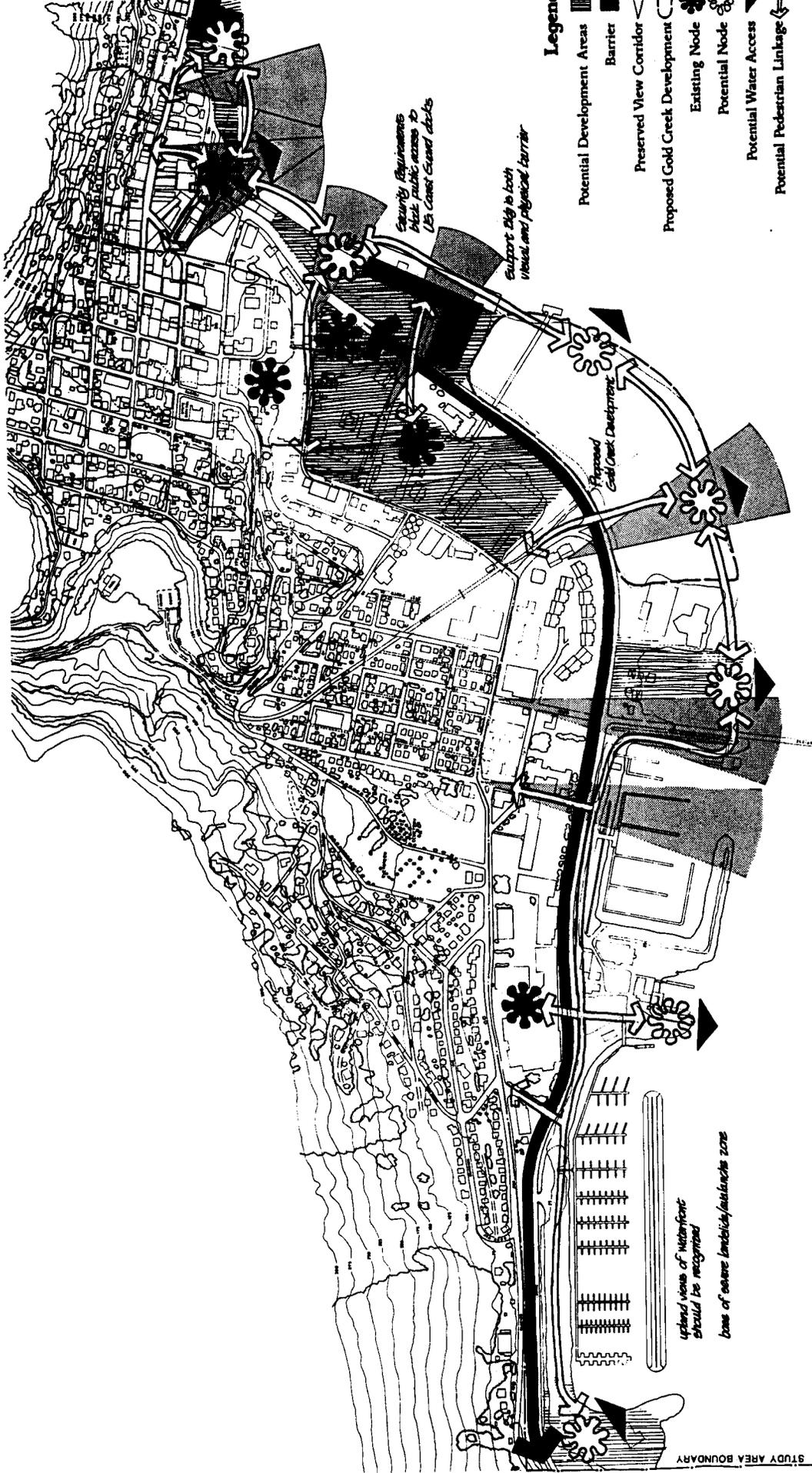
o Boat Basin Area. Development in this area is constrained by limited access to the Egan Expressway and its barrier to pedestrians in need of services such as grocery stores and

laundry on the landward side. Parking is limited and support services are lacking in close proximity. Needs for security at the Marine Technology Center could pose a problem if a public esplanade is desirable. A critical concern is that the Aurora Harbor is in the path of a severe avalanche hazard zone.

Opportunities include the possibility of additional moorage, dry dock storage facilities, parking facilities at Aurora Harbor, launching facilities, an esplanade for pedestrians and bicyclists connecting with Gold Creek and perhaps downtown and the creation of a tourist attraction with green spaces for visitors and residents alike. Emphasis could be placed on capitalizing on magnificent channel views from this location.

o Gold Creek Area. Primary opportunities for this area include dramatic views of the mountains to the north, downtown, the Channel, and Douglas Island. The recently completed plan for this new land fill area proposes public access and activities along the waterfront; including new office and retail development; berthing space for cruise ships; a waterfront promenade leading to and enhancing downtown pedestrian and tourist attractions, such as hotels, retail shops, the convention center and museum; and the creation of a natural park-like environment at the mouth of Gold Creek.

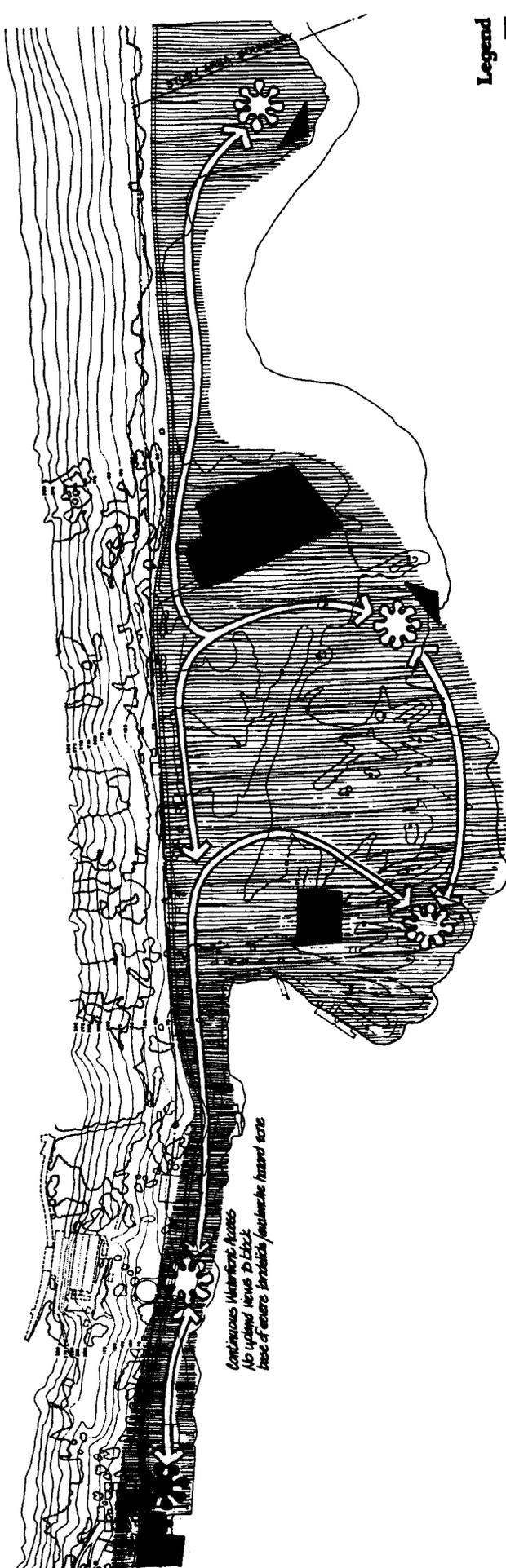
Primary constraints upon development of the site include: the difficulties for cruise ship berthing caused by harsh weather conditions, including "Taku Winds" from the northeast and winter winds, predominantly from the southeast; a zoning requirement to maintain an established view shed from the top step of the State Office Building (this limits the height of the eastern portion of the site to 60 feet); soil instability due to liquefaction precluding some building types without costly soil stabilization procedures;



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DOWNTOWN WATERFRONT STUDY | Opportunities and Constraints
 City and Borough of Juneau

Figure 1-16 A



- Legend**
- Potential Development Area
 - Barrier
 - Potential Pedestrian Linkage
 - Potential Water Access
 - Existing Node
 - Potential Node

TRA
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 Street
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 TRA_S&A



DOWNTOWN WATERFRONT STUDY | Opportunities and Constraints
 City and Borough of Juneau

Figure 1-16 B

and the Standard Oil Fueling dock. Major obstacles to providing a water's edge promenade into downtown Juneau are the subport building, Coast Guard Operations, and a seaplane dock.

- o Central Port Area. Major development constraints in this area include: the subport which blocks connections to the Gold Creek area; Coast Guard facilities which limit public access to the waterfront; dock facilities which are unprotected from severe winter "Taku Winds"; limited land area for support facilities such as parking; and ownership patterns which divide the area with private land holders.

Opportunities include the proximity to the Historic District and other major centers such as the State Office Building, Museum and Convention Center; the possibility of an esplanade providing a pleasant route for joggers, pedestrians and bicyclists; a series of mini parks located along the esplanade similar to Marine Park with covered outdoor spaces providing a place for residents and visitors to enjoy dramatic waterfront views; and an opportunity to substantially upgrade the appearance of the waterfront, as well as maximizing public access.

- o Willoughby Area. Constraints here primarily center on past development trends which represent a lack of planning with regard to relationships to surrounding uses. Located on modified lands, soils in this area will need to be stabilized in order to minimize seismic damage.

An opportunity exists to redevelop this area. Many structures are either of a temporary nature or in poor structural condition. Most lands are publicly owned, predominantly flat and in close proximity to the Historic District and waterfront. A

joint parking facility could be provided in this area to service surrounding activity centers, State offices and waterfront uses. Planting areas to clarify auto movement and pedestrian routes could provide a framework for development as well as upgrade the area aesthetically.

- o South Franklin Area. The area between Juneau Cold Storage and the Ferry Terminal is severely limited in terms of topography. Located at the base of Mt. Roberts it is subject to severe avalanche and landslide hazards. Public access is from South Franklin, which is limited to narrow sidewalks in this area. Public access to the waterfront is presently limited in this area.

Since the area predominantly consists of structures which are in poor condition, it is highly susceptible to change within the next five years. However limited in landside area, the potential exists for downtown uses oriented to the pedestrian and boater to expand into this area. Short term parking could be accommodated at the Ferry Terminal.

The area south of the Ferry Terminal along South Franklin is also limited in terms of land area and is within the avalanche-landslide hazard zone. Constrained heavily by upland steep slopes, it is all under one ownership, which is a definite planning advantage. Structures along this area are in very poor condition and susceptible to change in the near future. Opportunities for development include dramatic views and continuous waterfront access.

- o Mine Tailings Area. This area currently accommodates two major uses which limit the desirability for development. These include the CBJ Sewage Treatment Plant and the Union

Oil Tank Farm and Fueling Dock. Another constraint to development on the southern and western sides is the extreme wind conditions which occur during the winter.

The north side of this area is somewhat sheltered and suitable for development such as a small boat harbor. Currently devoid of vegetation, there is an opportunity to add to the attractiveness of the entire waterfront area by clearing the trash dump, removing shore debris and planting in strategic areas.

TRANSPORTATION

Opportunities and constraints in the transportation system will affect development on the downtown waterfront.

o Traffic volumes along Egan Drive are peak oriented resulting in a capacity deficiency during peak periods. The effect of this peak constraint works against continued development along the corridor of peak oriented land uses. Offices generate an extremely high portion of their daily traffic during peak hours; typically 18-20 percent. Therefore, further development of this type of land use would be unadvisable given the existing circulation patterns and peaking characteristics of Egan Drive traffic. A transportation management program to reduce the concentration of travel during the peak hours could (and should) be implemented to allow further development of office type uses without unacceptable traffic impacts. In a sense, the peak hour limitations on Egan Drive may be considered an opportunity in that this presents an incentive to develop transit and ridesharing programs. However, until such programs are implemented, and become successful, further development of peak oriented land uses is constrained.

- o Traffic on Egan Drive is moderate during off peak periods resulting in minimal constraints to traffic. Land uses which generate traffic during off peak periods, between 9:00 a.m. and 4:00 p.m., would have lower traffic impacts on the existing street system. Many types of tourist related facilities are less peak oriented, and therefore, more desirable given the existing constraints to peak hour traffic growth.
- o Land uses with many access drives onto Egan Drive should not be encouraged. The current design of the highway provides no left turn storage (such as a two-way center turn lane) to allow effective operation with access drives. Also, access onto Egan is restricted by the Federal Highway Administration. Therefore, waterfront development should occur in a unified manner with combined access at a pre-existing intersection, where possible.

MARKET

The following opportunities and constraints are the outcome of conclusions and implications identified in the market analysis.

- o The development of a causeway to North Douglas Island would lead to eventual relocation of marine industrial users to the Fish Creek area. The vacated space in Downtown Juneau would become available for redevelopment.
- o Although there is a need for improved boat ramp facilities in Downtown Juneau, access to the Harris Harbor ramp will be hindered further because of planned expansion by the University of Alaska.

- o If the Gold Creek area is developed as planned, there is little need for additional hotel, retail or waterfront office development elsewhere along the downtown waterfront within the next five years. In addition, a second cruise ship berth at Gold Creek and consolidation of State ferry use to Auke Bay would allow potential redevelopment of the existing downtown ferry terminal.
- o If Gold Creek is not developed, those uses recommended for that site could be accommodated on another similar area.
- o As population grows, marine cargo volumes will also grow and strain the capacity of existing container-barge terminals unless they acquire space for expansion.
- o The potential loss of cold storage in the area will hamper commercial fishing. This could be partially offset by development of an area for direct sale of fresh fish by fishermen. The cold storage area would be redeveloped.

Preface

Phase 2 of this study is a transitional phase. Its intent is to summarize and focus the data gathered and displayed in Phase 1, and to establish the program and parameters for the delimitation and evaluation of the alternative development concepts in Phase 3. While some information may seem repetitive or redundant, it is repeated only in a way as it may interface with other data from Phase 1 in order to present a brief but comprehensive picture of the existing development climate within the study area and to outline a potential framework for future development on the Juneau downtown waterfront.

Land Use Capabilities

SUMMARY OF ACTIVITY PATTERNS AND USE CONCENTRATIONS

It is the intent of this section to summarize the information generated in Phase 1 into a general discussion of the existing and proposed uses and activity patterns found in each subarea of the Juneau downtown waterfront, and the implications they may have for future development within these subareas.

Boat Basin Area

The primary activity in the boat basin subarea is the two small boat harbors operated by the city. Immediately north of the Aurora Harbor is the city-owned parcel undeveloped except for the Juneau Yacht Club facility. At present, parking is the only other use on the lot and it is rarely used to capacity. The University of Alaska Marine Technology Center is located between Aurora and Harris Harbors. The Marine Technology Center has the capabilities of handling and repairing small boats. Its purpose is to teach boat repair and other marine-related skills. Harris Harbor, located immediately north of the Juneau/Douglas Bridge, includes moorage facilities, a launching ramp, and a seaplane hangar and float. Parking is congested when heavy use is made of the launching ramp. Continued development of the Marine Center will preclude future use of this ramp. Future activities in this area are likely to remain similar to those that exist now.

Gold Creek Area

Existing development in the Gold Creek area includes the twin theaters converted to use for state offices and a new three-story office building. A CBJ maintenance yard and KINY broadcasting facility are also located just to the south of the bridge. The remainder of the area is intertidal and subtidal land owned by the CBJ.

In May of 1983 the CBJ approved the Gold Creek Development Plan which would create 24 acres of developable land by filling the tidelands owned by the CBJ. The plan calls for a cruise ship berth and transient moorage facilities primarily aimed at commercial fishing vessels. Also on the site would be a 300-room hotel; 140,000 square feet of office; a fish market and restaurant; a state aquarium; a retail mall; a specialty retail facility, including 35,000 square feet; indoor and outdoor and plaza and promenade areas; and approximately 500 parking spaces. The Gold Creek plan also notes the potential for future expansion in the area presently occupied by the Standard Oil of California fueling dock. This development would be a major addition to the activities in the downtown area and on the downtown waterfront and would, by itself, satisfy much of the demand for office, hotel, and retail and restaurant facilities in the downtown area.

The U.S. Army Corps of Engineers is currently reviewing the CBJ application to permit filling of the Gold Creek tidelands area and construction of the cruise ship berth. Funds in the amount of \$3,000,000 are currently available for development of the site. If approved, filling of the site could get underway during 1984.

Willoughby Area

The Willoughby area is the only subarea without any frontage on the water. It is included within the study area because of its proximity to the waterfront and the importance of activities that go on in this district to the adjacent waterfront areas.

The Willoughby area is inland from the Gold Creek site just on the other side of Egan Drive. Until recently the land uses in this area were a mixture of retail, housing, motels, and state offices. Land uses and activities in the area are changing rapidly. Within the last year, Centennial Hall has been completed, the Indian Village area has been redeveloped, and several major office buildings have been placed in the area. The 90-unit Park Shore Condominium project is immediately to the north of this area.

In the future it is very possible that additional state facilities will be constructed in the Willoughby area. The CBJ Performing Arts Center and a parking facility to serve the center and Centennial Hall is also proposed. The possibility of relocating the National Guard Armory presently located in the Willoughby area, and replacing it with the Southeast Regional Library, has also been mentioned. Increased office employment in this area would be likely to increase demand for restaurant facilities and other retail uses on the Gold Creek site, at least during daytime hours. The additional nighttime activity and convention and conference activities at Centennial Hall are adding to demand for hotel facilities and restaurants in the downtown area. A performing arts center would also be likely to affect nighttime commercial activity in the downtown area.

Central Port Area

The Central Port area extends from the subport building to Juneau Cold Storage. The area is presently occupied by a mixture of water-dependent and related uses and non-water-dependent and related uses. Activities include State Department of Fish and Game offices located in the subport building, the U.S. Coast Guard dock, NOAA, the Seadrome Annex, and Merchant's Wharf. Marine Park is the focal point of the Central Port area and is a major attraction for both local residents and visitors.

The downtown historic district is to the rear of a portion of the Central Port area. This district is currently used by a variety of people including downtown workers who patronize the shops, restaurants, and lounges during their lunch hours and after work; tourists arriving by cruise ship, particularly during the summer months; visitors coming to Juneau on state legislative or administrative business throughout the year; and residents of the CBJ who come downtown for restaurants and entertainment. The downtown historic district is also used for office space by state and private businesses. In the future, it is likely that the use and activity patterns of the Central Port area will be similar to those presently found because of increasing tourism, economic activity in the downtown area, and population of the CBJ. The level of demand is therefore likely to increase. It is possible that some activities will relocate, as described in the following section. Of particular note are the possibilities for relocation of state offices occupying the subport building and dropping of state leases on a substantial portion of its office space scattered throughout the downtown area.

Increased demand for hotel, office, restaurant, and retail space in the downtown area was assumed during the preparation of the Gold Creek Development Plan. As mentioned previously, a

substantial portion of the additional demand would be accommodated at the Gold Creek site. While the Gold Creek analysis indicated that there would be no significant harm to existing businesses in the downtown area, and that there would be room for some additional growth in areas other than Gold Creek, there was no detailed analysis of the ability of other areas to accommodate restaurant and retail uses. Attention was given to potential existing sites for major office development. The effect of small quantities of office space becoming available as state leases expire, and the relationship to overall demand for office space in the quantities being projected for the Gold Creek site, were not analyzed in great detail. The alternative development concepts to be studied in Phase 3 should consider the possibility for accommodating at least a portion of the uses planned for Gold Creek at other locations on the downtown waterfront and in the downtown area. This would require a restudy and redesign of the Gold Creek Plan to assure that there still would be a marketable mix of activities provided, including the minimum level of retail required for an attractive destination, and an adequate amount of office space to assure the profitability of the entire development. It is possible that the Gold Creek development could be phased in such a way as to allow development of the most appropriate uses at that site, and to accommodate elsewhere facilities for which there is demand in the long term.

South Franklin Street

The South Franklin Street area begins at Juneau Cold Storage and extends to the Foss Alaska barge facilities. Uses along the waterfront at the South Franklin Street area include transient moorage for commercial fishermen and the Alaska Marine Highway System ferry terminal. There is also a mixture of small retail and commercial uses in the area.

possible changes in this area include the potential consolidation of state ferry terminal activities at Auke Bay, thereby eliminating that use on the waterfront. The South Franklin Street area is adjacent to the historic district and could develop as an extension of activities on Franklin Street. Because of the cruise ship facilities located there, tourist-related activities might meet with strong demand.

Mine Tailing Area

Prominent uses in the rock dump area include the Foss Alaska barge facilities, the Union Oil tank farm, an abandoned landfill, a telecommunications disk, and the CBJ sewage disposal plant. A fuel dock serving both large and small vessels is located on the north side of the rock dump. In the future it is possible that the Foss Alaska facilities might relocate to another location on Douglas Island. Foss' existing facilities are near capacity at this time. It is possible, however, that the rock dump area could be planned and developed in such a way as to allow for expanded industrial activities. One problem in this regard is that the owners of a substantial portion of the rock dump have begun reprocessing the mine tailings constituting the rock dump for extraction of gold. It is assumed that once the reprocessing is complete, land would become available for development.

POTENTIAL FOR RELOCATION

Foss Alaska

Representatives of Foss Alaska have indicated that their facilities are near capacity at the present time. The anticipated population growth and increased development in the Juneau area should result in a significant increase in marine cargo traffic. In addition to space problems, the Foss Alaska location on the south waterfront causes truck traffic to and from the facility to move through the downtown area, adding to downtown traffic problems. Cargo operations in and out of the downtown waterfront area are inconvenient for marine operators due to the necessity of coming up the Gastineau Channel and having to return by the same route. The factors described above all contribute to a serious interest in developing a marine cargo facility at another location. North Douglas Island is frequently mentioned as having good potential sites. In order for such a facility to be developed on Douglas Island, it appears that an additional crossing over the Gastineau Channel would be necessary. The relationship between the potential crossing and new port facility is that a majority of the marine cargo coming in to Juneau is transported to commercial facilities in the Mendenhall Valley. It would be inconvenient and could result in traffic problems if this cargo had to be taken southward and over the Juneau/Douglas Bridge and then out the Egan Expressway to the Mendenhall Valley.

A feasibility study of the proposed crossing is currently underway. If the crossing appears to be a realistic possibility, the CBJ will probably initiate studies of potential port locations. These studies would consider navigation, docking, and other port-related uses. If the Foss Alaska facilities on the south waterfront were relocated, a major parcel on the downtown

waterfront would become available for redevelopment and the traffic patterns of the area would be dramatically affected.

Juneau Cold Storage

The owners of the Juneau Cold Storage facility have been studying the present and potential future operations and alternative uses of the facility. Among the uses being considered are continuation of some fish processing activities and renovation for use of part or all of the facility for retail and other commercial uses. The owners have offered the Juneau Cold Storage facility for sale within the past month. Because of the limited amount of fishing and seafood processing activity in the Juneau area and the presence of alternative locations and means of processing, it is unlikely that a major seafood processing operator would purchase Juneau Cold Storage. It is also unlikely that such an operation would be economically feasible in a new location such as the potential new port facility. If the cold storage operation does close down, a major structure with docking facilities would become available on the downtown waterfront. Potential uses of this facility and its relationship to other parts of the downtown waterfront should be thoroughly considered in the alternative development concepts for the downtown waterfront plan. A major issue in considering future uses of the cold storage facility is the structural condition of the pilings supporting it. Preliminary indications are that the pilings are in such bad condition as to require complete replacement, thereby making retention of the buildings themselves doubtful.

Subport Building

The Borough Assembly has approved the use of the existing subport site for the development of a Pioneer Home. If this project is developed as proposed, the state facilities currently occupying the subport site would have to move. One of these state uses, the State Department of Fish and Game, is water-dependent and water-related and would have to find an appropriate alternative location. Other uses of the subport building are primarily warehousing, including container storage for the Department of Transportation and archive storage for the Departments of Administration and Legislative Affairs, and could be located away from the water. The Department of Military Affairs for the State of Alaska also uses the building for offices and states a need for water access to boats, including haul-out facilities for repairs. This latter function might also be consolidated elsewhere on the waterfront. The use of the site for the Pioneer Home is currently being reconsidered due to cost estimates in excess of those originally anticipated. One of the major reasons for the higher cost is the previously unanticipated expense of relocating state facilities currently using the site.

State Offices

Due to the uncertainty that existed for so many years concerning the capital move issue, the State chose to lease rather than construct office space. This leased space is located throughout the downtown area and is generally in existing buildings, many of which have been converted from their previous commercial or residential uses. State government employment grew rapidly during the past decade, so the amount of leased office space is substantial. The Alaska Department of Transportation and Public Facilities is currently evaluating office space requirements

in Juneau in view of the decision to retain Juneau as the capital. Major objectives of the study are to determine the future space requirements of State offices, develop a program for the physical consolidation of departments and divisions now scattered in various locations, and determine public/private responsibilities for their development. It is highly probable that new office facilities will be constructed in Juneau and that offices and employees currently dispersed in relatively small leased spaces will be moved to new locations. As these smaller leased spaces are dropped by the State, they will become available for some form of private use.

Petroleum Facilities

Petroleum facilities are found at two locations in the downtown area. Union Oil has storage tanks on the AJ rock dump and Standard Oil of California has a dock and short pipeline leading to storage tanks in the midst of the downtown area. One use of the oil in these tanks is as fuel for the reserve generating facility of Alaska Electric Light and Power (AEL&P). Most of the capacity is general bulk storage including the largest supply in the area for heating fuel. Standard Oil leases the land for its storage tanks and dock facility from AEL&P. The lease on these facilities runs out soon (the exact date is unavailable); and there is at least some level of interest in an alternate location for part or all of this complex (support facilities would be easier to relocate than the tanks themselves). One location might be the potential new port facilities. If the Standard Oil fueling dock were eliminated, a significant waterfront parcel would be available for development. Because of its location next to the Gold Creek site, it has been discussed as a possible expansion area for the Gold Creek development. Development should be compatible with the Gold Creek site and with other uses along the downtown waterfront and in adjacent upland areas.

DEFINITIONS OF WATER-RELATED AND WATER-DEPENDENT USES

Under the Alaska Coastal Management Program and the Draft CBJ Coastal Management Program, priority is placed on water-dependent and water-related uses of coastal areas. The definition of these uses established by the State of Alaska is as follows:

"Water-dependent means a use or activity which can be carried out only on, in, or adjacent to water areas, because the use requires access to the water body." (6AAC 80.900)

"Water-related means a use or activity which is not directly dependent upon access to a water body, but which provides goods or services that are directly associated with the water-dependents and which, if not located adjacent to water, would result in a public loss of quality in the goods or services offered." (6AAC 80.900)

Examples of water-dependent uses currently in existence on the downtown waterfront include the Alaska Steamship docks and the Foss Alaska operations. An example of a water-related use on the downtown waterfront is the Juneau Cold Storage operation. Uses such as the Merchant's Wharf and the Seadrome Annex are not water-related or water-dependent except for floatplane auxiliary uses. While public access to shoreline areas is a major objective of the Alaska Coastal Management Program, uses such as Marine Park are not strictly within the definition of water-related or water-dependent. A fishing dock or boat launching facility, on the other hand, would be.

The CBJ Coastal Management Program designates the downtown waterfront area as an "Area Meriting Special Attention" (AMSA) under provisions of the Alaska Coastal Management Program. The

primary reason for the AMSA designation is a recognition of the uniqueness of existing and potential development in the downtown waterfront relative to other parts of the CBJ coastal area. This uniqueness requires special attention in considering the uses appropriate to the downtown waterfront and the way in which water-relationship and dependency characteristics should be handled.

WATER RELATIONSHIP OF FUTURE ACTIVITIES ON THE DOWNTOWN WATERFRONT

The downtown waterfront area represents a unique segment of the CBJ's coastal area. Uses along this waterfront and on its upland area are the most varied and intense in the CBJ. There are local, state, and federal offices, and facilities, private offices, small boat marinas, docking facilities for large vessels, retail and commercial uses, housing, hotels, restaurants, a fish processing plant, and warehousing facilities. Some of the uses on the downtown waterfront are water-related and dependent and some are not. There is no remaining natural shoreline in the area.

The CBJ has made clear in the draft Comprehensive Plan and Coastal Management Program its intention of maintaining the downtown area as the civic, economic, and cultural center of Juneau. The downtown area is also expected to provide an attractive setting for the state capital and for the many business visitors and tourists who stay in and use the downtown area. The CBJ has also expressed its desire to see additional housing developed in the downtown for the convenience of residents who desire close-in housing and to maintain a variety of activities in the area at all times.

There will continue to be demand for use of the downtown waterfront by water-related and water-dependent activities. Examples include docking for cruise ships and Coast Guard vessels, transient moorage for commercial fishing boats and pleasure craft and float plane docks. However, the demand will grow very little and eventually in some cases may actually decline. Although space required for cargo handling is growing, Foss Alaska may relocate to another site. Other uses such as seafood processing and cold storage may also disappear. The net result would be an increase in available land along the waterfront.

In order to maintain a diverse mix of activities, some communities reserve their coastal areas for either water-dependent or water-related uses. Without such restrictions, these uses might be displaced by other uses which are more economically viable but do not need to be adjacent to the water. Since there are limited opportunities for major water-related, or water-dependent industrial or manufacturing uses in downtown Juneau, development along the downtown waterfront, therefore, may focus more on public access and water-oriented uses in combination with more financially feasible uses such as retail and residential.

Although public access to the waterfront and water-oriented park/recreation facilities are not defined as water-dependent or related (except for fishing and boating facilities), the standards of the Alaska Coastal Management Program identify the maintenance and increase public access and recreational use of the coastal area as a high priority (6AAC 80.060). Because large numbers of visitors and local residents use the downtown area at all times of the day and year, and because of the scenic and physical qualities of the downtown waterfront, provisions for public access and use of the waterfront should be a major element of the plan. Public access and park/recreational uses on the downtown waterfront should be given a high priority along with water-dependent and water-related uses in land use designations and development plans for the area.

The downtown waterfront plan should develop a concept of appropriate uses for that specific area that goes beyond the general definition of water-related and water-dependent uses. An approach that should be considered is to allow water-oriented private uses to be developed on the waterfront on the condition that they include and/or support a certain level of water-dependent and water-related uses and public access and use elements. For example, a restaurant facility oriented to views of the waterfront area might be allowed if it maintained facilities for transient moorage or boat rentals and charters or air taxis, and included public walkways and viewpoints on the water side of the structure. Another example would be a mixed-use building including retail shops, offices, a seafood market, and restaurant. Design guidelines and review procedures would assure the water orientation of the structure and its compatibility with other waterfront uses and the upland area to its rear. It might be required to preserve a certain percentage of its on-shore space for water-dependent and water-related uses, such as backup facilities for cruise ship docking and marine equipment and repair businesses.

In identifying appropriate types and levels of water-dependent and water-related uses that would be supported by water-oriented development, consideration should be given to treating different areas of the waterfront separately. For example, it might be that offices and residential uses could be appropriate in some areas but not others. Public access and use requirements might also vary, depending on the area and type of development. The level and type of water-dependent and water-related uses could also vary with location and type of development.

In summary, it is evident that some of the historical water-dependent and water-related uses on the downtown waterfront are no longer feasible in that area or perhaps in the entire Juneau area. There are some that will continue to be vital elements of the downtown waterfront and

that must be maintained. Some of these require economic subsidy from the public or other activities sharing a site. Public access and use of the waterfront is a high priority. Along with uses meeting the legal definition of water-dependent and water-related uses on the downtown waterfront, there are additional uses which, if carefully conceived for their water orientation and their relationship to surrounding uses, can enhance the public enjoyment of the waterfront and support water-dependent and water-related activities.

Action Areas

Synthesis of the information generated in the previous inventory and analysis phase has resulted in the identification of areas along the waterfront with development potential (Figure 1-16). The major characteristics of the property considered in identifying this potential are a combination of vacant land; vacant buildings or buildings in poor condition; property presently in transition, i.e., for sale, likelihood of moving, etc.; publicly owned land; and land presently underutilized or with inappropriate uses easily located elsewhere, away from the waterfront itself, i.e., surface parking, dead storage, maintenance yards, etc.

Those areas suitable for development or redevelopment that were contiguous, adjacent, and with similar characteristics were aggregated into development Action Areas (Figure 2-1). The following, along with Table 2-1, is a brief description of the conditions and potentials of each Area.

1 AURORA HARBOR NORTH

This five- to six-acre peninsula is owned by the City and Borough of Juneau and defines the northern boundary and protective breakwater of the Aurora Basin. The area is predominantly vacant except for a small meeting and office facility for the Juneau Yacht Club. Further north the Egan Expressway comes down to the water's edge with no significant land areas seaward.

The site is well suited for development of public boat ramp with ample room for support parking and trailer storage. The Yacht Club and its parking could still be accommodated on site and integrated into a public park and open space amenity developed on the point to the west. Some

fill might be required to keep the potential park area above high tides. Access to this area would be from the Egan Expressway to the south, through the parking area for Aurora Harbor.

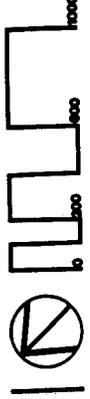
2 AURORA HARBOR SOUTH

This three- to four-acre area comprises the peninsula which separates Aurora Harbor from Harris Harbor to the south. The majority of the peninsula is occupied by the University of Alaska Maritime Center, including small boat transient moorage and haul-out facilities. The northernmost portion of the site is owned by the CBJ and houses the harbormaster's office, a dock, and access ramps to the moorages and parking. On the eastern portion of the site along Egan Expressway are a series of commercial buildings, many of them vacant. Across Egan is the Juneau-Douglas High School and attendant structures.

The site is well suited for its present uses. The University of Alaska will continue to develop its Maritime Center and should consider the possibility of physical and programmatic interaction with adjacent public activities. Other suitable uses for the site would include boat-oriented retail, such as marine supplies and a chandlery. This central location is ideal for the harbormaster's office and perhaps a relocated Juneau Yacht Club. Public access with viewing possibilities is a strong potential given all the interesting activity in the area. Access to the area would be directly from Egan Expressway.

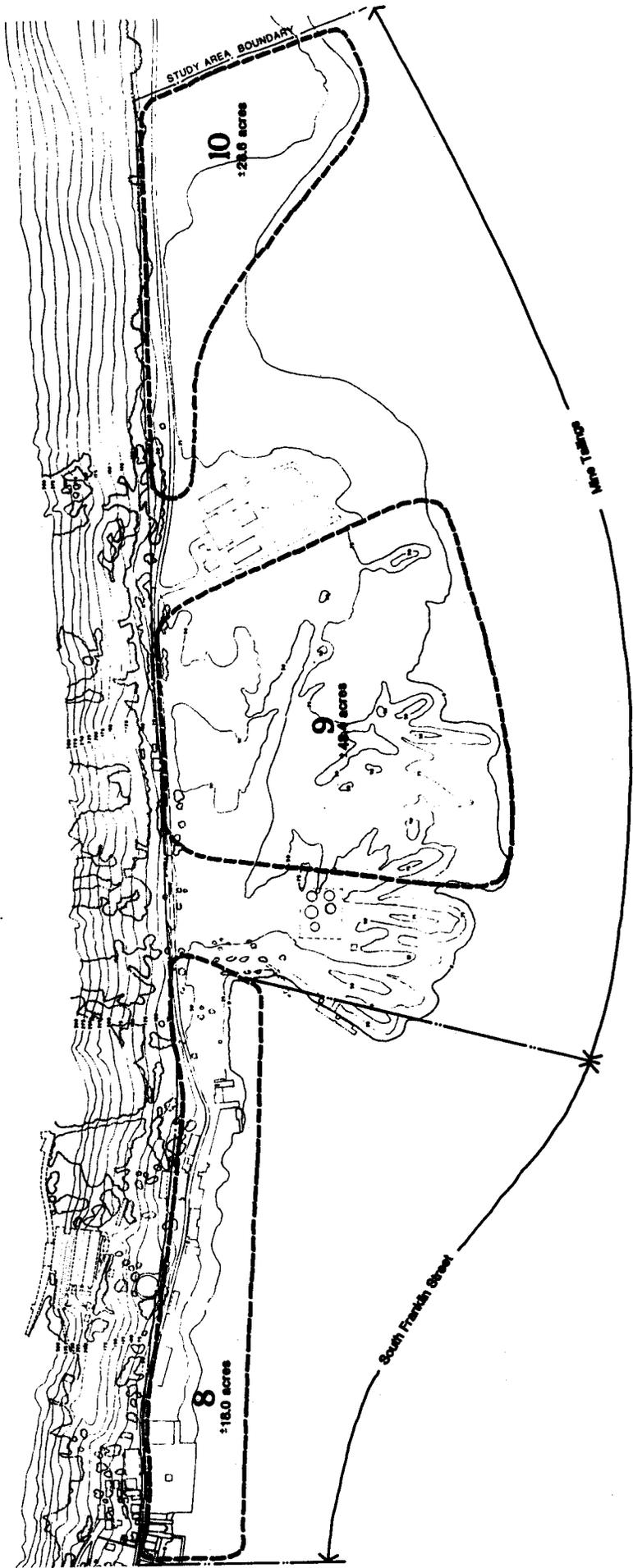


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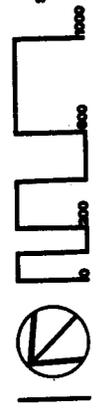


DOWNTOWN WATERFRONT STUDY | Action Areas
 City and Borough of Juneau |

Figure 2-1A



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DOWNTOWN WATERFRONT STUDY | Action Areas
 City and Borough of Juneau

Figure 2-1B

3 JUNEAU/DOUGLAS BRIDGE

This seven-acre area to the immediate south of the bridge access ramp is occupied by the CBJ maintenance storage and staging area, as well as several small, deteriorating single-family houses, many others of which have already been demolished. The southern boundary to this area is comprised of very intensive office uses. To the east, across Egan Expressway, is the Park Shore residential complex. The western tip of the property is owned by the CBJ.

Potential exists here for creation of a public park and the possibility of a public boat ramp with support parking. Other compatible uses might include additional office space and/or high-density residential use. Access to the area would again be directly from Egan Expressway.

4 TIDEFLATS

This Action Area coincides with the site under consideration in the Gold Creek Development Plan. The uses and activities proposed for this site have been outlined above. The uses and plan configuration as delineated in the Gold Creek Development Plan will be reevaluated in the context of the overall Downtown Waterfront Study and will be explored in the next phase of this study: Development Concepts.

5 WILLOUGHBY UPLANDS

This twenty-acre Action Area is cut off from the actual waterfront by the Egan Expressway. It is a mixed-use area in transition and adjacent to several activity areas of unique character, including the capital area, downtown Historic District, Gold Creek, and the waterfront.

potential development of this area would include uses compatible and supplementary to these surrounding activity centers, and that would support their existence. For example, a residential neighborhood in this area would support retail uses in the downtown, make use of public facilities and open space along the water's edge, and would serve office uses of the government center and at Gold Creek. Parking structures serving these activity centers would also be a potential use for this area. Uses complementary to the conference and convention uses of Centennial Hall, such as hotels, restaurants, and nighttime entertainment including a new performing arts center are a good possibility. Continuation of public and private office uses mixed with other institutional uses is also a possibility as support for the State Capital complex. (The area is designated as part of the State Capital Complex in the Draft Comprehensive Plan.) Access to the area is good because it can be approached from both Egan Drive and Willoughby Avenue.

6 COAST GUARD - SUPPORT

The focus of this eight-acre area is the U.S. Coast Guard facilities including offices, staging area, and deep-draft dock. At the west end is the old subport building with its mix of office and storage uses for the CBJ and State. It is presently being considered for development of a home for elderly citizens. East of the Coast Guard office building are offices, storage areas, and parking lots occupied by NOAA. To the north, across Egan Drive, is Centennial Hall, the new convention facility, the State Office Building, and the Sheffield Hotel.

The area has great potential for development of a cruise ship dock or a Fishermen's Terminal, given the deep-draft docking facility. A Fishermen's Terminal might include a public fish market, net drying and repair areas, gear storage, and some supporting retail activities. A

dock for the State's experimental hydrofoil program would be appropriate here. Additional retail might be appropriate as an extension of the Merchant Wharf complex, perhaps in conjunction with a public park opposite Centennial Hall and the State Office Building. This would require a consolidation or relocation of the NOAA complex. Residential is being considered as a possible use in the area (the Pioneer Home) and should be evaluated further. Office uses would not be appropriate due to increased peak demands they would place on already burdened streets in the area (see Circulation Alternatives) and access could occur only from Egan Drive.

7 STEAMSHIP DOCK

This three-acre area is south of Marine Park and includes the existing steamship dock for moorage of cruise ships, CBJ-owned public and staff parking areas, and Juneau Cold Storage (presently listed for sale). Potential development use would include the expansion of Marine Park to the south on the parking areas as an entry portal for disembarking cruise ship travelers, transition to the Historic District at South Franklin, and forecourt to a redeveloped Cold Storage site. Potential uses for the Cold Storage site would include a fishing terminal and dock as described above, a major public attraction such as an aquarium, or a new retail complex. The site forms the terminus to the Downtown Historic District and waterfront area, is between the two existing cruise ship moorages (Steamship Dock and Ferry Terminal), and is heavily trafficked by tourists and visitors. Potential uses should capitalize on this activity.

Offices, again due to their peak traffic demands, would not be suitable because of restricted and already congested access and egress routes (see Circulation Alternatives).

8 SOUTH FRANKLIN SHORELINE

This area is comprised of a 3,000-foot stretch of shoreline anchored by the terminal for the Alaska Marine Highway System. Between the terminal and the Juneau Cold Storage facility is a mixture of office and retail activities housed in small, rather dilapidated structures on piers, and a public transient moorage facility for commercial fishing vessels. The remainder of the area is housed by barge and trucking facilities or is vacant with decaying piers. Redevelopment of this area is difficult for several reasons, including limited vehicular access due to the narrow, low-capacity road through the area, and narrow upland area backed by steep, potentially hazardous slopes. The area benefits from deep water access.

Regardless of the disposition of the State ferry terminal, it could continue to be used as a cruise ship moorage with the potential of extending this capability further south to handle a second ship. Expansion of the transient moorage facility is also a possibility, including the addition of a boat repair and haul-out facility, as well as the supplementary use of dry boat storage for both smaller commercial craft and pleasure boats. This area might be ideal for tug boat moorages which require little backup area and would benefit from the deep water access. A hydrofoil dock for the State's experimental program would also be appropriate here. Tourist-related retail use might be revitalized between the ferry terminal and the Cold Storage site as a continuum of Historic District activities for visitors and tourists arriving by cruise ship or ferry.

Development of a small boat harbor is an outside possibility if more preferable sites in Auke Bay are not available or forthcoming.

9 AJ ROCK DUMP

This forty-eight acre area is presently vacant. It has the potential to house expanded industrial development such as back-up area for the Foss Alaska Marine facilities, if vehicular access can be improved. It also has potential for a major public facility such as a park with a boat ramp and parking, interpretive center, nature study, walking trails, and other more passive forms of recreation. There is good access to beach and tideland areas.

10 SECOND ROCK DUMP

This twenty-eight to twenty-nine acre area is far removed from downtown activities and suffers from the same vehicular access problems as above. It is presently being used as a sludge disposal site by the CBJ. It might best be set aside for passive recreation including the possibility of a boat ramp serving residential areas further south.

TABLE 2-1
ACTION AREAS

Study Sub-Area	#	Action Area	Acres/ Sq.ft. (000)	Existing Uses	Potential Uses
Boat Basin	1	Aurora Harbor North	5.1 222.2	Yacht Club Meeting Hall Vacant	Boat ramp w/back-up parking Mini Park
	2	Aurora Harbor South	3.8 165.5	University of Alaska Maritime Center including haul-out and boat repair Harbormaster Vacant buildings	Boat-oriented retail Public view point Yacht Club
Gold Creek	3	Juneau/Douglas Bridge	6.6 287.5	CBJ maintenance facilities Residential	Boat ramp w/back-up parking Public park Residential Office
	4	Tideflats	24.3 1,058.5	Chevron oil dock	Office Retail Residential/hotel Public park Major public attraction Ship moorage

TABLE 2-1
(continued)

Study Sub-Area	#	Action Area	Acres/ Sq.ft. (000)	Existing Uses	Potential Uses
Willoughby	5	Willoughby Uplands	18.6 810.2	Office Retail Hotel/Motel Institutional Parking	Residential Office/Retail Parking structure Hotel Performing arts
Central Port	6	Coast Guard/ Subport	8.3 361.5	Coast Guard offices and dock CBJ and State offices and storage Office Parking	Residential Fishing terminal and dock Retail Mini Park Hydrofoil Tugboat moorage
	7	Steamship Dock	3.1 135.0	Juneau Cold Storage and Dock Cruise ship moorage Parking	Fishing terminal and dock Retail Major public attraction Public park (extension)

TABLE 2-1
(continued)

Study Sub-Area	#	Action Area	Acres/ Sq.ft. (000)	Existing Uses	Potential Uses
South Franklin	8	South Franklin Shoreline	18.0 784.1	Office/Retail Ferry terminal Public moorage facility Shipping terminal Barge moorage Residential Vacant land	Cruise ship moorage Public small boat harbor Retail Boat repair and haul-out with dry boat storage Hydrofoil Tugboat moorage
Mine Tailings	9	AJ Rock Dump	48.4 2,108.3	Vacant	Major public park Major public attraction Boat ramp w/back-up parking Industrial Residential
	10	Second Rock Dump	28.6 1,245.8	Vacant Sludge disposal	Recreation Boat ramp w/back-up parking

Circulation Alternatives

CIRCULATION SYSTEM

The circulation system serving Juneau's Downtown Waterfront in the north-south direction consists mainly of Egan Drive, Admiral Way, and South Franklin Street. Egan is a four-lane arterial with signalization at Main and 10th Streets. Admiral Way connects Egan at Ferry Way and provides a bypass of the central downtown area for large trucks and other through traffic. South Franklin provides access into the Historic District and core area from the waterfront and is one-way northbound.

Egan Drive is the only arterial connection into the limited road network serving the outlying City and Borough. A small but increasing number of motorists avoid peak congestion on Egan by following downtown streets over the hill to Twelfth Street and connecting back into the Egan Expressway. The limited geometry and alignment of upland streets may be insufficient to accommodate these increasing volumes. Therefore, traffic volume growth to and from the southern portion of the downtown can be expected to increase the pressure for signalization and other improvements to Egan Drive. In addition, programs to reduce the concentration of peak traffic will become fiscally (as an option to capital improvements) and operationally more attractive.

The existing circulation system exhibits a number of problems which constrain the potential for waterfront development; some of these are:

- o Cross-street traffic entering Egan Drive experiences extreme delays at unsignalized intersections. This problem can be mitigated by signalization of those intersections

meeting specific engineering warrants.

- o The intersection of Ferry Way/Shattuck Way with Egan Drive has an unusual geometric configuration which can be confusing to motorists. This intersection requires redesign and potentially may require traffic control techniques to regulate the yield of left-turning traffic to northbound through traffic. The CBJ Downtown Street Improvement Design Study has proposed a reconfiguration of this intersection that includes closing Shattuck Way to all through traffic and allowing only service vehicles and transient parking for the Municipal Building. Two control possibilities for the intersection are signalization with a free southbound right turn, or a stop sign controlling northbound through traffic.

- o The segment of South Franklin Street between Ferry and Front Street carries peak-hour volumes near the capacity of a one-lane facility. The current available surface is wider than a single lane but insufficient for effective two-lane operation. The CBJ Downtown Street Improvement Design Study has proposed a reconfiguration of this block to include two 12-foot lanes of northbound traffic flanked by 8-foot parking lanes on each side. This clear designation of two lanes would improve access and operations in the downtown core.

- o The segment of South Franklin south of Admiral Way is substandard in width and design. This street is travelled by large trucks which may reduce the effective width of the street below two-way operations.

PROJECTED CHANGES TO THE CIRCULATION SYSTEM

Planned or proposed transportation-related projects in Juneau will have an effect on downtown circulation and traffic flow. The North Douglas Causeway, currently under study, can be expected to improve traffic operations on the Juneau/Douglas Bridge and at the approach intersections to the bridge. The Egan and 10th Street intersection currently operates at or near capacity during peak periods. This is partly due to high left-turn volumes from the bridge to northbound Egan; therefore, a North Douglas connection can be expected to improve operating conditions at that location.

Site selection for a central business district parking garage is currently being considered by CBJ staff. The parking garage should relieve stress on existing facilities. Location of the structure and placement of access points will effect traffic circulation. The site should be located to the northwest side of downtown, if possible, to minimize traffic volume increases along the waterfront. Optimum site and access drive locations can be expected to slightly reduce traffic volume growth because of a decrease in parking search circulation.

CIRCULATION IMPROVEMENTS

Four circulation alternatives were evaluated during the proposed Gold Creek development planning process, and were reviewed by CBJ staff. The approved concept included additional signals on Egan Drive and implementation of transportation system management programs to reduce traffic peaks. Signalization and management programs would improve access and traffic flow in the downtown waterfront study area. Figure 2-2 shows target intersections which should be tested for meeting signal warrants. (Warrants are usually applied in a pre-design phase.) The signals

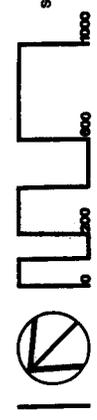
placed on Egan Drive should be centrally controlled to allow progressive movement of heavy peak traffic flows. In addition, long-term measures to improve downtown access may eventually be necessary, such as:

- o North Douglas Causeway: Planning phases of a highway linking the Mendenhall and Lemon Creek areas to North Douglas Island have been underway recently. This connection would remove some traffic from the downtown area, especially turns at the intersection of Egan and 10th Street.
- o Willoughby Tunnel: A circulation concept evaluated under the Gold Creek Traffic Analysis involved a tunnel between Main and Willoughby at Front Street. The tunnel concept could be combined with improvements on Willoughby/Glacier Highway to provide an alternate route to and/or from downtown. Development of the tunnel may not be feasible today but may be considered under certain future conditions, such as simultaneous construction with adjacent development.
- o Ramp Interchange Improvements: Installation of ramps linking Egan Expressway to cross-streets could remove high turning volumes from critical intersections. For example, a grade-separated left-turn ramp from the Juneau/Douglas Bridge onto Egan would relieve stress on the current signal timing. Gold Creek development may allow opportunities for interchange ramping at selected locations.
- o Acceleration Lanes: Lanes on Egan Drive for vehicles entering from the left and right would allow vehicles to merge with less impact on the flow of through traffic. This



Legend
 Existing ■
 Needed □
 Other Possible Locations ○

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DOWNTOWN WATERFRONT STUDY | Traffic Signal Locations
 City and Borough of Juneau | Source: TDA

Figure 2-2

measure could be applied at several downtown locations, such as Willoughby Avenue onto Egan Drive.

- o South Franklin Street, south of Admiral: Improvements to South Franklin Street should be considered as a measure to remove capacity constraints in that section. Potential changes include widening and improving the design or minimizing large truck usage of the street. Removing these truck trips along the downtown waterfront could be achieved only by relocating the containerized cargo facilities to the potential new port facilities.

- o Upland Street: Construction of a new street on the upland (high) side of downtown has been discussed with the CBJ. The concept is in very early stages of development and it is not known exactly where the connections would be made. However, the street would run roughly from South Franklin near the cargo terminal into downtown, possibly near the Ferry Terminal. The arterial would relieve stress on existing inadequate facilities along South Franklin, but may bottleneck again as it intersects back into South Franklin.

- o The consolidation of parking facilities into a planned garage or use of facilities out of the downtown core may be combined with a circulator shuttle. Shuttles are used in some cities where long-term parking facilities are distant from employment centers (beyond walking distances of 4-5 blocks). The shuttle may be operated by Capital Transit or contracted to another operator. This measure should be considered as a transit amenity and evaluated based on availability of parking near major downtown destinations and the cost of such a service (an estimated annual operating cost of about \$45,000).

PLACEMENT OF TRAFFIC GENERATORS

Transportation improvements in downtown Juneau are limited by topographical constraints and high costs for materials and engineering. Therefore, traffic generators and attractors should be strategically located to minimize through traffic on downtown streets. To facilitate this, land uses which generate large volumes should be placed north of Main Street, when possible. Lower traffic generators, or uses generating traffic during off-peak periods, are better suited to south downtown waterfront locations. Construction of a second street connecting the upland side of downtown to the south, or improvements to South Franklin, may ease the restrictions on peak traffic generators south of the city center. The following are identified land uses in high and low peak generator categories.

- o Port and terminal facilities generate relatively low peak-hour volumes but often have a high percentage of trucks, which reduces service levels and may damage streets.
- o Industrial land uses have relatively low generation rates per acre but may be large in size, therefore creating high volumes. These uses must be evaluated on a case-by-case basis to determine total generation, peak characteristics, and mix of heavy trucks.
- o Residential uses, if located south of downtown, would generate traffic in the opposite direction of existing peak flows. Therefore, the additional volume would utilize available capacity in the off-peak direction and would tend to have lesser impacts than commercial uses. (This would not apply to residential development north of downtown.)

- o Marinas typically have relatively low trip rates during weekday peak periods.
- o Parks and recreational facilities sometimes generate high traffic volumes but usually not during weekday peak hours. Such facilities would require case-by-case analysis prior to location along the waterfront.
- o Offices generate high peak direction volumes during heavy traffic periods and should be located away from south downtown sites.
- o Retail uses can generate high volumes, depending on the type of goods sold. Specialty retail shops usually are lower generators than convenience or shopping center facilities. Tourist-oriented specialty shops usually will not create high peak hour volumes.
- o Parking lots and garages generate extremely large volumes during peak periods. Placement of parking facilities south of the downtown core will impose higher peak traffic flow on currently strained facilities. The selected location will have less adverse impact on downtown circulation and the waterfront if it is located at or north of Main Street. This will intercept parking traffic and minimize circulation before entering more congested portions of downtown. The garage should be served by at least two-lane streets and if possible a separate turn lane into the garage should be provided. A separate turn lane would minimize the interference of garage traffic with downtown traffic operations.

The proposed parking locations on the east side of South Franklin Street and at the former Juneau Cold Storage site fail to achieve the maximum benefits to the city. Turns to and

from the garage will create mid-block left-turn conflicts on South Franklin, which may impair access and discourage use of the facility. In addition, these sites require circulation through downtown and along the waterfront, further reducing benefits.

The garage location and access point should be placed to minimize downtown circulation. Improvements to streets and intersections associated with this added circulation could ultimately prove very expensive. At a minimum, South Franklin will require a three-lane upgrade with two-way left-turn lane. An additional lane, separate from through traffic, may be needed to accommodate right turns generated by the garage.

Development Program

The development program for the Juneau downtown waterfront may be divided into three categories:

- o Reserve for future expansion of water-dependent and water-related uses.
- o Private development of other uses.
- o Public facilities or amenities.

Whether these uses can be accommodated will depend on both the amount of space available as well as the benefits and costs of each. Phase 3 of this study will consider the economic feasibility issues in greater detail. The purpose of this section is to present estimates of the amount of space needed and preliminary economic considerations.

RESERVE FOR WATER-DEPENDENT AND WATER-RELATED USES

As part of the market analysis section of this study, little growth was forecast for water-dependent or water-related uses along the Juneau downtown waterfront. Therefore, a reserve for future expansion is not required and the waterfront may be developed with other uses.

PRIVATE DEVELOPMENT

The market analysis forecast future demand for each type of use for private development. As shown in Table 2-2, the Juneau downtown waterfront would absorb 12 additional acres of development by 1987. An additional 18 acres would be developed by 1997. These estimates are

TABLE 2-2

INCREMENTAL NET ACREAGE REQUIREMENT
FOR JUNEAU WATERFRONT

	1983-1987	1987-1997
<u>Private Uses</u>		
Retail	0	.25 - .4
Restaurant	0	.1 - .15
Private office space	0	.8 - 1.15
Housing	12	14.6
Barge terminal	0	2.5
		<hr/>
Total	12	18.25 - 18.8
<u>Public Facilities</u>		
Aquarium	5	--
Combination transient and tug boat moorage		Depends on public policy
Public open space		Depends on public policy
Reserve for future expansion of water-dependent and water-related uses	0	0

Note: Assumes development of Gold Creek and causeway to North Douglas.

developed using density factors shown in Table 2-3 and forecasts for each use from the Market Analysis section.

These are net land requirements. Additional areas may be required for public amenities as well as access and circulation.

PUBLIC FACILITIES

Generally, public facilities are not financially self-supporting. If they were, the private sector would construct them. Public facilities and amenities may be financed either by imposing their cost as a requirement of nearby private development or with public funding. For example, a requirement of developing along the waterfront may be to allow areas for public access and open space. Undoubtedly, this would increase the cost to private developers. The precise impact will vary with location, type of development, and amount of land required.

Using rough rules of thumb, land costs and landscaping represent 25 to 33 percent of total development cost, while developers' required profit is 15 percent of development cost. An increase in developers' site costs of 60 percent would totally eliminate this profit.

If public funding is used, the level of development becomes a matter of public policy. Phase 3 of this study will consider potential sources of funding and apply fiscal analysis to determine the extent in which revenues generated by a facility will offset the costs of operation. For example, new transient moorage will generate moorage fees.

TABLE 2-3

DENSITY ASSUMPTIONS

Use	Density Assumption
Retail	FAR ¹ of .4
Restaurant	FAR ¹ of .4
Private office space	FAR ¹ of 1.0
Housing	25 units per acre
Hotel	50 units per acre
Barge terminal	Acreage was estimated directly

Source: TRA, Shapiro & Associates, Williams-Kuebelbeck & Associates, Inc.

1. FAR = floor area ratio: ratio of allowable gross building floor area to lot area.

SUMMARY

Since expansion of water-dependent and water-related uses is not expected, the Juneau downtown waterfront has the opportunity for redevelopment into other activities without displacing existing users. As shown in Table 2-2, only 17 acres would be needed by 1987 even if the aquarium is relocated from Gold Creek. In comparison, the A.J. Rock Dump site has 72 vacant acres. Although public facilities and amenities could potentially absorb additional acres, their development may be constrained by financing limitations. The cost of some public improvements may be imposed on private developers but this will be limited. Direct public funding will be needed and this will be a matter of public policy.

Development Concept Options

It is the intent of this phase of the Downtown Waterfront Study to delineate and evaluate a series of physical development concepts that respond to the development potentials assessed in the previous phase and reflect the logical alternative combinations of uses and activities suggested therein. While assessing specific development possibilities, it became clear that there are two major variables which will significantly affect the direction of future growth and development on the waterfront and the subsequent emphasis and role that the waterfront will play in the City and Borough of Juneau. It is these variables and their various combinations which will guide the formation of the alternate development concepts.

THE VARIABLES

The first of these variables is the future possibility of a second crossing of the Gastineau Channel between Juneau proper and Douglas Island. The Draft Comprehensive Plan indicates the most likely location of the new channel crossing to be west of Juneau Airport from the Mendenhall Peninsula to the Fish Creek Area on North Douglas. The direct result of a new channel crossing would be to open up North Douglas to development by making it much more accessible to the airport and population concentrations and growth areas in Auke Bay and the Mendenhall Valley. Because of this proximity, the relative abundance of land available, and ease of access for deep draft ships to open water, it is predicted that major port facilities would be developed there and that marine industrial users would seek out or relocate in this area. Those

likely to relocate there would be Foss Alaska for easier expansion possibilities, and Standard Oil of California to be closer to its customers in the Mendenhall Valley. It is unlikely that Union Oil would relocate, though the possibility is certainly an option. The relocation of these major activities from the downtown waterfront would in turn create significant redevelopment possibilities there; and with the marine industrial focus shifted to North Douglas the emphasis and image of the downtown waterfront would change from industrial to a greater focus on commercial and more public access uses. The development concepts will reflect options with and without the causeway.

The second major variable to consider for its potential effect on the downtown waterfront is the proposed Gold Creek Development. As we have shown, if Gold Creek is implemented to its full planned potential, it will absorb a level of activities to satisfy projected development demand in downtown Juneau for approximately the next ten years. While the Gold Creek Development Plan was adopted by the City and Borough of Juneau in May of 1983, it has not yet received permit approvals for diking and filling from the Corps of Engineers. There has surfaced some concern regarding the environmental impacts to habitats caused by filling the tidelands in that area. The final scope and configuration of an approved Gold Creek development will significantly affect allocation of uses and their phasing throughout the remainder of the waterfront. The development concepts will illustrate a variety of development levels for Gold Creek.

There are several other variables on the waterfront that could potentially affect overall development patterns. It is, however, possible to reach tentative conclusions about their status for planning purposes.

The United States Coast Guard and the National Oceanic and Atmospheric Administration operate adjacent facilities in the Central Port Subarea of the downtown waterfront. Each agency has indicated it will remain at its present location and it is assumed that any future expansion or consolidation will occur on their present sites. The Alaska Marine Highway System has indicated its desire to consolidate its facilities at Auke Bay and eliminate service to downtown Juneau. For the purposes of this study, the possibility of keeping limited service to downtown Juneau was kept open with each of the options keeping the Ferry Terminal as at least an alternative use. Juneau Cold Storage is presently for sale and it is not likely that fish processing activities will remain on that site. It has been assumed that the site will be available and completely redeveloped for other more intensive uses. It has also been assumed that the Pioneer Home will not locate on the old subport site and will be developed elsewhere in the downtown area. It was further assumed that the warehousing functions of the subport building may be relocated and the site redeveloped. Other activities for the site have been illustrated in the various development concepts. Finally, the City and Borough of Juneau operates a public facility and road maintenance and storage yard on the waterfront under the Juneau-Douglas Bridge. While indications are that the facility will remain at its present location, it is not an appropriate use for public waterfront property and the development concept options will illustrate other potential activities for the area.

THE OPTIONS

The two major variables delineated above interact together in four different combinations:

1. New channel crossing with Gold Creek developed as planned (with minor modifications)
2. No channel crossing with no Gold Creek development.
3. New channel crossing with reduced development at Gold Creek.
4. No channel crossing with reduced development at Gold Creek.

These alternative scenarios are the framework upon which four development concepts will be formed. The analysis of development potential in the previous chapter indicated that while there will continue to be a demand for use of the downtown waterfront by water-related and -dependent activities, the demand will grow very little and, due to the possibility of marine industrial uses relocating to North Douglas, may eventually decline, with the net result being an increase in available land along the downtown waterfront. There is already vacant and underutilized land along the downtown waterfront, most notably along South Franklin Street. Development of Gold Creek or the new Gastineau Channel crossing would assure this situation to occur.

As a result of this condition, the development concepts are not forced to choose between accommodating different water-dependent or water-related uses, or between public access uses or

economic interests, but rather to study different locations and/or relationships between them and other water-oriented uses for which there are variable amounts of land depending on the scenario chosen. The concepts, therefore, do not deal in alternatives (mutually exclusive possibilities) but rather options (available as a choice) as to how the downtown waterfront should develop based on scenarios clearly in the control of the City and Borough of Juneau.

FIXES

There are certain uses and activity concentrations on the periphery of the downtown waterfront study area that are fixed, viable, and major attractions and generators of pedestrian traffic. They are significant institutions within downtown Juneau and require any potential waterfront development to respond to them. Because of their high visibility and levels of use they have been identified as nodes (convergence of pedestrian movement and activity) around which future development and improvements should focus.

One such node centers on Centennial Hall, the new conference/meeting facility. It lies across Egan Drive from the waterfront and adjacent to the State Office Building. It is desirable that waterfront development concepts appropriately address this significant activity. All of the options presented suggest that the southeastern section of the Willoughby Uplands Action Area be developed as a downtown Civic Center for the City and Borough of Juneau, including provision of a future location for a performing arts center adjacent to Centennial Hall. A waterfront mini-park east of the NOAA complex as a forecourt to this Civic Center with a strong pedestrian connection across Egan Drive along Willoughby Avenue to the State Office Building is also suggested for each option. A second mini-park and pedestrian connection is suggested west of

the Coast Guard Facility with another pedestrian route across Egan at Whittier Avenue. These two mini-parks and major public access routes would provide for a strong relationship between this Juneau Civic Center and the waterfront in an area presently cut off from it due to security reasons at the Coast Guard and NOAA, and thereby adding open space amenity, protecting views, and providing historic continuity, i.e., Juneau's dependence on the water, at this important activity node.

Another such node is Marine Park on the waterfront, adjacent to the Downtown Historic District and contiguous with the public Steamship Dock and cruise ship moorage. All of the options suggest expanding Marine Park across the present open parking lots south to the Juneau Cold Storage site. A tourist orientation facility is suggested for the southern end of the new park. The expansion of Marine Park will accomplish several things. It will provide a more appropriate sense of arrival for tourists than a parking lot; it extends the open space amenity along the entire width of the Historic District thereby reestablishing its contact physically and visually with the waterfront; it provides a forecourt for the Juneau Cold Storage site, thereby providing a stimulus for redevelopment of the site into a major public attraction; it offers a gesture to South Franklin Street presently functionally and visually cut off from downtown activities; and it responds aesthetically to the Downtown Street Improvements Design by reinforcing and complementing the major pedestrian access routes into the downtown along South Franklin, Ferry Way, Shattuck Way, and South Seward Street.

Each of these two major activity nodes is suggested and reinforced in each of the following options. Other less intensive nodes are also suggested, but differ in type and location from option to option.

One other section of the downtown waterfront is treated similarly in each option, and that is the Boat Basin Subarea consisting of the Aurora Harbor North and Aurora Harbor South Action Areas. Each option suggests that the Aurora Harbor North Action Area be developed into a public boat ramp with adequate support parking and public access in the form of a mini-park along the shoreline. The Aurora Harbor South Action Area is adjacent to the University of Alaska Marine Technology Center between the two public boat basins. All the options suggest reinforcing this area as the center of surrounding marine activities, including consolidating harbormaster uses; providing marine-oriented retail such as a chandlery and boat supply sales; providing strong pedestrian interaction and connections to the Technology Center and the public schools across Egan (new pedestrian bridge); providing pedestrian promenades along the uplands of the marinas; and providing a public access, mini-park overlook at the western point of the Action Area.

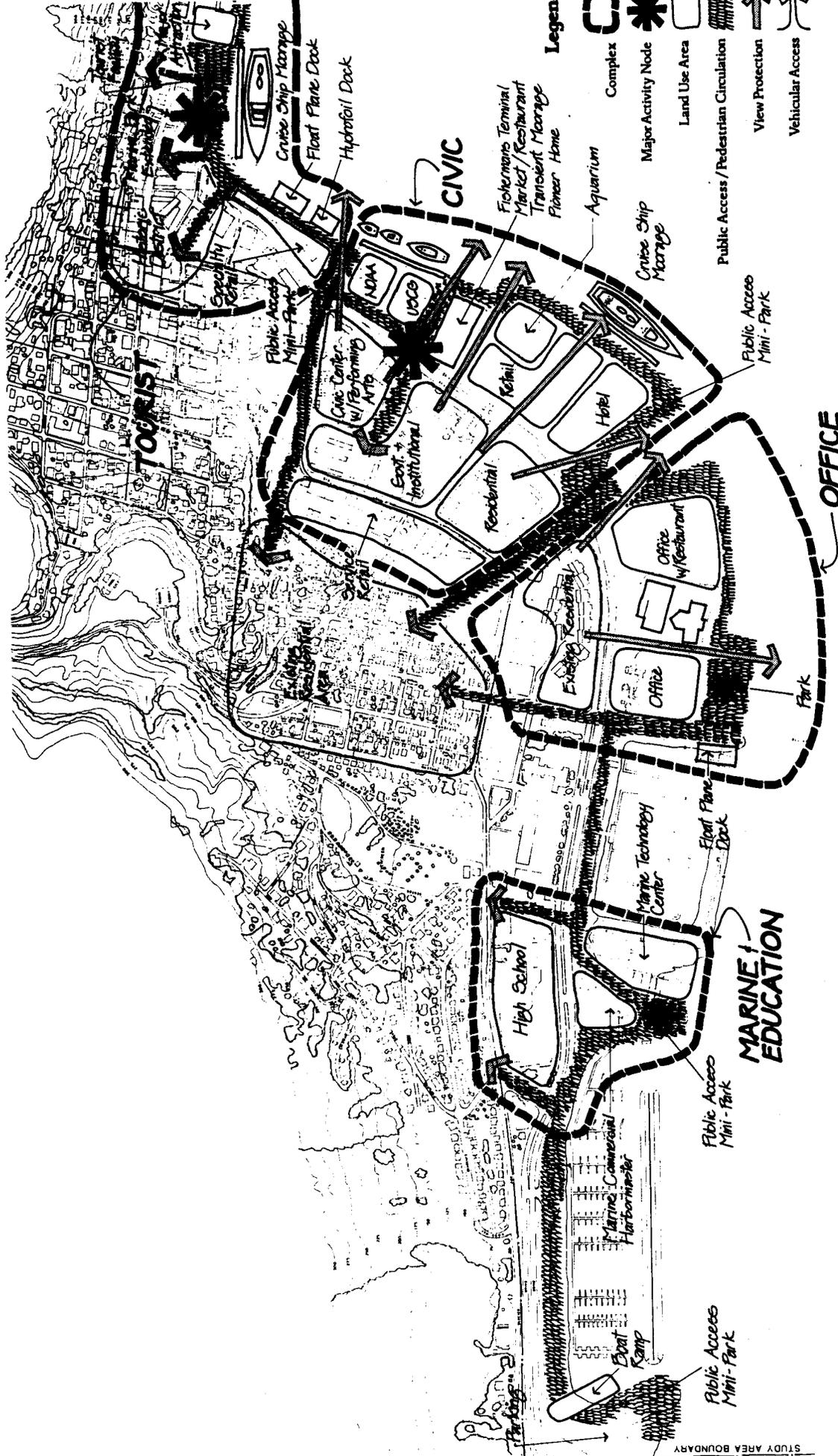
The remaining subareas suggest different combinations of uses and activities depending on the combination of variables illustrated by each option.

The final similarity from option to option is the suggestion of a public, pedestrian promenade along the entire waterfront at the water's edge except in those cases where security (U.S. Coast Guard and NOAA) or public safety (industrial uses) would discourage it. In those cases the promenade would relocate behind these uses, on the water side of the major access road, i.e., Egan Drive, Marine Way, and South Franklin Street. Visual access is to be kept open wherever possible.

OPTION 1

This development concept is based on the scenario of a new Gastineau Channel crossing being developed to North Douglas Island and Gold Creek being fully developed as planned with the minor modification of widening the mouth of the creek from Egan Drive south. It assumes that with the new causeway, Foss Alaska and both Standard Oil of California and Union Oil would relocate to a new marine terminal at North Douglas. This is a full growth option opening up new areas to development, along with the greatest potential for redevelopment of public access and water-oriented activities on the downtown waterfront due to relocation of some water-dependent and -related uses elsewhere.

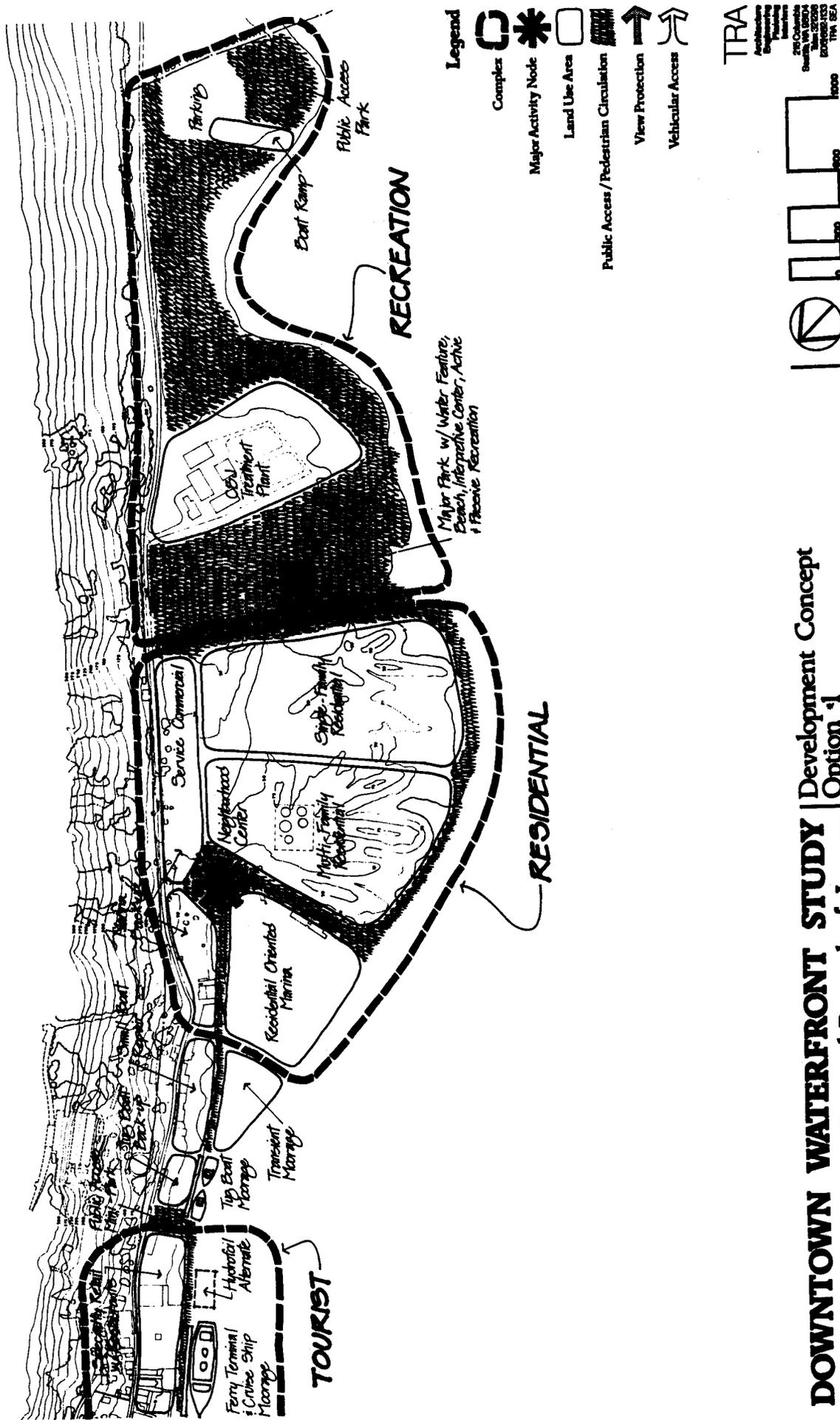
The most significant characteristic of Option 1 (see Figure 3-1) is the provision of a major downtown residential community at the Mine Tailings Action Area. This is made possible by the relocation of the existing industrial uses and the development of commercial uses on the Gold Creek fill site. The new residential community would be composed of approximately 300 dwelling units from single-family detached to townhouse type dwelling clusters. Such a community would require a "community center" as a focus for all its activities. This center would result in a third major node along the waterfront in this option. The concentration of housing suggested would require an amount of service retail, as shown on the concept along South Franklin to the east. A pleasure boat marina is suggested for the relatively sheltered water area north of the mine tailings peninsula with support activities and parking on the adjacent uplands to the east with access from South Franklin. The new node becomes the focus for all the new development in this area.



DOWNTOWN WATERFRONT STUDY | Development Concept
Option #1
 City and Borough of Juneau

Figure 3-1 A

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DOWNTOWN WATERFRONT STUDY | Development Concept | Option '1'
 City and Borough of Juneau

Figure 3-1 B

Adjacent and to the south of this residential area, a major water-oriented park is delineated. A beach and nature interpretive center are possible features of this park. More active uses, such as a ballfield, might be accommodated. Further south on the Second Rock Dump Action Area is delineated a boat ramp with support parking and a public access park. Along with the former park, this area becomes a major public recreational resource complex for the new residential area and the City and Borough of Juneau.

The remainder of South Franklin to just south of the Ferry Terminal is set aside for water-dependent uses including marina support space, small boat repair, and tugboat moorage to serve the cruise ships. The Ferry Terminal becomes a redeveloped cruise ship moorage (still allowing ferries to dock) and serves as the focus of a specialty retail/restaurant complex with a tourist orientation. The Juneau Cold Storage site is identified as a major attraction (as yet undesignated) to form the centerpiece, along with Marine Park, of a major tourist-related complex.

The Gold Creek site, while developed to its full planned potential, has been altered slightly to accommodate a 200- to 300-foot channel from the new shoreline to Egan Drive. With Standard Oil relocating, the complex expands to that site and connects directly to the subport site which is delineated as a Fisherman's Terminal, market, and restaurant that becomes an integral part of the Civic Center node. The site east of Gold Creek retains its hotel, retail, cruise ship, and Aquarium uses, with the Aquarium relocated to be adjacent to the Fisherman's Terminal and more integrated with the Civic Center complex. The site west of Gold Creek retains its office uses. The CBJ maintenance facility along with the vacant land and remaining residential use in the Juneau/Douglas Bridge Action Area is designated as office use with a public park under the

bridge along the water. Thus the area between the bridge and Gold Creek becomes a new, waterfront office complex with a focus on the public park and a major pedestrian connection to existing residential areas across Egan Drive. The Gold Creek corridor itself is suggested as a major pedestrian route connecting the waterfront promenade to existing residential areas.

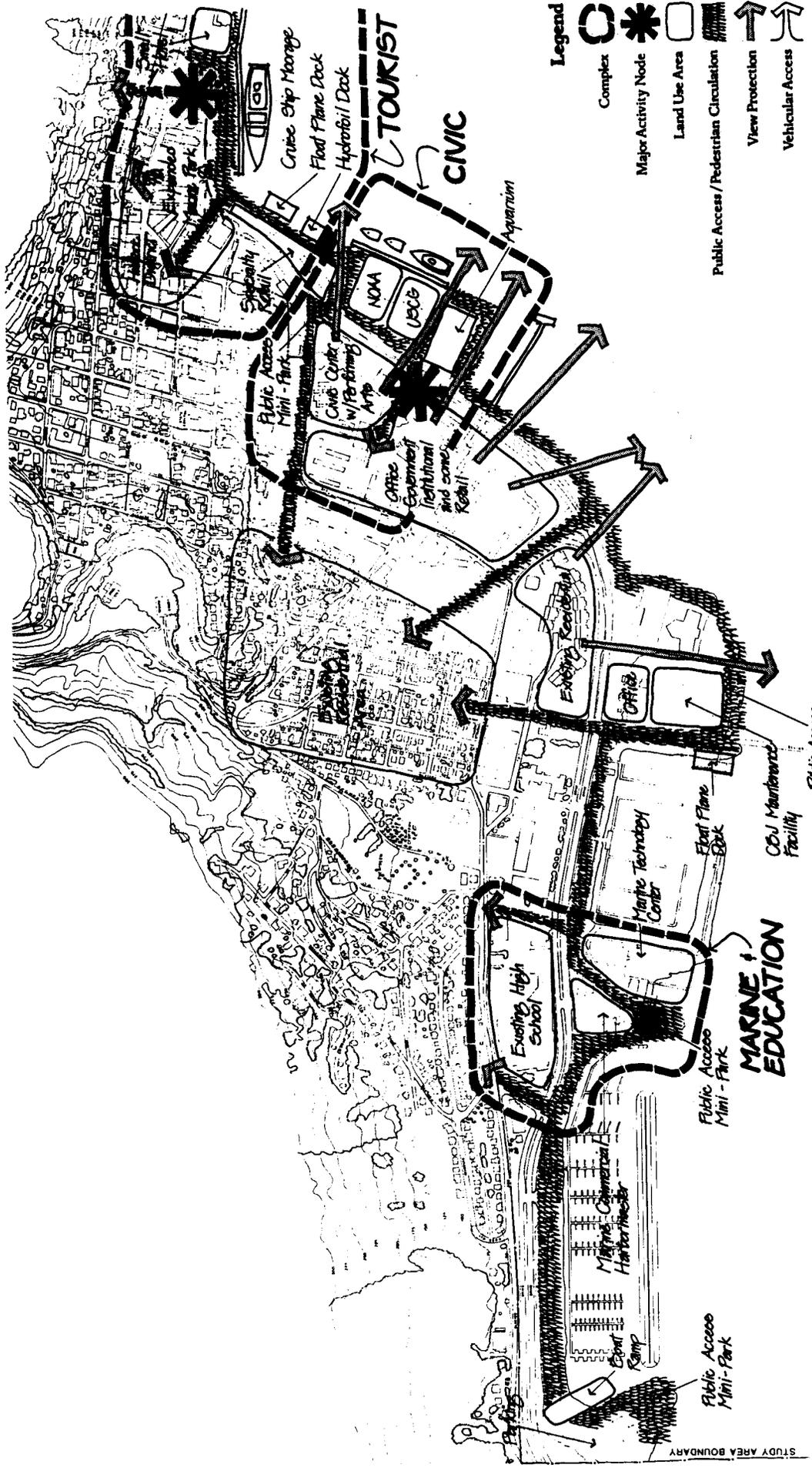
The Willoughby Uplands Action Area is designated as governmental/institutional around the suggested Civic Center; residential toward Gold Creek to supplement the Park Shore neighborhood across the creek; and service retail along Willoughby Avenue itself.

In summary, this option offers the most relocation, the most intense redevelopment, and results in a series of six public activity nodes along the waterfront: marine/education; office; civic; tourist; residential; and recreation. It offers three potential cruise ship moorages.

OPTION 2

This development concept illustrates the opposite extreme of the previous one and is based on the scenario of no second channel crossing being developed and no implementation of the Gold Creek Plan in any form. The concept assumes that major industrial waterfront uses, i.e., Foss Alaska, Standard Oil, and Union Oil, will remain at their present locations, and that future growth and expansion must occur on or adjacent to their present sites. This is a minimal growth option providing the least potential for redevelopment of sites for water-oriented and public access activities on the downtown waterfront.

The most significant characteristic of Option 2 (see Figure 3-2) is the setting aside of a large amount of the AJ Rock Dump Action Area as a reserve for industrial expansion and the creation of

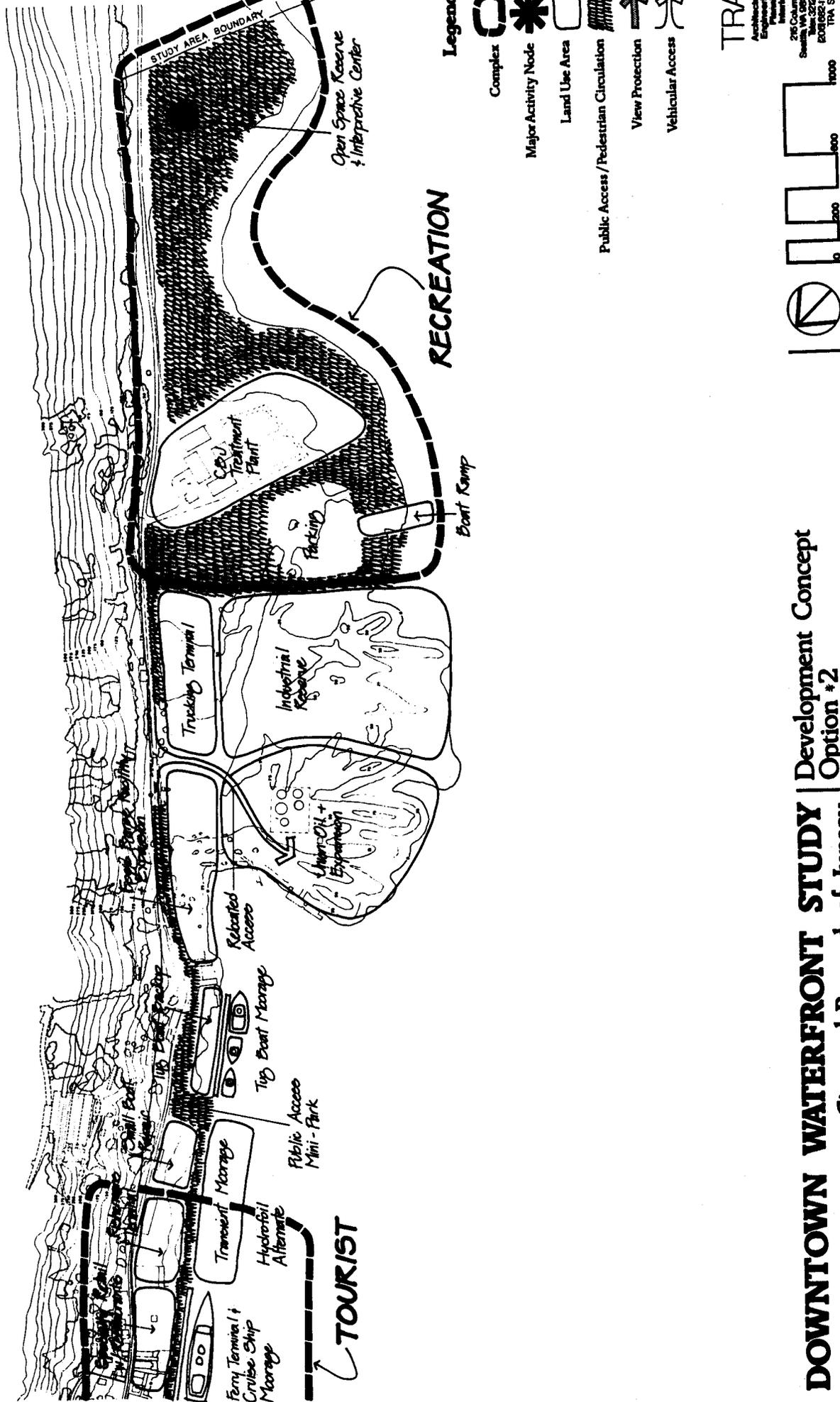


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DOWNTOWN WATERFRONT STUDY | Development Concept
 Option #2
 City and Borough of Juneau

Figure 3-2 A



DOWNTOWN WATERFRONT STUDY | Development Concept
 Option #2
 City and Borough of Juneau

Figure 3-2 B

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an industrial complex in that area. It indicates a relocation of the Union Oil access road further south to allow for expansion and consolidation of Foss Alaska, including its barge and trucking facilities, to the south along South Franklin Street. Union Oil would expand on its present site adjacent to its existing facilities.

South of an industrial reserve area, the remainder of this Action Area is delineated as a public park with a boat ramp, support parking, and other more active recreational activities, such as a ballfield. Further south on the Second Rock Dump Action Area, a small interpretive center might be developed with the land mainly held in open space reserve for future recreational (or perhaps industrial) uses. As in Option 1, this area becomes a significant recreational resource for the City and Borough of Juneau.

The remainder of South Franklin Street to the Ferry Terminal site is delineated for industrial uses as a part of the industrial complex described above, and would include a tugboat moorage facility for both barges and cruise ships; a small boat repair yard with an associated small marina for transient moorage; and a Fisherman's Terminal just south of the Ferry Terminal. The Fisherman's Terminal, including a market and restaurant, would act as a transition between the industrial complex and specialty retail/restaurant uses suggested for the Ferry Terminal site, north to the Juneau Cold Storage site. The Ferry Terminal again becomes a redeveloped cruise ship moorage (still allowing ferries to dock) and the Juneau Cold Storage site is identified as a location for a small (150-room) tourist hotel. Marine Park and the hotel form the focus for a tourist complex similar to that in Option 1, but smaller in terms of support retail and without a major use attraction.

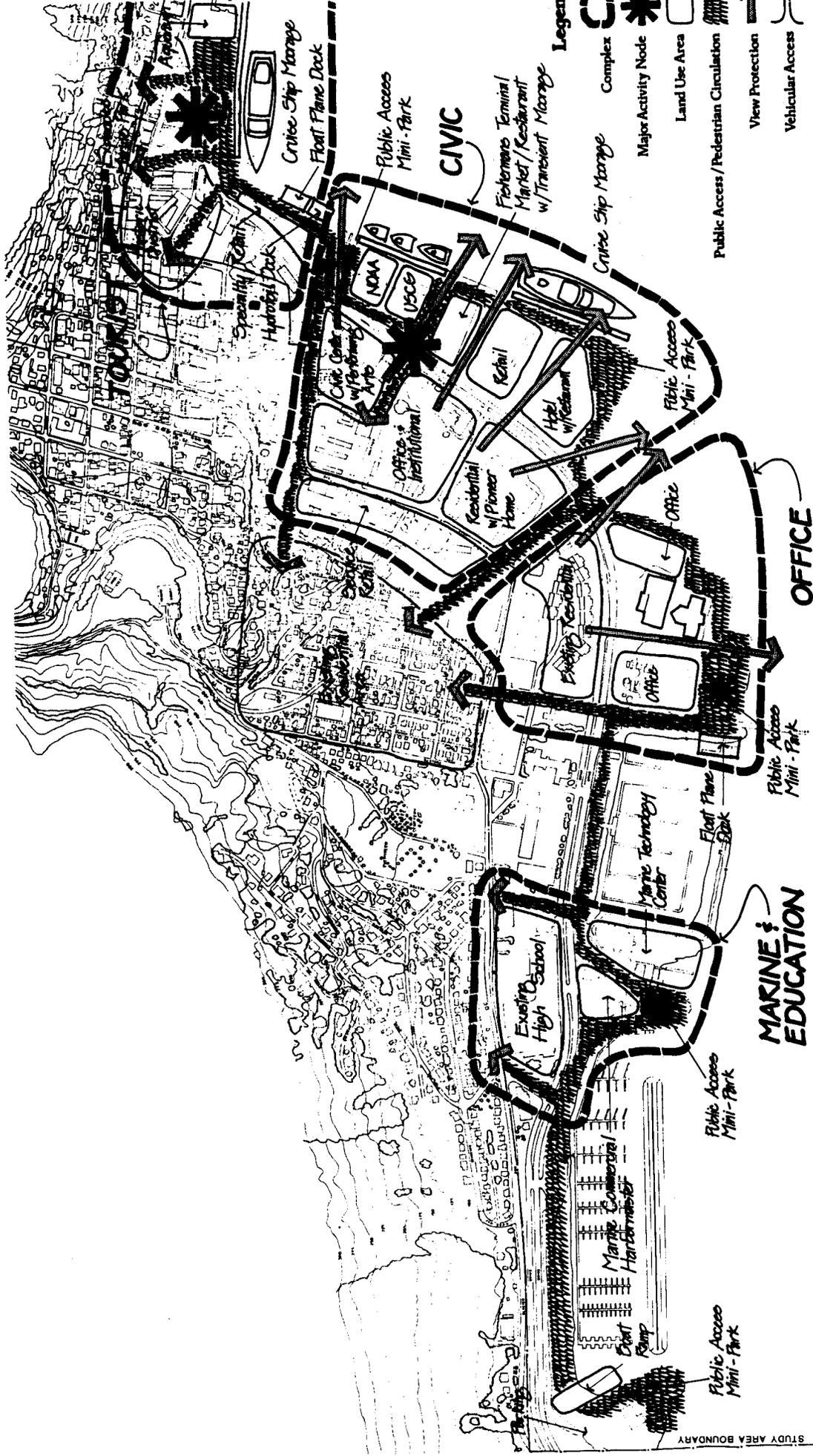
The Gold Creek site is not developed, but an aquarium is recommended for the support site, further consolidating a smaller yet still highly visible and active Civic Center complex. The Willoughby Uplands Action Area is designated generally as governmental/institutional supplementary to the civic center including both support office and retail uses. The CBJ maintenance facility remains at the Juneau/Douglas Bridge Action Area with some office use possible to the east along Egan Drive and a public access promenade provided along the water's edge. Pedestrian connections to existing residential areas are still suggested including one along the Gold Creek Corridor.

Option 2 offers the least relocation, the least redevelopment, and results in four public activity nodes along the waterfront: marine/education; civic; tourist; and recreation. It offers only two cruise ship moorage locations.

OPTION 3

This development concept is based on the scenario of a new Gastineau Channel crossing being developed to North Douglas Island and a reduced Gold Creek Plan being adopted and implemented. The concept assumes that Foss Alaska and Standard Oil of California would both relocate to a new marine terminal at North Douglas, but that Union Oil would remain and expand at its present location. This is a moderate growth option providing a mix of water-related, -dependent uses and water-oriented, public access uses, with an emphasis on providing some housing on the waterfront in lieu of industrial uses.

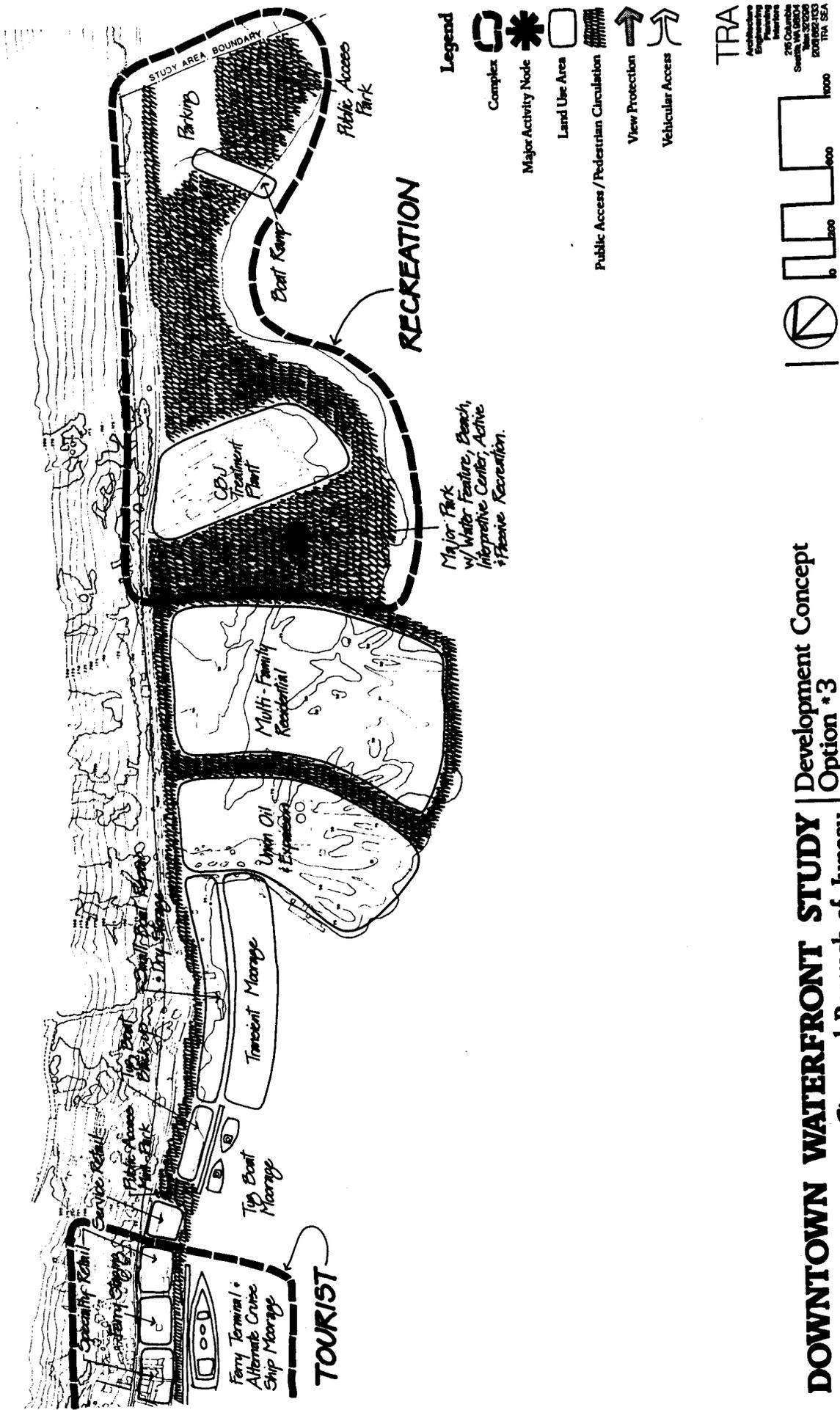
The major characteristic of this option (see Figure 3-3) is the attempt to mix housing and industrial uses along the waterfront without either being dominant. It is probably the most



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DOWNTOWN WATERFRONT STUDY | Development Concept | Option #3
 City and Borough of Juneau

Figure 3-3 A



DOWNTOWN WATERFRONT STUDY | Development Concept
City and Borough of Juneau | Option *3

Figure 3-3 B

balanced of all the options in terms of mixes of uses along the downtown waterfront. This is most evident at the Mine Tailings Subarea where this option suggests a mixture of industrial, housing, and recreation uses. Union Oil remains at its present location. Because other industrial uses will relocate to North Douglas, the AJ Rock Dump Action Area just to the south of Union Oil is delineated as multi-family housing with an open space buffer strip between it and the oil terminal.

Adjacent and to the south of the residential area a major, water-oriented park is delineated as in Option 1 and uses similar to that option are suggested. Also as in Option 1, the Second Rock Dump Action Area further south is delineated as a boat ramp with parking and a public access park.

North of Union Oil, along South Franklin, is a continuation of industrial uses, including a small boat dry storage and repair area with an associated transient moorage, and a tugboat mooring area, again serving barges as well as cruise ships. Just to the north of the tugboat area is a public access point acting as a buffer between the industrial uses and more public uses further north. These would include a new cruise ship moorage and Ferry Terminal as a focus for a retail/restaurant complex of tourist orientation. An aquarium is suggested for the Juneau Cold Storage site and it, along with Marine Park, forms the focus for a major tourist complex as in Option 1.

The Gold Creek site accommodates a reduced development plan and is shifted eastward to occupy the relocated Standard Oil's site. The site east of the creek would accommodate a hotel with restaurant adjacent to the creek mouth and retail uses adjacent to the support site. As in

Option 1, the subport site is suggested as a Fisherman's Terminal with a market and restaurant. These uses would relate to and enhance the Civic Center node. The site west of the creek retains its office uses but in a much reduced plan. At the Juneau/Douglas Bridge Action Area the CBJ maintenance facility is relocated and replaced with office uses and a small waterfront park and public access point. A waterfront office complex is created here, similar to Option 1, but smaller in area. The major pedestrian connection to residential areas across Egan Drive is maintained. Because of the shifting and reduction of uses at the Gold Creek site, the mouth of the creek itself is much wider and more easily identified than in Option 1, and more of the existing tidelands are preserved. A major pedestrian route is still proposed along the Gold Creek corridor connecting the waterfront to existing and proposed residential areas.

The Willoughby Uplands Action Area is delineated similar to Option 1 with institutional/office uses suggested adjacent to the Civic Center and residential uses adjacent to the Gold Creek corridor opposite the Park Shore neighborhood. Service retail is provided along Willoughby Avenue.

Option 3 is the most balanced development concept and suggests five public activity nodes along the waterfront: marine/education; office; civic; tourist; and recreation. It offers three potential cruise ship moorages.

OPTION 4

This development concept is based on the scenario of no second channel crossing being developed and a reduced Gold Creek Plan being adopted and implemented. The concept assumes that the major industrial waterfront users, i.e., Foss Alaska, Standard Oil, and Union Oil, will remain at their present locations, and that future growth and expansion must occur on or adjacent to their present sites. This, too, is a moderate growth option providing a mix of water-related, -dependent uses and water-oriented public access uses, but without housing development. The main emphasis is to accommodate desired and existing industrial water-dependent uses.

The significant characteristic of this option (see Figure 3-4) is its similarity to Option 2 in setting aside a large amount of the AJ Rock Dump Action Area as a reserve for industrial expansion and the creation of an industrial complex in that area. The description of this Action Area, the Second Rock Dump Action Area, and the remainder of South Franklin Street to the Ferry Terminal site is the same as in Option 2. The only difference is that Option 3 provides no Fisherman's Terminal in this area, but a larger small boat repair area.

The Ferry Terminal site is identified as a cruise ship moorage (still allowing ferries to dock) jointly developed with specialty retail/restaurant uses; and the Juneau Cold Storage site is suggested for development as a public aquarium as in Option 3. As in that option, the aquarium along with Marine Park forms the focus for a major tourist complex.

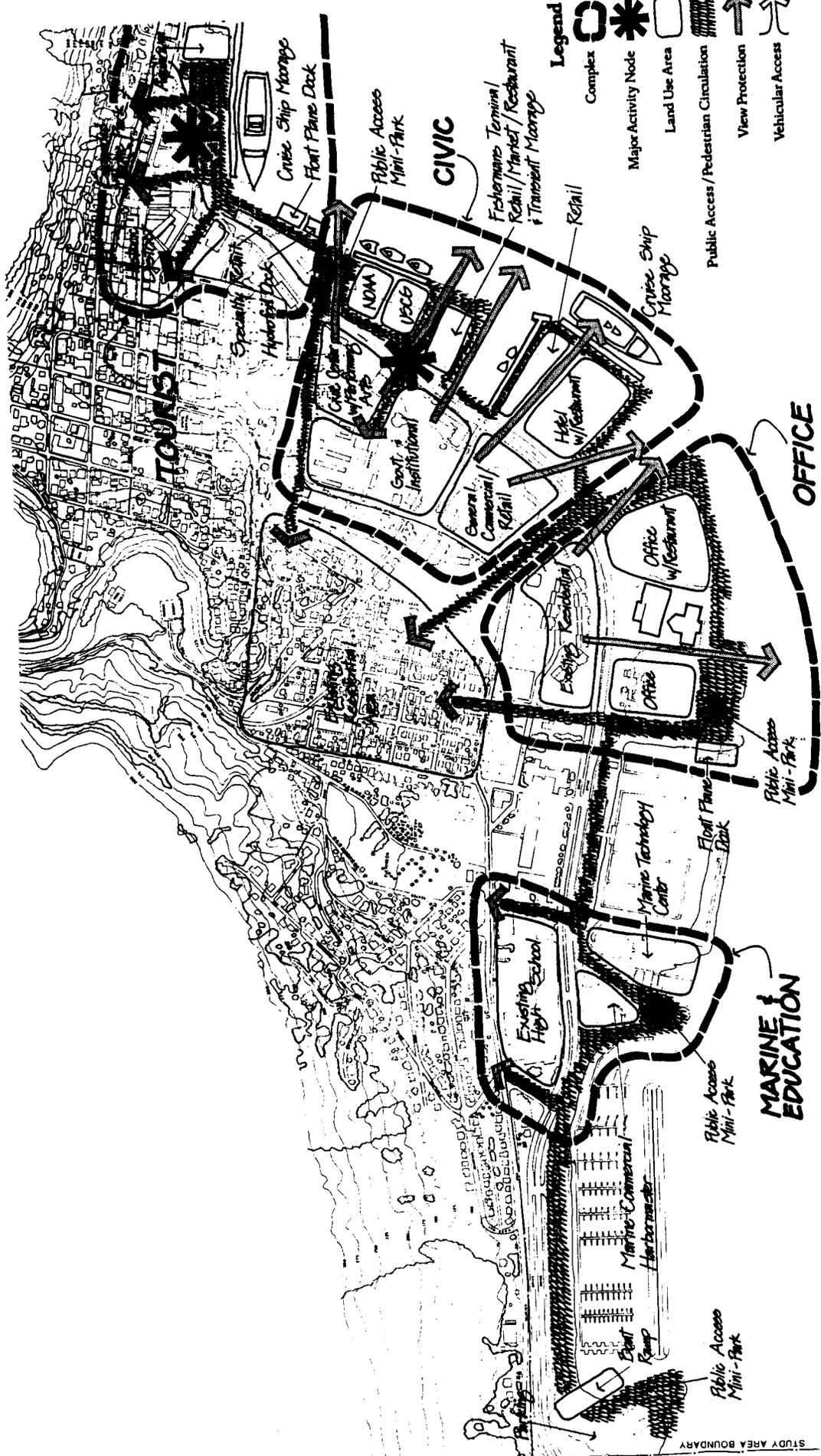
The modified Gold Creek development creates a larger mouth to the creek as in Option 1 but cannot shift eastward due to the continued presence of Standard Oil. This requires the

relocation of the aquarium (to Juneau Cold Storage site) and a reduction in the amount of retail. A reduced hotel is also a possibility for this option. The subport site is again suggested as a Fisherman's Terminal with market and restaurant as an integral part of the Civic Center node. The Civic Center complex tends to be weakened in this option due to the gap caused by the Standard Oil pier and property and the resultant lack of a functional connection between the Gold Creek hotel/retail development and the Civic Center node.

The site west of Gold Creek retains its office uses as planned and becomes a major waterfront office complex with a public access node and pedestrian connection to the existing residential neighborhoods as described in Option 1. The Gold Creek corridor is again addressed as a major pedestrian route from the waterfront to existing residential areas. The Willoughby Uplands Action Area is designated as governmental/institutional around the suggested Civic Center, and as general commercial/retail adjacent to Gold Creek in support of surrounding office and hotel uses.

Option 4 is also a balanced concept, but excludes residential uses in lieu of maintaining existing and potential future industrial uses or expansion areas along the downtown waterfront. It suggests five public activity nodes along the waterfront: marine/education; office; civic; tourist; and recreation. It offers three potential cruise ship moorages.

The intent of the preceding options was to illustrate potential development concepts based on different combinations of variables. They are not exclusive. Other concepts or development patterns are possible and may be desirable. The following sections of this chapter will review



DOWNTOWN WATERFRONT STUDY | Development Concept
Option #4
 City and Borough of Juneau

Figure 3-4 A

the traffic, environmental, and economic implications of these concept options. The options will then be reviewed by the public, the CBJ Planning Commission, the CBJ Planning Department, the Waterfront Study Advisory Committee, and the consultant team to determine the best option to pursue for delineation of a final plan. It may be one of the above, a combination of elements of some of the above, or a totally new option. It is likely that whatever the final direction, it will contain options in order to be responsive to whatever variables, pressures, or opportunities the future may bring.

Circulation Requirements

REQUIRED IMPROVEMENTS

Analysis of traffic operations indicates the need for several basic improvements and upgrading of existing facilities to accommodate current traffic demand and the projected vehicle generation of proposed developments. Many of the transportation facility requirements in Downtown Juneau have been discussed in previous studies, including:

- o Egan Drive/Gold Creek Study Area Traffic Analysis, 1983. This study resulted in circulation system recommendations highlighted by the need or potential need for signalization at five locations in the Waterfront study area (these signal locations are shown in the preceding section as Figure 2-2).
- o Downtown Street Improvements Design Study, 1983. The design study identified the need for two lanes on South Franklin from Ferry to Front Street.
- o Downtown Waterfront Study, Phase Two, November 1983. This section of the current waterfront study discussed the intersection of Egan Drive at Ferry/Shattuck Way and at South Franklin, south of Admiral Way. (Refer to pages 2-27 through 2-28.)

Each of these upgrades is intended to improve deficient conditions in the existing circulation system. Potential development under the Gold Creek and Downtown Waterfront proposals creates

additional support for these improvements. Traffic facility improvements specific to each development concept option are discussed below.

OPTION 1

The inclusion of the Gold Creek fill area means that there will be an access road at the Egan/Glacier Extension intersection; this access requires signalization to allow traffic to enter Egan Drive. A frontage road connecting the east parcel into the new access via a new overpass of Gold Creek or, alternatively, a southern linkage into Whittier Avenue, will be necessary. These elements were also discussed in the Gold Creek Study.

Specialty retail and other uses along the water side of South Franklin will require improvements to the street. The following alternative upgrades are indicated:

1. Widen South Franklin to a two-lane arterial with parallel parking on one or both sides.
2. Widen South Franklin to a three-lane arterial with parking on one side or no parking.

One of these alternatives can be selected depending on the way new land uses are developed. Generally, the two-lane concept can be used if the developed areas have no on-site parking and therefore no left turns onto Franklin. Parcel development with on-site accommodations for vehicles should include a three-lane improvement with a center lane for turning traffic. Table 3-1 shows the approximate widths associated with each of the potential lane dimensions.

TABLE 3-1

SOUTH FRANKLIN WIDTHS

Two-lane -- no parking	24 feet
Two lane -- parking one side	32 feet
Two-lane -- parking both sides	40 feet
Three-lane -- no parking	36 feet
Three-lane -- parking one side	44 feet

Source: TDA Inc.

The residential developments proposed for the South Waterfront area in this option would also benefit from the South Franklin reconstruction. Additionally, the access road to that parcel can be moved south to improve sight distance at the intersection with Thane Road where grade changes limit visibility. The existing intersection of Thane Road and South Franklin (near the container/truck terminal) has a slope combined with a curve at a "Y"-type intersection. This combination results in very limited sight distances at a point of vehicle conflict when traffic on Thane is often traveling at high speeds. Reconstruction of this intersection should occur with upgrading of Franklin. The curve at the base of the grade should be straightened as much as possible and the minor leg (from the terminal) should be turned to form a "T"-type intersection. These changes would improve sight distances and reduce potentially hazardous vehicle conflicts, especially important considering the traffic volume growth generated by residential units.

Residential development in this area is favorable in terms of traffic considerations because new volume would be generated in the opposite direction of existing peaks. This would utilize capacity that is now available rather than additionally stressing Egan Drive in the peak directions. An equal amount of residential units in a location north of Downtown would add traffic to streets currently at or near capacity.

An important consideration for residential development on the mine tailings parcel is the provision of more than adequate parking. Sufficient parking for residents and guests should be provided (about two per unit) to avoid any parking impact on Thane Road.

OPTION 2

This option has the same traffic considerations as Option 1 with the exception of signalization at Egan/Glacier Extension, which is of course unnecessary without the Gold Creek access. In addition South Franklin should be reconstructed to withstand heavy vehicle loads. Because this option is intended for conditions without the North Douglas Causeway, special attention should be given to signalization of Glacier at 10th Street. Currently, Glacier is used as a route to avoid the left turn from northbound Egan to the Douglas Bridge, which is particularly heavy in peak periods. This alternate route creates high turning volumes at Glacier and 10th, a location without traffic control.

OPTION 3

No additional considerations beyond those discussed under Option 1 are apparent.

OPTION 4

Again, no additional considerations beyond those addressed above are indicated. Further traffic analysis may identify other transportation elements.

GENERAL TRANSPORTATION SYSTEM IMPROVEMENTS

The limited opportunity in the downtown for major improvements in street facilities encourages the promotion of alternative modes of transportation. The predominant secondary commute mode is public transit. There is a potential for many improvements and service expansions in public transit, including expanded routes, increased frequency, shuttle service, and a transit terminal to provide a downtown focus on transit and to simplify its use.

Transit terminal development would require selection of a central location for bus activities in the downtown. The selected location should be readily accessible to pedestrian traffic but need not be separated from general traffic. Potential locations include on Marine Way across from the proposed waterfront parking garage site (Marine near South Franklin), or along Main Street near Front. Other potential locations could be identified in a review of sites. A comprehensive study of the potential for a transit shuttle in Juneau has been scheduled for early 1984. This study will research transit improvements and operating requirements.

Environmental Evaluation

Major environmental characteristics of the downtown waterfront area were described previously in the Inventory and Analysis section of this study. The most significant environmental factors affecting potential development in the downtown waterfront area are: intertidal areas important for salmon spawning and juvenile salmon feeding and migration; landslide and avalanche hazard areas; and seismic hazards. Another environmental consideration of importance is the relative exposure to sunlight of areas along the downtown waterfront.

Each of the four basic options outlined is different with respect to its environmental implications.

OPTION 1

Option 1 assumes full development of the Gold Creek project and filling of the entire intertidal area located there, with the exception of an outlet channel for Gold Creek. Comments by resource agencies on the CBJ application to the Corps of Engineers (COE) for a permit to fill these tidelands have raised issues concerning the ecological value of this area. Recent information indicates that some species of salmon are reestablishing a spawning area in brackish water at the mouth of Gold Creek. These salmon are not migrating upstream. The Gold Creek tidelands area is also the only major shallow area for several miles along the Gastineau Channel. Such areas are important to juvenile salmon for feeding habitat and as an area to avoid predators found in deeper water. The Gold Creek area represents the only significant

intertidal area along the downtown waterfront. Of the four options presented, this option would eliminate the greatest amount of habitat for juvenile salmon use and spawning activity. Location of an aquarium at the Gold Creek site has the potential for taking advantage of the area's use by salmon and of assuring use of the site by water-dependent and water-related activities.

Landslide and avalanche hazards are most serious in the areas of the Aurora Boat Basin and South Franklin Street. No changes are proposed under any of the options in the portion of the Aurora Boat Basin (the moorage area itself), which would be most susceptible to avalanches and landslides. Substantial development, including a "major attraction," specialty retail shops, and restaurants, is proposed under Option 1 for the South Franklin Street area. A portion of this area, in the vicinity of Ferry Street, is identified as a "severe" landslide/avalanche area under the Draft Comprehensive Plan and Coastal Management Program. (There are some minor differences in the landslide/avalanche area designations in the Inventory and Analysis section of this study and the Sensitive Area boundaries of the Comprehensive Plan and Coastal Management Program. The latter, along with the CBJ zoning ordinance, will establish the definitive boundaries for regulatory purposes.) Siting, design, and construction of any buildings in this area must give careful attention to these hazards. These hazards also present an important issue in deciding whether or not to allow development of a type and intensity that would attract numbers of people to the area.

Seismic hazards are present throughout the CBJ. Structures built on fill or pilings, however, represent a more serious problem, due to soil liquefaction problems. The Inventory and Analysis section of this document indicates that seismic hazards in the area lead to poor and marginal

foundation conditions in most of the downtown waterfront area (see Figures 1-12a and b). Although proper engineering and design can compensate for these problems, the construction costs necessary to do so can be extremely high.

The greatest sun exposure on the downtown waterfront is found at the AJ Rock Dump and in the area between Marine Park and the Douglas Bridge. Residential use of the rock dump area would be able to take advantage of this exposure.

A potential problem with residential and park uses of the Rock Dump site is the possible presence of toxic chemicals or heavy metals in the mine tailings. For example, arsenic is commonly associated with materials excavated and produced during gold mining and processing. The site should be carefully analyzed to determine whether or not there are any potential hazards to possible future residents of the site, and whether landscaping and vegetative growth would be affected.

OPTION 2

Under Option 2, there would be no filling of the Gold Creek site. This is a possibility because the COE conceivably could deny any permit to fill in the area. This option also assumes that another channel crossing would not be built and that the industrial area near the rock dump will remain and expand. The intertidal area at Gold Creek would remain undisturbed. It cannot be said with any certainty that the absence of any filling at Gold Creek would be significantly different than the substantially reduced fill as shown under Option 3. Analysis currently being undertaken for the CBJ may present some conclusions concerning this issue.

Uses proposed for the Gold Creek site would be located elsewhere in the downtown area or at other sites in the CBJ. A major activity node, hotel facility, specialty retail and restaurant development, and Fisherman's Terminal would be located on South Franklin Street. These structures and the people using them could be subject, depending on their exact location, to moderate and severe landslide/avalanche hazards.

OPTION 3

The third option presented includes a substantially modified Gold Creek development project. The western side of the site would be reduced in size and the eastern portion moved eastward. This would allow a much larger intertidal area to remain and therefore would have much less impact on migrating juvenile salmon and spawning activities. The probability of receiving a positive response from resource agencies and approval of a COE permit would be greater than with Options 1 and 4.

The amount of intensive, people-oriented development on South Franklin Street is less under this option than any other. The potential for exposure to landslide/avalanche hazards is thereby reduced. As with Option 1, there is the possibility of a hazard to future residents of the site posed by the potential chemical constituents that may be found there. The site should be carefully analyzed prior to making commitments to any residential and/or park development. There are no other significant differences in environmental impact between this option and the others identified.

OPTION 4

Option 4 includes a reduced Gold Creek project and a widening of the mouth of Gold Creek. This widening would increase the quantity of remaining intertidal area beyond that presently proposed but not to the extent shown under Option 3. The negative impact on migrating juvenile salmon and spawning activities would be less than under Option 1.

Option 4 also contains a major activity node, specialty retail shops, and restaurants along South Franklin. As with the other options including such uses, and again depending on the exact location, there is a possibility for exposure to moderate and high landslide/avalanche hazards.

Economic Evaluation

The purpose of this section is to evaluate the economic impact of development concept options for the Juneau downtown waterfront. Since a successful plan depends on a combination of public and private investments, both must be considered as criteria for evaluating each option. This section is divided into two additional subsections addressing:

- o Public Sector Impacts
- o Private Sector Impacts

The economic evaluation is part of a larger process for selecting a preferred development concept. During the final phase of this study, the fiscal impact and rate of return to private developers will be refined as appropriate for the preferred development concept. As a basis for selecting an option at this phase of the study, only the relative economic impact need be considered. This section provides a qualitative evaluation of both the fiscal impact and financial feasibility for private development.

PUBLIC SECTOR IMPACTS

The relevant public sector impact is the fiscal balance of revenues generated and costs of services and facilities. Generally, fiscal impacts will differ according to the overall mix of uses and the location of those uses within the study area. Uses considered in this study can be characterized as follows:

- water-dependent private sector uses;
- non-water-dependent private sector uses; and
- water-dependent public facilities and access.

Water-dependent private sector uses are accommodated under all options and there are no differential fiscal impacts. Non-water-dependent private sector uses are accommodated to differing degrees in each option. Such uses are considered for available land on the waterfront because they can sometimes subsidize the public uses. In those options where they cannot be accommodated on the waterfront, they are likely to locate elsewhere within or on the edge of downtown. Again, there would not be differential impacts related to the overall mix of uses. The water-dependent public uses and access are generally accommodated in every alternative. In total, the fiscal impacts of options vary according to location of certain uses. These differences are considered below.

Options 1 and 3 assume construction of a causeway to North Douglas. This would lead to significantly higher public costs in the short term at the location. Whether the CBJ is affected would depend on the source of funding. This is an item not included under Options 2 and 4.

Additional impacts arise from the location of the uses because some concepts have more balanced growth. For example, residential development on the mine tailings would alter the quality of public services. If there are no improvements to Egan Expressway, more population and commuters from Mendenhall Valley would add to the congestion and travel time for all users of the road. If part of the additional work force is traveling from the south, this traffic problem would be

partially mitigated. Similar benefits would accrue from the relocation of Foss Alaska and Standard Oil. Also, the relocation of the fuel storage tanks by Standard Oil would reduce the potential hazard downtown. Although these differences are difficult to quantify, Options 1 and 3 would have relatively more favorable fiscal impact than the others.

Since the CBJ would act as land developer for the Gold Creek site, it is affected by that development which varies across options. It is possible to make some general observations at this time. A reduced project would generate less ground rental payments than full development as shown in Option 1. Further, there is a question of whether a smaller project would create a sufficient attraction to be successful. This is considered further in the following subsection. Finally, the cost of filling and stabilizing the site may not necessarily decline proportionately with the amount of leasable area. If there are economies of scale with site preparation, a smaller project may result in relatively adverse fiscal impacts.

PRIVATE SECTOR IMPACTS

As recognized in other parts of this section, the general level of development does not vary substantially across alternatives. The rate of growth for the various uses depends primarily on the local economy rather than the choice of option. The general feasibility of each type of development is based on current growth patterns. However, the particular location for some uses may affect their rate of return as well as financial feasibility. The purpose of this subsection is to evaluate the impact of different locations on the financial feasibility of the development.

The magnitude and location of private sector development varies in the following instances:

- o Gold Creek site uses
- o residential development at AJ Mine Tailing site
- o Foss Alaska marine cargo terminal
- o Standard Oil and Union Oil terminals

A qualitative evaluation of the feasibility for these developments under each alternative is summarized in Table 3-2. The remainder of this subsection examines the relative feasibility of each type of use in greater detail.

Gold Creek

Option 1 maintains Gold Creek as originally planned while Options 3 and 4 offer a reduced development. Since restaurants and retail space are more successful when developed in large concentrations, Gold Creek is likely to be more viable financially under Option 1. This is particularly true in the case of Gold Creek because the area is somewhat removed from existing uses of that type. A successful development there will have to establish itself as an attraction on its own. Concentrating large quantities of development there would achieve this result. At the same time, Gold Creek would benefit from careful integration and physical connections with the nearby Civic Center complex. Under Option 2, where there is no development at Gold Creek, new development would be channeled to the South Franklin Street area. Since large vacant parcels are not available there, public access and the aquarium would require acquisition and redevelopment of existing sites. A site for a third cruise ship moorage would

TABLE 3-2
 RELATIVE FEASIBILITY OF PRIVATE SECTOR
 DEVELOPMENTS UNDER EACH OPTION

USE	OPTION 1	OPTION 2	OPTION 3	OPTION 4
Gold Creek	Most Viable	No Development	Less Viable	Less Viable
Residential Development of AJ Mine Tailings	Most Viable	Not Viable	Less Viable	Not Likely
Foss Alaska Marine Cargo	Relocation Likely	Likely Expansion of Current Facility	Relocation Likely	Likely Expansion of Current Facility
Standard Oil*	Relocation Likely	Possible Relocation	Relocation Unlikely	Possible Relocation
Union Oil	Possible Relocation	No Relocation	No Relocation	No Relocation

* Relocation would be to North Douglas with a causeway or adjacent to Union Oil without the causeway.

not be readily available. Private development would be dispersed over a wider area. Instead of one 300-room hotel, there might be three 100-room hotels.

Residential Development at AJ Mine Tailings

Under Options 1 and 3, residential development is considered at the mine tailings area. This would be a significant change from its current use. In order to achieve a residential setting, a large project is needed which would be a partially self-contained neighborhood. Also, extensive landscaping would be required as buffer from other nonconforming uses such as the waste treatment plan. Given these requirements for a successful residential development, the larger project proposed under Option 1 would be more viable.

Under either option, there is sufficient demand to absorb all units if construction is phased over several years. However, the larger project would need to offer a wider price range and type of housing if it is to appeal to a wide market segment. Therefore, Option 1 includes some single-family residences as well as multi-family.

A larger project is likely to be more successful because fixed costs are allocated over more units and the neighborhood would be easier to market as residential. A small project would require almost as much landscaping as a large project. Therefore, the cost of each unit would be proportionately higher. If Union Oil relocates under Option 1, water access would be increased and the development would include other amenities. A larger project achieves a more complete transition from industrial to residential use and creates a better image. Since the larger project would have lower unit costs and a more marketable appearance, its financial feasibility would likely be greater.

Foss Alaska Marine Cargo Terminal

As discussed under the market analysis portion of this study, the marine cargo capacity of Foss Alaska is already strained to the point of congestion. If a causeway to North Douglas Island is constructed under Options 1 and 3, Foss Alaska could move to a site near Fish Creek. However, the incentive to relocate would depend on the relative cost of land and the amount of potential cost savings.

The current facility has higher operating costs because of congestion in the handling area during unloading and distance to the market. Due to limited space, containers must be stacked as they are unloaded from the barge. This makes it difficult to sort the containers by destination. Under all alternatives, Foss Alaska would have more room. Therefore, lower handling costs during loading or unloading would not be a factor in whether Foss Alaska relocates to Douglas Island.

After the containers are unloaded, they must be transported by truck and in most cases they are delivered to the Mendenhall Valley area. If a causeway is constructed near the airport, a facility near Fish Creek would be closer to the primary market. Trucks would travel a shorter distance and avoid traffic congestion in downtown Juneau. As Mendenhall Valley and Douglas Island continue to grow faster than the downtown, the incentive to relocate to Douglas Island increases. Additional growth downtown would add to traffic congestion and further increase the transportation cost of each container.

If there is no new causeway, then relocation serves no purpose because trucks would have to use the existing bridge and there is no time saved. However, it would be possible to expand

adjacent to the existing site as shown under Options 2 and 4. Cargo handling costs while unloading would be reduced but congestion from trucking containers through downtown would continue.

In summary, there are two types of potential cost savings:

- o travel time savings under the options with the causeway, and
- o operations cost savings under the options where additional backup area is available.

In every case, the savings must be compared with the costs of relocation, including land purchase.

Standard Oil and Union Oil

Although there may be public benefits associated with the relocation of Standard Oil, private benefits may be few. As with Foss Alaska, Standard Oil would be closer to its market by relocating on Douglas Island if a causeway is constructed. However, Standard Oil would achieve smaller benefits per truckload since it is not as far south as Foss Alaska. In addition, the replacement cost of storage tanks is probably quite high and would not be justified unless there is a significant cost savings elsewhere.

If Gold Creek is developed, this would increase land values nearby. Over time, there would be spin-off development on adjacent land. This new development pressure would be greatest under Option 1, but it would not be significant until after Gold Creek is completed. Full development of Gold Creek would result in a new major center of activity with further growth nearby.

Therefore, higher lease rates due to higher land prices would be an additional incentive for Standard Oil to relocate.

Under Option 3, Gold Creek development is smaller. Even though the portion of land near the fuel terminal pier is developed, there is less pressure on the land occupied by the fuel storage tanks because it is a smaller project. Unless there is a substantial increase in land values, relocation is unlikely.

Union Oil would only relocate under Option 1. Except for housing, there are few uses which would absorb the amount of land available at the rock dump area. If there is little development pressure, land values are not likely to increase. Therefore, there is little incentive to relocate. Some cost savings may be realized in transporting fuel to Mendenhall Valley but this may not justify a new facility.

Preferred Development Concept

PUBLIC REVIEW AND INPUT

For the purpose of providing for public awareness and generating comments and opinions, the Downtown Waterfront Advisory Committee held a public meeting on Wednesday, January 11, 1984, at which the four development concept options for the downtown waterfront were presented and discussed. Many individual questions and concerns were raised and addressed. While these comments were generally diverse, a good number of them tended to focus on three distinct topics or issues. The first of these centered on the desire for more public access to the downtown waterfront and the concern over the CBJ subsidizing private development by using public lands and public money for providing space for waterfront hotels and offices and not for public uses (using Gold Creek as an example). In response to this issue the plan is attempting to provide for both in a symbiotic relationship. For example, at Gold Creek the CBJ is attempting to create additional waterfront land that would provide for increased public access and activities, i.e., park, promenade, aquarium, cruise ship facility, etc., at great potential expense and no financial return to the public. By creating an increment more of land, the CBJ can make this available to the private sector via lease or sale for development of complementary and/or tourist-related activities, thereby subsidizing the public facilities through direct return off the lease or sale; additional taxes; and provision of a substantial integrated user group. Other water-dependent or related uses, such as a Fisherman's Terminal, can be subsidized in a similar fashion, i.e., making it a part of other uses that would not be allowed on the water-

front unless it accommodates such uses. There is little existing publicly owned land along the waterfront for public access or use. It either has to be bought or created at expense to the public. Joint development with the private sector appears to be a very cost-effective way to create public access.

The second issue which generated a number of comments is the development of a second crossing of the Gastineau Channel at North Douglas and its impacts on the downtown waterfront. Opinion appears to be divided as to its need or benefit. Its development would likely result in major industrial users relocating to North Douglas, thereby opening up the downtown waterfront for other uses. While a second channel crossing is not inevitable, it is a possibility that requires consideration in planning for future development on the downtown waterfront. Options illustrating alternative futures should be continued with implementation mechanisms for dealing with each.

The third issue receiving multiple comments was the potential use of the Mine Tailings Action Area, i.e., AJ Rock Dump. There appears to be some interest and support for creating a dense residential community and town center in that area. This clearly would preclude any additional industrial use in the area and would require the relocation of the Foss Alaska barge facility and the Union Oil Terminal for a successful image as a complete residential community. It is clear that resolution of this issue depends squarely on the outcome of issue two above.

THE WORKSHOP

A planning workshop was held on the two days following the public meeting in order to discuss and evaluate the different options, the variables and fixes within these options, and the comments received at the public meeting to reach a recommended or preferred single development concept with whatever built-in options proved necessary. Participants in the workshop included members of the Downtown Waterfront Advisory Committee, staff from the CBJ Planning Department, and representatives from the planning consultant team.

The workshop participants employed an informal process for establishing objectives and determining priorities, and returned to the initial statement of Goals and Objectives (Introduction, pages 5-9) for the criteria used to evaluate the options before them and to jointly delineate a preferred development concept. No quantitative methodology was employed to score or rank options. That type of methodology was deemed inappropriate because the options illustrate different combinations and/or locations of activities rather than mutually exclusive alternative development directions. It was not necessary to select between options but rather to bring together the most appropriate suggestions from all options into the preferred concept. After much discussion, the Waterfront Advisory Committee arrived at the following preferred development concept.

PREFERRED DEVELOPMENT CONCEPT

The preferred concept is based on the assumption that a modified and reduced Gold Creek Development Plan will proceed (similar to that in Option 3) because of the demand for and need to create more public access areas and activities along the water. The concept also addresses the fact that it is impossible at this time to determine with any reliability the future of a new Gastineau Channel crossing to North Douglas Island. Such an undertaking would be very controversial and it is likely to take years to decide the outcome. As a result, the concept must address development potential both with and without a new channel crossing, and include growth options for each scenario. As previously discussed and illustrated, a new channel crossing would primarily affect water-dependent or water-related industrial development, with such development likely to relocate to North Douglas Island. These uses are presently located in the South Franklin Shoreline and AJ Rock Dump Action Areas, and it is these areas that will be most affected by such growth options for the future. These will be discussed below.

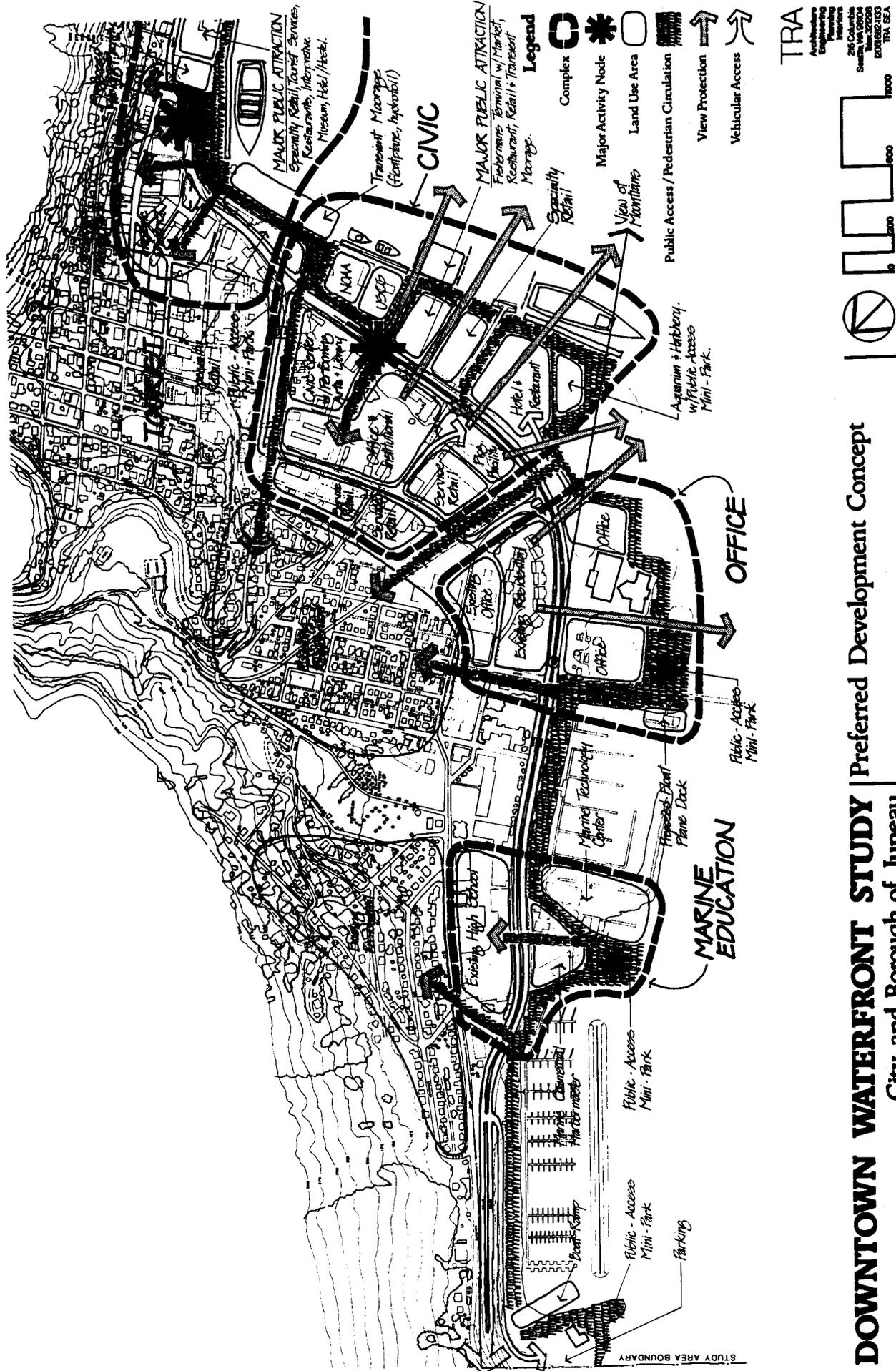
Fixes

The "fixes" discussed in the Development Concept Options section of this phase have been retained in the Preferred Development Concept. It is useful to describe them briefly here. See the previous discussion for more detail.

A major activity node has been identified centering on Centennial Hall, the new conference/meeting facility adjacent to the State Office Building. This node at the southeast section of the Willoughby Uplands Action Area would be the focus of a downtown Civic Center

complex for the City and Borough of Juneau, including provision of a future location for a performing arts center and municipal library. Two waterfront mini-parks, one to the east of NOAA and the other to the west of the Coast Guard, are suggested opposite this Civic Center complex to provide visual access and physical continuity of these significant public activities to the waterfront. Well-defined pedestrian routes across Egan Drive would reinforce the physical connection. One route would occur along Willoughby Avenue past the Civic Center to the State Office Building and residential neighborhoods beyond. The other route would occur at Whittier Avenue, adjacent to the subport site and forming the western edge to the Civic Center. Surrounding activities are proposed to reinforce the downtown Civic Center complex with strong connections to the waterfront.

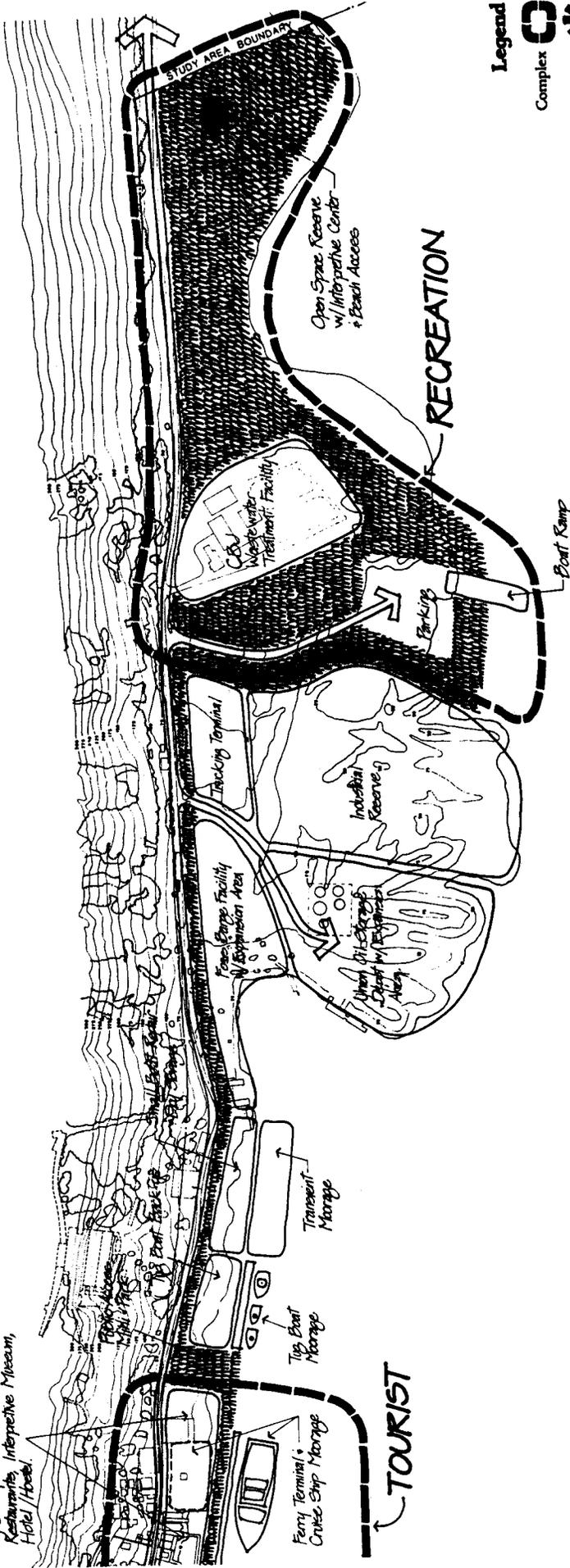
A second such node is Marine Park on the waterfront, adjacent to the Downtown Historic District and contiguous with the public Steamship Dock and cruise ship moorage. Initial concepts suggested expanding Marine Park southward to the Juneau Cold Storage site with provisions for a tourist orientation facility at the southern terminus (see previous discussion). Since the development of the concept options, the City and Borough of Juneau made a decision to locate a municipal parking garage on the site previously designated for park expansion. Design criteria for the garage calls for continuation of the park amenities and provision of a tourist facility within the garage framework. Further discussion of the parking garage and related issues concerning the waterfront site are discussed in the following section in this phase. Again, the concept proposes that surrounding activities reinforce Marine Park, the Historic District, cruise ship dock, and tourist facility, and thus establish a major tourist complex on the downtown waterfront.



DOWNTOWN WATERFRONT STUDY | Preferred Development Concept
 City and Borough of Juneau |

Figure 3-5 A

MAJOR PUBLIC ATTRACTION
 Specialty Retail, Tourist Services,
 Restaurants, Interpretive Museum,
 Hotel/Hotel.



- Legend**
- Complex
 - Major Activity Node
 - Land Use Area
 - Public Access / Pedestrian Circulation
 - View Protection
 - Vehicular Access

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DOWNTOWN WATERFRONT STUDY | Preferred Development Concept | Industrial Option
 City and Borough of Juneau

Figure 3-5 B

Finally, a continuous public pedestrian promenade is suggested along the entire downtown waterfront along the water's edge. This promenade would only be omitted in those areas where security or public safety issues would discourage or prohibit it. All future development would be required to accommodate such a promenade, as well as provide public access through each project to the promenade from a public right-of-way. With these major elements providing focus and continuity, the remainder of the preferred development concept is described by Action Area as follows.

Second Rock Dump

The Second Rock Dump Action Area from the CBJ Waste Water Treatment Facility south is designated as a public open space reserve with the potential for developing a nature interpretation center and beach access trails to and around existing tideflats. An alternative use for the site may be a small public recreation-vehicle campground. However, this use would tie up a valuable piece of public property for a very small segment of the population, of which most would be visitors.

AJ Rock Dump

Two options have been developed for this Action Area in response to the uncertain future of a second Gastineau Channel crossing. If there were to be no second crossing, the AJ Rock Dump would be set aside for additional industrial expansion and the creation of an industrial complex in that area. The access road to the Union Oil complex would be relocated further south to accommodate the growth and expansion of the Foss Alaska barge facility. To the south of that

access road and along the Thane Road, a new Foss Alaska trucking terminal could be developed, thereby making it adjacent to the barge facility, rather than removed as it is currently. Union Oil would expand on its present site adjacent to its existing facilities. South of the industrial reserve area, the remainder of this Action Area would be acquired and developed as a public park with a boat ramp, support parking, and other more active recreational activities, such as sports fields. If future demand for additional industrial uses does not develop, the reserve area may be designated partly or entirely for other uses. One such use may be a recreation-vehicle campground adjacent to the public park.

With the implementation of a second channel crossing, Foss Alaska would move to North Douglas Island and it is possible that Union Oil may also move. If that scenario were to occur, the AJ Rock Dump could be transformed into a major residential community, as all future demand for water-dependent or water-related industrial land could be met at North Douglas. This new residential community could accommodate approximately 300 dwelling units of single-family detached and attached cluster type housing in a planned unit development. A town center would be required as a focus for activity within the community. This center would function as another major node along the waterfront. In support of this concentration of housing, the concept indicates an amount of service retail with frontage along South Franklin Street providing good access and visibility for the retail and acting as a buffer to the residential area. A pleasure boat marina is proposed for the relatively sheltered water area north of the mine tailings peninsula with support activities and parking on the adjacent uplands to the east with access from South Franklin. A park similar to that in the industrial option is located between the residential community and the CBJ Treatment Facility. The park would service the community and buffer it from the treatment facility.

South Franklin Shoreline

The South Franklin shoreline accommodates a mixture of uses. The area from the Juneau Cold Storage property to just south of the Ferry Terminal has been designated a Major Public Attraction as a part of a tourist-related complex. Uses identified within this designation include specialty retail, tourist services, restaurants, hotel or hostel, interpretive museum, or other tourist orientation activities. The Ferry Terminal would remain, maintaining a level of service to the downtown and would be redeveloped (including potential air rights) to accommodate a cruise ship moorage. Preservation of any historic structures in the area would be encouraged if feasible.

Immediately to the south of this public attraction area, a public access mini-park is suggested as a terminus to the activity to the north and a buffer to the more industrial uses further south. Those uses identified between this park and the residential complex (or Foss Alaska under the industrial option) include a tugboat moorage facility for cruise ships (and/or barges) and a small boat repair and transient moorage area. Other water-dependent or water-related uses are also possible and acceptable, including additional barge moorage and staging areas.

Steamship Dock

The Steamship Dock Action Area has been designated for expansion of Marine Park and provision of a tourist orientation facility to be located on the vacant land between the existing park and the Juneau Cold Storage site. The CBJ has designated this site for development of a public parking structure. The design criteria (see following section) for the garage include extension

of park amenities and creation of a tourist facility, as an integral part of the development project. The Juneau Cold Storage site is pivotal in tying the South Franklin retail area into the Downtown Historic District. It would be an ideal site for a highly visible and intense activity such as a hotel/retail development.

Coast Guard - Subport

The Coast Guard - Subport Action Area has been divided into three separate use areas. The area from Merchants Wharf to just beyond the Seadrome Building has been designated for specialty retail, with the remaining stretch of shoreline to the NOAA installation set aside as a public access mini-park. The water south of this upland retail area is identified as transient moorage for floatplanes, and potentially a state-operated hydrofoil, should it prove feasible.

The area from the Seadrome Building to the subport is occupied by the U.S. Coast Guard and NOAA, both of which will remain at this location. For security reasons, public access will be diverted landside of these facilities along Egan Drive. A second public access mini-park is suggested west of the Coast Guard installation and the subport.

The subport site itself has been integrated with the Gold Creek project and is designated for a Major Public Attraction in order to provide an activity connection between the Civic Center and Gold Creek development. A preferred use for the site would be a Fishermen's Terminal including a fish market, restaurant, gear and provisions handling, related retail, and transient moorage.

Willoughby Uplands

The area from Willoughby Avenue to Whittier Avenue and from Egan Drive north to approximately mid-block, is designated as the CBJ Civic Center. The area immediately to the north on both sides of Willoughby Avenue is identified for office and institutional uses. Identical uses are also identified for the area from Whittier to the Standard Oil pipeline right-of-way. These office and institutional activities are intended to provide support for the Civic Center and the State Office complex. Housing and retail activities would also be considered for these areas as part of a planned mixed-use development (PMUD). From the pipeline to Gold Creek, service retail has been designated to complement suggested office and institutional uses. The site along Egan Drive to the south of Foodland is proposed for a major municipal parking structure that would serve the parking needs of Gold Creek, the Civic Center, office and retail uses, with appropriate pedestrian connections. Demand would be spread out throughout the day. Access to the garage as well as other uses in the area would be from Willoughby Avenue along the pipeline right-of-way. Mixed use would be encouraged in this area with residential uses jointly developed with office and retail space, thereby providing around-the-clock activity.

Tideflats

Gold Creek development would be reduced in scale similar to Option 3, with a wide delta created for Gold Creek itself and the site relocated to include the area between the Standard Oil dock and the subport. The majority of the parking requirements for the eastern portion of the development would be satisfied by the municipal parking garage across Egan Drive. The eastern portion will retain a public orientation with a cruise ship dock, an aquarium with salmon

hatchery capabilities, hotel/retail uses, and a public park. Activities would be integrated with the subport site and the proposed Fishermen's Terminal there.

The west side of Gold Creek is designated as office use to supplement adjacent similar uses and to provide additional revenue to help subsidize the public uses to the west. Automobile access to the entire project will occur at this western parcel opposite the existing intersection of Glacier Avenue with Egan Drive, creating a new signalized intersection. The access road, including a pedestrian walkway, would bridge the creek immediately adjacent to Egan Drive.

The proposed Gold Creek development will be studied in greater detail in an individual section during Phase 4.

Juneau/Douglas Bridge

The preferred development concept suggests removing the CBJ maintenance facility from this area, and designates the area for office uses with a major public park at the water's edge. This park would become the focal point of an office complex including office use in this area, existing office structures to the south, and the western parcel of the Gold Creek development. A major pedestrian route to existing residential neighborhoods from the waterfront park is suggested to the north of the bridge access ramp, along the 10th Street right-of-way.

Aurora Harbor South

This area is to be enhanced as the center of surrounding marine activities by consolidating harbormaster facilities with proposed marine-oriented retail uses. A public access, mini-park overlook is suggested at the western point of the Action Area and pedestrian promenades have been proposed along the uplands of the marinas. The existing connection from the area across Egan to the existing public schools should be reinforced, reflecting the interaction between school programs and the activity of the Alaska Marine Technology Center. An additional pedestrian connection is suggested from the marina promenade at Aurora Harbor along the Highland Drive right-of-way to the existing residential neighborhoods to the east.

Aurora Harbor North

A public boat ramp with adequate support parking, and public access in the form of a mini-park along the shoreline, are recommended for this area. Automobile access would occur from the existing intersection at Egan Drive to the south and along the shoreline parallel to the pedestrian promenade.

ADDITIONAL ISSUES

During the review and evaluation of the Development Concept Options and the delineation of a Preferred Development Concept, several new issues and events arose which have implications for the Downtown Waterfront Plan, and will significantly affect the physical environment along the water's edge. The following narration will outline those implications and effects.

Floatplane Usage

Further discussion with representatives of the floatplane charter and sightseeing businesses revealed that there may be a need for more floatplane moorage and dock space in the downtown area during the summer months. In addition, the proposed floatplane facility provided by the State, to be located at the southern entry to Harris Harbor, may seriously conflict with boat access and egress at that point. It has become controversial and is opposed by some individuals and groups. Its future is uncertain. In recognition of these new developments, the Preferred Development Concept has designated the entire water area between the cruise ship lighter dock and the NOAA complex as a transient moorage area with priority for floatplane docks.

Waste-to-Energy Facility

The City and Borough of Juneau is undertaking a study to determine the feasibility of a solid waste-to-energy facility near the downtown area. One of the sites recommended for its location is the AJ Rock Dump. If this area is to be maintained for industrial development (see discussion of options above), such a facility would probably be an appropriate use. If the intent is to redevelop the area into a residential neighborhood with the coming of a second channel crossing, the location of a waste-to-energy facility in the area, together with the CBJ Wastewater Treatment Facility and the Union Oil Storage Facility, would create too negative and counterproductive an image to developing a residential environment. An additional item to consider, regardless of the eventual use of the Rock Dump area, is the additional traffic the facility would draw through the downtown, and the type of vehicles involved, i.e., waste removal vehicles. The additional traffic would obviously add to congestion, and the type of vehicle would not likely enhance the image of the downtown.

Parking Facility

The City and Borough of Juneau has determined that the site for a new downtown municipal parking facility shall be that area owned by the CBJ between Marine Park and Juneau Cold Storage and currently occupied by surface parking lots. The CBJ has titled the project the Juneau Waterfront Parking and Tourist Facility, and has developed the following preliminary criteria for its design:

- o The main purpose of the project is to develop additional parking on the site. A preliminary goal is to provide at least 330 parking spaces on the entire site, including any existing spaces not directly displaced by the project.
- o The project must physically and aesthetically integrate with the Marine Park and possibly extend the park, or create park areas on the site. The pedestrian park is considered a very high priority in this project.
- o The project must provide for easy pedestrian access to the dock and along the waterfront.
- o The project must provide direct access to the dock by buses and vehicles servicing ships and transporting tourists.
- o The project must, to the extent feasible, preserve visual corridors from Marine Way.
- o The project should be developed to provide the least disruption to pedestrian and vehicular traffic in the area.

- o The project should provide for smooth ingress and egress for vehicular and pedestrian traffic. Pedestrian traffic should flow smoothly through the building to points which provide the best access to the downtown area, including points near both Marine Park and South Franklin Street.
- o The project design should provide for retail and other commercial uses on the site which are appropriate to the waterfront.
- o The parking structure must be designed to accept additional floors for additional parking and/or office and other commercial uses. The first phase construction must include structural support for the additional floors. Six stories of parking and commercial space must be planned as the maximum future development.
- o The project must be phased to provide for the least disruption of existing parking and to provide the City and Borough the option of constructing the project in phases due to funding constraints.
- o The project must be aesthetically pleasing from all directions and complement the character of the downtown area, the waterfront, and the Marine Park.
- o The project must include a covered waiting area for transit buses and other public transportation to pick up persons who have parked their cars.

- o The construction of portions of the project below adjacent street levels is encouraged but must be compatible with the marine environment and high tide levels.

- o A sidewalk and landscape buffer should be provided along Marine Way to the extent possible.

An additional criterion would be the minimization of shadows cast from the six-story structure onto Marine Park, as the proposed structure would be located to the south of the park.

A final, important design consideration would be the type of tourist facility proposed for the structure. Marine Park and the existing Steamship Dock are Juneau's front door for those people arriving by boat. It is important to maintain that front-door image. While a parking structure would not by itself enhance that image, the inclusion of a tourist orientation facility within the structure would be a positive contribution from a use standpoint. Such a facility is proposed in the Preferred Development Concept and might include dissemination of information about events and activities in Juneau and Southeast Alaska, ticket counters for sightseeing tours and charters, cruise ship information desks, etc.

From an operational standpoint, the following traffic and circulation issues will need to be addressed during the planning and design process:

- o The high peak nature of traffic generation characteristic of a parking garage and its impact on flows through the downtown during the morning and afternoon peaks.

- o The maintenance of safe sight distances between northbound traffic on South Franklin Street and access and egress at the garage itself.
- o The potential tendency for downtown through traffic diverting to Star Hill routes to avoid additional congestion and delays downtown.
- o Increased traffic volumes on South Franklin Street north of Admiral where presently there is one lane of northbound traffic (future plans call for one lane, based on through-traffic demand projections before development of a garage).
- o Potential operational impacts of garage traffic on Marine Way at the Ferry/Shattuck Way intersection, specifically considering level of service and safety.
- o Projected operations, i.e., level of service and safety, at the garage access and egress point(s), including and considering:
 - Probable growth in traffic generation south of the garage site.
 - Potential growth in truck traffic to and from growth areas to the south.
 - Possible touchdown of a new access road to proposed development on "the shelf" and traffic from that site.

- o Potential changes in volume and flow on streets in the downtown area and effects on circulation efficiency.

Addressing these interrelated issues may result in the formation of additional design criteria for the garage structure and its site.

Oil Storage and Transfer Facilities

An incident occurred at the Standard Oil of California facility that dramatically illustrated a problem with such storage and transfer facilities located in heavily developed areas. An overflow of gasoline presented a hazardous condition requiring the evacuation of everyone within a large area in the vicinity of the facility. As a result of this incident, the CBJ Assembly passed a resolution urging Chevron USA, Inc. (Standard Oil of California) to move its bulk oil storage facility to another location where such a use will have minimal life safety impacts.

Subsequent to this incident and the CBJ's action, all further consideration of a development option that included housing adjacent to the Union Oil facility at the AJ Rock Dump were abandoned due to the potentially hazardous conditions and concern for the safety of potential residents. In addition, the Preferred Development Concept was delineated with the assumption that Standard Oil of California and its dock was a temporary, nonconforming use and would ultimately relocate.

Context

This phase of the Downtown Waterfront Study delineates the Master Plan for the Juneau downtown waterfront. As such, it represents the culmination of the study effort. The preceding phases, each reflected in a chapter of this report, established the foundation for the Master Plan. The Plan also is based on the goals and objectives for the study established by the Downtown Waterfront Advisory Committee, with which the consultants and Planning Department staff have worked throughout this study.

The initial phase, which covered inventory and analysis, included: an analysis of market demand for existing and new uses in the study area; development patterns, zoning, activity concentrations, pedestrian use, environmental characteristics, and key images along the water's edge; local and state policies and regulations applicable to the area; traffic and parking facilities and patterns; and identification of the opportunities and constraints for development of the downtown waterfront. The second phase evaluated the development potential of the area and included: a discussion of the unique characteristics of water-dependent and water-related uses on the downtown waterfront; identification of "action areas," each with its distinctive attributes; circulation alternatives; and a development program defining the basic uses to be accommodated on the downtown waterfront. Phase Three resulted in the presentation of four alternative development concepts for the downtown waterfront, as well as the preferred development concept. Major factors influencing the alternatives included varying levels of development at Gold Creek; the implications of whether or not a second channel crossing is built; and the appropriateness of additional residential and industrial development in the downtown waterfront area.

A report summarizing each phase of the study was presented in a draft form to the Downtown Waterfront Advisory Committee and Planning Department for their review. During the alternative development concepts phase, a public meeting was held to obtain comment from interested individuals and groups on the alternatives. The consultants revised each chapter of this report in response to decisions and suggestions by the advisory committee. Once that group has completed its review of the Master Plan and appropriate revisions are made, the Plan will be forwarded to the CBJ Planning Commission for its review. The Planning Commission will then make its recommendations on the Master Plan to the Assembly, which will be responsible for final review and adoption.

This phase of the study includes a section which establishes a Gold Creek Development Plan. That plan is a revision of a plan adopted in May 1983. The revised plan includes changes to assure that development of the Gold Creek area is coordinated and compatible with the entire downtown waterfront area. It is therefore seen as an element of the Master Plan for the downtown waterfront area. There may in the future be additional development plans for other specific areas of the downtown waterfront.

RELATIONSHIP TO COMPREHENSIVE PLAN AND COASTAL MANAGEMENT PROGRAM

The Downtown Waterfront Master Plan will become an element of the CBJ Coastal Management Program, which is part of the CBJ Comprehensive Plan. The downtown waterfront area was recommended for designation as an "Area Meriting Special Attention" (AMSA) by the Comprehensive Plan and Coastal Management Program. The AMSA designation has a specific definition and related guidelines under the Alaska Coastal Management Program. An AMSA plan is prepared for areas when development pressures, coastal resources, and issues of appropriate use of shoreline areas

create situations where detailed studies and management approaches are necessary. CBJ plans recommend the AMSA designation for the downtown waterfront because of the area's scenic and historic values and the range of development possibilities for the area. The plans also recognize the need for compatibility and interrelationships of development on the waterfront with development of the Gold Creek site and the entire downtown area.

The Comprehensive Plan and Coastal Management Program emphasize the role of downtown as the scenic, cultural, and economic center of the community. They also stress the need for careful urban design and planning of public and private facilities in consideration of community objectives for the waterfront, capital complex, the historic district, and other areas of downtown. Policies also recognize the importance of the downtown and its waterfront to tourism and business visitation. The potential for development of new port facilities elsewhere in the CBJ and the implications for the downtown waterfront are also addressed. Policies state the CBJ's intention of designating and reserving waterfront land with adequate services and in appropriate locations for water-dependent and water-related commercial/industrial activities. The Comprehensive Plan and Coastal Management Program call for intensive mixed-use development in the downtown area and emphasis on water-dependent, water-related, and water-oriented mixed uses in the downtown waterfront.

Detailed discussion of policies of the CBJ's Comprehensive Plan and Coastal Management Program and Alaska Coastal Management Program and their relationship to the downtown waterfront area is included within the Phase One report. An evaluation of the existing and potential characteristics of water-dependent and water-related issues on the downtown waterfront is contained in the Phase Two report.

The Coastal Management Program is in the final stages of review and adoption. The Downtown Waterfront Plan will be submitted along with the Coastal Management Program to the Alaska Coastal Policy Council for its review and approval. The Standards of the Alaska Coastal Management Program require that the management scheme for an AMSA, such as the Juneau downtown waterfront, include the following:

- A. A description of uses and activities which are considered proper and the uses and activities which will be considered improper with respect to land and water in the area.
- B. A statement of the specific, enforceable policies which will be applied in managing the area.
- C. An identification of the authority which will be used to implement the proposed management scheme.

The implementation section of this plan outlines all steps necessary to manage use and development of the downtown waterfront in a manner consistent with the Master Plan.

DEVELOPMENT CONCEPT

The overall concept for use and development of the downtown waterfront was selected by the Downtown Waterfront Advisory Committee at the conclusion of Phase Three and is described in detail in that phase of this study. The concept is intended to serve as a general guide for the policies and land use designations of the downtown waterfront plan.

The selected concept reflects the CBJ's intention of maintaining the downtown area and its waterfront as the civic, economic, and cultural center of the CBJ and of providing adequate land and an attractive setting for the state capital and related activities. The concept emphasizes the need to maintain existing transient and permanent moorage facilities and to develop additional facilities for cruise ships and fishing vessels. Recognition is given to the specific types of water-dependent and water-related uses that are appropriate to the downtown waterfront and to the desirability of including a mixture of uses that are water-oriented in character.

The development concept provides for the creation of additional developable land by filling a portion of the CBJ-owned tidelands near the mouth of Gold Creek. The concept assumes that the southern end of the downtown waterfront will continue to be the location of major barge transport and related storage facilities. A major alternative is outlined in the event that a second Gastineau Channel crossing is constructed, as recommended by a recent study prepared for the CBJ. In that event, most industrial uses would relocate from the downtown area to new port facilities on Douglas Island.

The development concept also outlines major elements of future public and private development on the downtown waterfront. These include a pedestrian path along the entire waterfront area and

public parks and viewing areas at appropriate locations. Distinct districts of the downtown waterfront are identified according to their existing and potential character and functions. General types of uses appropriate to these areas are also described. A detailed discussion of the development concept is included in the preceding phase.

Policies

The following policies are the major elements of the development concept for the downtown waterfront. The policies regarding shoreline location relevancy and the Seawalk also appear in the main Juneau Coastal Management Program and are enforceable under that program.

1. Shoreline Location Relevancy. (This policy is enforceable under ACMP)

Purpose: It is the CBJ's desire to maintain the downtown waterfront and adjacent area as the center of Juneau's economic, cultural, civic, and visitor activities. Juneau also intends to provide adequate land and an attractive setting for the state capital and related public and private activities.

Because of the unique role and mixture of uses in the area, allowable uses of the downtown waterfront should include activities which are oriented to the water or which have water-dependent or water-related components. (Refer to Development Potential phase for detailed discussion of water-relationships of future uses in the downtown waterfront.)

Policy: Uses of the downtown waterfront shoreline shall be water-dependent, water-related or water-oriented in character. These uses and the area are defined as follows:

Downtown Waterfront Area Shoreline subject to this policy: From the northern edge of Aurora Basin to the southern edge of the Second Rock Dump (see figure 4-1), the area on the water side of Egan Drive, Marine Way, and South Franklin. On the rock dumps the shoreline area extends approximately 200 feet upland from the shore as shown on map series 3 in the main Juneau Coastal Management Program.

Water Dependent: A use or activity which can be carried out only on, in or adjacent to water areas because the use requires access to the water body.

Water-Related: A use or activity which 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 water, would result in a loss of quality in goods and services offered.

Water-Oriented: Uses or mixtures of uses which would benefit from being near the water and are intrinsic to waterfront development. These uses must meet the following criteria:

- (a) Water-oriented uses must be part of a larger fully-planned development which also incorporates water-dependent or water-related uses.
- (b) All uses and/or activities which are not directly water-dependent or water-related must be necessary to the overall development of the project.
- (c) All uses and/or activities must be integrated functionally by architectural and site designs which are sensitive to the waterfront site.
- (d) Such uses must act as economic stimuli and anchor points to enable other forms of development, particularly public access improvements;
- (e) Such uses must contribute to a diverse and healthy downtown core.

2. Additional Land

Purpose: To adequately and successfully perform its role as the location of the state capital and as an economic, civic and cultural center for the CBJ, and to avoid haphazard dispersal of these activities elsewhere, additional lands are required in the downtown area. Because of geographic conditions and existing development patterns, additional filled lands will be needed to provide an adequate supply of developable sites for these activities.

Policy: The CBJ shall create additional developable land in the downtown area by filling a portion of its lands in the Gold Creek tidelands. Public and private filling and development shall be permitted in accordance with applicable Juneau Coastal Management Program policies landward of the "seaward limit of areas which may be filled" designated on Maps 3A through 3F in the Juneau Coastal Management Program.

3. Land Use Designations

Purpose: To recognize the distinctive characteristics of areas along and near the downtown waterfront and to designate uses appropriate to each of these areas.

Policy: Districts of the downtown waterfront shall be designated in recognition of existing and appropriate development patterns. Four of the use districts affect the downtown shoreline and have been included in the Juneau Coastal Management Program under Chapter IX, Section 13, Special Waterfront Designations, Map Series 3, and Appendix B. These districts are: Marine Commercial, Industrial Commercial, Retail Commercial, and Office Commercial.

The permitted uses, conditional uses, and accessory uses allowed in each of the four districts as well as information on habitat values are provided in the Juneau Coastal Management Program. In general, water-dependent and water-related uses shall be given priority in waterfront areas. However, water-oriented uses may be permitted if they meet the criteria listed in (1) above. A fifth designation will be used for certain inland areas: Planned Mixed Use Development. There is also a recreation district at the south end of the Downtown shoreline. Inland areas designated as Retail Commercial are not subject to the shoreline location relevancy requirements of (1). The Master Plan, figure 4.1, also shows Civic/Institutional, Public Open Space, Transient Moorage and Permanent Moorage overlay designations within the six general designations. See next section for descriptions of each land use designation.

4. Seawalk Pedestrian Access (This policy is enforceable under ACMP)

Purpose: To provide a continuous pedestrian path along the entire downtown waterfront area.

Policy: A pedestrian access easement and walkway intended to provide a continuous pedestrian path along the entire downtown waterfront area, and constructed to city design specifications shall be included within all future development or redevelopment along the downtown waterfront shoreline. The walkway route is designated on Figure 4-1 as the "public access easement". This walkway, to be known as the Seawalk, shall be a continuous path along the entire downtown waterfront with the following exceptions:

- (a) The Seawalk may depart from the shoreline in areas where government security or public safety are significant concerns.

(b) The Seawalk shall not be required along the water's edge on South Franklin Street extending from the southern boundary of the Ferry Terminal to the second rock dump, but rather shall be constructed along the street or on the uphill side of the street. The Seawalk shall be required parallel to South Franklin Street from the southern boundary of the Ferry Terminal to the Second Rock Dump when the state or CBJ substantially improves or reconstructs the street, or when industrial uses of the area seaward of the street are relocated, whichever occurs first. (The preferred location for the Seawalk between the CBJ Pump Station and the Thane Road intersection is on the landward side of South Franklin, uphill from the street. The CBJ shall work with private landowners to obtain an appropriate right-of-way in this area.) If the Seawalk is not constructed in the uphill location at the time South Franklin is substantially reconstructed or improved, then the Seawalk shall be constructed along the street.

If industrial uses relocate to another area and are replaced by residential land uses, the Seawalk shall be located along the water's edge.

- (c) The Seawalk shall not be required for existing buildings located along the water's edge until such time as additions and/or alterations (as defined below) in excess of 50 percent of the gross square footage of the existing structure are proposed or undertaken within a 36-month period as determined by the CBJ Building Department. General maintenance or repair work is exempt from this requirement.

Definitions:

Addition is an extension or increase in floor area or height of a building or structure.

Alteration is any change, addition, or modification in construction.

General maintenance and repair are activities which over a 36-month period do not change the use of more than 25 percent of the floor area of the structure; do not add more than 20 percent to the usable floor area of the structure; and do not exceed 25 percent of the value of the structure.

- (d) Existing access along the water's edge shall not be obstructed in any manner except on a temporary basis to accommodate repairs or new construction.

5. Public Parks and Open Space

Purpose: To provide areas for public enjoyment and recreational use of the downtown waterfront area.

Policy: Public viewing areas, fishing platforms and other appropriate park facilities shall be developed on public properties along the downtown waterfront and linked to the Seawalk, to the extent feasible and prudent.

6. Aquarium

Purpose: To develop a state aquarium highlighting aquatic environments and species native to Alaska.

Policy: An aquarium facility shall be developed and land set aside for this purpose.

7. Civic Center

Purpose: To provide for a concentration of civic, cultural, entertainment, and government facilities in a prominent and convenient location with the downtown area (see figure 3-5).

Policy: An area emphasizing the enhancement of public facilities with civic, cultural, entertainment or government functions shall be reserved and shall be located inland from the shoreline, wherever feasible and prudent. Appropriate parking facilities and pedestrian linkages shall be incorporated into this development.

8. Transient/Permanent Moorage

Purpose: To provide transient and permanent moorage facilities for commercial vessels, fishing boats, cruise ships, government vessels, recreational boats and float planes in the downtown waterfront vicinity.

Policy: Public properties along the downtown waterfront shall include and maintain, wherever feasible and prudent, facilities for permanent or temporary moorage of vessels. An additional cruise ship berth and a fisherman's terminal shall be developed at appropriate locations on the downtown waterfront.

9. Design Guidelines

Purpose: To provide more direction for public and private development in the study area.

Policy: To establish a set of design guidelines for the Downtown Waterfront which will provide thematic identification, increased public benefits, maintenance of the waterfront character, landscaping and greenspaces, pedestrian amenities, and unifying features to benefit the entire study area.

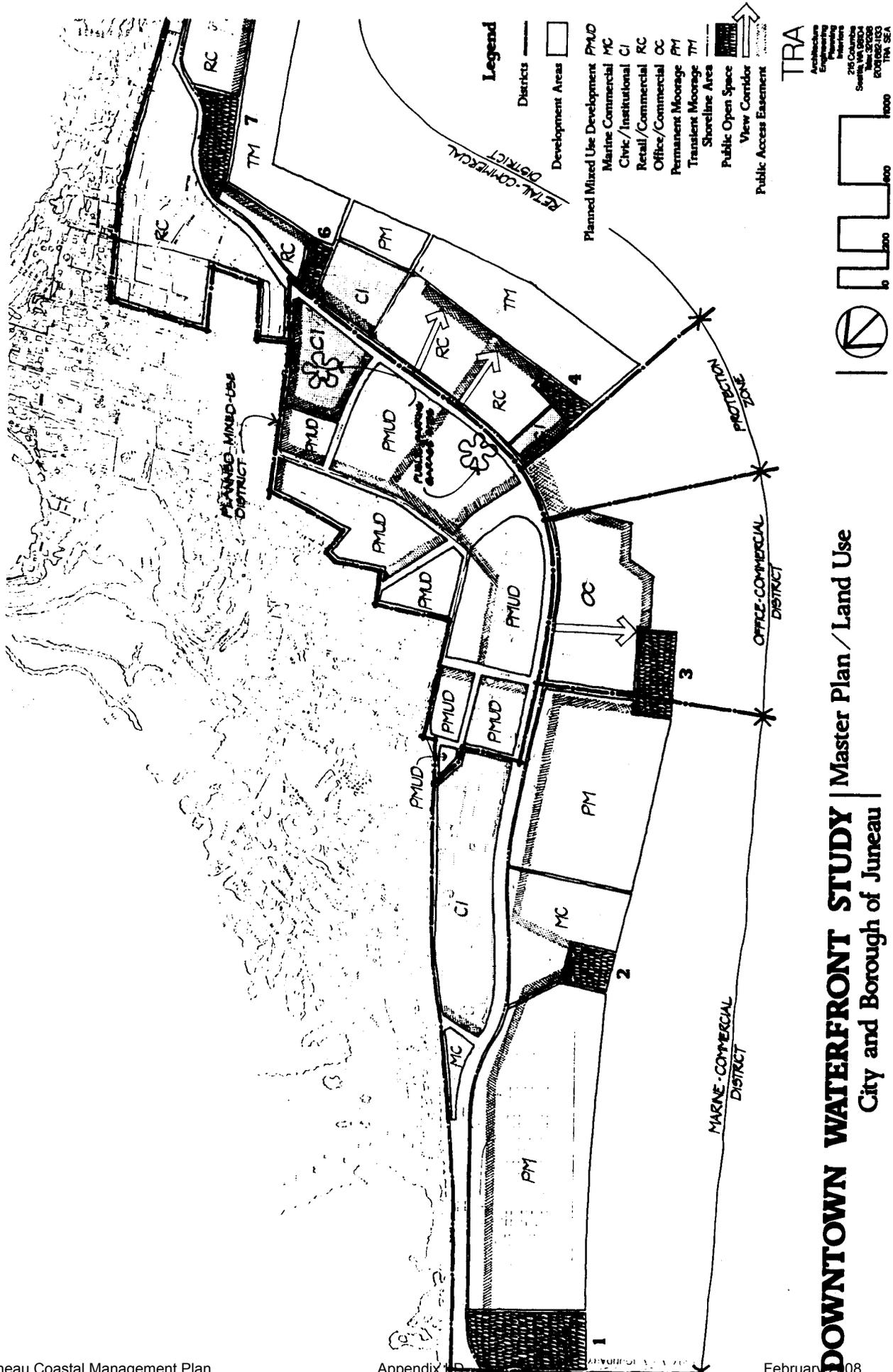
Physical Plan

LAND USE DISTRICTS

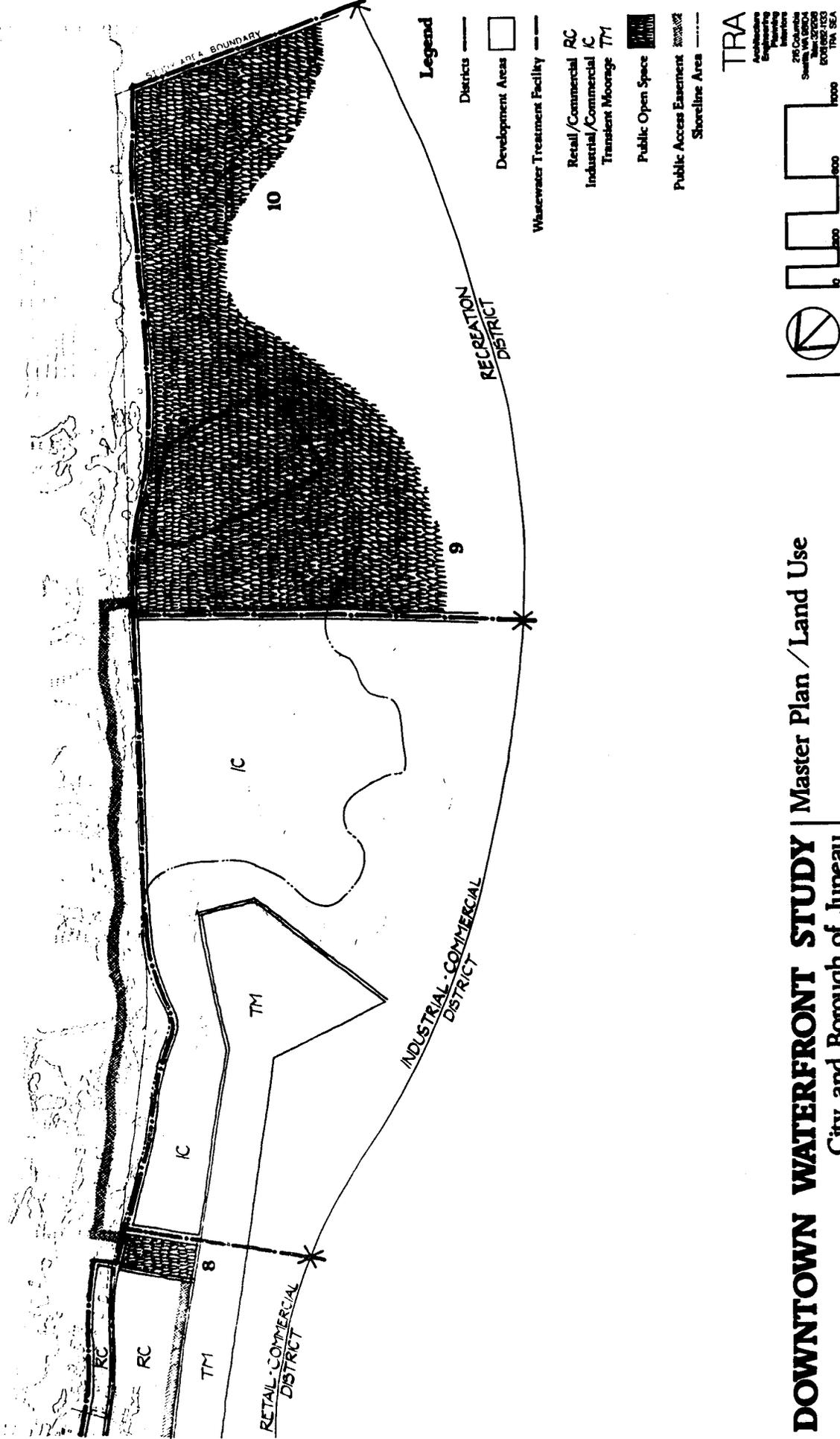
This section of the Master Plan describes the uses and character intended for the districts within the downtown waterfront area. Figure 4-1 illustrates the descriptions presented below. The development patterns and uses identified for each district are to be implemented in two ways. Four of the seven districts (Marine Commercial, Retail Commercial, Office Commercial and Industrial Commercial) are reflected in the main Juneau Coastal Management Program and will be implemented through that program. The remaining districts, which are not to be considered as enforceable under the Alaska Coastal Management Program, will be implemented through other means available to the CBJ.

Recreation District

This area extends from the Second Rock Dump to a line just north of the CBJ Wastewater Treatment facility. South of the treatment facility, land will be kept in open space reserve with provisions for pedestrian access to the tidelands and development of a nature interpretation center. North of the treatment facility, active recreation uses are proposed. These park/open spaces will be an amenity for the entire city. Some acquisition of private land will be needed to carry out the intent of this district. Otherwise, the district can be implemented through the CBJ's direct ownership and management powers.

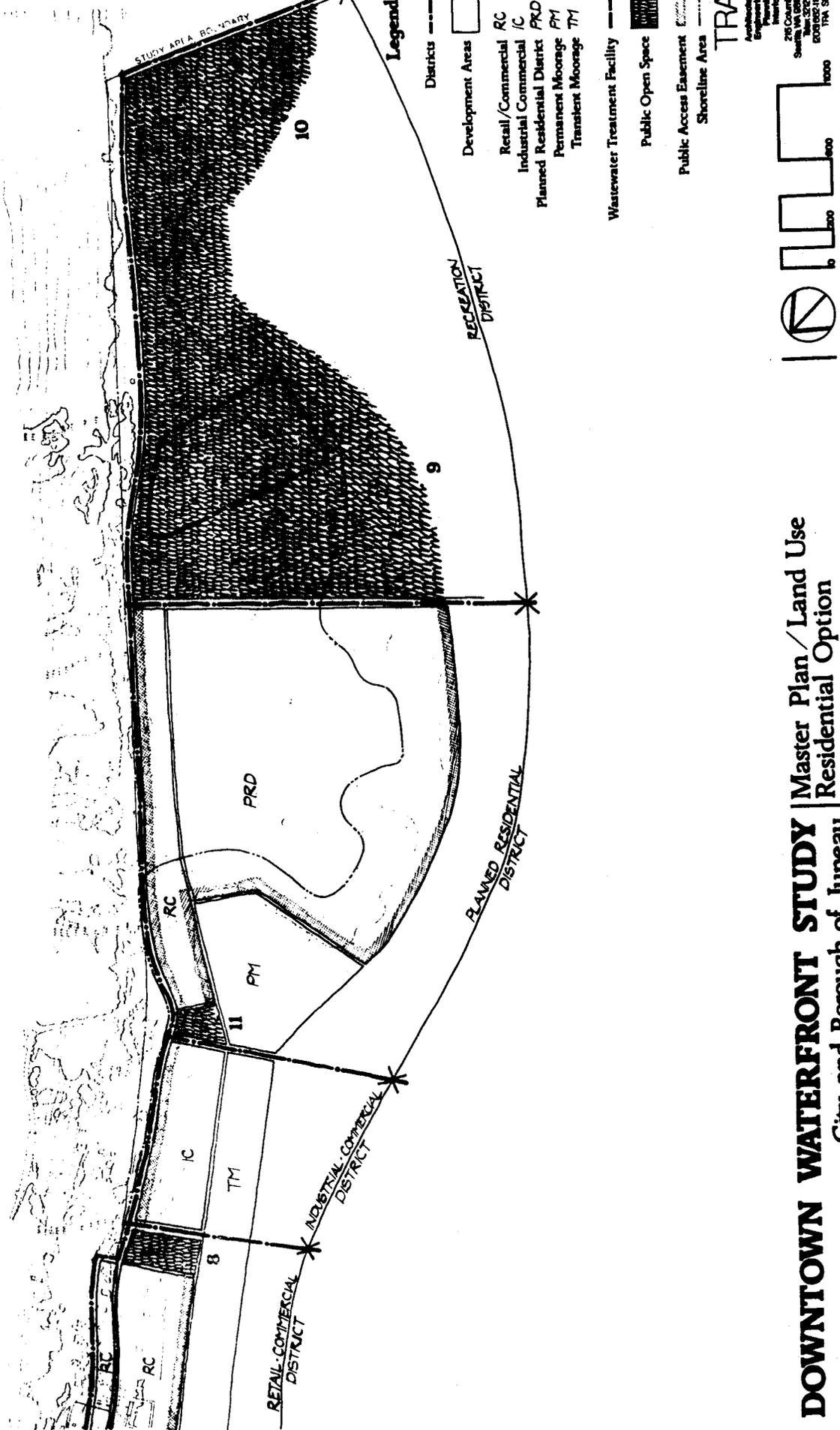


DOWNTOWN WATERFRONT STUDY | Master Plan / Land Use
 City and Borough of Juneau |



DOWNTOWN WATERFRONT STUDY | Master Plan / Land Use
 City and Borough of Juneau

Figure 4-1 B 4-17



DOWNTOWN WATERFRONT STUDY | Master Plan / Land Use
Residential Option
 City and Borough of Juneau

Figure 4-2

Industrial/Commercial (I/C) District (Implemented under ACMP)

This area extends from the Recreation District northward to the existing truck terminal area. Under this plan, the area will maintain its present industrial character. Industrial uses with shoreline frontage will be required to be water-dependent or water-related. Activities related to these uses could locate in the rock dump area if placed approximately 200 feet inland. See map series 3 in main Coastal Management Program. Private landfill or pilings will be allowed in the South Franklin Street area to accommodate the growth needs of water-related and water-dependent uses.

The pedestrian Seawalk extending along the entire downtown waterfront will be located away from the water in this area in recognition of the activities and personal safety hazards that exist in an industrial waterfront area. If, however, pedestrian access to the shoreline area can be provided without interference to industrial/commercial activities and hazards to the personnel safety of the public, it will be encouraged. The pedestrian Seawalk will be reduced in width and landscaping will be less important in this area.

Land uses in this district would include transient moorage, industrial and commercial uses and public park/open space areas.

Alternative

If major existing industrial uses of this area relocate, and remaining uses do not present a hazard or nuisance, residential development could be situated in the rock dump site. Residential use shall be allowed only if the AMSA document is amended in accord with Section 6 AAC. 150 of the Alaska Coastal management Program.

Retail/Commercial District (R/C) (Implemented under ACMP)

This area extends northward from the edge of the industrial/commercial area, inland to include the downtown Historic District, and continues to the water side of Egan Drive to the mouth of Gold Creek. Its activities will relate to tourism, entertainment, civic activities, and public access. District land uses will be primarily retail, including hotels, with the possibility of other commercial uses (e.g. office) in mixed-use configurations or on upper floors. Civic and institutional uses, parking facilities, and public parks/open space area will also be included. The character of the historic area will be maintained (refer to CBJ Historic District Plan) as will transient moorage facilities for cruise ships, ferries, and float planes. Permanent moorage of government vessels will continue to be allowed. Support facilities necessary for moorage-related uses will be required elements of any development along the shoreline.

The Seawalk maintained for public use and built in conformance to CBJ design guidelines will be located on the water side of all private and public development. For reasons of security and public safety, the Seawalk will be to the rear of the Coast Guard and NOAA docks. Public parks would be sited at locations indicated on the Master Plan (Figure 4.1).

The CBJ should pursue the acquisition of the privately owned land between the NOAA property and the Seadrome Building.

An area from the existing subport site to the mouth of Gold Creek will be filled to provide needed additional land in the downtown area and an additional cruise ship moorage facility. In addition to the cruise ship facility, other water-dependent and water-related public uses of the fill area include an aquarium, Seawalk, and public park. Other uses will include hotel and retail activities. A fishermen's terminal will be developed on the existing subport site. As much parking as reasonably possible will be located off-site on the landward side of Egan Drive.

CIVIC CENTER COMPLEX

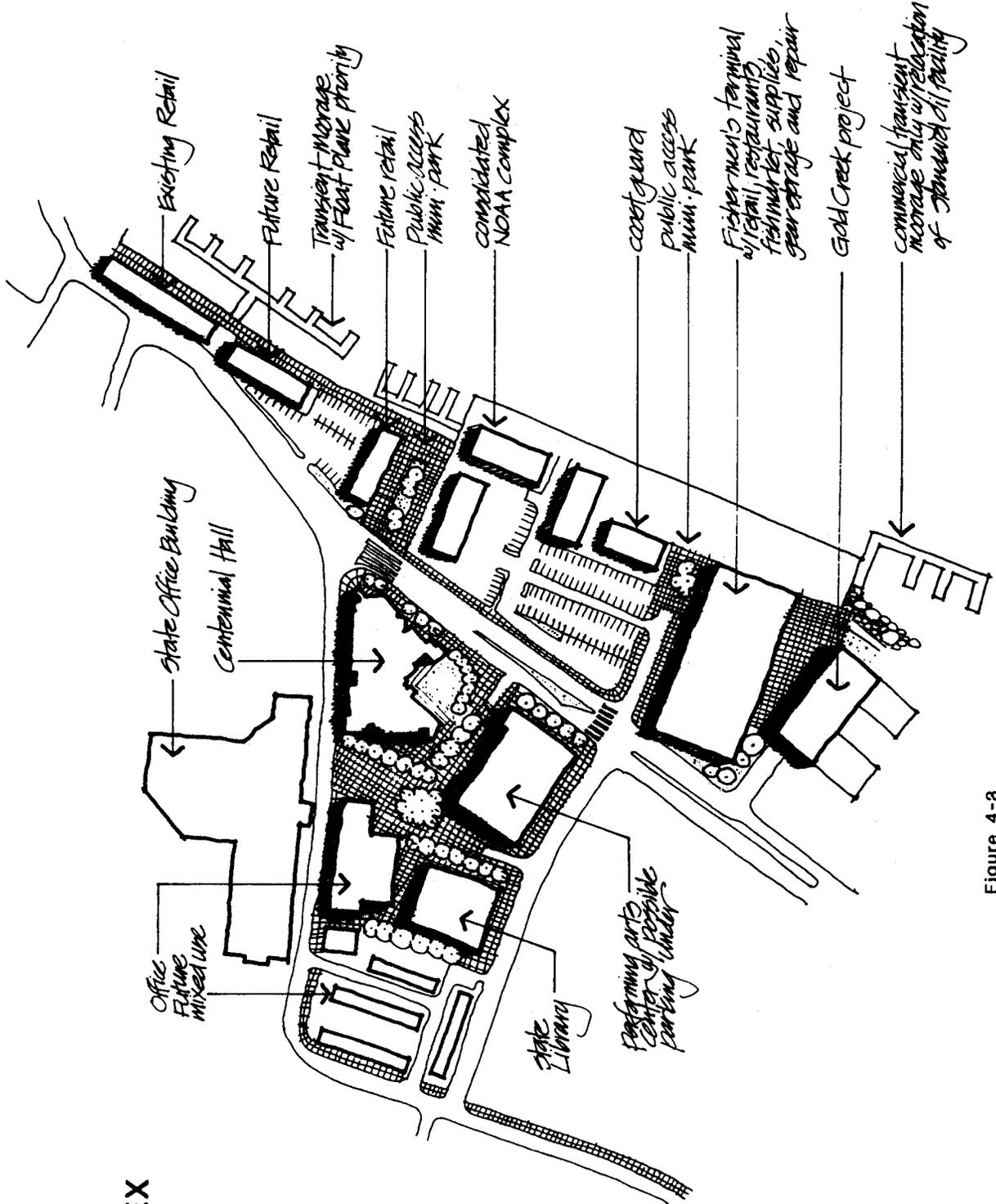
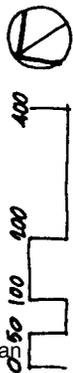


Figure 4-8

SOUTH FRANKLIN TOURIST COMPLEX

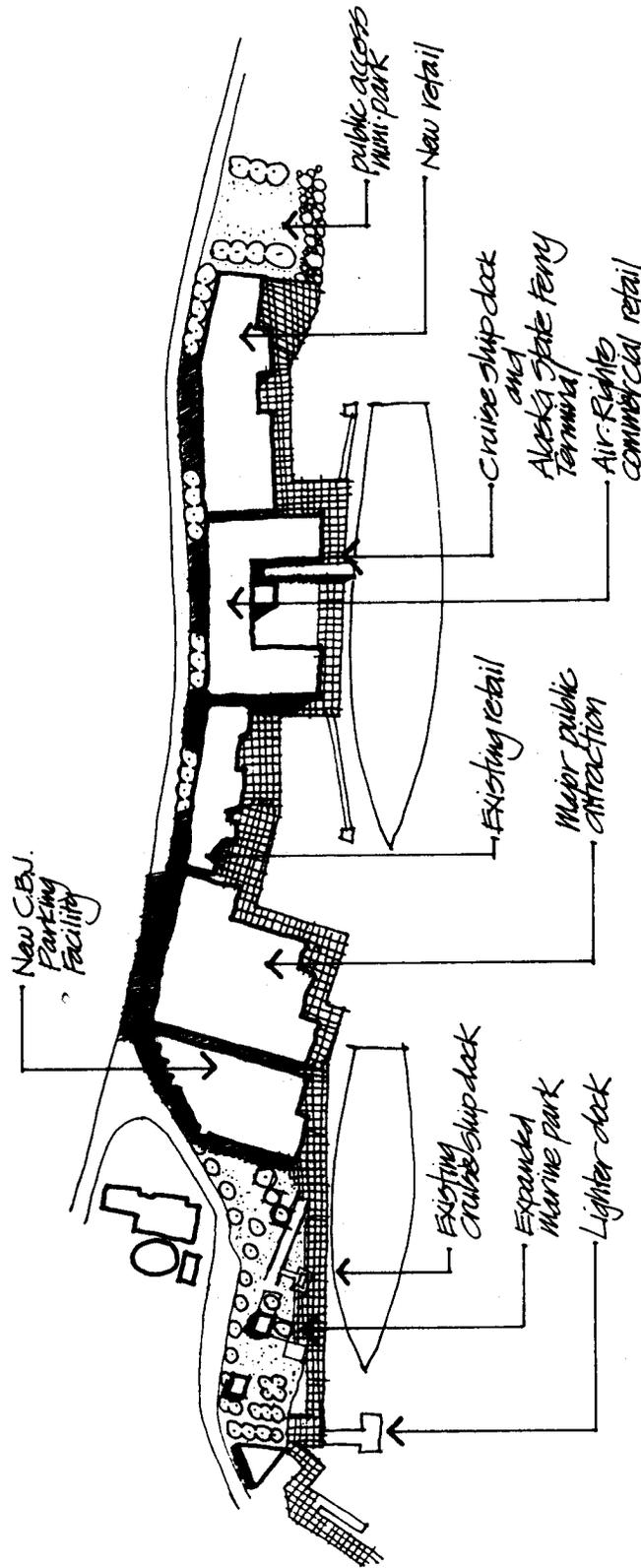
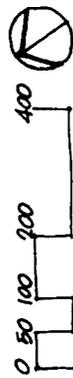


Figure 4-4

Office/Commercial District (OC) Implemented through ACMP

This area is on the water side of Egan Drive from the mouth of Gold Creek to the Juneau/Douglas Bridge. Existing office structures will be supplemented by new office developments to create a major office concentration in the district. Office developments may include other commercial activities such as service retail and restaurant uses. An area of approximately 3.3 acres on the western side of Gold Creek will be filled to provide a circulation area for a new Glacier Avenue/Egan Drive interchange needed to serve new development on both sides of Gold Creek. The fill will also provide site area for an office development required for economic support of the public water-dependent and water-related uses that are elements of the Gold Creek Development Plan. A large portion of the Gold Creek delta area will be maintained in its present state to provide habitat for migrating juvenile and spawning salmon (refer to the Gold Creek Development Plan).

The Seawalk will continue along the water's edge and underneath the Juneau/Douglas Bridge. A public park will be developed on CBJ land at the shoreline on the eastern side of the bridge.

Planned Mixed-Use District (PMUD)

This is the only district of the downtown waterfront that is not immediately adjacent to the water. As can be seen on the Master Plan, it is approximately bounded by Egan Drive, Willoughby Avenue, and Glacier Avenue. It presently includes a mixture of public facilities, retail uses, office and a small amount of housing. It is in close proximity to existing state offices, and the State Legislative Hall planned for Telephone Hill. The new Centennial Hall complex is located with the district and represents a major aspect of the area's existing and potential character. Because of the strong physical and functional relationships between this area and the Office/Commercial and Retail/Commercial waterfront districts, it is included within this plan as a district of the downtown waterfront.

Under this plan, the Planned Mixed-Use District will accommodate civic facilities and public and private offices, and will continue to be a major retail area serving downtown residents and workers. These uses will serve the entire CBJ population, state facility requirements, private office space needs relating to the public and private sectors, downtown area residents, and visitors to Juneau. It will also contain parking facilities to serve uses within the district as well as waterfront activities. Because of the many functions and activities of this district, it is desirable that a mixture of uses be developed wherever appropriate. It is also important that uses be compatible with and supportive of adjacent and nearby uses. Proposed development will be subject to planned development procedures of the CBJ.

Pedestrian connections to the waterfront area, Seawalk, and other areas of the downtown will be an important feature of this area. Pedestrian connections between downtown residential areas and the waterfront will also pass through the district.

Marine/Commercial District (MC) (Implemented through ACMP)

This area extends from the Juneau/Douglas Bridge to the northern end of the Aurora Harbor, on the water side of Egan Drive. It presently includes two small boat basins and upland support facilities. Under this plan, the area will maintain its strong emphasis on water-dependent and water-related uses. In addition to the existing facilities, UAJ marine-related educational facilities and a boat launching ramp will be developed.

District land uses will include permanent and transient moorage, water-dependent and water-related commercial activities, civic and institutional uses, parking facilities, and public parks/open space areas. The seawalk will continue from the Juneau/Douglas Bridge along the water's edge along the entire district.

DESIGN GUIDELINES

This section provides a set of guidelines for the design and development of the Juneau downtown shoreline. The guidelines are specific but will be more detailed and incorporated into the land use regulations governing the area. Guidelines are included for plaza, pedestrian walkways, landscaped areas and buildings.

General Guidelines

- o All developments located along the shoreline should rely on the waterfront as the framework for the design and character of development.
- o Artwork with a historic or cultural theme should be provided as an aesthetic framework for architectural elements throughout development projects. This could take the format of applied art through selection of colors, designs on walkways, sculptures, building materials, murals, lamps, and bench designs.
- o All unbuilt and unpaved areas of the site should be thoroughly landscaped with indigenous plant materials related to the function of the area in which they are located.
- o All developments should be connected by walkways to the remainder of the downtown area. Covered walkways should be provided in areas of heavy pedestrian traffic. Pedestrians should be kept separate from automobile traffic.

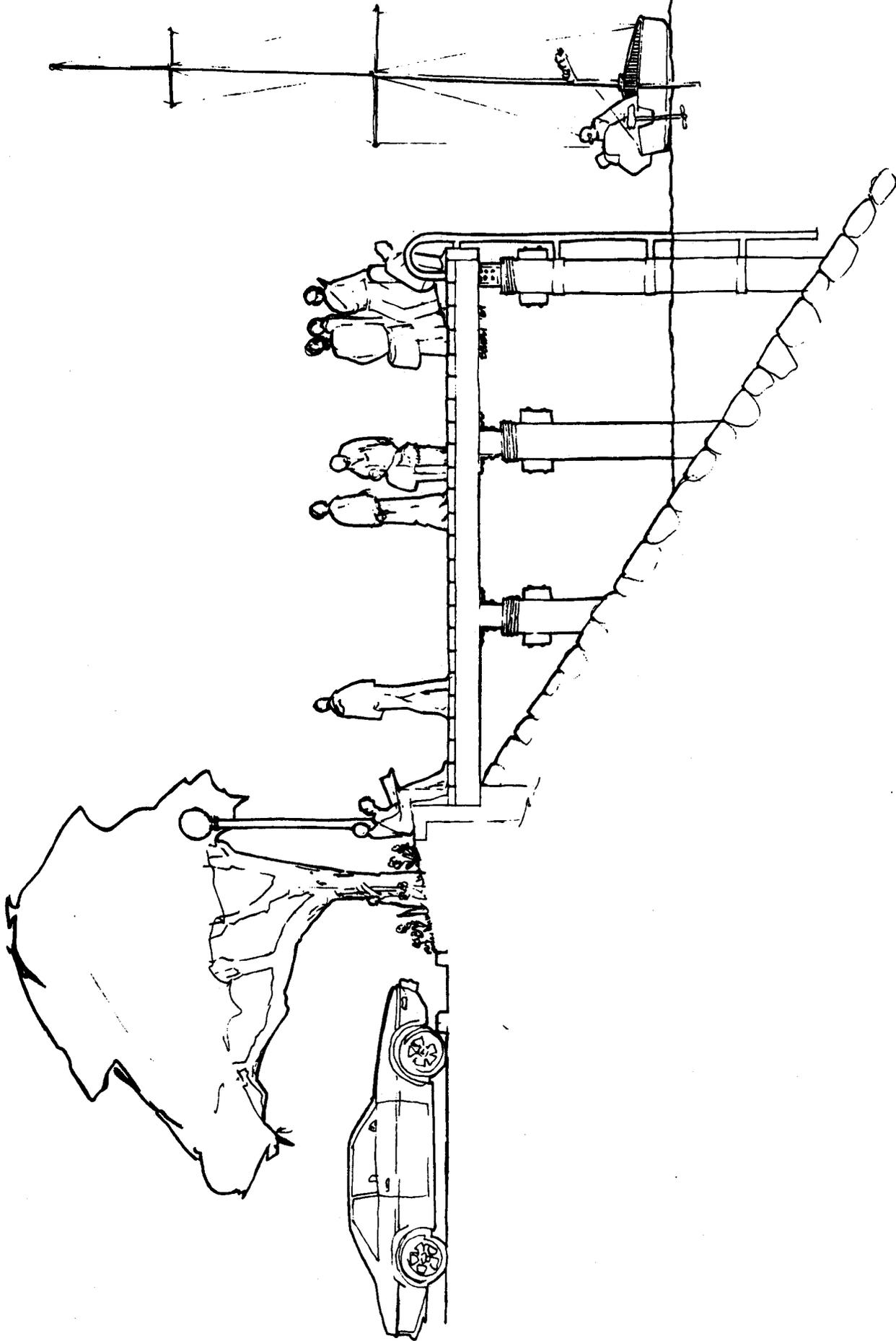
Pedestrian Walkways

- o Pavement materials should consist of wood, pavers, or concrete which is patterned to imitate pavers or wood.
- o Where appropriate, seating should be provided facing the channel or other view opportunities.

- o Artwork which reflects the native culture and history of Juneau should be incorporated in the form of murals, pavement design, sculpture, totem poles, etc.
- o Guardrails on the Seawalk should be designed to minimize view blockage for those seated at bench height.
- o Public walkways to and from cruise ship berths an other public areas should be designed similar to the Seawalk.
- o The Seawalk should be designed to accommodate high volume of two-way pedestrian traffic, handicapped access, and emergency vehicles.

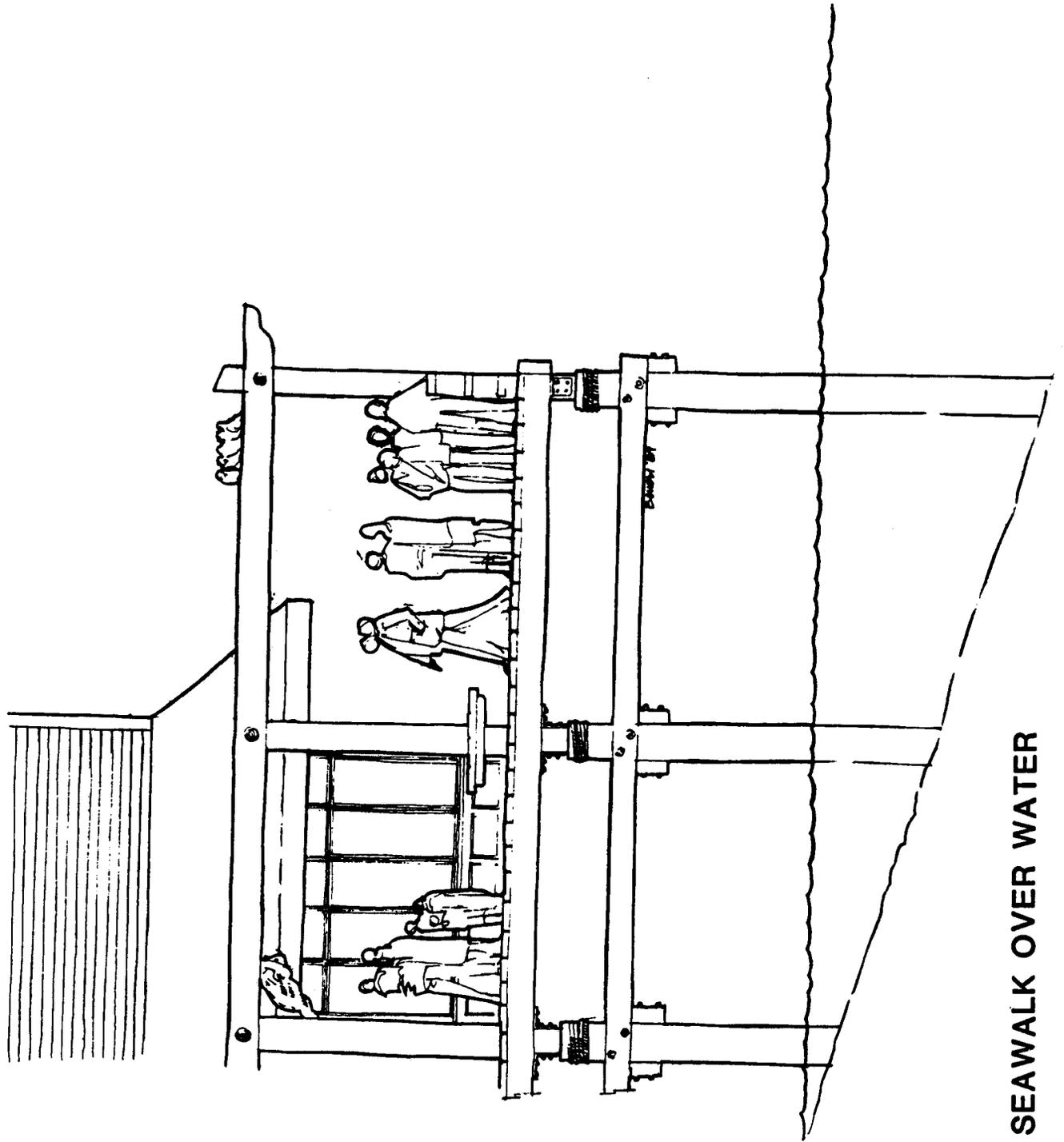
Buildings

- o Buildings should be designed to minimize view blockage from adjacent street, nearby buildings, and upland areas to the channel and to maximize view potential for building users. Particular attention should be paid to lot coverage, height, and building placement on the site.
- o Careful attention should be given to avoid blockage of views from within the same structure.
- o The ground floor of building should provide direct pedestrian access to public areas, including plazas, the Seawalk, and parks.



SEAWALK AT THE MARINAS

Figure 4-5 4-29



SEAWALK OVER WATER

Figure 4-6 4-30

- o Buildings located along the Seawalk, parks, and plazas should provide opportunities for visual interest to pedestrians and should not be constructed with blank walls facing pedestrian areas. The use of murals, artwork, and display windows on building exteriors is encouraged.
- o Architectural features such as skylights and clerestories should be incorporated into the design of any interior malls or plazas.
- o Buildings fronting on plazas, parks, or the Seawalk should encourage activities that enhance and use these spaces. Such activities would include flower shops, bookstore, restaurants, etc.
- o Elements such as awnings, canopies, arcades, small-scale signs, and interesting window displays should be colorful and encouraged in buildings which front plazas and the Seawalk.
- o Where appropriate, awnings, marquees, or canopies should be installed on buildings where they abut pedestrian walkways to protect pedestrian from inclement weather conditions.

Landscaping

- o All developments along the waterfront and shoreline shall comply with the City and Borough of Juneau Design Standards for Landscaping and all subsequent regulations governing landscaping requirements.

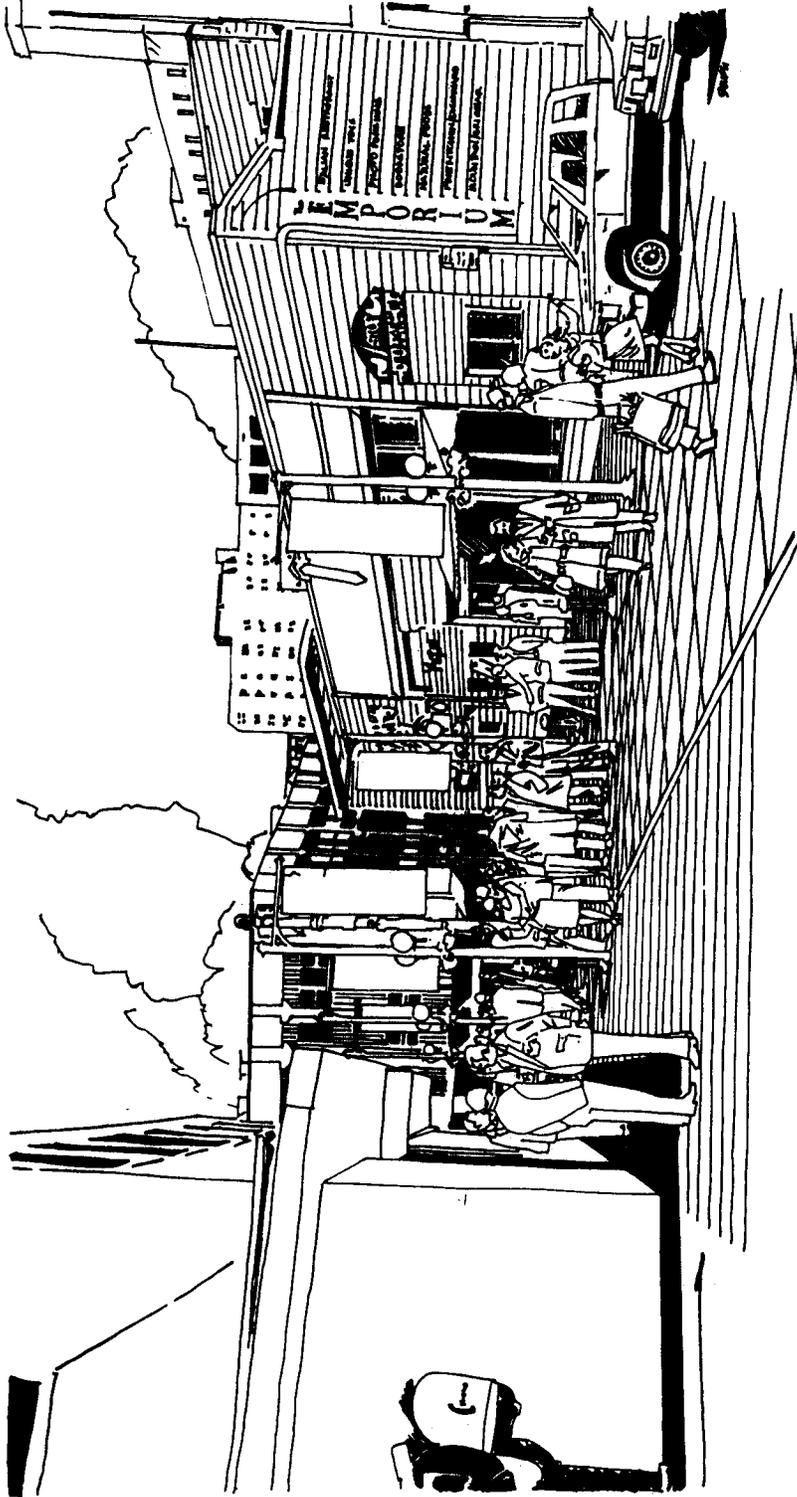
Plazas and Parks

- o Outdoor plaza areas should consist of a mixture of landscaping and surfacing. A minimum of 40 percent of the area should be surfaced with materials such as masonry pavers, wood decks, and concrete which is patterned to imitate pavers.
- o Information kiosks and portable structures for selling food and flowers should be encouraged in plaza areas.
- o The design of plaza areas and any portable or permanent structures located within the plazas should be sensitive to the harsh weather conditions which sometimes occur in Juneau.
- o Plazas should contain features to encourage liveliness and pedestrian attractions such as fountains, sculptures, benches, seats, trees, planting beds, litter receptacles, drinking fountains, bicycle racks, kiosks, flag poles, and public telephones.
- o Indoor plazas with views to the waterfront are encouraged. These areas should be incorporated into spaces such as hotel lobbies, public facilities, and retail enclosures.

Gold Creek

The following design guidelines are specific to the Gold Creek Development:

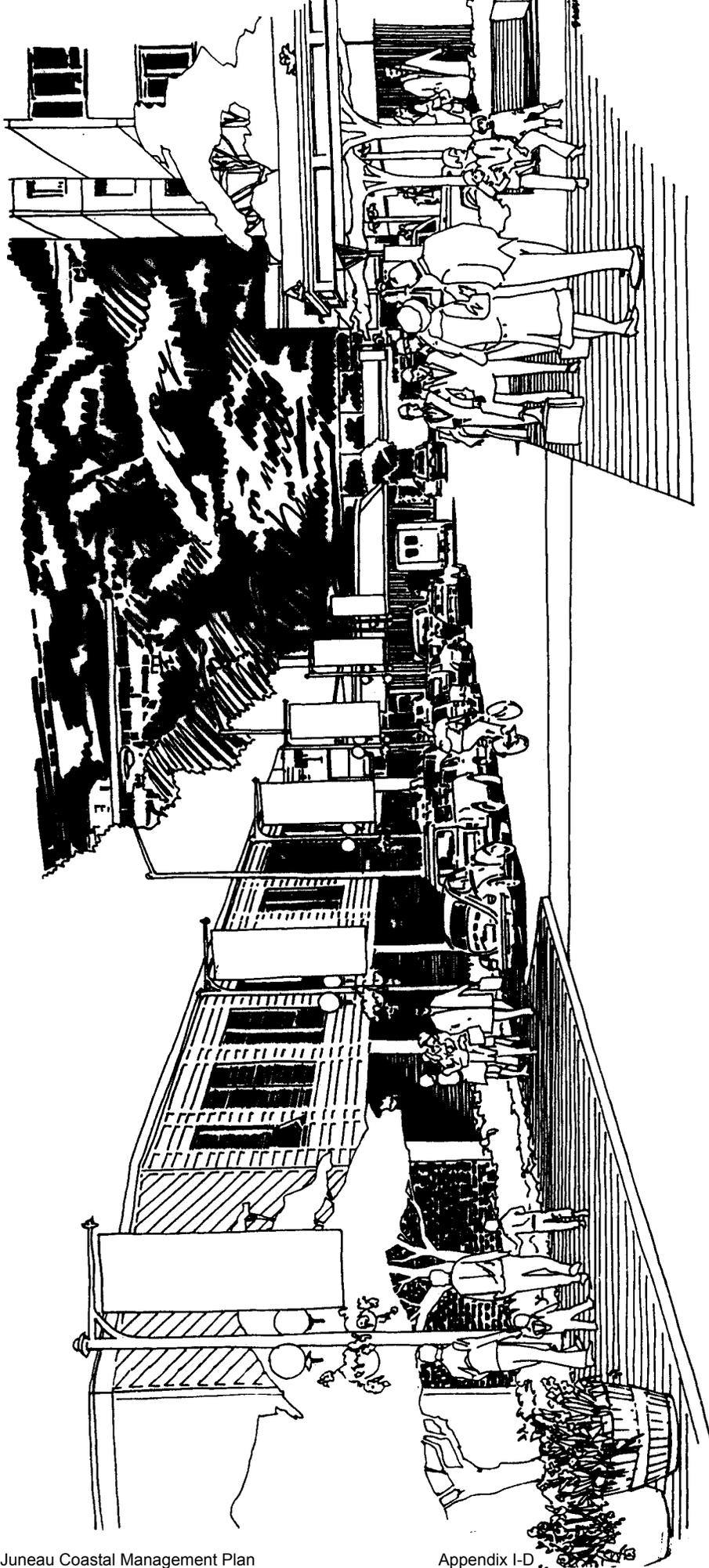
- o The banks of the fill should be designed and constructed with stair-step riprap.
- o Buildings shall be set back a minimum of 30 feet from the top of the bank, with the exception of the aquarium and fish ladder.
- o The Seawalk shall be a minimum of 25 feet in width.



SHATTUCK WAY AT MUNICIPAL BUILDING

DOWNTOWN STREET IMPROVEMENTS DESIGN STUDY
 City and Borough of Juneau

Figure 4-7 4-34



TR
 ARCHITECTS
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DOWNTOWN STREET IMPROVEMENTS DESIGN STUDY | **FERRY WAY**
 City and Borough of Juneau

Figure 4-8



DOWNTOWN STREET IMPROVEMENTS DESIGN STUDY | **SOUTH FRANKLIN AT ADMIRAL WAY**
City and Borough of Juneau

TRA
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Planning
Interior
216 Colant,
Sitka, AK 99801,
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CORPORATE
TRA SEA

Public Improvements Program

GENERAL

The public projects identified in Figure 4-1 and in Table 4-1 form the basis of a capital improvement program for the downtown waterfront. An estimate of the cost of each of the identified capital projects is included.

Most of the improvements identified are parks or public access elements. Development costs vary from \$50,000 to \$5,625,000. While most of the parks are developed on public lands, three are slated for private property. Costs in the table include acquisition costs. As shown, acquisition of downtown waterfront property can be costly. It would be advantageous for the CBJ if these parks could be developed without acquiring the property. This could be achieved through long-term lease of the land, regulations related to private provision of public access, or through incentives to developers to provide these facilities.

The parking garage for the Gold Creek Development identified in the Willoughby Uplands area could be developed as a public/private partnership. The concept is explored further in the funding section which follows.

Finally, Gold Creek capital costs are not included in the table because it is difficult to separate the costs which are normal public improvements from the costs of preparing the site for private development. In fact, the entire area will be developed through joint public and private action. The sharing of costs is considered in more detail in the Implementation section under "Funding".

TABLE 4-1

DOWNTOWN WATERFRONT PUBLIC IMPROVEMENT PROGRAM

Study Subarea	Improvement	Quantity	Unit Cost	Project Cost ¹	Funding
Aurora Harbor North	Minipark	5.6 acres	\$50,000/acre	\$ 280,000	
	Boardwalk	2,000 l.f.	\$200/l.f.	400,000	
Aurora Harbor South	Boardwalk	1,000 l.f.	\$200/l.f.	200,000	
	Minipark	1.3 acres	\$50,000/acre	65,000	
Juneau/Douglas Bridge	Minipark	2.5 acres	\$100,000/acre	250,000	
Gold Creek	Mini Park				
	Seawalk				
	Aquarium				
	Ship Moorage Other Site Improvements	See Gold Creek	Development Feasibility		
Willoughby Uplands	Parking Structure				
Coast Guard/Subport	Fishermen's Terminal	See Gold Creek	Development Feasibility		
	Minipark	--	--	--	
Steamship Dock	Minipark	1.0 acres	\$50,000/acre ³	50,000	
	Minipark	0.7 acre	\$450,000/acre ³	300,000	
	Marine Park Extension	0.6 acre	\$100,000/acre	60,000	State
South Franklin Street	Downtown Street Imprvmts. Phase One			1,500,000	State & local
	Waterfront Parking Garage	324 spaces	\$16,534/space ⁴	5,357,000	
AJ Rock Dump	Minipark	1.8 acres	\$225,000/acre ⁴	405,000	
2nd Rock Dump	Public Park/Boat Ramp	23.4 acres	\$225,000/acre ⁴	5,265,000	
	Open Space Reserve	36.7 acres	\$25,000/acre	915,000	

Source: Williams-Kuebelbeck & Associates, Inc.

¹ Includes 15% to cover fees and project administration.

³ Includes acquisition cost @ \$10/s.f.

² Assume transfer from state and no additional cost to CBJ.
⁴ Includes acquisition cost @ \$5/s.f.

TRANSPORTATION ACTIONS

Transportation system problems, limitations, and improvements have been identified in previous phases. Some of the specific actions discussed below will enhance waterfront access and improve overall traffic operations. Transportation planning and implementation for the downtown waterfront study area should maintain awareness of this guiding principle:

Alternatives to single occupant vehicle travel should be actively encourage both for peak commuter trips and local circulation. As major employers, state, federal and local jurisdictions can lead this effort.

The scope and cost of future transportation system improvements will be determined by the success of efforts to reduce peak congestion in the waterfront corridor. Waterfront transportation plan elements are listed below. Some of the elements enhance the general system and some specifically enhance waterfront access and circulation.

- o Install a traffic signal as soon as possible at the intersection of 10th Street and Glacier Avenue.
- o Determine if signalization is warranted at the following locations:
 - Egan Drive and Highland
 - Egan Drive and Whittier
 - Egan Drive and Willoughby
 - Marine Drive and Ferry

- o Improve South Franklin Street, south of Marine Drive, to two standard 12-foot lanes with minimum 5 foot sidewalks. If improvements are limited by constraints on each, remove curb parking to provide 36 foot clearance.
- o Improve traffic controls at the Egan and Willoughby intersection. Depending on the results of signal warrant analysis, evaluate the following options :
 - Signalize the intersection with a short phase to allow safe access to Egan for vehicles turning left from Willoughby.
 - If signalization is not warranted, minor widening of Egan should occur to allow installation of a center left-turn acceleration lane.
- o Close Shattuck Avenue to general traffic as a measure to reduce the complexity of the Egan and Ferry intersection. Minor loading activities must remain on Shattuck to serve the City and Borough office and nearby businesses.
- o When Gold Creek access is constructed at Glacier, reduce the existing right-turn radius from Glacier to Egan and eliminate the channelization island. This measure will reduce conflicts between right turns and new left turns out of Gold Creek.
- o Enhance area pedestrian linkages between 10th Street, Gold Creek, and downtown. Additional pedestrian improvements shall be provided at the following locations :

- Egan Drive and 9th-8th Streets
- Egan Drive and Whittier Avenue
- Egan Drive and Willoughby Avenue
- Willoughby Avenue at the State Office Building, Willoughby Office Building, and Centennial Hall Complex

- o The CBJ should continue its efforts in developing transit management, ridesharing, shuttle bus, park-and-ride, and high-occupancy vehicle programs.
- o Place additional public parking facilities west of Main Street
- o Allow only short term and handicapped parking in the shoreline area. Long term parking (mostly employee) should be accommodated in off-site facilities.

FUNDING

The CBJ will construct improvements called for in this plan (Table 4-1) through inclusion of these elements in its capital improvements program (CIP). This program establishes priorities for funding of all capital improvement projects of the CBJ and should reflect the priorities and phasing identified in this plan. Management responsibilities, particularly for the Gold Creek project, must also be defined and funded. Sources of funding may include local, state and federal contributions. Local funds may come from general fund revenues and/or bonds.

Construction of improvements required of private developers will come from private sources and/or local improvement districts.

The financing program is intended to address all the types of development listed in Table 4-2 of the Timing section. There are actually two aspects of the financing program:

- o Is the project financially feasible?
- o If so, how much funding is required and from what source?

For public projects, the latter question is the most important because feasibility cannot always be measured in financial terms. For private project, the first question is relevant here, because it will be the private developer's responsibility to structure his own financing based on his own resources. Financial impacts are considered according to the appropriate measure for each sector below.

Public Parks

The CIP identified a series of parks along the downtown waterfront. The cost of these projects (not including Gold Creek) by time period is as follows:

Near Term: \$60,000
Intermediate Term: \$1,950,000
Long Term: \$6,180,000

These items would likely be part of the overall CBJ CIP or could be included in a future general obligation bond issue for Borough-wide capital improvements.

Seawalk

The Seawalk will be required of property owners along the downtown waterfront shoreline area involved in major rehabilitation or new construction projects. Prior to issuance of a building permit, the Planning Director will review the location and design of the Seawalk in conformance with the requirements of the policy.

Gold Creek Development

The total cost of development at Gold Creek is summarized in Table 4-3. Additional details on many of the cost estimates is provided in the Gold Creek Development section of this report.

As shown, the private sector would fund over 60 percent of the cost. The State of Alaska would fund the major cost items such as the aquarium/covered area, cruise ship berth, and fill and stabilization. The first two items are appropriate state expenditures because the aquarium is intended to serve all residents of Alaska and the cruise ship berth is intended to stimulate the State's tourism program. The cost of fill and stabilization could ultimately be recovered from leasehold revenues as described in the Gold Creek Economic Assessment in the Appendix. However, the CBJ could not capture the entire value of the lease payment stream initially and would require State assistance for the fill and stabilization.

CBJ project costs could be financed by a \$3.8 million revenue bond issue. Issuance costs, reserve requirements, and funded interest costs would take the remainder of bond proceeds. Annual debt service on a bond issued at 10 percent for 20 years would be \$450,000 per year. Lease revenues would be sufficient in the second year of operation to fund debt services and provide coverage. Growth in lease revenues in subsequent years would provide significant revenue in excess of debt service requirements.

Public Garage

A public garage is proposed in the Willoughby Uplands area across Egan Expressway from the Gold Creek project. Gold Creek development will require 480 parking spaces (see Figure 4-10).

Of these spaces, 385 would be provided in the proposed garage. Additional spaces could be provided to serve other development in the downtown.

If the CBJ were to build a 500-car garage, the cost would be approximately \$8,750,000. Of that cost, \$6,737,500 would be attributable to the Gold Creek commercial development. The CBJ could lease parking stalls to the Gold Creek developers for approximately \$800,000 per year. The remaining stalls could be rented on a short or long term basis to other users of the downtown.

Fishermen's Terminal

The fishermen's terminal is proposed as a commercial venture designed to meet fishermen's needs for services and supplies as well as markets for their products. The fact that many of the businesses catering to fishermen in the downtown have closed down indicates that such an enterprise is not financially feasible on its own. Affordable rents or charges for service would not be sufficient to cover operating and maintenance expenditures as well as amortize the cost of the building.

The existing subport building is proposed as the site for the fishermen's terminal. The existing structure could provide a shell for retail/service space, and the existing dock provides water access. Development costs would be limited to interior improvements to provide tenant areas, and outside improvements to provide safe access and circulation about the water, as well as a transient moorage facility to the north of the state-owned dock.

The subport building is owned by the State of Alaska and occupied by State employees. Alternative space would have to be provided before the building could be available for alternative uses.

If the State were to transfer the subport building to the CBJ at no cost, the CBJ could lease the facility to a private developer on a sliding scale based on the performance of the project. That developer might be a cooperative or nonprofit corporation. The developer could provide the improvements required and rent space to tenants and provide services to users. Without the burden of a heavy cost of facilities, the terminal operator could set rents and charge affordable by fishermen. Further, inclusion of retail outlets serving the general public could provide revenue which could further subsidize rates.

DEVELOPMENT TIMING

The timing of development on the downtown waterfront will be affected by two major factors: market demand for individual uses and priorities for public investment. Table 4-2 identifies the recommended potential uses for the waterfront and provides an estimate of the timing of development. Generally, the uses can be categorized as public improvements or private development. The timing of the public improvements is dictated largely by the spending priorities while the timing of private development is dictated by market conditions. Together these factors can be reflected in a designation of three development intervals:

Near Term (1985-1987): high priority public projects and private projects with current unmet demand.

Intermediate Term (1987-1992): moderate priority public projects and private projects with future unmet demand.

Long Term (after 1992): lower priority public projects and private development contingent on future events.

TABLE 4-2

ESTIMATED DEVELOPMENT TIMING

Study Subarea	Potential Uses	Responsibility	Timing of ¹ Development
Aurora Harbor North	Mini Park	Public	Intermediate Term
	Boardwalk	Public	Intermediate Term
Aurora Harbor South	Boat Oriented Retail	Private	Intermediate Term
	Mini Park	Public	Intermediate Term
Juneau/Douglas Bridge	Mini Park	Public	Intermediate Term
	Office	Private	Intermediate Term
Gold Creek Tideflats	Office	Public/Private	Near Term
	Retail	Public/Private	Near Term
	Residential/Hotel	Public/Private	Near Term
	Mini Park	Public	Near Term
	Aquarium	Public	Near Term
	Ship Moorage	Public	Near Term
	Seawalk	Public	Near Term
Willoughby Uplands	Office/Retail	Private	Intermediate Term
	Parking Structure	Public/Private	Near Term
	Hotel	Private	Long Term
Coast Guard/Subport	Performing Arts	Public	Intermediate Term
	Fishing Terminal	Public/Private	Intermediate Term
	Retail	Private	Intermediate Term
	Mini Parks	Public	Intermediate Term

TABLE 4-2

Continued

Study Subarea	Potential Uses	Responsibility	Timing of ¹ Development
Steamship Dock	Retail	Private	Intermediate Term
	Public Attraction	Public	Intermediate Term
	Marine Park Extension	Public	Near Term
	Waterfront Parking Garage	Public	Underway
	Downtown Street Imprvmts.	Public	Underway
South Franklin Shoreline	Small Boat Harbor	Public	Long Term
	Retail	Private	Intermediate Term
	Boat Repair	Private	Intermediate Term
	Tugboat Moorage	Public/Private	Intermediate Term
	Mini Park	Public	Intermediate Term
AJ Rock Dump	Public Park	Public	Long Term
	Boat Ramp	Public	Long Term
	Industrial	Private	Intermediate Term
	Residential	Private	Long Term
2nd Rock Dump	Recreation	Public	Long Term

Source: Williams-Kuebelbeck & Associates, Inc.

¹Timing of development approximately as follows:

- Near Term: 1985-1987
- Intermediate Term: 1987-1992
- Long Term: After 1992

TABLE 4-3
 GOLD CREEK DEVELOPMENT
 SHARING OF PROJECT COSTS

	TOTAL	CBJ	STATE	PRIVATE
Roads and sidewalks	\$ 540,000	\$ 540,000		
Utilities	174,000	174,000		
Vehicle bridge	540,000	540,000		
Pedestrian pathway	84,000	84,000		
Plaza	750,000	750,000		
Parking (on-site)	60,000	60,000		
Public park	170,000	170,000		
Aquarium	10,000,000		10,000,000	
Covered area	900,000		900,000	
Cruise ship berth	4,100,000		4,100,000	
Fill and stabilization	5,700,000		5,700,000	
Retail space	3,675,000			3,675,000
Restaurants	2,250,000			2,250,000
Hotel	8,400,000			8,400,000
Office	23,625,000			23,625,000
Leasehold landscaping	650,000			650,000
	<u>\$61,618,000</u>	<u>\$2,318,000</u>	<u>\$20,700,000</u>	<u>\$38,600,000</u>

Source: Williams-Kuebelbeck & Associates, Inc.

Implementation

GENERAL

The Downtown Waterfront Plan will be a component of the CBJ Coastal Management Program. As an "Area Meriting Special Attention" (AMSA) under the Alaska Coastal Management Act, a specific approach to management of the area must be adopted by the CBJ. The Policies, Land Use Districts, Design Guidelines and Public Improvement Program delineated previously in this phase establish the approach to be taken in management of the downtown waterfront. Implementation will be accomplished by the following methods:

The CBJ Coastal Management Program will be the primary device used by the CBJ to implement the "enforceable policies" of the Downtown Waterfront Plan. These are the policies for four of the land use designation districts and the Seawalk.

The non-ACMP policies will be implemented through the CBJ zoning ordinance and other land use regulations. In addition, the CBJ Capital Improvement Program will reflect the Capital Improvement projects identified in the master plan. Priorities and phasing of project as outlined in the plan will be included in the CBJ CIP program.

PUBLIC AND PRIVATE RESPONSIBILITIES

Public action will be required to implement certain portions of the plan. Examples of public responsibilities include development of public parks and open space areas, Seawalk and pedestrian connections on public land, development of the Gold Creek project, and construction of public facilities such as a performing arts center and cruise ship dock. There are some elements, such as parking facilities and the fishermen's terminal, that could be public, private, or joint responsibilities.

Typical actions taken by a public agency involve:

- o regulating development through comprehensive planning and zoning;
- o opening up areas for development by providing street and utilities
- o providing amenities which enhance the desirability of development areas.

All of these actions are embodied in the development process for the waterfront.

Private responsibilities will be associated with development or redevelopment of private projects in the waterfront area. Zoning ordinance provisions for such things as allowed uses, parking, height and bulk of buildings, pedestrian facilities, and design guidelines will apply. There may also be improvements jointly sponsored by several property owners, through the establishment of local improvement districts. Typical private sector actions include construction and operation or occupancy of commercial, residential, and industrial facilities. These actions will occur as a result of market conditions affecting demand for these uses, and the attitudes and desires of individual owners.

The Preferred Development Concept (see Phase 3) also includes a relationship between the public and private sectors which is somewhat less typical. This involves joint public and private development of certain facilities. In some cases, the public sector would fill the private sector role of site development as in the case of the CBJ development of the Gold Creek site. In other cases, the private sector may provide public amenities such as waterfront access over private property. In either case, the public and private sectors must work closely together to assure that each party has the flexibility to do what it can do best in each individual instance.

ADMINISTRATION

This plan will be administered and implemented by the CBJ, through the Borough Assembly, Planning Commission, and Planning Department.

In meeting the responsibility for issuing permits and other regulation of activities in the downtown waterfront area (e.g. dredging, filling, pollutant discharge), state and federal agencies will use the ACMP standards, the CBJ Coastal Management Program's enforceable policies, some of the policies specified in this AMSA plan and comments made during the consistency determination process. CBJ comments will be given "due deference" by decision making agencies. Amendments to the plan will be submitted to the Division of Governmental Coordination as provided in 6 AAC 85.120 for a determination as to whether they are minor or significant amendments. Significant amendments will be reviewed and approved by the Coastal Policy Council as provided in 6 AAC 85.150.

For a detailed discussion of consistency decisions refer to Chapter X, Section 3, pages 74-77, of the Coastal Management Plan (CMP) for the City and Borough of Juneau, June, 1984. Also see Chapter VIII, Section 1, pages 2-4, of the CMP for a discussion of coastal management goals and issues.

Gold Creek Development

DEVELOPMENT PLAN

This section presents a development plan for an area in the vicinity of the mouth of Gold Creek, between Egan Drive and the Gastineau Channel. The entire site will be created by the filling of presently undeveloped tidelands owned by the City and Borough of Juneau.

The Gold Creek Development Plan has several functions. One is to guide the detailed design and engineering of the project, including site layout, fill, docking facilities, utilities, and landscaping. Another is to indicate specific types of uses and quantities of space for those uses that are appropriate for the site. Guidelines for design of buildings and public areas are also suggested (see Design Guidelines).

The plan is based on the conclusions of the Downtown Waterfront Study and analysis prepared specifically for the Gold Creek Development Plan that there is an insufficient supply of developable land to satisfy the requirements of uses deemed by the CBJ to be essential and most appropriate to the downtown area. These uses include state capital facilities, visitor-related facilities and businesses, civic and institutional uses, certain water-dependent and water-related activities, and commercial uses related to the other activities of the area.

This development plan is a revision of a plan for Gold Creek adopted by the CBJ in May 1983. A revision was determined to be necessary as a result of state and federal agency responses to an application by the CBJ to the Corps of Engineers for a permit to fill the area outlined by the

May 1983 plan. The agencies believe the delta at the mouth of Gold Creek to be of much greater significance to migrating and spawning salmon than had been understood previously. The revision also allows the Gold Creek Development Plan to be refined in response to the conclusions and policies of the Downtown Waterfront Study, which was begun after the completion of the original Gold Creek Plan. This revision is integral with present and future development patterns planned for the entire downtown waterfront area. (See Phase Three: Development Concepts.)

Further Revisions to the Gold Creek Plan

Changes in the proposed uses for Gold Creek would have a significant effect on the entire Downtown Waterfront Plan. For example, if the proposed cruise ship berth is deleted from the Gold Creek site plan, another cruise ship berth will have to be located somewhere else in the downtown area. The most likely place for this to occur would be South Franklin Street between the Ferry Terminal and the Rock Dump area. Location of the cruise ship berth in this location could have an effect on the ultimate land uses in this area being more tourist/retail-oriented. The feasibility of these uses in that area would require further study. In addition, if any of the water-dependent uses on the Gold Creek site are deleted from the project, this would affect the overall evaluation of the project need in terms of securing an Army Corps Permit.

The objectives for the Gold Creek area were enunciated during the process of preparing the initial development plan. These objectives, shown below, have continued to provide the basic guidance for this revised development plan.

Previous Objectives for Gold Creek Development Plan

During the early phases of the original work on the Gold Creek Development Plan, the CBU Planning Commission approved objectives that were to be used in the evaluation of development possibilities and preparation of the plan for the Gold Creek site. These objectives were to:

1. Create additional developable land in the downtown Juneau area.
2. Provide a waterfront area which is accessible and useful to the public.
3. Complement rather than compete with existing and potential downtown uses.
4. Evaluate planning, design, and economic relationships of park and pedestrian areas, residential development, tourist-related facilities, and commercial activities, with a major emphasis on "water-related" and "water-dependent" uses.
5. Achieve high quality design which emphasizes the site's prominent waterfront setting and physical relationship to the downtown and adjacent waterfront areas.
6. Provide the maximum potential economic return to the CBU.
7. Coordinate evaluation of the site and its development potential with the Planning Department, appropriate state agencies, key property owners in the vicinity, and other interested groups and individuals.

8. Adopt and implement a plan which represents the public's best interests and aspirations for downtown and Gold Creek.

The concept of the revised Gold Creek Development Plan is presented below. Details of the physical design, transportation, natural resource impacts, and economics of the project are presented in subsequent sections.

Concept

The Gold Creek project will create 12.5 acres of additional land for uses appropriate to the downtown area and its waterfront. There are several elements of the development plan that constitute the general concept for the project. This concept has guided the preparation of a site plan and identification of the most appropriate uses.

A major purpose of the plan is to create additional opportunities for public access and public use of the downtown waterfront shoreline. This is to be accomplished through construction of a major "promenade" section of the Seawalk (the Seawalk extends along the entire downtown waterfront; refer to Figure 4-1), protected and open viewing and seating areas, and fishing platforms. Water-dependent, water-related uses will include a new cruise ship berth and state aquarium. A mixture of water-oriented uses will be developed on remaining portions of the development. These uses are intended to serve both local residents and visitors and to complement adjacent and nearby uses.

Development at Gold Creek should set an example of quality for design in the downtown area. While structures of even one story and dock facilities could block views of the water from Egan Drive and nearby buildings, development is planned in a manner that holds view blockage to a

reasonable minimum by protecting specific view corridors. There will be several convenient and protected pedestrian paths from the site to state office buildings, Centennial Hall, the historic district, and along the waterfront (Seawalk).

The City and Borough of Juneau will be the master developer of the project. Portions of the site will be sold or leased to developers of specific private elements of the project. The project is to be devised in such a way as to offset CBJ costs for development and maintenance of the site and its public facilities and areas.

The site layout and design recognizes the area's walking distance proximity to downtown. Development of the site will create an opportunity for an intersection at Egan Drive and Glacier Avenue, thereby providing convenient access to the site and helping to resolve existing traffic problems created by existing development located towards the Juneau/Douglas Bridge. In order to minimize the total area to be filled, as much parking as possible will be located off-site, on the opposite side of Egan Drive.

The configuration of the newly created land in the Gold Creek vicinity is intended to leave a large protected delta. This delta will be of sufficient size to maintain a resting area for migrating juvenile salmon. The outlet of Gold Creek will be maintained in its present condition, thereby preserving the spawning habitat for returning adult salmon.

Site Plan

A site plan for the Gold Creek project is presented in Figure 4-10. A summary of uses and square footage is included in Table 4-4. On the western side of Gold Creek, a fill area will be created sufficient to accommodate a 70,000-square-foot office building and an auto circulation

TABLE 4-4
GOLD CREEK DEVELOPMENT PROGRAM

USE	PROGRAM
Retail	35,000 s.f.
Restaurant	25,000 s.f.
Office	70,000 s.f.*
Hotel	300 rooms
Plaza (uncovered)	50,000 s.f.
Plaza (covered)	18,000 s.f.
Seawalk	2,400 l.f.
Park	74,000 s.f.
Aquarium	40,000 s.f.
Parking (on-site transient and handicapped)	50 spaces
Cruise ship berth	1

* Option for an additional 70,000 s.f.

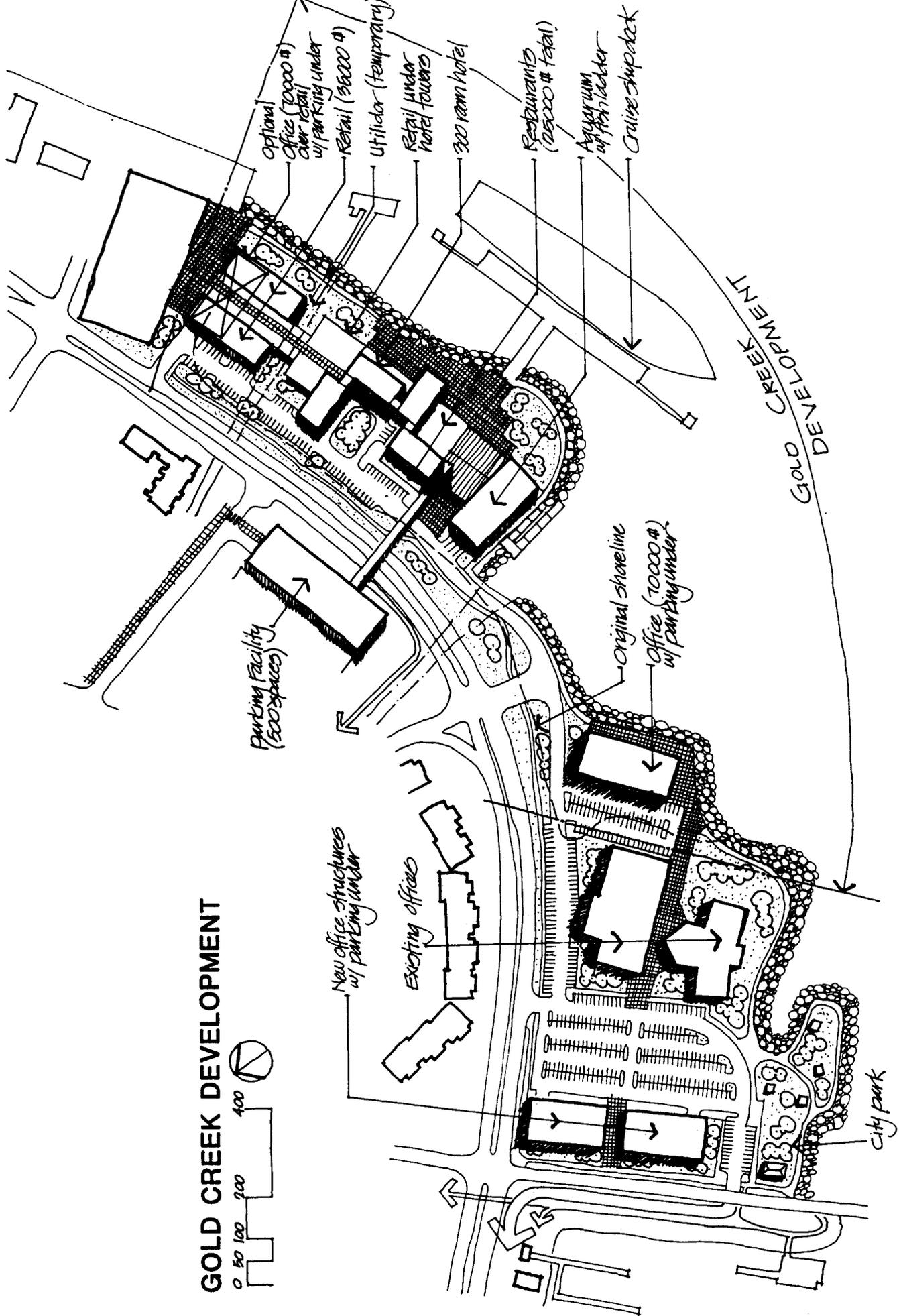
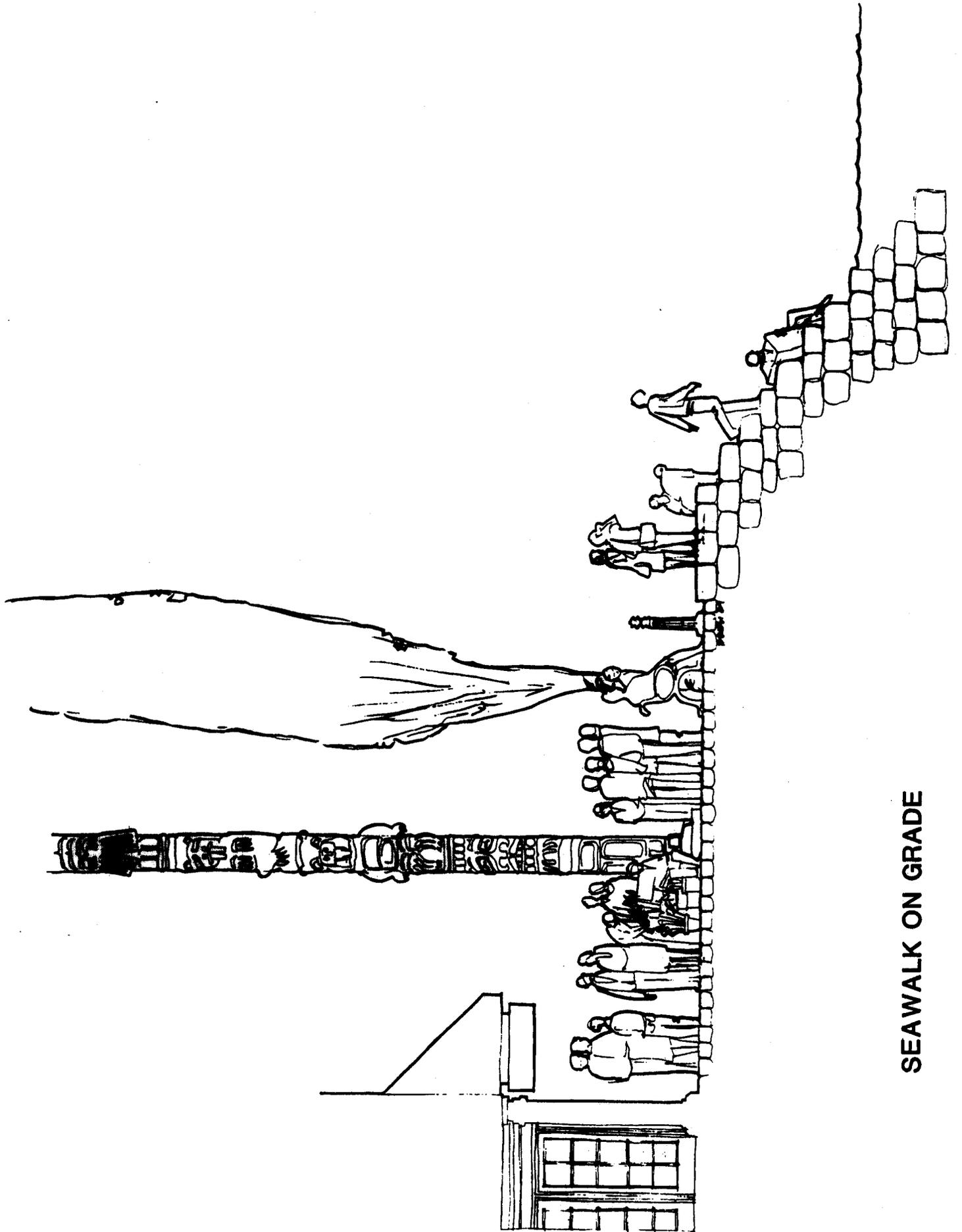


Figure 4-10



SEAWALK ON GRADE

Figure 4-11

area for an intersection at Egan Drive and Glacier Avenue. The area to the west of this office building is existing land on which two office buildings presently exist. This area will become a concentration of office buildings, with limited service retail. The Seawalk will be an element of an auto and pedestrian bridge constructed over Gold Creek, to allow access to the eastern portion of the development. The bridge will be immediately adjacent to the existing Egan Drive Bridge over Gold Creek.

On the eastern side of Gold Creek, there will be a mixture of uses appealing to both residents and visitors. A state aquarium will be located adjacent to Gold Creek. Its location will allow the incorporation of viewing platforms and displays from which salmon spawning activities can be observed. The aquarium will have a footprint of approximately 100 by 200 feet and will open onto a covered outdoor plaza. The plaza will be designed to shelter prevailing winds, capitalize on solar gain, and offer a feeling of openness to the channel. An open plaza will be developed on the channel side of the covered plaza and aquarium. This will be the focal point of the public use portion of the Gold Creek development.

The cruise ship berth will be designed to accommodate the increasing number of larger cruise ships visiting Juneau during summer months. The cruise ship dock will be designed to allow public access at all times. The views of the mountains, channel, and downtown area will create the most spectacular viewing area along the downtown waterfront. The cruise ship docks and appropriate sites on the newly created shoreline will include fishing platforms open to the general public.

A five-story, 300-room hotel is planned for construction in two phases. The ground floor of the hotel will contain a restaurant, coffee shop, and limited retail facilities. Its lobby will be

able to take advantage of the spectacular views offered by the site. A top floor restaurant will provide panoramic views of Juneau and its surroundings.

Between the hotel and the retail facilities to the east, the existing oil pipeline will be placed in a utilidor within the proposed fill of the development, while the Oil Terminal remains in its downtown location. The relocation of Standard Oil would have a positive impact on the Gold Creek Development. The potential for conflicts between users of the cruise ship berth and Standard Oil dock (should it remain) needs further investigation. Approximately 35,000 square feet of retail space will be constructed in a single-story configuration. Up to four levels of office space (70,000 square feet) could be constructed above the retail area as an alternate or future option.

Across the southern boundary of the Gold Creek project, on the existing support facilities, a fishermen's terminal will be developed. Design of the retail facilities and seawalk will be created with attention to the need for compatibility and continuity with the terminal.

PARKING

Supply and Demand

The revised Gold Creek development scheme results in revisions to the parking requirements detailed in the Egan Drive/Gold Creek Traffic Analysis and the reduction of the proposed fill changes the concept for providing parking supply. Table 4-5 summarizes the parking requirement for proposed new Gold Creek land uses. As shown in the table, the estimated parking demand for the reduced Gold Creek scheme is 480 spaces. Private development of additional office space beyond the programmed 70,000 square feet is possible as an option, but is not included in these demand estimates.

TABLE 4-5

GOLD CREEK PARKING DEMAND

	SPACES
Hotel	200
Restaurant	60
Retail	35
Aquarium	65
Fishermen's terminal	50
Offices	70
	<u>480</u>

Source: TDA, Inc.

The reduction of fill proposed for Gold Creek limits the available area for surface parking. Some on-site parking can be provided for short-term and handicapped requirements, but provision of the entire supply on the fill may not be allowed by authorizing agencies. Nearby off-site parking could be located across Egan Drive on a (mostly) City and Borough owned parcel behind the Foodland Supermarket (see Figure 4-10). Vehicle access would be from Willoughby Avenue alongside the supermarket. Pedestrian access to Gold Creek would be by an above-grade walkway connecting the garage to an on-site structure. A portion of the office parking supply could be provided beneath the office building, with the remainder provided in the off-site garage. Use of the garage by office workers would require a walk of 600 to 800 feet, which is within acceptable ranges for long-term parking.

The size of the parking structure would depend on the ultimate program for Gold Creek. Parking for the development plan indicates the appropriate size would be approximately 385 spaces. Temporary surface parking could be provided on the suggested garage site to accommodate construction and first phase development parking. The garage could then be constructed later when needed to meet growing demand.

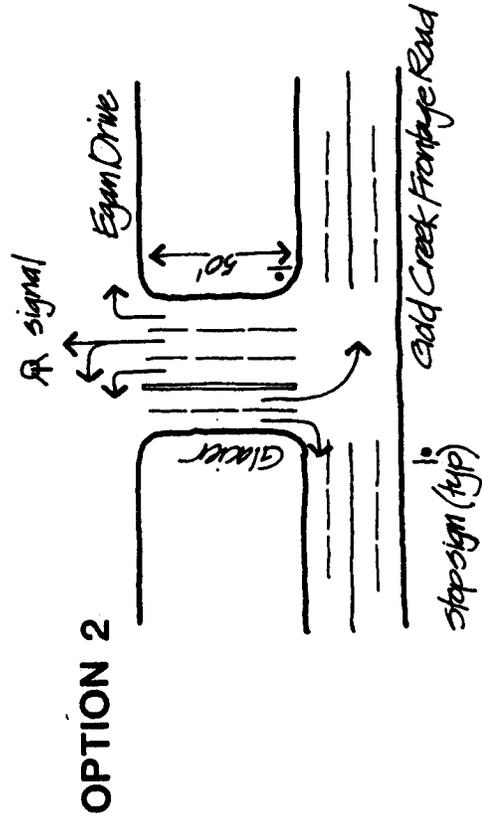
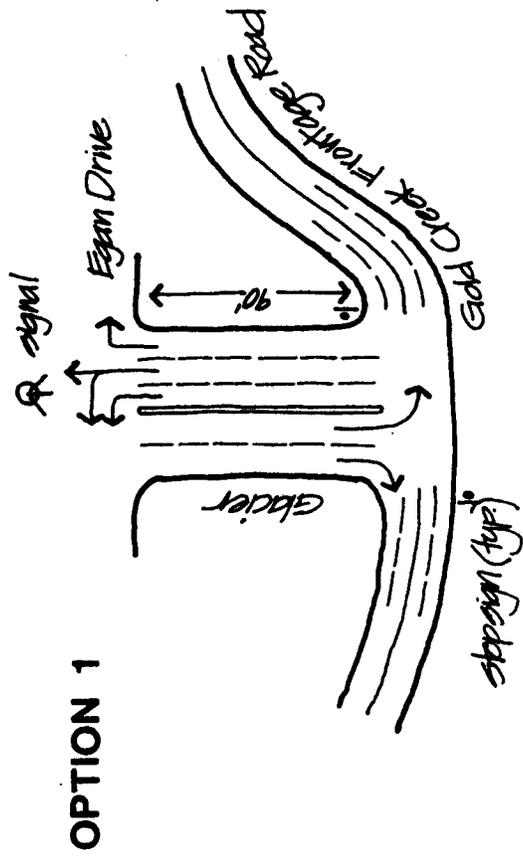
Design Standards

Parking spaces provided for Gold Creek should meet City and Borough standards for parking dimensions. Recommended parking space dimensions are as follows:

- o Standard parking spaces should be 8.5 feet wide by 19 feet long. Spaces next to posts or other lateral obstruction should be 10 feet wide.
- o Small or compact car spaces should be a minimum of 7.5 feet wide by 16 feet long. Compact spaces generally should not exceed 30 percent unless parking surveys display higher small car levels.

SITE ACCESS

The revised Gold Creek Development Plan includes access at three locations on Egan Drive. The recommended main entrance is aligned with Glacier Extension, forming a four-approach signalized intersection. Peak hour operation of the intersection was projected at level of service "C", indicating acceptable conditions with average delays. Secondary access points at 8th Street and at the subport are included in the revised plan, providing enhanced access to office parcels on the west and retail uses on the east. These access points would have stop sign traffic controls



GOLD CREEK SITE ACCESS

Figure 4-12

and would require state and federal highway approval. These intersections must be limited to right-in/right-out movements only to eliminate left-turn conflicts with Egan Drive traffic. Curb cutouts are provided currently at these locations and should remain. Lane widths at access intersections should be 11 feet minimum and turning radii should be about 30 feet. Both connections can be two-lane with one lane in and one lane out.

Alternative configurations for the Glacier main entrance were reviewed and are presented below.

- o Option 1. Average queue (backup) calculations indicate that the access should be about 90 feet long before turns onto the frontage road, and provide three lanes (see Figure 4-12). Lane configurations would be one exclusive left-turn lane, one shared left and thru lane, and one right-turn lane. Provision of 90 feet would require angling (therefore lengthening) the proposed frontage road bridge across Gold Creek and adding a small amount of additional fill compared with that shown in the development plan.

- o Option 2. Relocation of the bridge and increase of the fill would not be necessary with Option 2. The access street would be a minimum of 50 feet long before the frontage road, with three lanes. However, under average queue conditions, vehicles would have to wait on the frontage road for opportunities to turn onto the exit approach (see Figure 4-12).

Option 1 is recommended but must be weighed with the small amount of additional fill and a possibly longer frontage bridge. Intersection operation would be slightly less complicated with Option 1 because, during average queues, vehicles would not have to wait on the frontage road for vehicles on the approach to enter the intersection.

The physical configuration of access into Gold Creek at Glacier has been reviewed by ADOT/PF. Their review was completed prior to the change in fill and width of Gold Creek. With the change in fill, their requirement of 200 lineal feet cannot be provided straight back from Egan Drive into the site. However, the main leg of the frontage road can be turned into the intersection to provide ample stacking distance. Stacking could then occur on the access to Egan Drive along an approach curving to the northwest. The frontage road to the southeast parcel across Gold Creek would be a minor road connecting into the major street.

Appendix

Gold Creek Economic Assessment

The development plan for Gold Creek provides for a mix of public improvements and private development as well as a mix of water-dependent uses and general commercial enterprises. By definition, the water-dependent elements require a waterfront site. The general commercial enterprises may benefit from waterfront sites but do not absolutely require them. The benefits which these enterprises receive is reflected in value created which in turn can be captured and used to subsidize non-revenue-generating uses. Thus, the non-water-dependent uses become an important part of the project because they can support the water-dependent uses. The economic interrelationship of the two types of uses is presented in three subsections below: Demand for Project Elements, Project Financing, and Economic Impacts and Summary of Need.

DEMAND FOR PROJECT ELEMENTS

The water-dependent project elements include a cruise ship berth, a public aquarium, and waterfront access. The demand for each element is summarized below.

- o The demand for an additional cruise ship berth downtown was documented in earlier sections of this report and previous reports. At present, there are two cruise ship docks available in Juneau. Increasingly often, three or more ships are in the harbor at one time. Five ships are scheduled to be in the harbor at one time, on occasion, in the summer of 1984. Other potential sites in the downtown have been explored. All are in the South Franklin Street area and their development would have to recognize the potential slide hazards in that area.

Cruise ship dockage rates are traditionally fixed at nominal levels to encourage ship calls and the resultant pedestrian traffic. Dockage revenues are seldom adequate to cover operating expenses and cannot amortize original capital cost.

- o The demand for an Alaska Aquarium has been documented in a feasibility study for that facility. The facility would feature native Alaska aquatic life and include an outdoor salmon ladder. The facility is conceived of as an urban experience and the Gold Creek site provides a suitable location.

Preliminary economic analysis indicates that with high capture rates for visitors to the area the aquarium could ultimately generate sufficient revenues to cover operating costs. Revenues would not be sufficient to amortize capital costs.

- o Public access is proposed along the entire downtown waterfront. However, the Gold Creek site offers an opportunity to provide pedestrian pathways at the water's edge where that is not possible at areas already developed.

Public access improvements would not generate any revenue.

The project includes three types of general commercial uses: hotel, retail/restaurant, and office. Demand for each of these uses is strong throughout the downtown as documented in earlier sections of this report and previous reports. Developers of such uses would pay a premium on the Gold Creek site for two reasons. First, there are strong interrelationships between the water-dependent uses and these commercial uses. All the water-dependent uses

attract people and these people in turn are potential patrons for the commercial uses. Such spin-off demand was an important consideration in identifying the total potential for the site.

At the same time, the availability of alternative developed sites in the downtown is limited. In April of 1983, the Planning Department conducted an inventory of public and private vacant and underutilized land in downtown Juneau to accompany the Gold Creek Development Plan. This list has been revised to account for recent infill and additional comments regarding site suitability have been added. The 1983 inventory revealed the fact that over 70 percent of the lots were 5,000 square feet and under. In the year since the capital move decision, the demand for office space in the downtown area has exceeded the supply of vacant land. This demand has resulted in the recent encroachment of office type uses into residential areas. In many cases, construction of the new office structures has resulted in the demolition of existing residential dwelling units.

Public concern over the encroachment of office uses into residential areas has resulted in two major actions being undertaken by the City and Borough of Juneau Planning Commission within the last few months.

1. In January of this year the 17-block area surrounding the federal building was rezoned from R0 to R-5. The R0 designation of this neighborhood allowed the construction of office structures through a conditional use procedure. The neighbors in the area became concerned when a residential building was converted into a professional office building and petitioned the Planning Commission to change the zoning.
2. Residents in the Capital School area of downtown also became concerned when an application went before the Planning Commission to convert a residential dwelling to office use. The

residents petitioned the Planning Commission to deny the permit, organized an association and proceeded with extensive lobbying to change the boundaries of the Draft Comprehensive Plan to delete a nine-block area from the "downtown mixed use" designation. A newly constructed six-story office building on Fifth and Franklin also contributed to neighborhood concern in this area. In March 1984, the Planning Commission removed a five-block area from the "downtown mixed use" land designation.

Generally, the Gold Creek site would provide the best available site for downtown commercial development without encroaching on non-commercial uses.

PROJECT FINANCING

The cost of the Gold Creek project consists of three elements: the cost of land creation (the diking and filling), the cost of site improvements (site work and infrastructure), and the cost of public and commercial facilities. The cost of the land creation was estimated for a previous configuration in the Preliminary Design Report for the Gold Creek Reclamation Project. While no detailed cost estimates have been prepared for the new configuration, an adjusted estimate is presented in Table 4-6. The cost of all public elements of the project is shown in Table 4-7. As shown, public costs would exceed \$23 million. Major cost items are the aquarium, cruise ship berth, and fill and stabilization.

The costs could be shared among the CBJ, the State of Alaska, and private developers as shown in Table 4-8. Private investment would be \$38.6 million in constant dollars. The private developer would cover his investment through rental payments from commercial tenants. At the same time, the developer would make ground lease payments to the CBJ in return for its investment in

TABLE 4-6

GOLD CREEK LAND CREATION
REVISED COST ESTIMATE

	ORIGINAL ESTIMATE	ADJUSTMENT	REVISED ESTIMATE
Dike and Fill	\$3,432,780	.54 ¹	\$1,850,000
Riprap	863,400	.70 ²	600,000
Filter Fabric	33,902	.70 ²	20,000
Stabilization	2,066,400	.70 ²	1,450,000
Manholes	28,000	.70 ²	20,000
Pipe	118,275	.70 ³	80,000
Standard Oil Modifications	70,000	1.00 ³	70,000
Mobilization	440,000	1.00 ³	440,000
	<u>\$7,052,757</u>		<u>\$4,530,000</u>
Engineering (25%)	1,763,189		1,130,000
	\$8,815,946		\$5,660,000
Rounded	\$8,800,000		\$5,700,000

Source: Original estimate from Preliminary Design Report for the Gold Creek Reclamation Project. Adjustments by Williams-Kuebelbeck & Associates.

¹Based on reduction in surface area of fill.

²Based on reduction in length of containment dike.

³No change.

TABLE 4-7

GOLD CREEK PUBLIC PROJECTS
COST ESTIMATE

	QUANTITY	UNIT COST	CAPITAL COST
Roads and sidewalks	1,500 l.f.	\$360/l.f.	\$ 540,000
Utilities	600 l.f.	\$290/l.f.	174,000
Vehicle bridge	1	\$540,000	540,000
Pedestrian pathway	2,400 l.f.	\$35/l.f.	84,000
Plaza	50,000 s.f.	\$15/s.f.	750,000
Parking (on-site)	50 spaces	\$1,200/space	60,000
Public park	1.7 acres	\$100,000/acre	170,000
Aquarium	1	\$10,000,000	10,000,000
Covered area	18,000 s.f.	\$50/s.f.	900,000
Cruise ship berth	1	\$4,100,000	4,100,000
Fill and stabilization	1	\$5,700,000	<u>5,700,000</u>
TOTAL			\$23,018,000

Source: Williams-Kuebelbeck & Associates, Inc.

TABLE 4-8

GOLD CREEK DEVELOPMENT
SHARING OF PROJECT COSTS

	TOTAL	CBJ	STATE	PRIVATE
Roads and Sidewalks	\$ 540,000	\$ 540,000		
Utilities	174,000	174,000		
Vehicle Bridge	540,000	540,000		
Pedestrian Pathway	84,000	84,000		
Plaza	750,000	750,000		
Parking (on-site)	60,000	60,000		
Public Park	170,000	170,000		
Aquarium	10,000,000		10,000,000	
Covered Area	900,000		900,000	
Cruise Ship Berth	4,100,000		4,100,000	
Fill and Stabilization	5,700,000		5,700,000	
Retail Space	3,675,000			3,675,000
Restaurants	2,250,000			2,250,000
Office	23,625,000			23,625,000
Hotel	8,400,000			8,400,000
Leasehold Landscaping	650,000			650,000
	\$61,618,000	\$2,318,000	\$20,700,000	\$38,600,000

Source: Williams-Kuebelbeck & Associates, Inc.

the site. The projected internal rate of return on private investment would be 26 percent if all parking were provided as surface parking on site. A rate of return of 20 to 30 percent is considered adequate for a project such as this. If parking were provided in a structure with the developer incurring additional expense through a mechanism such as additional lease payments for use of a public garage, the internal rate of return would be reduced to 22 percent. The rate is still adequate. Further, the developer could offset a portion of the cost of parking through charges.

Leasehold revenues to the CBJ could be used to finance site improvements. These revenues would exceed \$700,000 per year in constant dollars as shown in Table 4-9. Assuming inflation at the rate of 5 percent, actual payments would be as shown in Table 4-10. This rental stream would be sufficient to support a \$3.8 million revenue bond issue as shown in Table 4-11. As shown, revenue would be sufficient in 1989 to pay debt service as well as provide at least 150 percent coverage for the bonds. Interest in 1987 and 1988 would be paid out of bond proceeds.

Table 4-9 also showed the net present value of leasehold revenues of over \$10 million. The value of the least revenues greatly exceeds the amount which can be borrowed against. This reflects the conservative nature of the municipal bond market. However, lease revenues will be available in excess of debt service requirements. Any comparison of costs and benefits of the project must consider the full value rather than the revenue bond amount.

The total public costs can be broken logically into two categories: major projects (aquarium/covered area, and cruise ship berth) and other improvements. Major projects total \$15 million in cost and other elements total \$8,018,000. Thus, the \$10 million value created by the leasehold revenues is sufficient to fund the land creation, site improvements, and miscellaneous

TABLE 4-9

GOLD CREEK SITE
LEASEHOLD REVENUE PROJECTIONS

	BUILDING AREA	GROUND RENT STABILIZED YEAR	NET ¹ PRESENT VALUE 20-YEAR REVENUES
Retail	35,000 s.f.	\$119,800	\$1,864,300
Restaurant	25,000 s.f.	100,000	1,547,700
Office	70,000 s.f.	239,500	3,727,300
Hotel	300 rooms	<u>246,000</u>	<u>2,917,700</u>
		\$705,300	\$10,057,000

Source: Williams-Kuebelbeck & Associates, Inc.

¹Includes inflation at 5% and discount rate of 10%.

TABLE 4-10
 CBJ GROUND LEASE REVENUE
 (in Thousands of Future Dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Retail	91.9	128.7	160.5	168.6	177.0	185.8	195.1	204.9	215.1	225.9
Restaurant	72.9	102.1	134.0	140.7	147.8	155.1	162.9	171.0	179.6	188.6
Office	183.8	257.3	321.0	337.0	353.9	371.5	390.1	409.6	430.1	451.6
Hotel	89.7	125.6	164.8	173.1	181.7	190.8	200.4	336.6	397.6	463.9
	438.3	613.7	780.3	819.4	860.4	903.2	948.5	1122.1	1222.4	1330.0

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Restaurant	237.2	249.1	261.5	274.6	288.3	302.7	317.9	333.8	350.4	368.0
Restaurant	198.0	207.9	218.3	229.2	240.7	252.7	265.4	278.6	292.6	307.2
Office	474.2	497.9	522.8	548.9	576.4	605.2	635.4	667.2	700.6	735.6
Hotel	487.1	511.4	537.0	563.9	592.1	621.7	652.8	685.4	719.7	755.6
	1396.5	1466.3	1539.6	1616.6	1697.5	1782.3	1871.5	1965.0	2063.3	2166.4

Source: Williams-Kuebelbeck & Associates, Inc.

Note: Assumes inflation at 5% per year. NPV = \$10,056,950.

TABLE 4-11

CBJ
REVENUE BOND FINANCING

Construction Cost (plus 2 years inflation)	\$ 2,555,000
Funded Interest (2 years)	781,000
Reserve Requirement	450,000
Insurance Costs	<u>190,000</u>
Total Cost	\$ 3,976,000
Interest Income on Construction Amount	<u>255,000</u>
Net Funding Requirement	\$ 3,721,000
Bond Amount (rounded)	\$ 3,800,000
Annual Debt Service	\$ 450,000

Source: Williams-Kuebelbeck & Associates, Inc.

amenities. The remaining excess value could be applied to recovering the cost of the aquarium or cruise ship berth. Clearly, however, the leasehold revenues alone are not sufficient to fund all public improvements.

ECONOMIC IMPACTS

In addition to consideration of the ability of the private developer and CBJ to finance their costs, there are two other major economic considerations of importance to the Gold Creek project. These are:

- o The fiscal impact of the project on the CBJ as provider of public services;
- o The impact of development at Gold Creek on other businesses in downtown Juneau.

FISCAL IMPACT

The CBJ must consider the financial implications of its role as provider of public services. In addition to the structures, utilities, and other physical improvements on the site, there will be new employment on the site and visitors for a variety of purposes. These activities will increase the demand for public services in the immediate area and throughout the CBJ. Offsetting these costs will be the higher property, sales, and hotel taxes collected. Ground lease revenues are not included because they are matched against the cost of development.

Table 4-12 summarizes the annual fiscal impact in constant dollars, based on the full buildout of the site. Revenues are estimated based on current tax rates and projected volumes. Costs are tied to expected employment on the site and cost factors developed according to methods in the Fiscal Impact Handbook by Burchell and Listokin. As shown, revenues would exceed costs by

TABLE 4-12

ANNUAL FISCAL IMPACT - CBJ
(1982 Dollars)

	BASE	RATE	AMOUNT
<u>Annual Benefits</u>			
Property Tax	\$38,600,000	\$10.51/\$1,000	\$405,700
Sales Tax (Retail & Restaurant)	12,000,000	3%	360,000
Hotel Tax	6,150,000	3%	<u>184,500</u>
Total Benefits			\$950,200
<u>Annual Cost</u>			
Workers			
Retail			70
Restaurant			125
Hotel			165
Office			350
Subtotal		\$575/worker	<u>408,250</u>
Net Annual Fiscal Impact			\$541,950

Source: Williams-Kuebelbeck & Associates, Inc.

\$540,000. The surplus will actually increase with inflation. However, the fiscal impact (in constant dollars) of the initial phase of development will be approximately 60 percent of this amount.

These annual surpluses would be available to fund debt service for additional public improvements on the site or elsewhere in the CBJ.

IMPACT ON DOWNTOWN BUSINESSES

The extent to which the proposed development of the Gold Creek site affects the remainder of downtown depends upon:

- o whether the businesses at Gold Creek and the remainder of downtown are in competition for a limited number of customers; and
- o whether use patterns would be significantly altered to favor one area or the other.

In the first instance, it is clear that the proposed development would include restaurant and specialty retail uses similar to those found elsewhere in downtown Juneau. The relative concentration of development would be as follows:

Specialty Retail (Square Feet)

	<u>Gold Creek</u>	<u>Other Downtown</u>	<u>Total</u>
Current Stock	0	72,000	72,000
Growth by 1997	35,000	73,000	108,000
Total Stock in 1997	<u>35,000</u>	<u>145,000</u>	<u>180,000</u>

Restaurants (Square Feet)

	<u>Gold Creek</u>	<u>Other Downtown</u>	<u>Total</u>
Current Stock	0	62,000	62,000
Growth by 1997	25,000	72,000	97,000
Total Stock in 1997	<u>25,000</u>	<u>134,000</u>	<u>159,000</u>

As shown, the specialty retail on the Gold Creek site could provide a new concentration of such uses and contain approximately 35 percent of total downtown retail space at the time of completion and 25 percent of the total by 1997. While the Gold Creek concentration would not necessarily dominate the specialty goods sales, it would provide significant competition for other businesses. It should be noted, however, that this alternative could have an impact on overall growth in tourism and spending. If tourism were to grow at 15 percent per year rather than the 10 percent growth rate that is projected to continue, the extra supportable development would dilute the impact of the development on the site itself.

While the projections indicate that there will be sufficient demand to support substantial growth in specialty retail throughout the downtown, it is possible that patterns of use would

provide one area an advantage over the other. Provision of a new cruise ship berth at the Gold Creek site would certainly change the traffic patterns for visitors. It is the location of the ship berth at the Gold Creek site rather than additional shops which threatens the other downtown retailers.

Implementation of the Historic District plan improvements of the entire downtown waterfront and development of state capital facilities will all contribute to general improvement and expansion of business activity in the downtown. Careful attention should be given to increasing the convenience and desirability of moving about the downtown on foot. Consideration should also be given to shuttle service. These approaches would help to minimize any adverse impact this development might have on other downtown businesses.

SUMMARY OF NEED

The financial analysis of the project indicates a need as summarized by the following three points:

- o There is a documented demand for water-dependent uses which can best be accommodated at the Gold Creek site.
- o There are non-water-dependent uses which would be willing to pay premiums to locate at the Gold Creek site because of the lack of suitable development sites elsewhere in the downtown and because of the potential commercial patronage attracted by the water-dependent uses.
- o The non-water-dependent uses create, through ground lease payments, a value in excess of \$10 million. This value exceeds the cost of land creation, site improvements, and

miscellaneous public amenities. The excess value created of \$2 million could help recover the cost of additional public projects like the cruise ship berth and aquarium.

Gold Creek Environmental Assessment

PHYSICAL ENVIRONMENT - EARTH

Existing Conditions

The soils at the Gold Creek site are described as "typical of a delta for a fast-moving stream" (Dames & Moore, 1982, p. 5). The soils are generally very loose to medium dense very fine to coarse sand with silt and gravel. The dominant soil type is slightly silty to silty fine to medium sand. Coarser soils, including gravel, cobbles, and boulders are more common near the northern margin of the site. These soils probably extend to depths of 150 or 170 feet.

Geotechnical studies prepared by Dames & Moore (1982) indicate that the steep slopes at the seaward edges of the project (below 0 feet MLLW) would be unstable during a design seismic event. In addition, some soils on the project site could be susceptible to liquefaction during a seismic event. Recommendations for project setback and fill stabilization are incorporated as part of that report.

As part of the geotechnical investigations, Dames & Moore (1982) prepared recommendations for foundation support. In general, the report noted that foundation support for structures would depend on a number of factors, "including method of soil stabilization accomplished after site filling, location/type of structure and site-specific subsurface information." It was noted that major structures would require special consideration of liquefaction and the need for soil stabilization and/or foundation support using piles. Moderate height wood frame structures, on the other hand, could be supported on conventional spread foundations.

The Gastineau Channel is a well-flushed marine waterway; tidal current velocities average 2 knots and may exceed 3.5 knots (NOAA Tidal Current Tables). Three creeks and several smaller streams empty into the channel. Several of these, including Gold Creek, have built up substantial deltas at their mouths, but in general they discharge relatively limited amounts of suspended sediment into the channel.

Impacts

As designed, the project will create about 12 acres of upland through the filling of intertidal flats. About 8.5 acres are located east of the Gold Creek Channel; the outer edges of the fill would be about 0 feet (MLLW). Approximately 3.5 acres of the project would be located in the northwest portion of the site where the outer edge of the fill would be at +8 to +10 feet (MLLW).

Approximately _____ cubic yards of fill material would be required to raise the elevation of the site to + _____ feet, equivalent to surrounding property. This includes about _____ cubic yards of material in the containment dike. [The remaining _____ cubic yards of fill material would be acquired by dredging the slopes seaward of the eastern parcel to a slope of about 4:1.]

It has been recommended that the slopes seaward of the site be dredged to a slope of 4:1 out to a depth of about -40 feet. This would occur only on the eastern portion of the site. The intertidal areas seaward of the western portion would not be affected by project activities.

As proposed, the project would include stabilization of the containment dikes to prevent failure during a seismic event. Stabilization of the dikes would follow the recommendations from the

preliminary design report. Regrading of the slopes in front of the dike on the east side of the project would also reduce the potential for slumping or sliding. It is assumed that no regrading of the slope will be necessary seaward of the western portion of the site.

The preliminary report indicates that wood frame structures of moderate height could be supported on conventional foundations. Larger structures could be stabilized as part of their initial construction.

Some temporary turbidity impacts in Gastineau Channel are expected during the dredge and fill operation. Assuming a pipeline dredge is used, most of the turbidity will occur at the discharge end of the operation. It is assumed that the discharge operation will include a series of sedimentation ponds to minimize the turbidity of water leaving the disposal area. The turbidity plume will be monitored regularly during the operation to assure that temporary maximum standards are not exceeded.

PHYSICAL ENVIRONMENT - WATER

Existing Conditions

Several major flooding events have occurred on streams in the Borough. Many others have been exacerbated by local urban development, inadequate culverts, or other flow restrictions. Since construction of the flood control channel on Gold Creek in 1958, the flood hazard has been substantially reduced.

Impacts

The channel through Gold Creek will be designed to avoid any restriction of stream flow. The channel will have a flow capacity at least as great as the existing bridge at Egan Expressway. In addition, it is assumed all runoff from the site will be discharged above the 100-year flood elevation. As a result, the project should not contribute to flood hazards upstream of the site.

BIOLOGICAL ENVIRONMENT

Existing Conditions

The Gold Creek site consists of about 22.7 acres of intertidal flats between 0 and +10 feet (MLLW). Most of the substrate is silty sand with gravel and shell fragments. Sandy gravel dominates along the northern edge of the site, lenses of sandy silt are common along the southern edge. Biological sampling of the site was conducted in late March 1982, with an emphasis on benthic organisms and salmonids. Some waterfowl and shorebird observations were made in October 1981 and March 1982.

The sampling indicated that harpacticoid copepods predominated numerically in the area, although the cumacian Cumella vulgaris probably dominated the biomass. The investigators felt that the epibenthic crustacean community "appeared to be fairly typical compared with those studied elsewhere." Harpacticoid copepods are known to be important prey species for juvenile copepods, and the large numbers in the area suggest they are an important food resource in the area.

Polycheate annelids were the most dominant infaunal organisms. Intertidal substrates were colonized by a Mytilus edulis - Fucus distichus - Balanus sp. association, with cover from 50 to

100 percent. Bivalves, especially Macoma balthica, were also moderately dense. At subtidal depths, the green sea urchin, Strogylacentrotus drobachiensis was dominant, with densities up to 44/m². The gastropod Neptunea, and sea stars (Evasterias and Lepasterias) were also common.

Juvenile pink and chum salmon were caught at the site; all were wild fish. Spawning by pink salmon has been reported at the delta by the U.S. Fish and Wildlife Service (letter to Corps from USFWS, October 4, 1983). To date there has been no investigation of the amount or success of that spawning. Recently the Alaska Department of Fish and Game has moved to have Gold Creek designated as an anadromous fish stream.

Impacts

The proposed project would result in the burial of about 12 acres of intertidal habitat; about 4.5 acres of this would be between 0 and +4 feet MLLW. Another 6 acres seaward of the dike would be dredged to a 4:1 slope from the base of the dike (approximately 0 MLLW) to about -40 feet (MLLW) at the channel edge. A total of about 15 acres of intertidal habitat would be eliminated. This represents about one-half of the intertidal area at the site.

As mitigation for these losses, the Borough will work with the Corps and the resource agencies to develop a salmon spawning channel within the Gold Creek Channel. This channel would be a narrow low-gradient gravel-bottom channel within the flood control channel to provide spawning substrate for returning salmon. The channel could also be linked with the proposed aquarium to be constructed at the Gold Creek site.

In addition, the outer face of the containment dike will be laid in a stair-step fashion to provide shallow intertidal habitat adjacent to the fill. These stair-step areas will also provide a location for recreational fishing.

This discussion of impacts and mitigating measures assumes that all necessary fill material will be acquired from dredging seaward of the eastern portion of the site; no material will be dredged from Lawson Creek or other potential sites.

Consistency

COASTAL MANAGEMENT PLAN - CHAPTER 10

The following is an excerpt from the Draft Coastal Management Plan of the City and Borough of Juneau, dated May 1984:

Section 3. Consistency Decisions - Discussion

The process of reviewing proposals for compliance with coastal management requirements is called "consistency review." This term is in use all around the United States' coast because it springs from Section 307 of the Federal Coastal Zone Management Act of 1972. This particular section provides the requirement that federal actions be consistent with state coastal management programs "to the maximum extent practicable." After the CBJ program has been approved at the state and federal levels, it will be a part of the Alaska Coastal Management Program; and its rules will have the authority of consistency under Section 307.

As indicated elsewhere, ACMP provides for consistency at the state level too. Section 46.40.10 of the Alaska Coastal Management Act establishes the responsibility of state agencies and the CBJ itself to act "in conformity" with approved district coastal management programs. The same section also provides an appeal mechanism for the Coastal Policy Council to adjudicate disputes over whether a district program is being properly implemented.

Consistency is a complex matter because the authority for it comes from different laws and because the federal authority hands over some powers to states, and likewise, from the state to the local level. In return for this delegation of power, the state

and district assume certain responsibilities and obligations, primarily to be cognizant of the state and national interest, and to use certain procedures in exercising their coastal management powers.

There are three types of consistency:

A. Federal. The authority for federal consistency springs from the Federal CZM Act. Federal agencies are obligated to send notice to the state of pending actions which will or might affect the coastal resource of the state. (There are no such obligations in states which do not have federally approved coastal programs. Alaska's program was approved in 1979.) There are four categories of federal action:

1. Permits and licenses
2. Direct federal activities
3. Federal financial assistance
4. Activities on the outer continental shelf

In the case of permits and financial assistance (1 and 3 above), the federal agency cannot act on a permit request or financial assistance request until the state has approved the proposal from a coastal management consistency standpoint. For the other two categories, the state's power is not so strong.

Despite the relative difference in power over the four categories, the state uses the same procedure for all four. The action-taking federal agency notifies the state by letter or copy of some document already in use at the agency which describes the proposed action. The state circulates copies to its own agencies, to the public, and to the affected local governments. Thirty days are usually given during which interested parties may comment. Shorter or longer periods are sometimes used. After the comment period closes, the state makes a decision and notifies the federal agency.

This procedure will not change with the approval of the CBJ's coastal program. What will change is the amount of weight the state must give to the CBJ's comments or position on a matter under review. This is an issue that has caused much debate, and there is no clear law directing what the state must do if it has comments from a local government that are contrary to what the state may wish to do.

As of 1983, this debate is more academic than substantive since there are virtually no cases where a potential disagreement has not been settled amicably. In any case, the consistency decision made by the state under federal consistency procedures and authority is also a state action under A.S. 46.40.100, and must therefore be taken consistently with the CBJ's coastal program when it is approved. If the state makes a decision which the CBJ finds to be inconsistent with the CBJ coastal program, the CBJ will bring the matter to the attention of the Coastal Policy Council; or if the matter is urgent, to Superior Court.

B. State. As indicated, A.S. 46.40.100 is the source of state consistency. The ACMP regulations provide more guidance:

6 AAC 80.010 COVERAGE OF CHAPTER.

- (a) This chapter contains standards for the use of and application by districts and state agencies in carrying out their responsibilities under the Alaska Coastal Management Act.
- (b) Nothing in this chapter or in any district program displaces or diminishes the authority of any state agency or local government with respect to resources in the coastal area. Uses and activities conducted by state agencies in the coastal area must be consistent with the applicable district program and the standards contained in this chapter. In authorizing uses or activities in the coastal area under its

statutory authority, each state agency shall grant authorization if, in addition to finding that the use or activity complies with the agency's statutes and regulations, the agency finds that the use or activity is consistent with the applicable district program and the standards contained in this chapter. (Emphasis added.)

C. Local. The same statutes and regulations of ACMP, which require consistency of state agency actions with local coastal programs, apply in equal measure to the actions of the district itself. A local government which adopts a local coastal program which obtains Coastal Policy Council approval of that program, may not deviate from the requirements of the program at whim. Actions of the local government can be appealed to the Council in the same way as state agency actions under A.S. 46.40.100.

So, the CBJ will act to acquaint all of its operating agencies with the need to be cognizant of the coastal requirements. In addition to the "Rules" contained in Chapter IX, the CBJ has also committed itself to the "Policies" of that chapter, which themselves are designed as appropriate actions for a municipality to take.

The rules are binding to the limits of state and federal law on all entities operating in or near the CBJ coastal zone, including the CBJ itself.

. . .the CBJ is not requiring a formal consistency review process where there is not already an existing review process. Rather, consistency with coastal management will be an added element that plays a part in the existing decision-making processes of the CBJ and the state and federal governments.