Anchorage Coastal Management Plan

Coastal Scenic Resources and Public Access Plan

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Anchorage Coastal Management Plan

Coastal Scenic Resources and Public Access Plan

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Alaska Coastal Management Program

All men who come here learn but a part of the truth; tomorrow will not be the same as today. The true reality of this land is change. The snowflake melts. The mountain crumbles.

John Milton; *Nameless Valleys, Shining Mountains*

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CHAPTER I INTRODUCTION

- Background
- Geographical Setting
- Coastal Management Program Background
- Coastal Management Boundary
- Coastal Flood Zone
- Coastal Management Program Requirements

Background

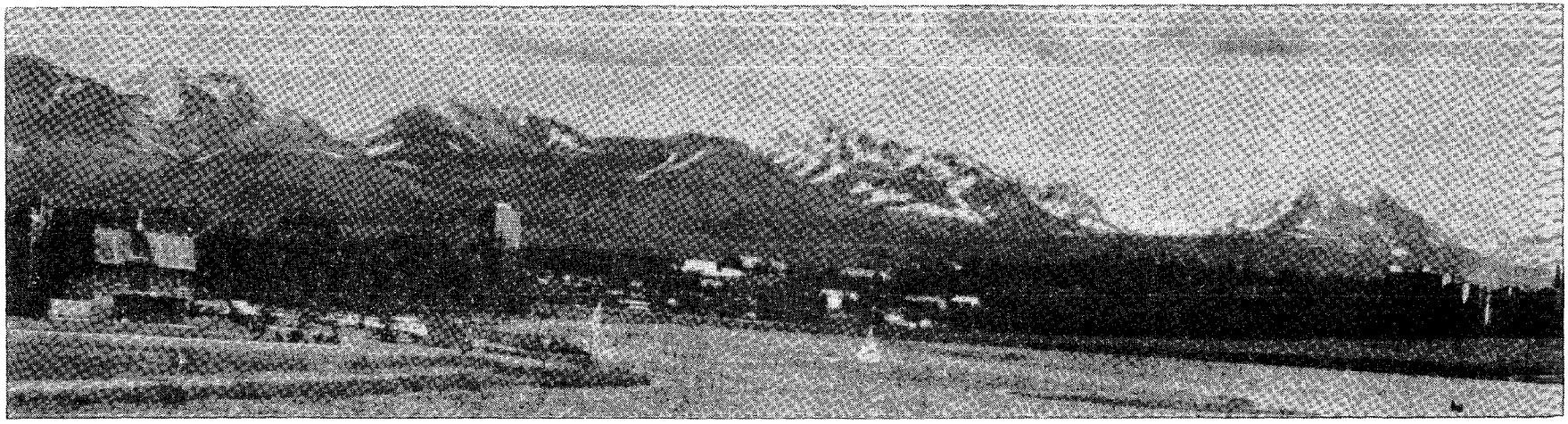
In response to the high public value inherent in coastal areas, the Coastal Management Program requires the development of a resource management and public access plan for the Anchorage District. This project represents the first comprehensive focus of coastal management policy on specific land areas in the Anchorage Bowl. Its intent is to provide the Municipality with management recommendations and site plans for coastal resources.

The shoreline of Anchorage has a number of scenic and recreational opportunities which have not been officially recognized or developed. Public access to the shore is limited. Most established access points are unofficial and involve trespassing on private land or railroad rights-of-way. In 1979, a general corridor for the coastal trail was identified as part of the Municipality's *Areawide Trails Plan.* In this report potential trail locations and alternatives are identified. The intent of this report is to connect neighborhoods and public facilities to coastal amenities.

The Coastal Management Program recognizes the need to promote rational development in coastal areas while protecting vital resources. Because the coast has historically been an area where competition between the land uses is intense, protection of resources that are of high public value is most important. Transportation, commerce and food-gathering activities have long been concentrated in coastal areas. The use of the shoreline for recreation has become increasingly popular, creating demand for public access to the coast. As the population of Southcentral Alaska increases, sensitive ecological systems are likely to be threatened in the absence of farsighted management policies.

The issues addressed in this coastal resource protection and public access plan are required by the Alaska Coastal Zone Management Act of 1977. The plan is in accordance with the recommendations of the Anchorage District Coastal Management Plan which was conceptually approved by the Municipal Assembly in September, 1979. Specific aspects include: potential shoreline recreation areas, identification of coastal scenic and habitat resources, consideration of historic and archaeological sites, and public access to shoreline amenities.

Environmental opportunities and constraints have been assessed in developing the master plan contained in this report. It is intended that the plan be used: (1) to minimize conflicting land uses; (2) to provide sensitive alternatives for trail locations and the siting of facilities; and (3) to provide the public with recreational and educational opportunities which are not presently available.



View inland toward the Chugach Mountains from the railroad tracks at Westchester Lagoon. Master Plan Site #7.

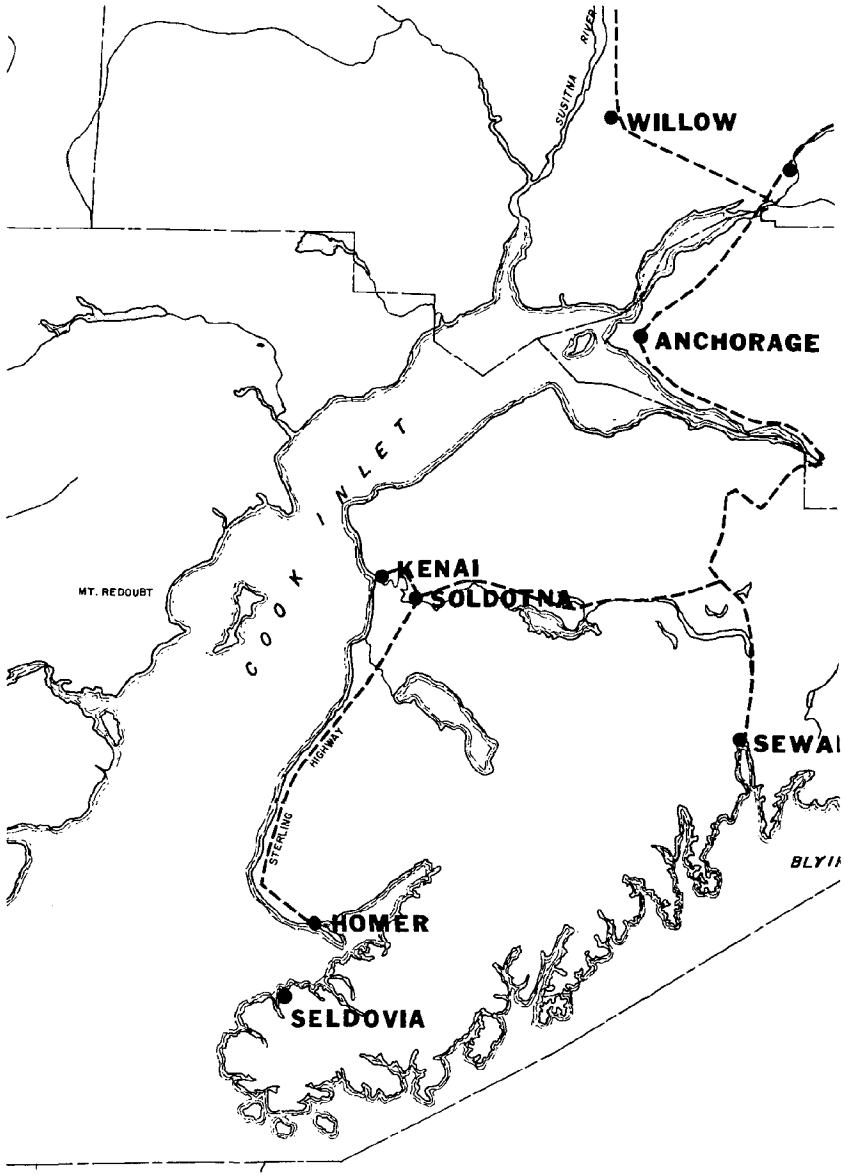
Within the study boundary, which includes the shoreline from Potter's Marsh to Ship Creek, preliminary management recommendations are proposed for control of development in hazardous areas and wetlands. In addition, specific resource management plans are proposed for the six Areas Meriting Special Attention (AMSA's) which have been identified in the Anchorage Coastal Management Plan. Site designs for public facilities, resource areas, and corridor details for the coastal trail system are primary components of the Master Plan.

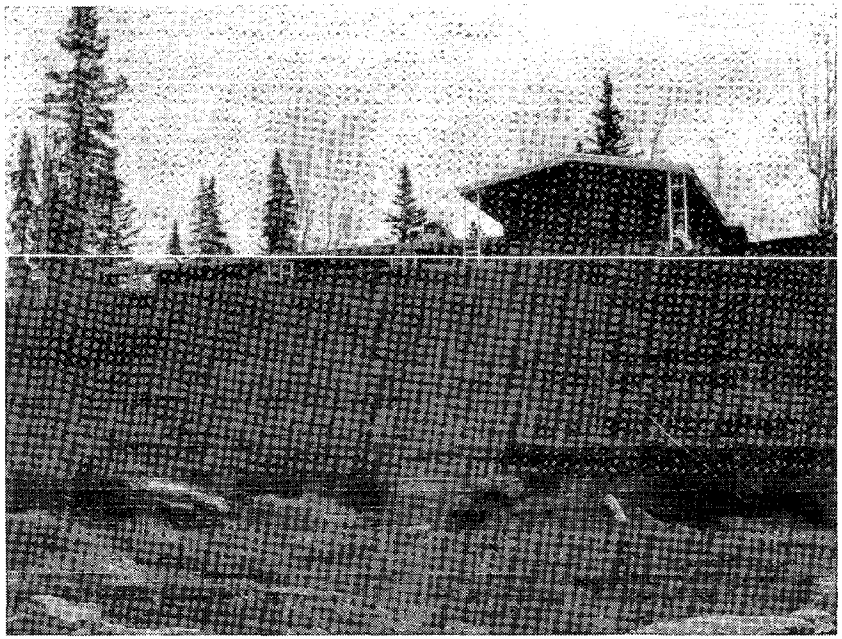
Geographical Setting

The Municipality of Anchorage is located in Southcentral Alaska on a triangular peninsula at the head of Cook Inlet. The Inlet is a tidal estuary, extending 180 miles inland from the sea. Bounded on the east by the Chugach Mountains, the Municipality is further defined to the north, west and south by two separate drainages of Upper Cook Inlet, Knik and Turnagain Arms. Of the 1950 square miles of the Municipality, 85 percent consists of the rugged peaks and glaciers of the Chugach Mountains. The area known as the Anchorage Bowl is an alluvial plain which slopes down from the mountains to the west. The topography of the area is glacial in origin, with the majority of the Anchorage bowl consisting of low-lying wetlands alternating with hummocks and moraines left by several major glaciations. The coastline of the Anchorage Bowl consists primarily of sea cliffs, tidal marsh, and mudflats.

Tides in the Cook Inlet average 30 feet, resulting in strong currents which limit coastal land and water use. Low tide exposes vast mudflats in Knik and Turnagain Arms. The waters at the head of the Inlet have varying salinities, with high suspended sediment levels due to glacial silt. Though the Inlet is subject to ice cover during winter months, the high tidal variation results in regular breakup of the ice. This allows the Inlet to serve as a major cargo route throughout the year. However, block ice buildup is a serious threat to navigation, and acts as a scouring agent along the shore.

There are two major fault zones and five active volcanoes along Cook Inlet. The relatively high level of seismic activity is related to its position on the Circum-Pacific Seismic Belt. The soils are largely unconsolidated surficial deposits, with poorly developed horizons. A unique





This house narrowly escaped the landslide of the 1964 earthquake. The bedding layers of sand and gravel are visible above the clay deposit.

clay material, locally known as Bootlegger Cove Clay, underlies much of the Anchorage coastal plain. This clay liquifies readily, and was responsible for the massive damage experienced by Anchorage during the 1964 earthquake. Ground failure, sliding and cracking are associated with the liquefaction of this clay.

Commercial resources include salmon, crab and shrimp fisheries in the lower Inlet. Sediment levels near Anchorage limit biological productivity considerably. Offshore oil rigs are located in the Inlet, and large coal fields will be developed to the west of Anchorage in the near future. There are five major drainages within the Anchorage Bowl: Ship, Fish, Chester, Campbell and Rabbit Creeks which flow westward from the mountains to the Inlet. These streams and ground water aquifers provide freshwater for approximately 200,000 people. Anchorage serves as the hub of Alaska's transportation and communication network, and the Port of Anchorage is a major commercial enterprise.

Coastal Management Program Background

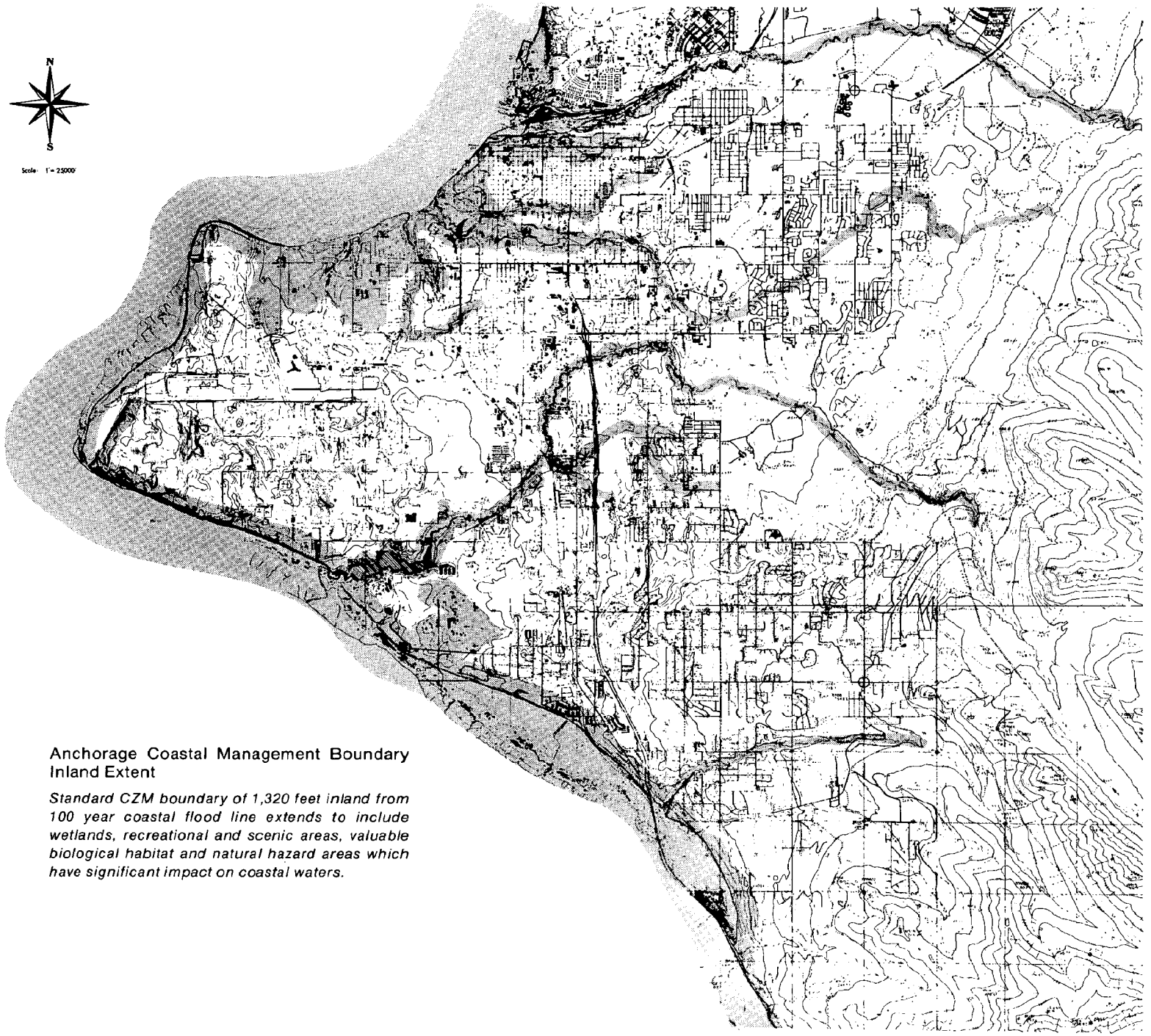
The development of land in Alaska's coastal zone is unique in the United States for several reasons. With its 33,000 miles of shoreline, the coastal area of this state nears that of the entire continental United States. Because only a small percentage of this land is in private ownership, Federal, State and Native Corporation holdings must be coordinated in order to provide adequate access, development opportunities and management in coastal areas. With only five percent of the coast developed, Alaska has the opportunity to avoid ownership and access problems through effective coastal management policies.

In the Federal Coastal Zone Management Act of 1972, Congress declared its intent to help states develop coastal management plans to "preserve, protect, develop, restore and enhance" the nation's coastal zone. States were encouraged through financial assistance programs to implement "management programs to achieve wise use of the land and water uses of the coastal zone, giving full consideration to ecological, cultural, historic and aesthetic values as well as to needs for economic development." In 1976, several amendments were passed which related to the development of offshore oil interests and the siting of energy facilities. Other issues addressed were coastal erosion control and public access to the shore.

Alaska first started developing a coastal management program in 1974. At that time several major coastal issues were facing the state including,

- The Trans-Alaska Oil Pipeline
- The Proposed Trans-Alaska Natural Gas Pipeline
- Native, State and Federal D-2 Land Selections
- Outer Continental Shelf Energy Development

By 1977, the Legislature was convinced of the necessity of a state coastal management plan. The Alaska Coastal Management Act was passed, creating a sixteen-member Coastal Policy Council. Further, it established management districts and service areas which were expected to develop local plans according to state standards and guidelines. The Coastal Policy Council became responsible for establishing standards and guidelines for program development, and overseeing comprehensive coastal resource planning for the nine geogra-



Anchorage Coastal Management Boundary
Inland Extent

Standard CZM boundary of 1,320 feet inland from 100 year coastal flood line extends to include wetlands, recreational and scenic areas, valuable biological habitat and natural hazard areas which have significant impact on coastal waters.

phic regions established by the Act. In 1978, Alaska Coastal Management Program Guidelines and Standards were accepted by the Legislature and became part of the Alaska Administrative Code.

The Municipality of Anchorage was awarded a two year grant to develop its District Coastal Management Program in 1977. The Municipality divided its coastline into three distinct planning units: Eagle River/Chugiak, Turnagain Arm and the Anchorage Bowl. The first phase of program development was concentrated on Eagle River/ Chugiak and Turnagain Arm . The second phase involved development of program elements for the Anchorage Bowl, and implementation strategies for all three district programs. The concept for the Anchorage Coastal Management plan was approved by the Municipal Assembly in the fall of 1979. Final approval by the state Legislature and Coastal Policy Council was given in March of 1980.

The major advantages of the Alaska Coastal Management Act are:

- The program allows protection and management of valuable environmental resources while accommodating growth in a sensible manner.
- Federal consistency requirements of the Act allow the Municipality the ability to coordinate management of land in Federal and State ownership, over which it previously had no jurisdiction.
- Resource management can now take place on a regional scale, since the Act encourages cooperation and integration of coastal plans with adjacent districts (Matanuska-Susitna and Kenai Boroughs).
- The collaborative state-local planning process, as it is set up by the Coastal Policy Council, allows the local government to develop and implement its own program to suit local needs. At the same time, it protects resources of state concern and establishes a process for conflict resolution.

Coastal Management Boundary

The boundaries of Anchorage's Coastal Zone are shown in Figure 2. The coastal resource boundary extends one-quarter mile inland from the line delineating the 100 Year Coastal Flood. Where the inland boundary partially touches upon lakes, bogs, marshes, swamps, floodplains, areas identified as having natural hazards or water recharge value, recreational, scenic, or biological habitat values, then these areas have also been included within the management boundary. This assures adequate protection for coastal-related resources. In addition, where the inland boundary crosses streams, the management boundary extends inland up to the 1000 foot contour level along the waterway.

The seaward extent of the Anchorage Coastal Management Program is the Municipality's boundary in Turnagain and Knik Arms, and includes all of Fire Island. This project addresses the coastal areas between Ship Creek and Potter Marsh that fall within the Coastal Management Boundary for the Anchorage Bowl.

Coastal Flood Zone

The inland extent of coastal flooding is shown in Figure 3. This zone encompasses land between the shoreline and the 100 Year Floodline; that is, the areas subject to flooding by gale driven tides at a statistical probability of at least once every 100 years.

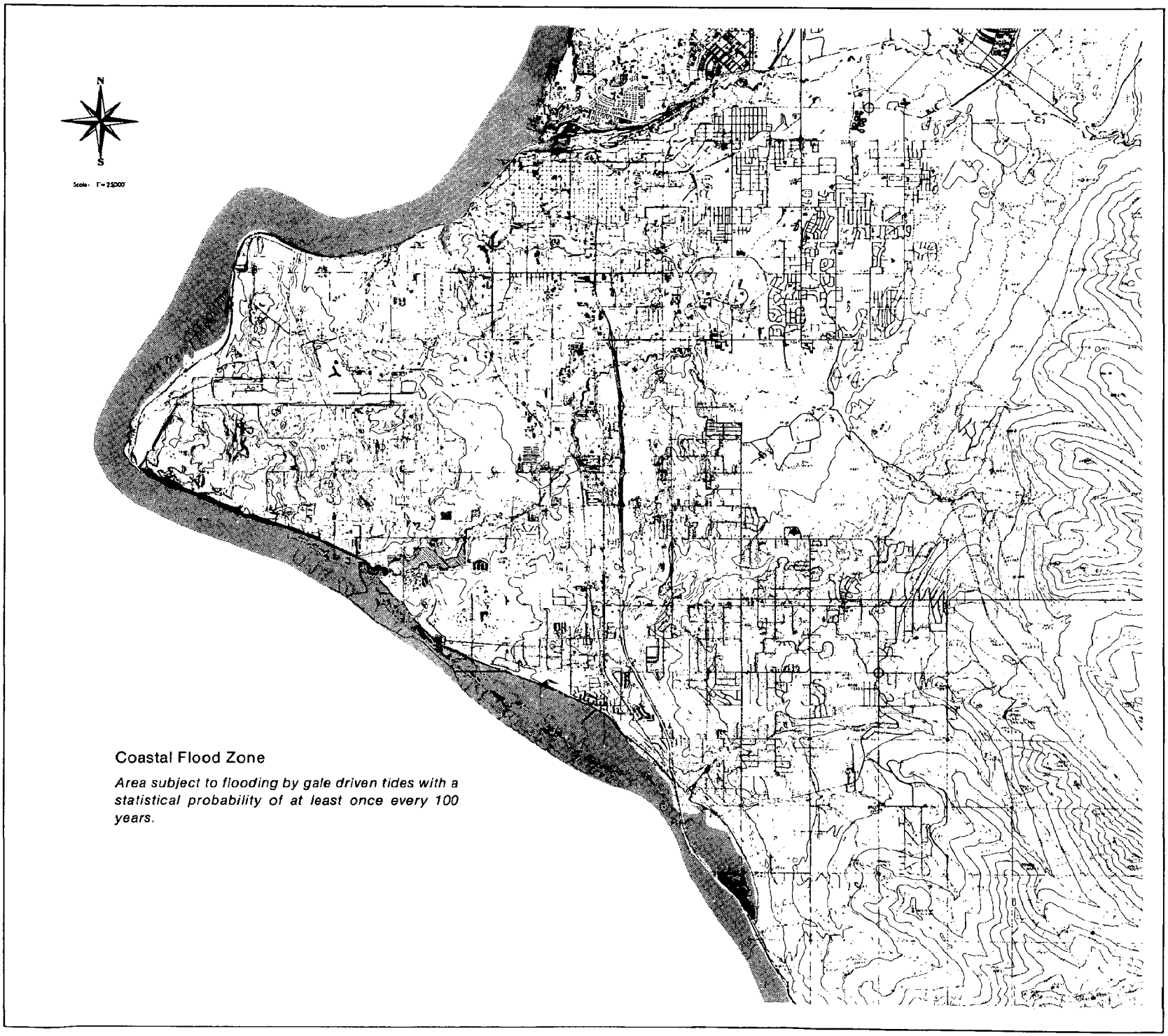
Coastal Management Program Requirements

This project addresses four of the eleven major uses and activities identified by the Alaska Coastal Management Program. They are all considered in the context of the *Shoreline Access Planning Element.* Though the Alaska Coastal Act does not specifically require standards guaranteeing shoreline access, it does grant authority to the District to plan for public access.

Standards Addressed in this Project (Numbers refer to Alaska CZM Statutes):

6 AAC 80.060.	Recreation
6 AAC 80.150.	Historical, Prehistoric and Archaeological Resources
6 AAC 80.050.	Geophysical Hazards Areas
16 AAC 80.140.	Air, Land and Water Quality
Article 4.6 AAC 80.16	Areas Meriting Special Attention.

Discussion of these standards and elements and the responses to each of these requirements may be found in Appendix A.

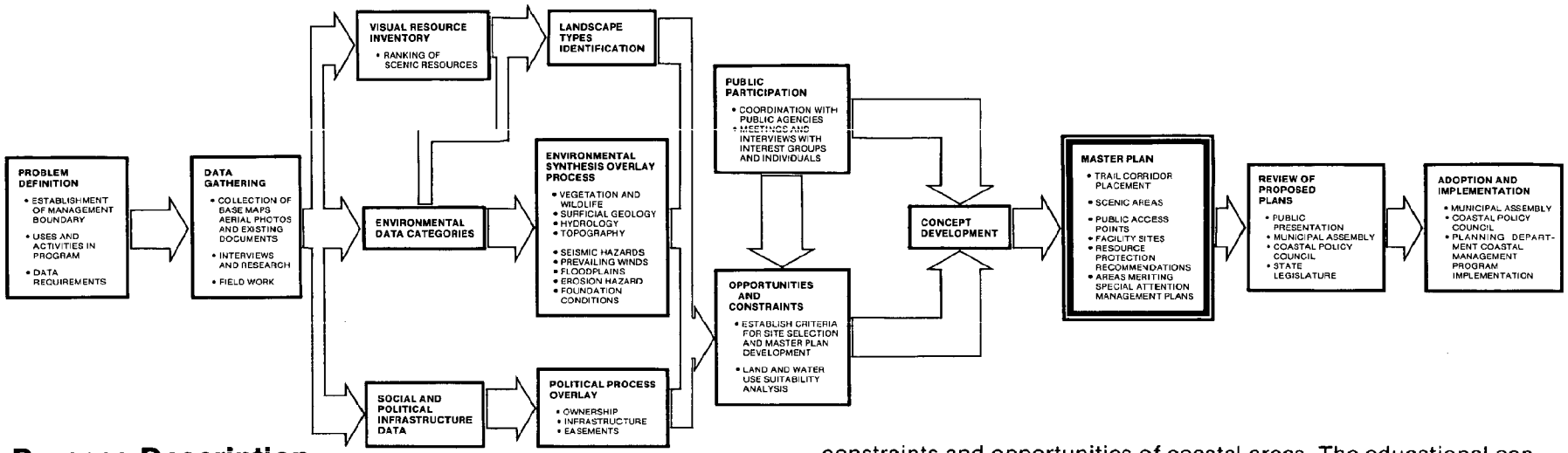


Coastal Flood Zone

Area subject to flooding by gale driven tides with a statistical probability of at least once every 100 years.

PROCESS

ANCHORAGE COASTAL MANAGEMENT PROGRAM
PUBLIC ACCESS AND RESOURCE PROTECTION PLAN



Process Description

The process for developing the Master Plan is outlined in chart form (Figure 4) to illustrate the sequence of decision-making steps. First, the project tasks were defined in relation to the project areas to determine what data would be required. The data was collected, and new information sources were sought to fill gaps in the data. Base information was derived from various kinds of maps and photographs. Additional data-gathering activities included library research, interviews and field observation. A method of visual analysis was selected, and the shoreline was investigated on foot wherever pedestrian access was feasible.

After the data was collected, it was sorted into relevant categories, synthesized, and mapped. A combination of visual resource and environmental information led to the identification of landscape types. Property ownership maps were used to identify land ownership constraints and suitable corridors for trails. Meetings and interviews with individuals and groups allowed public input into the process. Overlaying and synthesizing all the information led to an understanding of the constraints and opportunities of coastal areas. The educational concept of "Landscape Dynamics" evolved quite naturally from the overlay process.

Site selection criteria for the Master Plan were developed, and several matrices were prepared to indicate appropriate uses for these sites. The Master Plan includes a description of the corridor alternatives, and the facilities associated with the trail. The Master Plan is illustrated in graphic form in five fold-out Project Summary sheets and on a base topographic map. The Project Summary includes a mile-by-mile description of opportunities and constraints. Aerial photographs indicate spatial relationships of the land areas described. Site plans and corridor details were prepared to provide the Planning Department with prototypes for the coastal facilities.

Resource protection recommendations are made in the context of the 'landscape types' discussion, and in the specific management plans for each of the six Areas Meriting Special Attention.

Following publication of this document, the report will be forwarded to the Municipal Assembly and Coastal Policy Council for approval.

CHAPTER II

ENVIRONMENTAL SYNTHESIS

- Overview
- Land Ownership and Bikeway System
- Vegetation and Habitat Areas
- Wildlife Resources
- Geophysical Hazards
- Scenic Resources Inventory
- Landscape Types Resource Inventory and Management Considerations

Overview

The sections of this chapter describe the environmental factors, both natural and man-influenced, which led to the Master Plan concept. In the course of the project, the environmental factors were synthesized to identify the opportunities and constraints of land and water areas. Mapped information in this report includes land ownership and existing bikeway systems, vegetation and habitats, geophysical hazards, and scenic resources. The visual resource section describes the field observation process and visual ranking system, which appears in chart form. The maps in this chapter represent a synthesis of information from several sources. The landscape types map goes a step further to the analysis level, including a discussion of general land use suitability.

Land Ownership and Bikeway System

The generalized land ownership pattern for the coastal zone of the Anchorage Bowl is based on information from the Planning Department Land Ownership and Land Use Maps and the Planning Department Municipal Selections Map. The bikeway system is based on the Municipality's *Areawide Trails Plan* and Bikeway brochures, and the Parks and Recreation Capital Improvements Budget for 1980-81. The public parks system for the Anchorage Bowl is taken from the Planning Department's parks and trails inventory (1980).

The intent of this synthesis map is to show connections between existing recreation systems and the coastal zone. In addition, this map depicts public land areas that could be considered for facility and access locations.

Major federal landholders in the coastal zone include the Alaska Railroad, the U.S. Army (Point Campbell Military Reservation), and the Federal Aviation Administration which owns land on Point Woronzof. The State's Department of Natural Resources (D.N.R.) holds title to the majority of the wetlands between Point Campbell and Potter Marsh. This land has been designated as a State Game Refuge. The Point Campbell - Point Woronzof wetlands are also held by D.N.R. The State's Department of Transportation and Public Facilities controls the majority of the land around the International Airport.

There is potential for transfer of some of these land areas to the Municipality under the Municipal Land Act of 1978.

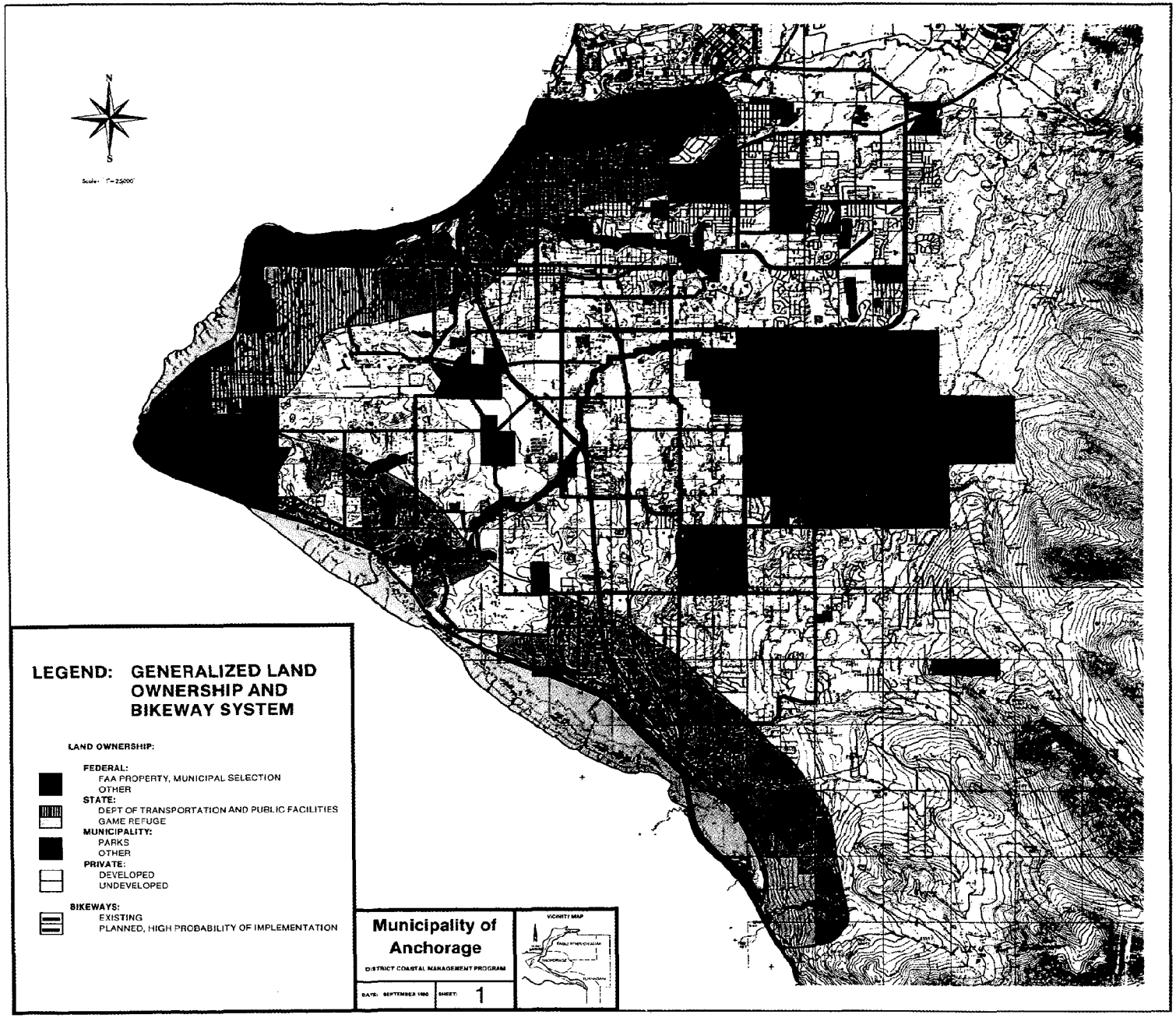
The Federal Aviation Administration property near Point Woronzof, the Point Campbell Military Reservation, and the International Airport itself may be transferred to Municipal ownership.

The Municipality presently owns the tidelands along the Knik Arm, several areas within the coastal zone that are being leased for gravel extraction, and other industrial land areas near Ship Creek. The greenbelts, 'Park Strip' and other park areas are also owned by the Municipality.

Development in areas that are presently in private ownership should be anticipated. It is extremely important that easements be established through these areas for coastal access. Such easements should be established in the near future, before the land is subdivided further. The large gravel pits and wooded areas along Dimond Boulevard near Kincaid Park and the area south of Bayshore are of particular concern.

The bicycle system in Anchorage is already well developed and highly utilized. The majority of paths go along roadways and greenbelts. Relatively few lead to coastal destinations. Several routes which are listed as existing on the trails plan have not yet been built. The coastal bicycle access and resource protection plan, was identified in the *Areawide Trails Plan.*

Facilities for commuting to the urban center by bicycle are not presently adequate. However, recreational bicycling is very popular with many residents of the Anchorage area. It is reasonable to assume that demand will continue to increase for trail related activities. In a 1975 study of southcentral Alaska's outdoor recreation demand, trail related activities were most popular. Driving for pleasure, sightseeing, picnicking and fishing were also among the preferred activities (Draft Statewide Comprehensive Outdoor Recreation Plan).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Scale: 1" = 2,500'
LEGEND: GENERALIZED LAND OWNERSHIP AND BIKEWAY SYSTEM
LAND OWNERSHIP:
FEDERAL:
FAA PROPERTY, MUNICIPAL SELECTION
OTHER
STATE:
DEPT OF TRANSPORTATION AND PUBLIC FACILITIES
GAME REFUGE
MUNICIPALITY:
PARKS
OTHER
PRIVATE:
DEVELOPED
UNDEVELOPED
BIKEWAYS:
EXISTING
PLANNED, HIGH PROBABILITY OF IMPLEMENTATION
Municipality of Anchorage
DISTRICT COASTAL MANAGEMENT PROGRAM
DATE: SEPTEMBER 1980
SHEET: 1
VICINITY MAP

Vegetation and Habitat Areas

Vegetation Resources

Most of the coastal vegetation of the Anchorage Bowl has been affected by residential and transportation system development. Very little old growth vegetation remains, due to the technique used by the Alaska Railroad to clear the area with fire near the beginning of this century. Between the east-west runway of the airport and Kincaid Park, the vegetation has been relatively undisturbed because of limited access to the military reservation. Most areas below the bluff along the Turnagain Arm have not been disturbed; however, two large pads have been built by dumping fill into the marshes of this area. South of Oceanview, where the railroad tracks run along the coast, construction and maintenance have resulted in changes in the vegetation pattern to alder-birch growth.

Probably the most important determinant of vegetation patterns aside from the influence of man is the amount of water in the soil. The coniferous woodland and mixed coniferous-deciduous woodland are essentially well-drained soil types. In contrast, spruce bog and shrubby vegetation indicate a high water table. In the lowlands, soil depth to hardpan clay or permafrost is often quite shallow, and the water is trapped above this layer, causing very poor drainage. There is not a particularly definite change in vegetation with slope-aspect, but the alpine vegetation begins at a relatively low altitude in Anchorage.

Because there were no adequate vegetation or habitat maps available for the Anchorage Bowl, the information for the vegetation and habitat map was assembled using air photo interpretation and field observation. The vegetation map from the Anchorage Environmental Atlas, the Southcentral Remote Sensing Demonstration Project Land Cover Map, and the United States Geological Survey quadrangle sheets (scale - 1:25,000) provided base information. Infrared air photographs (scale - 1"=500') taken in August, 1978, were used to identify specific vegetation patterns. Habitat information was constructed with information from U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, field observations and information from the Audubon Society.

Coastal Woodland Vegetation Types

Coniferous Woodland

Coniferous woodland consists of a predominant stand of white spruce, usually with an understory of wood rose, alder and willow. Associated trees are paper birch and balsam poplar. This type occurs in small patches in Kincaid Park and on the Point Campbell Military Reservation. The shallow roots of spruce trees cause them to be susceptible to wind throw in high winds.

Deciduous Woodland

The deciduous woodland type is primarily birch, black cottonwood, quaking aspen, and several species of alder and willow. Occasionally, white and black spruce are intermixed with deciduous vegetation.

Mixed Coniferous-Deciduous Woodland

Mixed coniferous-deciduous woodland is the primary vegetation pattern in coastal areas that have not been recently disturbed. These woodlands are composed of white or black spruce, birch, poplar, alder, cottonwood and conifers which appear regularly or in patches. Understory species include roses, grasses, devil's club and ferns.

Mixed Woodland

Mixed woodland consists of shrub thickets and scattered trees. Dense alder thickets occur in floodplains, along waterways and on disturbed sites. A number of herbs and shrubs are associated with this vegetation type, including devil's club, red-osier dogwood, willows and blueberries.

Coastal Wetland Vegetation Types

Treeless Bog

Treeless bogs occur in low lying wet areas near the coast which are too waterlogged for trees. The vegetation is predominantly sphagnum moss and low shrubs, with sedges, rushes, and cottongrass. Common species are bog rosemary, labrador tea, shrub willows and bog cranberries.

Spruce Bog

Spruce bogs consist of black spruce growing in poorly drained wetlands. The trees are very slow growing, and often appear stunted. A tree two inches in diameter may be one hundred years old. This species regenerates well after fire, since heat releases the seeds from the cones. Although black spruce do occur in the interior forest type as indivudual trees, a pure stand of tightly bunched, short-branched trees is characteristic of the wetland areas.

Brackish Marsh

Brackish marsh is vegetated primarily with sedges, bullrushes and grasses in standing surface water or varying salinities. Water hemlock, buckbean, pondweed and iris are associated species.

Tidal Marsh

Tidal marsh consists of primarily salt water species, green and blue-green algae, sedges, rushes and grasses.

Wet Deciduous Woodlands:

Wet deciduous woodlands are a nearly impenetrable growth of alders, with larger trees on higher hummocks, and are usually found in the floodplain and on newly exposed alluvial deposits that are periodically flooded.

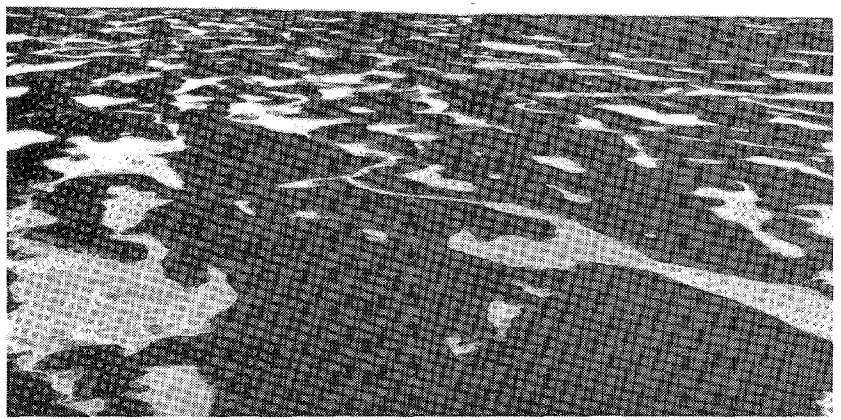
Other Landcover Types

Quarries and Disturbed Areas

Extensive gravel quarries are present within the coastal boundary due to excavation of the glacial deposits in this area. The gravel pits are vegetated only by weedy species; most pits have not been regraded. Sizeable areas near the new north-south airport runway have been devegetated during construction.

Agriculture

A field near the west end of the airport's east-west runway is the only coastal area presently used for row-crop agriculture.



Patterns formed by green algal mats on the mudflats along Knik Arm.

Mudflats

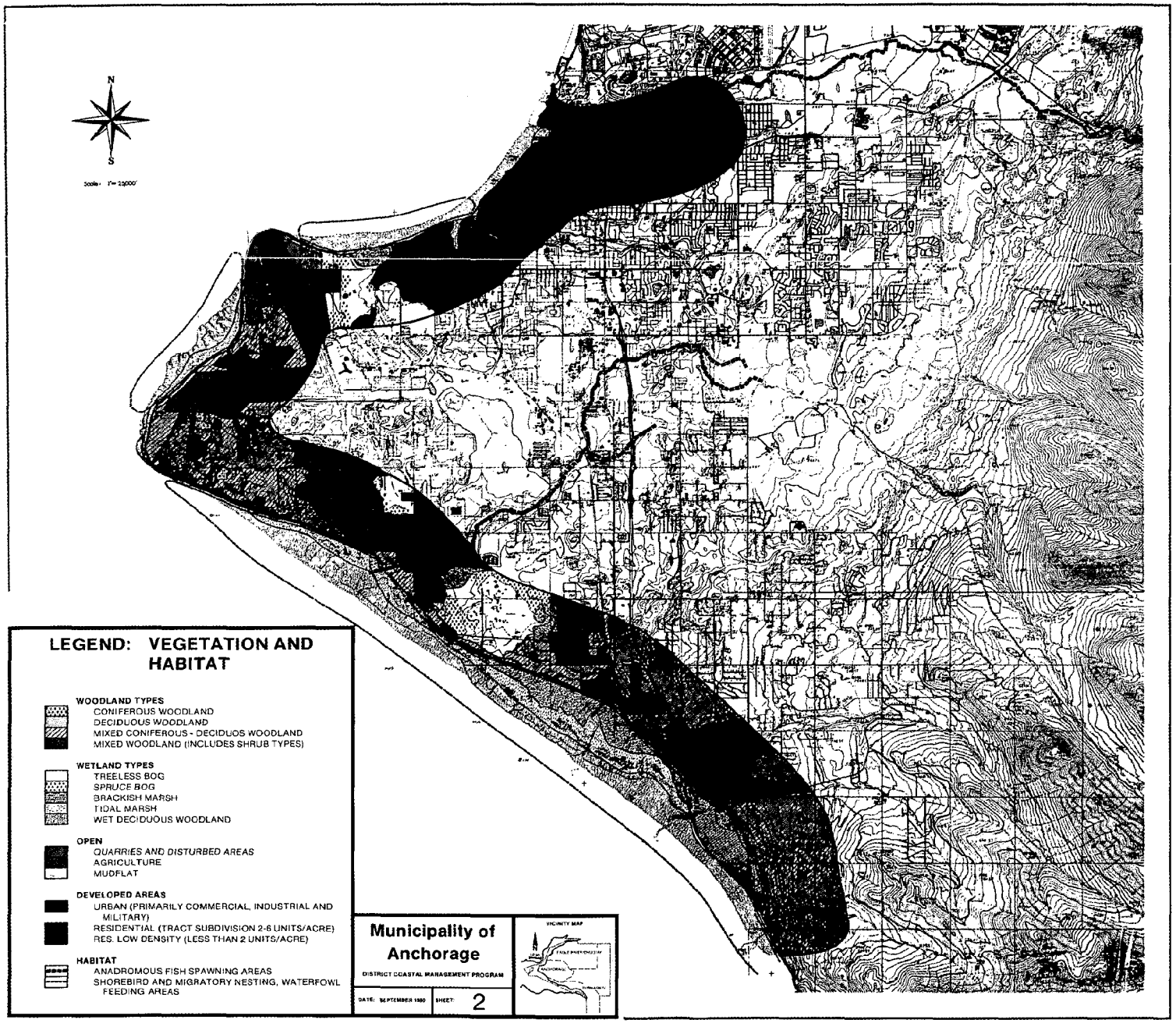
Mudflats are mostly unvegetated areas of shifting silt and sand below the mean water level. A thick mat of algae is commonly found on the mudflats, forming intricate patterns of intense green.

Residential Areas

Urban areas are mostly unvegetated except for small private gardens and park areas. No tree canopy exists in downtown Anchorage.

Residential tract subdivision areas along the Knik Arm have mature trees and carefully kept lawns and gardens. Newer subdivisions have a few scattered remnants of the black spruce that were there prior to draining and filling, but no mature tree canopy. Most of the immediate coastline in the vicinity of housing development has mixed deciduous-conferous or shrub growth.

Residential low-density areas are predominantly natural woodland in character, with a regular pattern of houses and roads. Lot size averages 5 acres.


N
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Scale: 1" = 2000'
LEGEND: VEGETATION AND HABITAT
WOODLAND TYPES
CONIFEROUS WOODLAND
DECIDUOUS WOODLAND
MIXED CONIFEROUS - DECIDUOS WOODLAND
MIXED WOODLAND (INCLUDES SHRUB TYPES)
WETLAND TYPES
TREELESS BOG
SPRUCE BOG
BRACKISH MARSH
TIDAL MARSH
WET DECIDUOUS WOODLAND
OPEN
QUARRIES AND DISTURBED AREAS
AGRICULTURE
MUDFLAT
DEVELOPED AREAS
URBAN (PRIMARILY COMMERCIAL, INDUSTRIAL AND MILITARY)
RESIDENTIAL (TRACT SUBDIVISION 2-6 UNITS/ACRE)
RES. LOW DENSITY (LESS THAN 2 UNITS/ACRE)
HABITAT
ANADROMOUS FISH SPAWNING AREAS
SHOREBIRD AND MIGRATORY NESTING, WATERFOWL FEEDING AREAS
Municipality of Anchorage
DISTRICT COASTAL MANAGEMENT PROGRAM
DATE: SEPTEMBER 1980
SHEET: 2
VICINITY MAP

Wildlife Resources

Fish

Prior to 1942, Ship, Campbell and Chester Creeks supported annual runs of king, coho, silver, chum and pink salmon, as well as abundant Dolly Varden and rainbow trout. Salmon fishing within the Anchorage Bowl is now minimal, since the small annual runs cannot support sport fishing pressure. Ship Creek still provides habitat for king, coho, pink and chum salmon. It is closed to salmon fishing from January 1 until August 17; no fishing is allowed upstream of 300 feet below the Chugach Electric Dam. Campbell Creek has king, coho, sockeye, and pink salmon, and a resident population of Dolly Varden trout. Salmon fishing is not allowed, and all fishing is restricted above the Old Seward Highway. Rabbit Creek has limited salmon fishing, though the lower reaches support cohos and pinks. Jewel, Little Campbell and Sand Lakes are stocked with rainbow trout and open to fishing. Blackfish, non-commercial fish in this area, are found in Fish Creek and Lake Hood.

Birds

Potter Game Refuge, which includes the tideflats from Potter Marsh to Point Campbell, is used by nesting geese, ducks and shorebirds, and many migrating waterfowl. Swans, snow geese and large numbers of Canada geese use this area during migration. Potter Marsh is one of the most heavily used nesting areas in the state for ducks and geese. Nesting species include mew gulls, herring gulls, grebes, mallards, lesser scaup and many others.

Shorebirds, such as plovers, yellowlegs and sandpipers nest and feed on the tideflats. Sand Hill crane nesting and feeding occurs south of Oceanview, at Earthquake Park, and in the bog east of the north-south runway at the International Airport. The tidal marsh west of the airport is used primarily for feeding in early spring and late fall. The tidelands along the Knik Arm are used for feeding, especially by migratory species, including widgeons, pintails, teal, goldeneyes and scaup. The cooling ponds associated with the electric power plant on Ship Creek provide ice-free water all year, allowing mallards to over-winter in the area. Scattered small ponds, lakes and marshes provide habitat for nesting ducks and geese, and shorebirds such as yellowlegs.

Animals

The wetlands and coastal woodland support populations of water shrews, meadow voles, muskrat, varying hare, red squirrels, and occasional predators such as mink, raccoons, red foxes, coyotes, ermine, and mouse weasels. Hawks, owls, and eagles also feed on rodent populations in bogs and marshes.

One of the unique aspects of Anchorage is its resident moose population. Approximately ten to fifteen moose inhabit the urban area and are concentrated in the Point Campbell-Kincaid Park area. Moose also range in the larger woodlands in the foothills of the Chugach Mountains. In the winter, the population expands considerably, as the animals move down to the lowlands in search of food. Human population pressure restricts the moose habitat, resulting in a number of conflicts. Accidents caused by moose are frequent on the highways. They occasionally create tense situations for joggers and skiers on the trails.

Black and brown bears are sighted occasionally in the Anchorage Bowl; the numbers in the coastal areas are probably not significant.

Habitat Management Considerations

1) Wildlife protection requires habitat protection. This necessitates an understanding of the characteristics and vulnerabilities of each species to be protected.
2) In general, large, diverse habitat areas are more valuable than small, segregated areas of uniform type. Edge types - the transition zones between types of vegetation - are very rich biologically. Water corridors and riparian zones are also of high habitat value.
3) Habitat areas that are connected by a system of waterways should be managed as a unit whenever possible.
4) Breeding and nesting grounds may be the most sensitive areas to human interference. Many species are more adaptable in their feeding grounds than they are in choosing places to mate and rear their young.
5) Many animals need sheltered migration or movement corridors to water and feeding grounds. It is important not to block access to water, and to maintain natural cover along corridors whenever possible.

6) Buffer zones (defined by the Department of Fish and Game) are considered to be "bands of undisturbed land forms and/or vegetation along rivers, lakes, streams, marine waters and contiguous wetlands, or surrounding wildlife use areas." The Department of Fish and Game recommends establishing buffer zones around anadromous fish streams and critical wildlife habitats which are highly sensitive to human disturbance.

Buffer zones are used to:

- protect the vegetative component of the habitat
- prevent pollutants from reaching a water body
- prevent water courses and wetlands from being unnaturally altered by being filled in, channelized, dammed, and drained
- avoid disruption of fish or wildlife populations during sensitive life history stages
- protect watersheds and recharge areas

The only information available on habitats in the Anchorage Bowl is of a relatively informal nature. For this reason, only primary waterfowl habitat and anadromous fish areas are outlined on the synthesis map. Upland bogs, ponds and lakes all serve as waterfowl and shorebird habitat, but individual nesting and feeding areas have not been adequately identified.

Geophysical Hazards

The unconsolidated surficial material of the Anchorage Bowl was deposited during the ice age or Pleistocene Epoch (1 million to 10,000 years) in five separate glacial advances. Material deposited directly by the glaciers is an unstratified mixture of gravel, silt, and sand and clay. Stratified deposits of sand and gravel were sorted by flowing glacial meltwater, while fine textured silt and clay remained suspended in water until it reached still-water lakes and ponds. Soils are thin and poorly developed because of the cool climate and recent origin of the surficial deposits (Environmental Atlas of the Greater Anchorage Area Borough, Alaska 1972).

The combination of fine grained unconsolidated deposits with the seismic activity characteristic of the Cook Inlet region create a number of fairly hazardous geological conditions. Most of the hazard zones are concentrated within the coastal management boundary, as the geophysical hazards synthesis map illustrates. In view of the high aesthetic, educational, and biological qualities and the general unsuitability of certain coastal areas for development, open space and passive recreation are appropriate uses of this land.

The elements of the geophysical hazards map are foundation stability, landslide areas, unstable slopes, areas of coastal erosion, and high wind areas. These aspects were selected as having the most impact on land use in the coastal area, within the scope of this project.

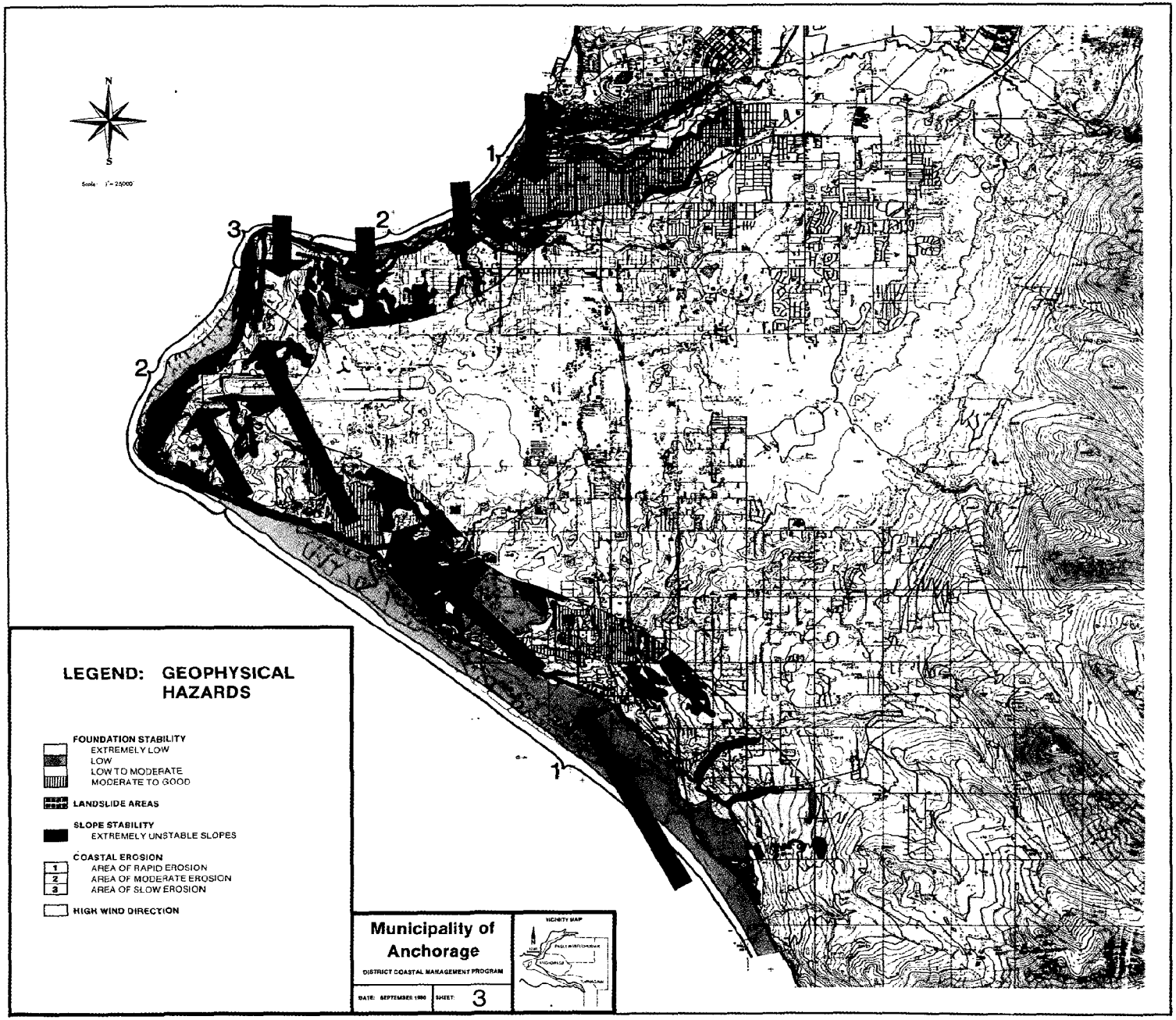
Foundation Stability

Foundation stability is the ability of soils and other surficial material to support buildings and structures. It has been categorized as follows:

Extremely Low:

This category is composed of chiefly fine-grained materials (silt and clay) which have low bearing capacity. It also includes extensive areas of poorly drained material. In places, thick

Bluff erosion is a serious problem in several areas along the coast of Anchorage.


N
S
Scale 1" = 2500'
1
2
3
2
1
LEGEND: GEOPHYSICAL HAZARDS
FOUNDATION STABILITY
EXTREMELY LOW
LOW
LOW TO MODERATE
MODERATE TO GOOD
LANDSLIDE AREAS
SLOPE STABILITY
EXTREMELY UNSTABLE SLOPES
COASTAL EROSION
1 AREA OF RAPID EROSION
2 AREA OF MODERATE EROSION
3 AREA OF SLOW EROSION
HIGH WIND DIRECTION
Municipality of Anchorage
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VICINITY MAP

peat deposits or marsh conditions prevail. The peat is generally underlain by silt and clay. These areas are more difficult to modify to provide suitable foundation conditions. Excavation is hindered by unstable material and high water table.

Low

Silt and clay in this category may lack sufficient bearing capacity for heavy loads. Moderate to very steep slopes are potentially unstable. In places in the lowland, peat is at the surface and the water table may be high. In some of these places the peat can be removed, so that the water table can be lowered to improve foundation conditions.

Low to Moderate

Low to moderate foundation stability is found in some areas where gravel and sand can support heavy to moderately heavy loads. In areas of hummocky topography, the conditions are fair to poor, especially in depressions where fine-grained material has lower bearing capacity. On some steep slopes of limited extent, instability problems are also likely.

Moderate to Good

This category includes chiefly homogeneous gravel and sand that is generally 20 feet or more thick and can accommodate heavy loads. Excavation by power equipment is generally easy.

Slope Stability

Slope stability is based on steepness and degree of cohesion of the slope face. Hazard areas are categorized as follows:

Landslide Areas

Areas which have been identified as having potential large landslides are included in this category. Landslides are most likely to occur during earthquakes, after heavy rainfall, or during spring thaw periods.

Extremely Unstable Slopes

Very steep slopes which are underlain by sand, silt and clay, or by landslide deposits are subject to instability. The least stable slopes occur mainly on coastal bluffs where erosion is active. Such slopes are characterized by continuous downslope movements.

Coastal Erosion

Coastal erosion is caused by tides, wind and ice-scouring. The coast has been ranked 1, 2 or 3 according to severity of erosion processes:

Areas ranked (1) have slow to negligible coastal slopes in alluvial material and are not subject to tidal wave action under present shoreline conditions. This category includes shorelines protected by structures or other man-made stabilizing features (Anchorage dock, railroad embankments).

Areas ranked (2) have slow to moderate coastal erosion. Bluffs and beaches which are subject to occasional tidal and wave action are included.

Areas of rapid coastal erosion are ranked (3). Bluffs at Point Woronzof directly exposed to frequent tidal and wave action. The rate of horizontal retreat is up to 2.5 feet per year.

Wind

Most coastal areas are subject to high winds. One or two wind storms up to 50 miles per hour can be expected, with occasional gusts to 100 m.p.h. Two types of wind storms are responsible for damage along the coast (see arrows on map):

1) North winds caused by cold air masses displacing the prevailing southerly airflow affect waterfront areas.
2) Strong funneled 'Chugach Winds' originate in the passes of the Chugach Mountains. They blow along the Turnagain Arm in a generally southeasterly direction.

Scenic Resources Inventory

The Anchorage coastline features a continuum of outstanding vistas, and an array of natural and man-made scenic resources. However, in the past there has been little planning for aesthetic quality in the coastal zone. Coastal development is limited in Anchorage except along the urban waterfront, so the impacts are not as severe as they might have been. Some unsightly areas, such as dumps and gravel pits, could be improved with careful site planning. As coastal land use increases, it becomes necessary to identify and prioritize scenic resources. A greater understanding of the interaction of man-made and natural elements will prevent negative effects on visual quality. Scenic resources planning serves as a guide for other land and resource planning decisions.

In this scenic resource inventory, twenty-five sites with unusual viewing opportunities or "typical" viewsheds were identified. Field notes were recorded on a topographic base map and on two field forms that required descriptive information (see Figures 5 and 6). The first of these forms consists of a United States Forest Service standard visual analysis check list. It employs criteria established by Litton in *Forest Landscape Description and Inventories* (1968). The second form addresses criteria from Litton, and from Roy Mann's *Aesthetic Resources of the Coastal Zone* (1975). Coastal Zone Management requirements for ranking coastal scenic resources were derived from a format used by Mann in *Shoreline Appearance and Design* (1975). A chart describing and ranking the scenic resources of Anchorage's coastline has been synthesized in this study from field notes, photographs and topographic maps. The criteria used in this chart are described in Appendix B.

Following are some general considerations for visual management of the Anchorage shoreline (from Mann, *Shoreline Appearance and Design*).

Knik Arm and Mount Susitna as seen from Point Woronzof vicinity.

Visual Management Considerations

1) Adopt site selection and site design criteria for facilities within the shoreline view area;
2) Require building setbacks of 100' and minimum vegetative screen depths of 50' in residential bluff areas;
3) Require building mass and color to be compatible with shorescape qualities;
4) Require advertising and utility line controls in viewshed areas;
5) Limit construction to water related or environmentally compatible uses;
6) Acquire title and easements to protect and provide public access to important scenic viewpoints and adjacent areas;
7) Facilitate removal or enhancement of eyesores.

Scenic Quality Inventory and Evaluation Chart

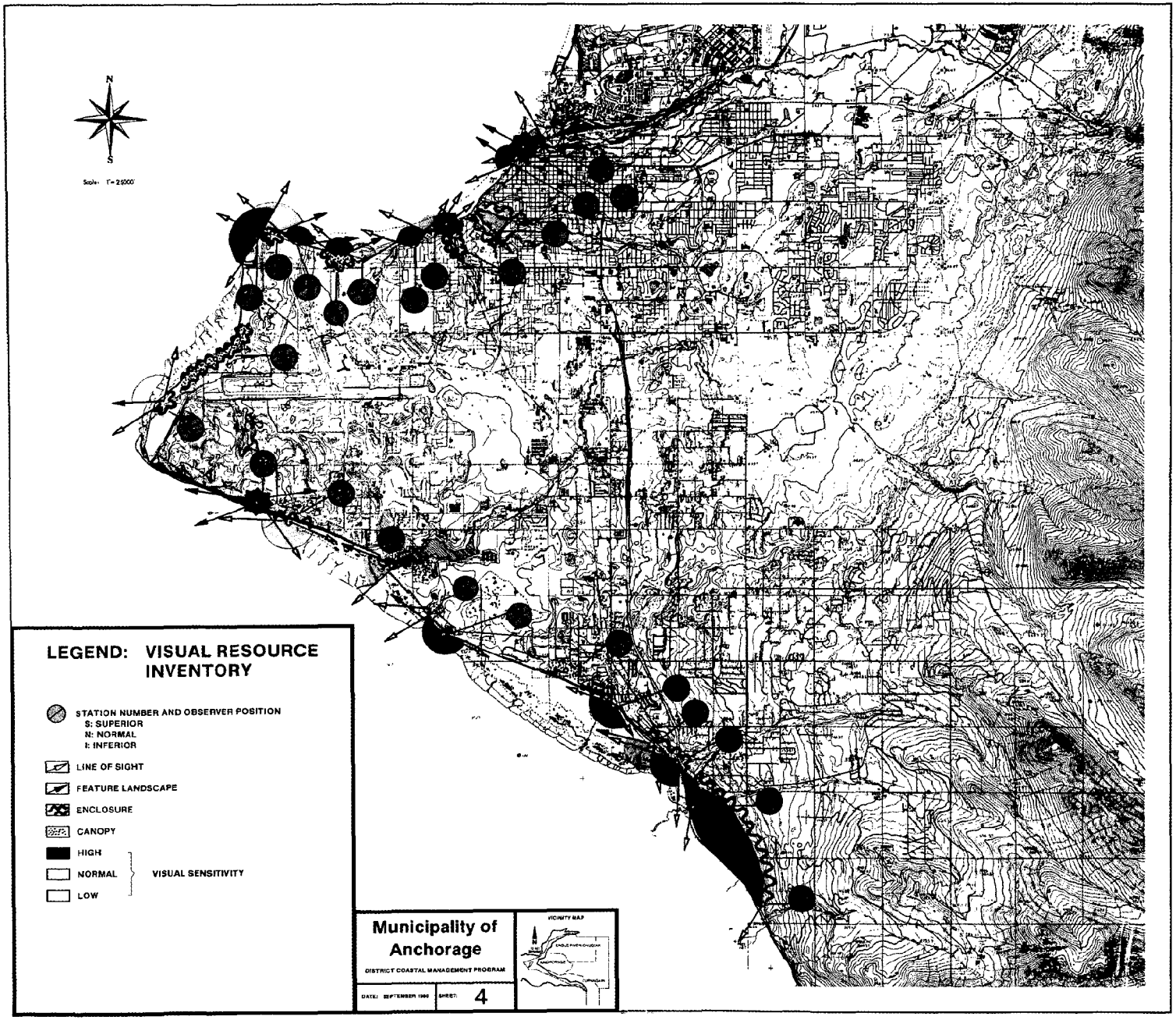
FURROW CREEK WOODLAND 7/1/80

Key Factors	Description
Landform (General) BLUFFTOP WOODLAND Form -Isolation VEGETATION AND CREEK HIDE NEARBY DEVELOPMENT AND MUFFLE TRAFFIC -Size and Scale DENSE STAND OF 40' BIRCH TREES -Contour Distinction, Silhouette STEEP BANK DEFINES CREEK BED. NO SILHOUETTE. -Surface Variation - Shapes, Patterns, Tectures VARIATION DUE TO NUMBER OF GROUND COVER, SHRUBS, AND CANOPY LAYER SPECIES.	
Special Definition -Degree of Definition; Floor to Wall Proportions LOOSELY DEFINED BY TREE TRUNKS AND CANOPY -Nature of Enclosure and Floor; Floor Configurations ENCLOSURE IS DUE TO VEGETATION AND IS THUS SEMITERMORELL. FLOOR VARIES W/ THE HEIGHT OF UNDERSTORY VEGETATION (GROSSES, GRASSES, SHRUBS). -Size and Scale	
Vegetation (General Type) GROUND COVER: MOSSES, LIVERWORTS / UNDERSTORY: LADY AND BRACKEN FERN, TALL GRASSES, WILD RYES / CANOPY: BIRCHES	
Color -Contrast MEDIUM. MOSTLY DUE TO GRASSES AND TREE TRUNKS -Hue MEDIUM TO DEEP GREEN -Value GRASSES AND LEAVES MOSTLY MEDIUM GREENS	
Influence of Adjacent Scenery NONE: ENCLOSED AREA	
Scarcity UNDEVELOPED STREAM CORRIDORS ARE LOGICALLY DISTINCT IN THIS OCEANVIEW NEIGHBORHOOD.	
Cultural Modifications NONE WITHIN JOHN'S PARK	
Sensitivity LOW VISUAL SENSITIVITY DUE TO DENSE TREE COVER	

Scenic Inventory Form

VISUAL RESOURCE INVENTORY STATIONS LIST

1. Railroad Station
2. Marina Site
3. Gravel Pad Near Nulbay Park (Site of Nulbay Park Beach Access)
4. Westchester Lagoon
5. Fish Creek Outlet
6. End of Marston Road, North of Lyn Ary
7. End of McKenzie Road
8. Earthquake Park
9. Earthquake Park Picnic Pullout
10. Gravel Pullout (Site of Pt. Woronzof Picnic Playground)
11. Point Woronzof Overlook
12. Gravel Pit (Site of Scenic Area at End of Old Clay Products Road)
13. Point Campbell-Point Woronzof Utility Corridor
14. Airport Fence
15. Kincaid Park Sand Dunes
16. Bluff Base South of Kincaid Park
17. Campbell Creek Outlet
18. Bayshore Ravine
19. Klatt Road Gravel Pit (Site of Klatt Road Scenic Area)
20. Furrow Creek Woodland (John's Park)
21. Gravel Pad at Oceanview
22. Jeep trail North of Seward Scenic Overlook
23. Seward Scenic Overlook
24. Pullout at North End of Potter Marsh
25. South End of Potter Marsh


N
S
Scale: 1" = 2000'
LEGEND: VISUAL RESOURCE INVENTORY
STATION NUMBER AND OBSERVER POSITION
S: SUPERIOR
N: NORMAL
I: INFERIOR
LINE OF SIGHT
FEATURE LANDSCAPE
ENCLOSURE
CANOPY
HIGH
NORMAL
LOW
VISUAL SENSITIVITY
Municipality of Anchorage
DISTRICT COASTAL MANAGEMENT PROGRAM
DATE: SEPTEMBER 1990
SHEET: 4
VICINITY MAP

LANDSCAPE ANALYSIS CHECK LIST

LOCATION OCEANVIEW / POINT K
DATE 7-1-80
HOUR 10 A.M.

		20		21		22		23		24	
OBSERVER POSITION	S							✓			
	N	✓		✓		✓				✓	
	I										
OBSERVER	*F. G.	✓ UNDER-STORY								✓	MARSH
	*M. G.			✓	MARSH	✓	SCRUB VEGETATION	✓	BLUFF AND MARSH		
	*B. G.										
SCENE COMPOSITION	PAN.			✓				✓			
	ENCL.	✓				✓				✓	
	FOCAL										
	*FEATURE										
	CANOPY	✓									
	OTHER							CLOUDS AND SKY			
*PLANT ASSOC.		DECIDUOUS WOOD-LAND		TIDELANDS		SHRUBS NEAR BLUFF MARSH DEAD WITH SPRUCE		SHRUBS & TREES MARSH		BRACKISH MARSH	
LIGHT	B							✓			
	F	•									
	S			✓		✓				✓	
	INTENSE			✓		✓		✓		✓	
	DK.										
	DIFF.	✓									
OTHER		SOUND OF RUNNING WATER		INCOMING TIDE CAN BE HEARD		BIRDS SEEN AND HEARD ALONG TRAIL		SHOTS HEARD FROM RIFLE RANGE		HIGHWAY TRAFFIC AND STREAM RUNNING THROUGH CULVERT	
STATION		20		21		22		23		24	
NAME, DESCRIPT. *DEFINE		FURROW CREEK (JOHNS PACE)		GRAVEL AND MT OCEANVIEW		JEEP TRAIL FROM BLUFF		OVERLOOK ALONG SEWARD HIGHWAY		NORTH END OF POINT MARSH	

RAH
Observer

Landscape Analysis Checklist

Land Types Resource Inventory and Management Considerations

Definitions

Carrying Capacity: A conceptual upper limit to the number or density of organisms that can be supported by an ecosystem *or* the maximum tolerance of an ecosystem to disturbance by human occupancy or resource use. Exceeding the carrying capacity usually results in permanent damage to the system.

Ecosystem: The interaction of all living forms with their environment, both living and non-living, within a specific geographic area. True understanding of ecology is the knowledge of interrelating systems and consideration of how the whole relates to its parts. In coastal areas, it is important to keep in mind that upland uses have a great deal of effect on the quality and integrity of coastal habitats.

Cumulative Impacts: The additive effect of individual events that are seemingly unrelated. This concept is usually associated with water quality problems in coastal areas, and regional scale resource management.

Erosion and Accretion: Normal shoreline processes that are the result of the combined effects of gravity, wind and water. Erosion is most obvious in the bluff areas, where freezing and hydrologic activity result in loosening of surface layers and subsequent slumping. Accretion is the process of building landforms; wind piles sand into dunes, tidal currents carry silt and sand and deposit them in spits and bars. These processes are illustrative of shoreline dynamics; rather than ignoring them or attempting to arrest them, it is important to site land uses that are appropriate to these areas.

Management Concepts

Each of the landscape types in the following discussion has been ranked according to its degree of sensitivity in three categories:

Ecological/Biological Sensitivity:

A high rank in ecological/biological sensitivity indicates important habitat for a large number of species, or critical habitat for one or more species. Human impact in these areas will be detrimental to the habitat in the absence of adequate control mechanisms.

Physical Sensitivity:

Physical sensitivity is characterized by land not physically able to withstand intensive uses, due to poor foundation stability, susceptibility to soil compaction, hydrologic sensitivity or other hazards. Although engineering solutions are possible in most areas, these are likely to be expensive or temporary at best.

Visual Sensitivity:

Open or unprotected areas, which are likely to be changed significantly in appearance by most types of development, are considered to be visually sensitive. The landscape types are rated High, Medium or Low in sensitivity according to the above criteria.

General Management Recommendations for All Wetland Types (from Clark, *Coastal Ecosystem Management*):

1) Maintain natural supply of nutrients
2) Prevent excessive discharge of nitrogenous compounds into confined coastal waters
3) Maintain natural oxygen concentration
4) Protect storage components of ecosystem
5) Maintain natural water temperatures
6) Avoid increase in sediment load
7) Avoid blockage of waterflow, drainage, or circulation
8) Prevent discharge of toxic wastes into coastal waters
9) High degrees of development require more stringent wetlands preservation techniques.

Specific management recommendations for Anchorage's wetlands are being prepared for the Municipality by Fugro Northwest, Inc. Their final report is available at the Municipal Planning Department.

Subsidence and salt water inundation killed larger trees in coastal lowlands following the 1964 earthquake.

Landscape Type: Beach

Location: The coastal beaches consist of narrow bands of pebbles, gravel or sand along Knik Arm from Nulbay Park to Bootlegger Cove Log House. These are located from Fish Creek to Earthquake Park in the slide area, west of Earthquake Park to beyond the Sewage Treatment Plant, and the south side of Point Campbell.

Environmental Sensitivity Rating:

Ecological/Biological: Medium
Physical: High
Visual: High

Coastal Management Considerations for Project Area

Beaches in the Anchorage Bowl are commonly associated with erosion of the vertical bluff landscape type, as on the southern edge of Point Campbell and the Point Woronzof area. They are generally found inland of the tideflats, with a very sharp gradient between. Recreational uses include jogging, walking and beachcombing at low tide. Small boat use is extremely hazardous, though a few Bootlegger Cove dories are moored north of Westchester Lagoon. The extreme tides and cold water prevent traditional beach uses.

The Sewage Treatment Plant outfall currently affects beach quality at Point Woronzof. An extended outfall pipe will be installed soon to improve tidal flushing of the area. Beach access is not presently adequate, since private property and railroad tracks must be crossed to reach them from an inland location.

Safety hazards are present below the bluffs in spring, so beaches may have to be closed from the onset of break-up until June 1. Warning signs would be appropriate in areas of active bluff erosion. High tides cover the beaches completely, and it would be reasonable to provide tide tables near beach access points so that visitors could check when to use them safely. These beaches are highly scenic, but are not particularly valuable as wildlife habitat.

Landscape Type: Mudflats

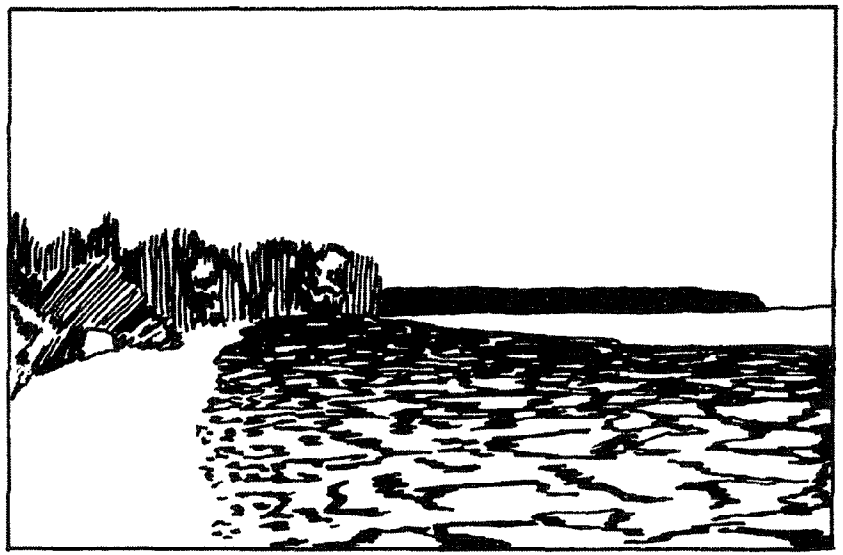
Location: Mudflats consist of an area of shifting silt and sand below mean water level, surrounding the entire Anchorage coastline.

Environmental Sensitivity Rating:

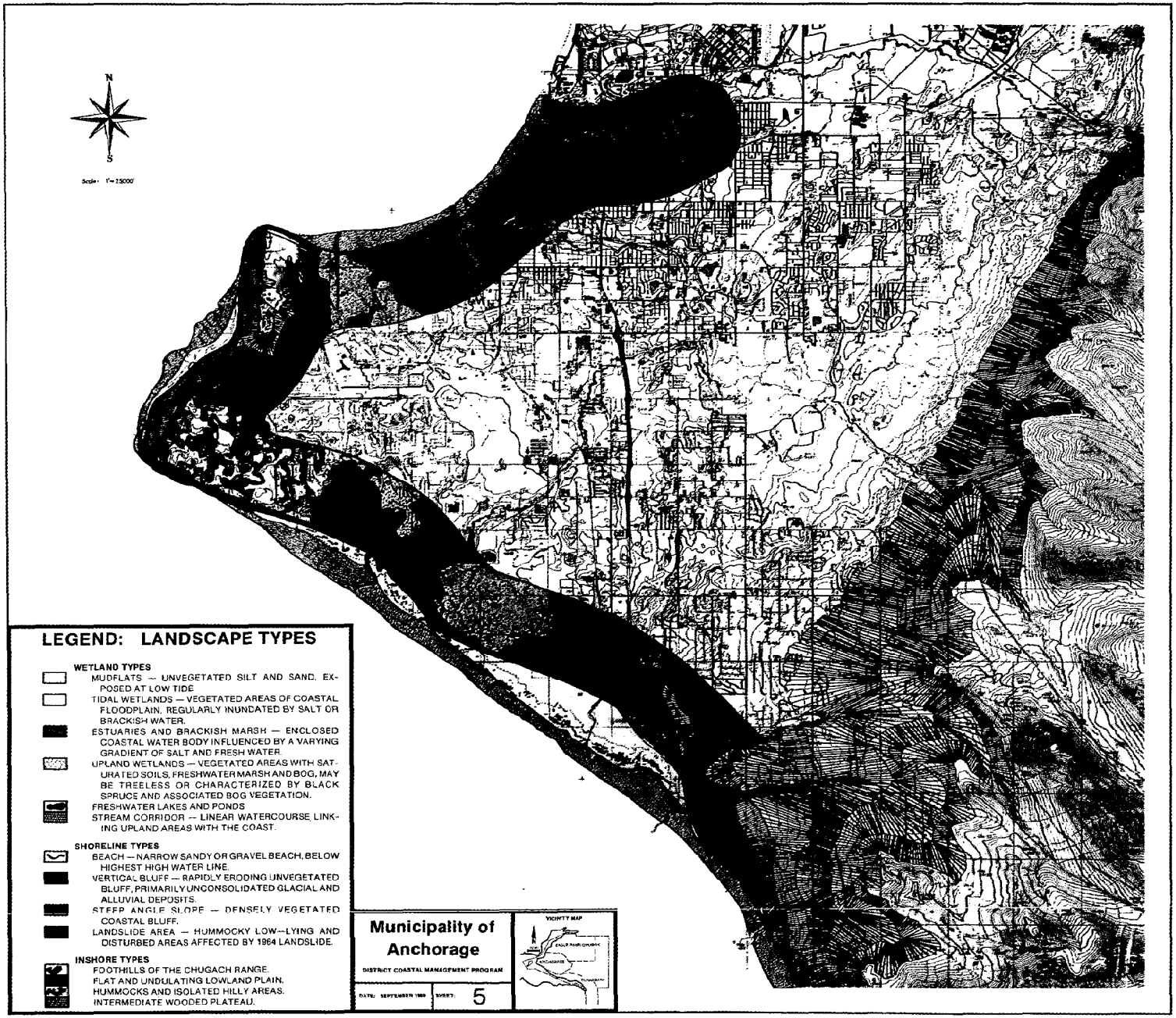
Ecological/Biological: Medium
Physical: High
Visual: High

Coastal Management Considerations for Project Area:

Despite their seemingly barren appearance, mudflats serve an important function as nutrient storage areas, catching vital dissolved chemicals that would otherwise be swept out to sea. Invertebrate organisms that normally inhabit coastal mudflats are limited in this area due to the high sediment load in the water. Filamentous green algal mats which form on the mudflats have a high aesthetic value, and may be damaged by boating activities.



1. Beaches and Mudflats


N
S
Scale: 1"=2500'
LEGEND: LANDSCAPE TYPES
WETLAND TYPES
MUDFLATS — UNVEGETATED SILT AND SAND, EXPOSED AT LOW TIDE.
TIDAL WETLANDS — VEGETATED AREAS OF COASTAL FLOODPLAIN, REGULARLY INUNDATED BY SALT OR BRACKISH WATER.
ESTUARIES AND BRACKISH MARSH — ENCLOSED COASTAL WATER BODY INFLUENCED BY A VARYING GRADIENT OF SALT AND FRESH WATER.
UPLAND WETLANDS — VEGETATED AREAS WITH SATURATED SOILS, FRESHWATER MARSH AND BOG, MAY BE TREELESS OR CHARACTERIZED BY BLACK SPRUCE AND ASSOCIATED BOG VEGETATION.
FRESHWATER LAKES AND PONDS.
STREAM CORRIDOR — LINEAR WATERCOURSE LINKING UPLAND AREAS WITH THE COAST.
SHORELINE TYPES
BEACH — NARROW SANDY OR GRAVEL BEACH, BELOW HIGHEST HIGH WATER LINE.
VERTICAL BLUFF — RAPIDLY ERODING UNVEGETATED BLUFF, PRIMARILY UNCONSOLIDATED GLACIAL AND ALLUVIAL DEPOSITS.
STEEP ANGLE SLOPE — DENSELY VEGETATED COASTAL BLUFF.
LANDSLIDE AREA — HUMMOCKY LOW—LYING AND DISTURBED AREAS AFFECTED BY 1964 LANDSLIDE.
INSHORE TYPES
FOOTHILLS OF THE CHUGACH RANGE.
FLAT AND UNDULATING LOWLAND PLAIN.
HUMMOCKS AND ISOLATED HILLY AREAS.
INTERMEDIATE WOODED PLATEAU.
Municipality of Anchorage
DISTRICT COASTAL MANAGEMENT PROGRAM
DATE: SEPTEMBER 1980
SHEET: 5
VICINITY MAP

Mudflats near Anchorage have qualities similar to quicksand; several people have lost their lives by walking on them too far from shore. Warning signs should be posted near beach access points so that visitors will be aware of the danger. Recreational potential on the mudflats is limited, except for duck hunting and wildlife observation. Due to its high hazard rating (ice buildup, poor foundation conditions, exposure to wind and tides) and visual sensitivity, it is not suitable for most types of development or recreational use.

Landscape Type: Tidal Wetlands

Location: Includes tidal marsh of the Point Campbell-Point Woronzof wetlands, and coastal strip between Kincaid Park and Potter Marsh.

Environmental Sensitivity Rating:

Ecological/Biological: High
Physical: High
Visual: High

Coastal Management Considerations for the Project Area:

Tidal wetlands are vegetated by salt-tolerant deciduous plants and marsh species. This is prime waterfowl nesting and feeding area, and habitat for various species of rodents and predatory birds, including eagles. It is an important buffer area in reducing the effect of coastal erosion processes and flooding. Salt marshes also serve as filters for runoff from upland sources and control release of nutrients to coastal waters.

Tidal wetlands can support dispersed or low-impact forms of recreation, with seasonable limitations on some activities that would disturb nesting waterfowl. They are not suitable for development due to poor foundation conditions and significance of the biologically rich ecosystem. Access on boardwalks is appropriate if these areas are highly used. Construction should occur after freezing in the fall. Dogs should be kept on leashes in this area to avoid impacts on nesting activities.

Landscape Type: Estuaries and Brackish Marsh

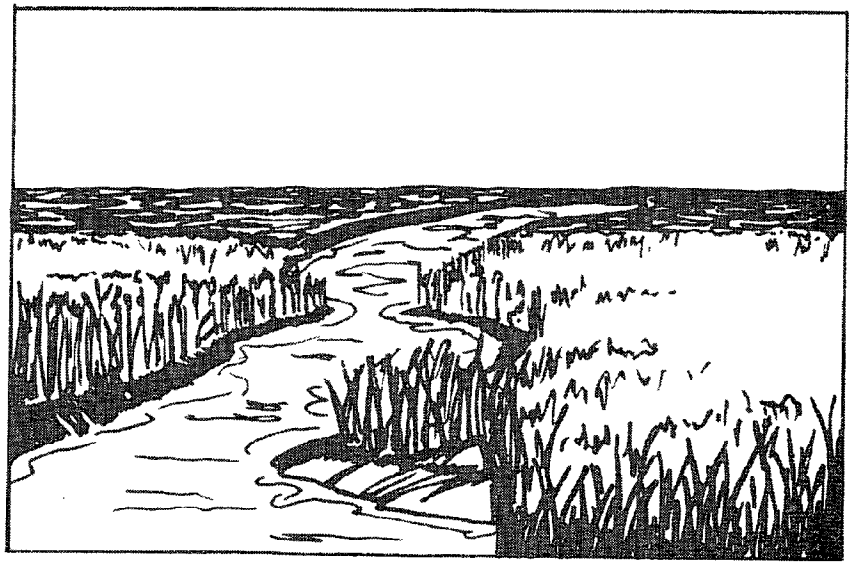
Location: Estuaries and brackish marsh can be found at the outlets of Ship, Fish, and Campbell Creeks, and at Potter Marsh between Old and New Seward Highways.

Environmental Sensitivity Rating:

Ecological/Biological: High
Physical: High
Visual: High

Coastal Management Considerations for the Area:

Estuaries and brackish marshes are valuable wildlife habitat, often vegetated by pure stands of sedges and grasses. They serve as nutrient-rich feeding areas for some fish and shellfish, and are especially important bird habitat. Potter Marsh, Fish Creek and the outlet of Campbell Creek are also of high aesthetic value, due to color contracts, form, texture, and other visual qualities. Ecosystem protection



2. Tidal Wetlands, Estuaries, Brackish Marshes

is only achieved by careful control of upstream development, and enforced erosion and pollution control measures. Vegetation types change with differences in salt concentration in the water. This is most visible in Fish Creek, where natural drainage is not impeded at the outlet.

Estuaries are most useful as nature study and birdwatching areas, since development requires costly construction and maintenance. Ice buildup can be a critical constraint in creek mouths in late winter and early spring. Access on boardwalks is recommended to prevent damage to the ecosystem. Pilings must be inserted eighteen feet into the ground to prevent pilejacking.

Landscape Type: Upland Wetlands

Location: Upland wetlands are found at Klatt Bog; the bog east of north-south runway at Point Woronzof; the bog between Jewel and Sand Lakes; and other scattered low-lying areas.

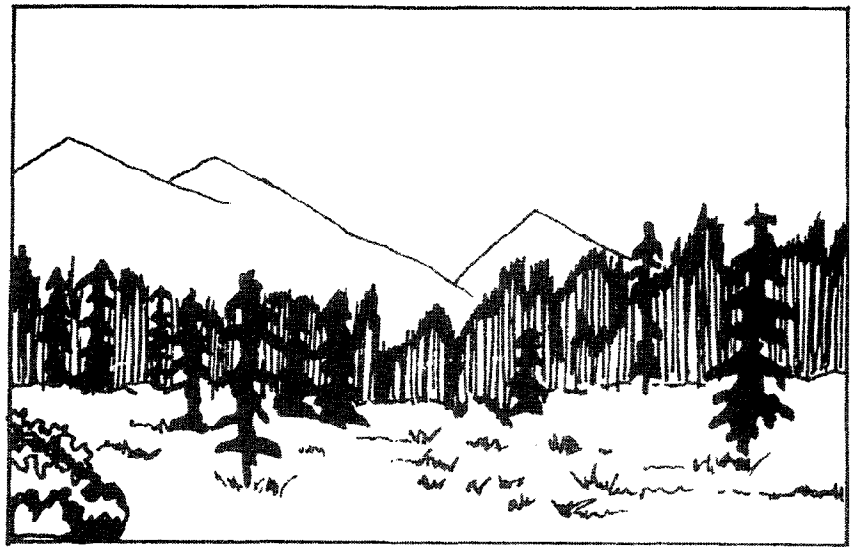
Environmental Sensitivity Rating:

Environmental/Biological: High
Physical: High
Visual: Medium

Coastal Management Considerations for Project Area:

Upland wetlands consist of peat bogs with or without scattered stands of black spruce. Bogs near the airport support Sand Hill crane nesting areas; others are inhabited by song birds, rodents and predatory birds. They function as water storage areas and may have a role in recharge of subsurface aquifers. The peat bog areas of the Anchorage Bowl were once much more extensive than they are now, but are being filled and drained for development at a rapid rate. Those near the coast are probably quite important hydrologically, because of their direct connection with tidal wetlands.

Large scale upland development is incompatible with most wetland types. Vegetation is easily damaged by soil compaction. Preferred use would be low-density single family housing clustered around edges of bogs, with minimal road construction and no paved roads through the



3. Upland Wetlands

wetland areas. Height controls might be considered to maintain the landscape quality. Access into bogs can be established on boardwalks or adequately drained gravel pads. Some upland wetlands are underlain by permafrost, which results in foundation construction difficulties.

Landscape Type: Freshwater Lakes and Ponds

Location: Freshwater lakes include Jewel, Sand, Campbell and Little Campbell; also included are Westchester Lagoon and numerous unnamed ponds.

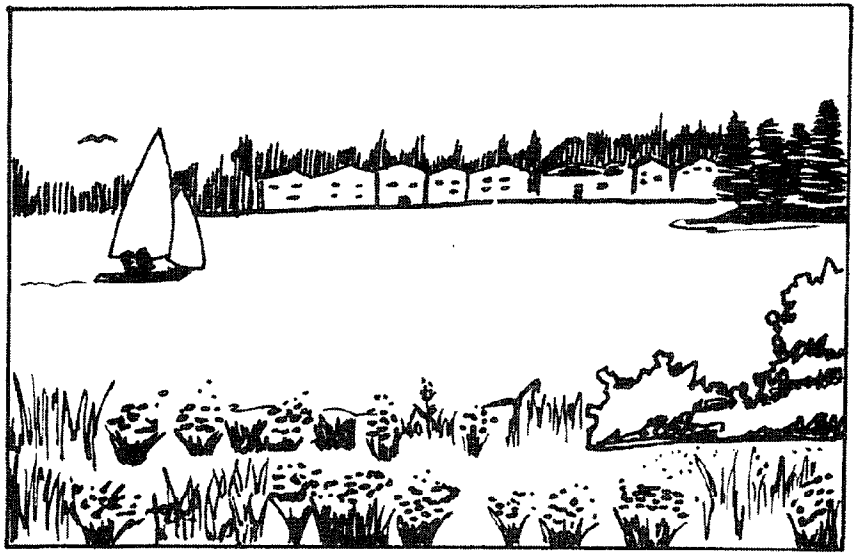
Environmental Sensitivity Rating:

Ecological/Biological: High
Physical: Medium
Visual: High

Coastal Management Considerations for Project Area:

Jewel, Sand, and Little Campbell Lakes are natural lakes with sandy or peaty shores. Westchester Lagoon and Campbell Lake are dammed creek outlets. All of these larger water bodies have high recreation potential, including swimming, fishing and boating. In Anchorage, lake and pond recreation activities replace those normally associated with the coast in warmer climates. Public access to all of these areas except Campbell Lake is adequate; the Campbell Lake Owners Association controls land and water activities in their area. The lakes serve as resting and feeding areas for waterfowl, especially during migration. They have an important function as water storage areas in the hydrologic cycle.

Since water quality is affected by refuse and boating activities, regular water quality testing is recommended in public lakes and ponds during high use periods. None of the freshwater lakes or ponds within the study area are large enough to support sustained-use facilities or motor boating.



4. Freshwater Lakes and Ponds

Landscape Type: Stream Corridors

Location: Stream corridors include Ship, Chester, Fish, Campbell, Rabbit, Little Rabbit, Furrow, and Hood Creeks.

Environmental Sensitivity Rating:

Ecological/Biological: High
Physical: High
Visual: High

Coastal Management Considerations for Project Area:

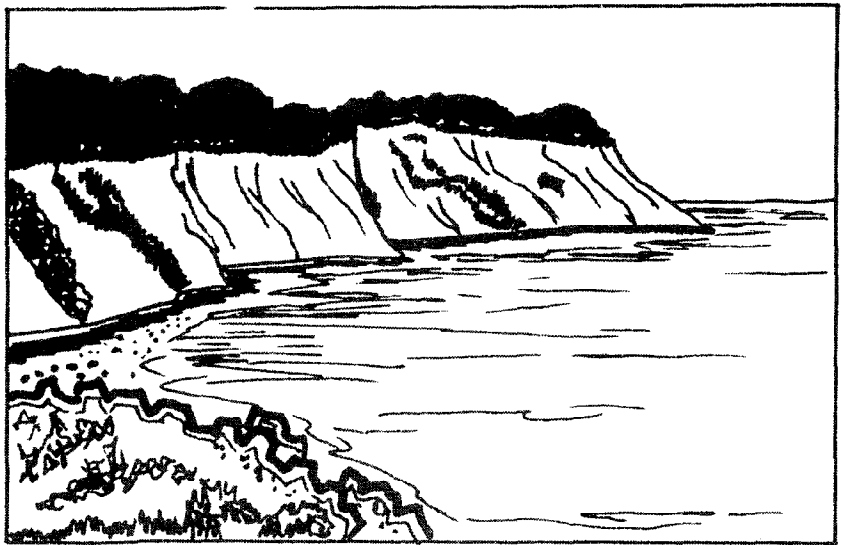
The greenbelt approach has been used in Anchorage as a management strategy for stream corridors. Since riparian vegetation is valuable wildlife habitat, it should be maintained wherever possible. Paved bikeways and equestrian trails should be separated from creek channels by a buffer strip to avoid water quality impacts. A ten-foot vegetated buffer, of fifteen-foot unvegetated buffer should be sufficient except on steep slopes.

5. Stream Corridors

All waterways are affected by upstream development; increased flooding should be expected as a result. Floodplain development should be limited to low impact recreational uses. Building inside the 100 year floodplain, as is currently taking place in Fish Creek near the intersection with Northern Lights Boulevard, is detrimental to water quality and unnecessarily risky. Watercourses are important wildlife corridors, and they provide lowland access for moose in the winter. Parallel and perpendicular access should be unobstructed wherever possible.

Landscape Type: Vertical Bluff

Location: The vertical bluff landscape type can be found from Point Campbell and Point Woronzof, and below Oceanview to Potter Marsh.



6. Vertical Bluffs

Environmental Sensitivity Rating:

Ecological/Biological: Low
Physical: High
Visual: High

Coastal Management Considerations for Project Area:

Habitat value of unvegetated coastal bluffs is minimal, except for nesting cliff swallows. Recreational value is limited, and steep cliffs are not conducive to easy access. However, bluffs are highly visible and interesting from scenic and educational standpoints. They clearly illustrate the shoreline dynamics of the Anchorage Bowl. Buildings on the bluffs require setbacks of at least 100 feet to avoid continuing erosion. Restricted use of the area below the bluff is necessary in spring, when constant mudflows and landslides occur.

Landscape Type: Steep Angle Slope

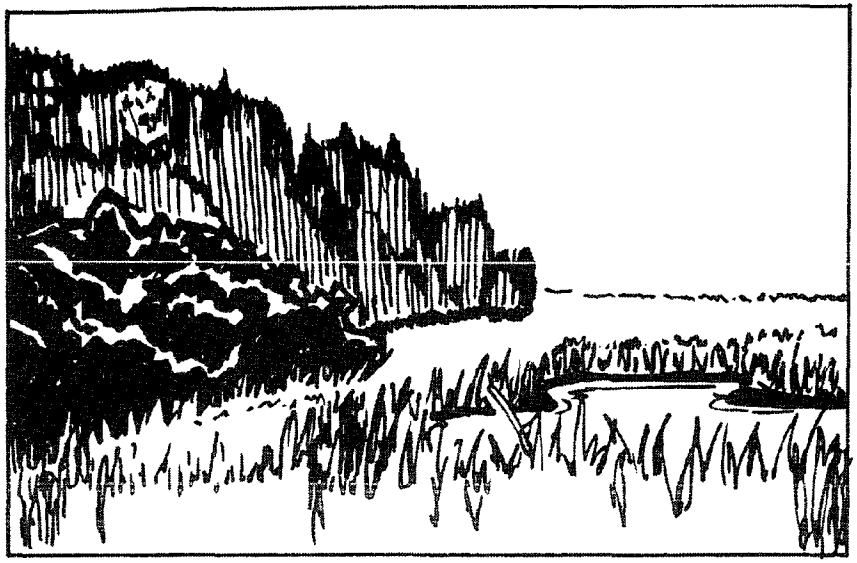
Location: Steep angle slopes are found along the urban waterfront near Point Woronzof, and from Kincaid Park to Oceanview.

Environmental Sensitivity Rating:

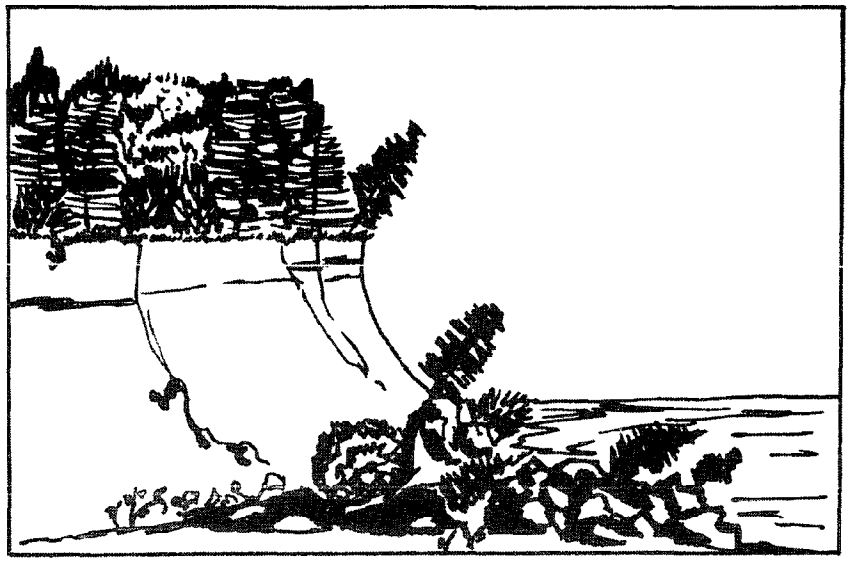
Ecological/Biological: High
Physical: High
Visual: Medium

Coastal Management Considerations for Project Area:

Due to dense vegetation, steep-angled slopes are less visually and physically sensitive than vertical bluffs. The vegetation stabilizes the slope, and provides cover for wildlife, although the slope/marsh interface has the highest habitat value. The slope itself probably does not support a large number of species. Small predators that feed in the marsh (for example, foxes and raccoons) and songbirds are found here. The vegetation should be protected to avoid excessive and visually obtrusive scars. Trails should be constructed so as to preserve the vegetated edge; other recreational uses are limited in this area.



7. Steep Angle Bluffs



8. Landslide Areas

Landscape Type: Landslide Area

Location: The landslife areas include bluffs along Ship Creek, Westchester Lagoon and Ship Creek, and the shore area to west end of Earthquake Park.

Environmental Sensitivity Rating:

Ecological/Biological: High
Physical: High
Visual: Medium

Coastal Management Considerations for Project Area:

This landscape type includes a variety of land uses and habitats that were affected by the 1964 earthquake. Most of the slides involved lateral movement of large blocks of sedimentary material which overlay the Bootlegger Cove Clay. Large sections of the coastline fell 30 or 40 feet, carrying houses and roads with them. The coast of Turnagain Arm was affected less radically, though drowned trees still remain as evidence of the subsidence that occurred.

The hummocky terrain and small ponds caused by seismic ground waves in the liquefied clay in Earthquake Park are a reminder of the magnitude of the earth movements. The sandy area that used to be Marston Road has a high recreation potential, but the Municipality has been unable to prevent rebuilding of homes in this high risk area because it is private property. It is recommended that pedestrian and bicycle access to earthquake hazard zones be improved, in the context of a coastal earthquake education program.

9. Lowland Plains

Landscape Type: Flat and Undulating Lowland Plain

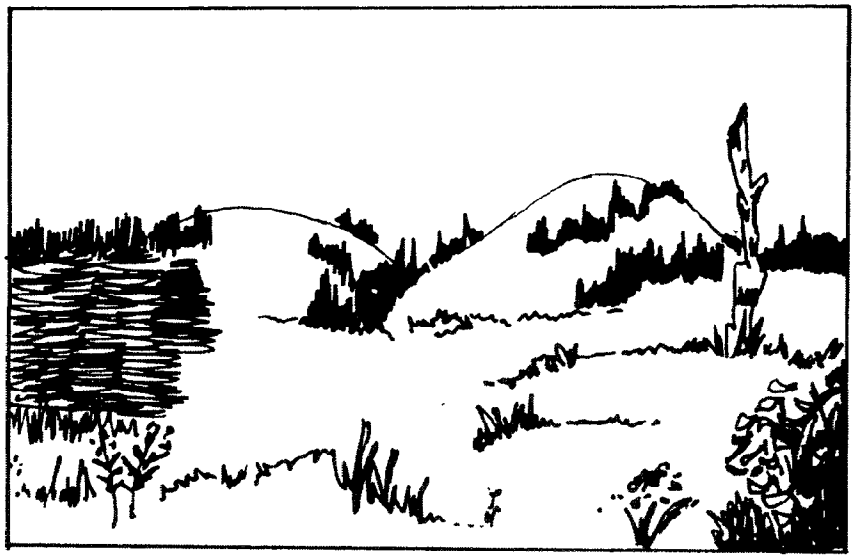
Location: The flat and undulating lowland plain category contains the large urbanized areas of the Anchorage Bowl and some reclaimed woodland and bog areas.

Environmental Sensitivity Rating:

Ecological/Biological: Medium
Physical: Medium
Visual: Medium

Coastal Management Consideration for Project Area:

This is basically an inland type of landscape which extends into the coastal zone. The flatter areas were caused by glacial movement across the Anchorage peninsula from north to south. Roadways provide adequate access; recreational uses are not significant.



10. Hummocks and Isolated Hilly Areas

Landscape Type: Hummocks and Isolated Hilly Areas

Location: The dunes along Turnagain Arm to Point Campbell and the steep hill at the end of Klatt Road are the primary areas of hummocks and hills.

Environmental Sensitivity Rating:

Ecological/Biological: Medium
Physical: Medium
Visual: Medium

Coastal Management Considerations for Project Area:

Hummocks are caused by a combination of glacial and wind-blown dune activity. These provide topographic variation and good observation points, but otherwise are of limited recreational value. Access is presently limited, since the hummocks west of Kincaid Park are in the Military Reservation, and the hill at the end of Klatt Road is owned privately. The area west of Kincaid Park is valuable moose habitat.

Landscape Type: Foothills

Location: The coastal foothill type is found in the hills east of Potter Marsh.

Environmental Sensitivity Rating:

Ecological/Biological: Medium
Physical: Medium
Visual: High

Coastal Management Considerations for Project Area:

The foothills of the Chugach Range extend to the coastal area near Potter Marsh. The hills are visible from the Seward Highway and higher elevations in the Anchorage Bowl. Although presently heavily vegetated, a large subdivision is planned for the area. The Chugach Mountains are valuable moose and bear habitat, but areas near the road are probably not as sensitive as more protected locations. Occasional outcrops of bedrock signify a change in substrate type from that in the rest of the Anchorage Bowl. Chugach State Park provides recreational trails and access in this area.

Landscape Type: Intermediate Wooded Plateau

Location: The intermediate wooded plateau is located between Point Campbell and Point Woronzof, between the marsh and the upland area.

Environmental Sensitivity Rating:

Ecological/Biological: High
Physical: Medium
Visual: Medium

Coastal Management Considerations for Project Area:

This is an upland vegetation type that extends into the coastal area. Birch-alder woodland is supported by a mixed substrate of clay and sand. Habitat value is fairly high, due to its isolated location and "edge" quality between upland and lowland areas. It is not visible from many places in the Anchorage Bowl, and has lower physical constraints than other areas near the coast. Recreational potential other than trail use is limited.

CHAPTER III

THE MASTER PLAN

- Master Plan Concept: The Dynamic Landscape
- Master Plan Site Selection Criteria
- Activity/Land Use Requirements
- Master Plan Methodology
- Master Plan

Master Plan Concept: The Dynamic Landscape

The project area from Ship Creek to Potter Marsh can be divided into four segments to illustrate the concepts of historical, cultural, biological and physical dynamics of the shoreline. These theme areas form the framework for organizing the public access and resource protection plan. They reflect the interrelated nature and relative intensity of urban, geological and biological processes.

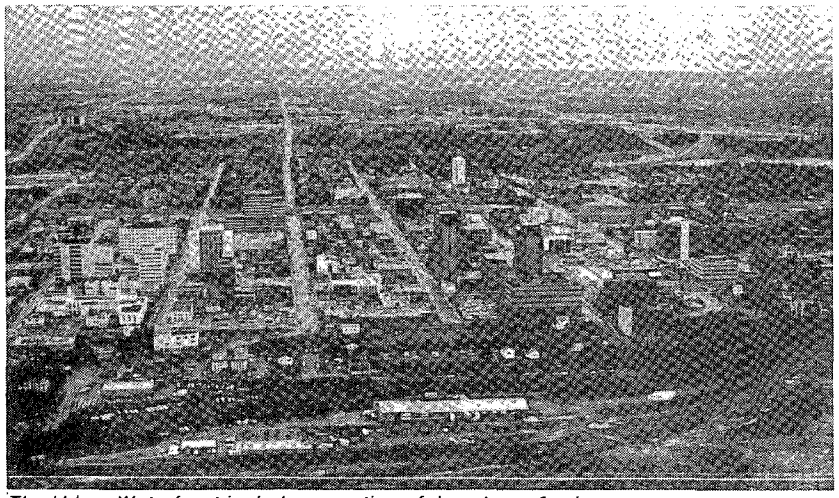
The **Urban Waterfront** contains the most intensive development of the shoreline and the greatest modification of its appearance by man. This concentration of population and diverse activities is reflected in the greater proportion of master plan sites identified in this area. The sites selected from Ship Creek to Fish Creek concern man's values in the urban context, and emphasize the potential harmony of man and nature in the city. This area offers the greatest range of activities to a variety of user groups. The Master Plan reflects the continued importance of public access in the area with the highest concentration of users.

Landslide Areas include coastal residential areas and parklands most affected by the 1964 earthquake. The disturbed terrain and remnants of roads and houses illustrate the magnitude of geological processes in contrast to the changes wrought by man.

The **Dynamic Shoreline** area includes the steep, unstable and rapidly eroding bluffs from Point Woronzof to Point Campbell as well as the more subtle changes of the associated wetlands. This area is the farthest from residential areas and only a few roadways provide access to points near the shoreline. The Master Plan identifies fewer sites in this theme area. Expansive views allow educational presentation of the Cook Inlet regional setting and geologic history.

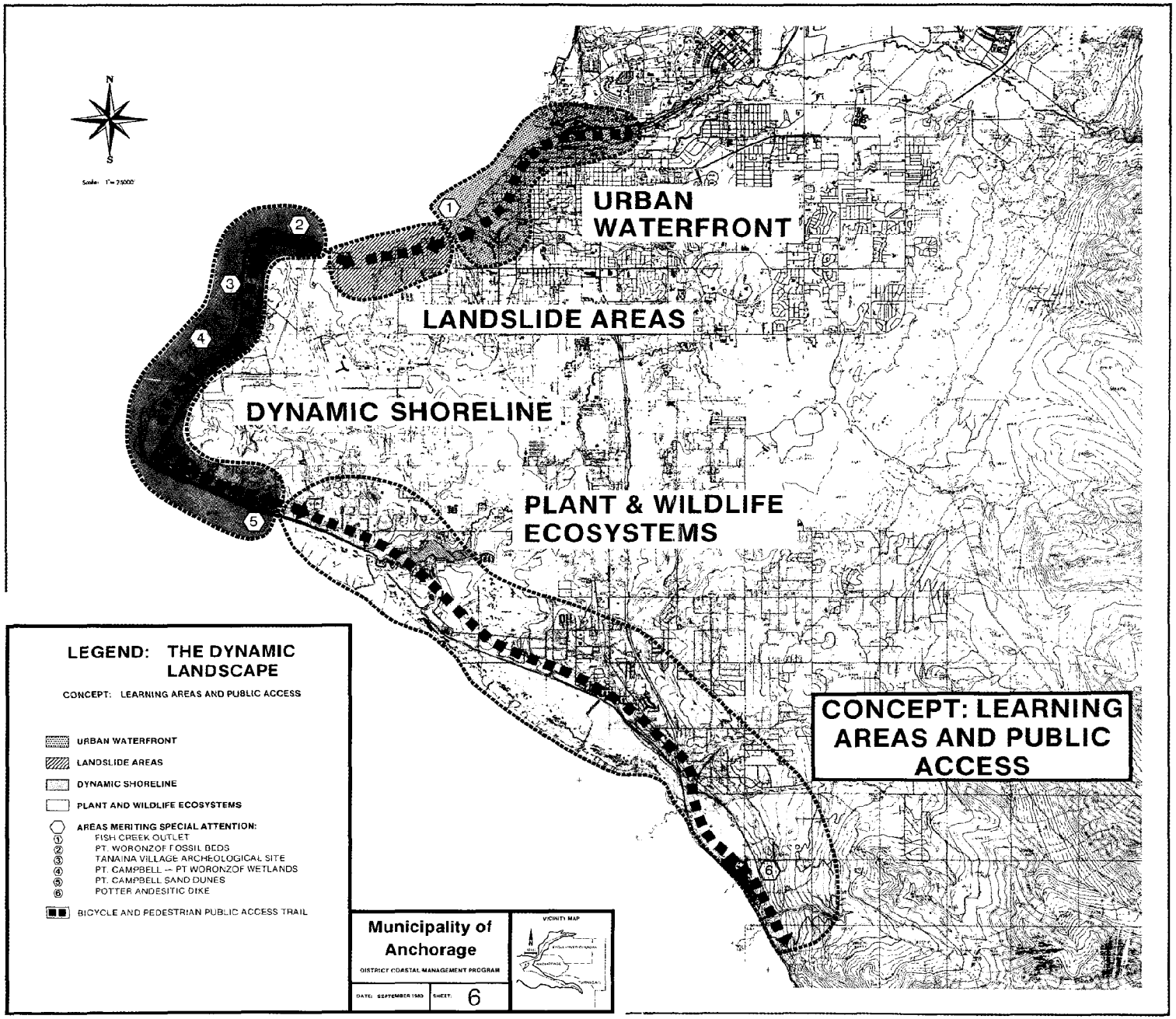
Wildlife and Biological Processes are illustrated by the site selections in the fourth segment. The theme of this area takes advantage of the scenic and educational potential of the Potter Game Refuge. Coastal development in this area is primarily low density residential.

These four areas have been collectively referred to as the **Dynamic Landscape**. This title emphasizes the element of change in the coastal environment. As John Milton wrote, "tomorrow will not be the same as today. The true reality of this land is change." Within this conceptual framework, specific site facilities accommodate educational, recreational, and scenic values. The sites within the project area are linked by a bicycle/ski trail, with associated corridors for pedestrian, equestrian and limited motorized trail use.



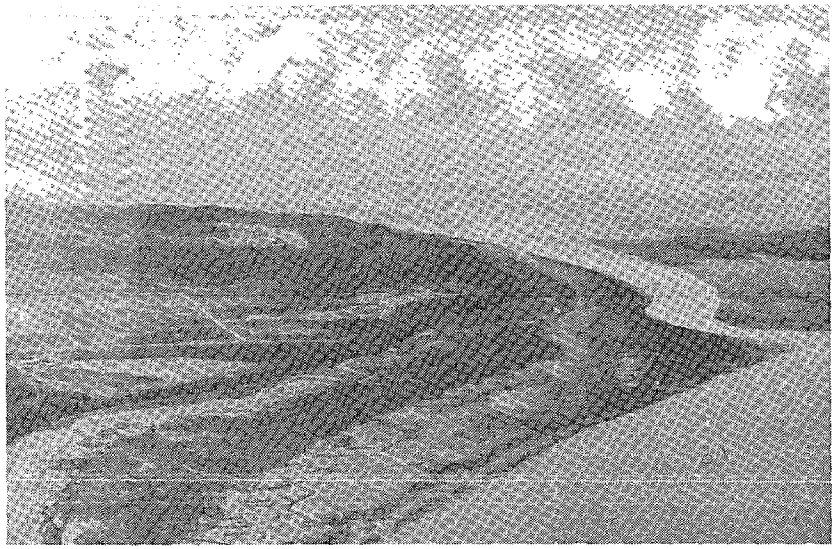
The Urban Waterfront includes a portion of downtown Anchorage.

Landslide areas include Earthquake Park.

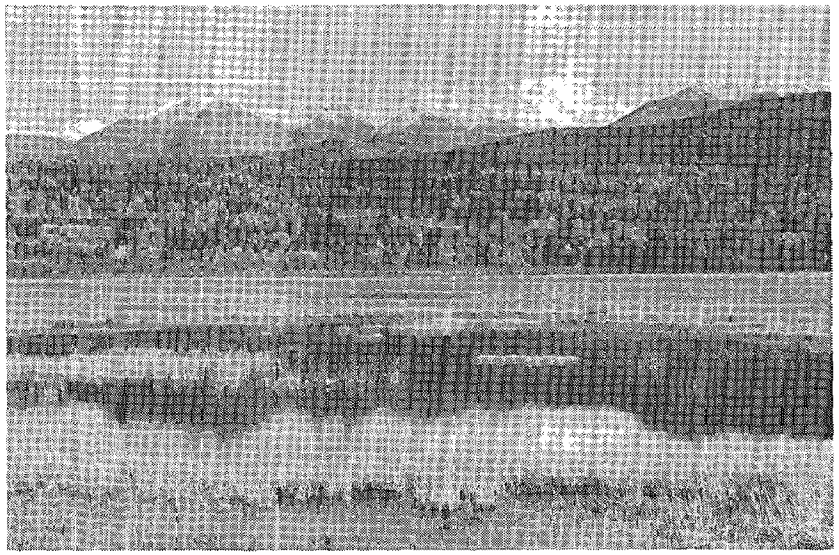

N
S
Scale: 1"= 2500'
URBAN WATERFRONT
LANDSLIDE AREAS
DYNAMIC SHORELINE
PLANT & WILDLIFE ECOSYSTEMS
1
2
3
4
5
6
CONCEPT: LEARNING AREAS AND PUBLIC ACCESS
LEGEND: THE DYNAMIC LANDSCAPE
CONCEPT: LEARNING AREAS AND PUBLIC ACCESS
URBAN WATERFRONT
LANDSLIDE AREAS
DYNAMIC SHORELINE
PLANT AND WILDLIFE ECOSYSTEMS
AREAS MERITING SPECIAL ATTENTION:
1 FISH CREEK OUTLET
2 PT. WORONZOF FOSSIL BEDS
3 TANAINA VILLAGE ARCHEOLOGICAL SITE
4 PT. CAMPBELL -- PT WORONZOF WETLANDS
5 PT. CAMPBELL SAND DUNES
6 POTTER ANDESITIC DIKE
BICYCLE AND PEDESTRIAN PUBLIC ACCESS TRAIL
Municipality of Anchorage
DISTRICT COASTAL MANAGEMENT PROGRAM
DATE: SEPTEMBER 1980
SHEET: 6
VICINITY MAP

Master Plan Site Selection Criteria

1. *Human and cultural values*
   - A. Educational opportunities, including increasing public awareness and coordinating with school programs
   - B. Integration of existing recreational activities and facilities with coastal trails plan
   - C. Unique or unusual viewing opportunities
   - D. Consideration of history in the regional and local content
2. *Environmental values*
   - A. Protection of fish and wildlife habitat
   - B. Preservation of wetlands and other ecologically sensitive areas
   - C. Erosion control and mitigation of geophysical hazards
   - D. Preservation of natural landscape patterns
3. *Reconciliation of multiple uses*
   - A. Consideration of tourist and local needs
   - B. Opportunities for all age groups and population segments
   - C. Long range considerations vs. short term use tradeoffs.
4. *Economic and political criteria*
   - A. Construction and implementation costs
   - B. Political feasibility
   - C. Land ownership
5. *Public Access*
   - A. Existing pedestrian use
   - B. Connections to existing and proposed bike routes
   - C. Road access
   - D. Proximity to anticipated user groups
   - E. Linkage of activity areas in logical sequence.



Point Woronzof is part of the Dynamic Shoreline.



Wildlife and biological process areas are represented by the Potter Marsh Game Refuge.

Activity/Land Use Requirements

All trail and corridor use areas should address the following considerations:

1) Variety of scenery
2) Specific destinations
3) Viewpoints
4) Separation from vehicular travel and other incompatible uses
5) Good drainage
6) Setbacks from dangerous bluff areas
7) Avoid road and railroad crossings whenever possible
8) Provide alternative loops
9) Adequate trail maps and signage at regular intervals
10) Slope standards for intended uses
11) Access by auto, bicycle, foot, transit or tour buses.

In addition, the following specific considerations are anticipated for activities in the project area:

Walking and Hiking

- Grades up to 6 percent do not affect normal walking speed; 15 percent is considered the maximum for recreational walking, with a maximum average grade of 10 percent.

Jogging and Running

- Soft surface paving preferred (fine gravel pad or cleared dirt trail), and
- Separation from bicyclists.

X-Country Skiing

- Trail free of snags and holes,
- Wooded setting preferable to avoid snow blowing off the trail,
- Relative proportions of "Up:Down:Flat" stretches in approximately equal proportions. Grade should be less than 10 percent if possible.
- Clear trail close to ground to allow longer use period,
- Widen trail at base of steep hills and after curves, and
- Separate from snowmachine and equestrian use.

Bicycling

- Paved surface with adequate structural support,
- Wide enough to avoid collisions with other bikes and pedestrians (standard is 8' wide),
- Avoid blind curves,
- Grades less than 100' long, up to 15 percent; subtract 1 percent for each additional 50 feet of slope length. Grades 1000' or longer should not exceed 5 percent.

Horseback Riding

- Soft surface paving, adequate structural support,
- Separation from skiing, biking, and motorized trail use,
- Access to rural areas, avoidance of highly developed areas,
- Provide hitching posts and water at staging areas.

Snowmobiling

- Trail cleared of brush,
- Adequate staging area.

Dirt Bike Trail Riding

- Separation from other uses,
- Variety of terrain,
- Cleared of brush,
- One-way direction signs for trail use,
- Erosion control in high use areas.

Dirt Bike Racing

- Relatively large isolated land area,
- Staging area.

Camping

- Land area cleared of underbrush, maintain canopy and/or windscreen,
- Clearly marked use areas,
- Good drainage,
- Quiet, remote, woodsy feeling,
- Access to fresh water,
- Facility requirements appropriate to level of development,
- Visual and noise barriers.

RECREATION ACTIVITY COMPATIBILITY MATRIX

	Fishing	Cultural Entertainment	Sightseeing	Outdoor Sports	Playground Use	Picnicking	Hunting	Birdwatching	Nature Study/ Field Trips	Camping	Dirt Bike Racing	Dirt Bike Trail Riding	Snowmobiling	Horseback Riding	Bicycling	Run, Ski & Bike Racing	X-Country Skiing	Jogging & Running	Recreational Walking & Hiking
Recreational Walking & Hiking	+	+	+	+	+	+	−	+	+	+	−	−	−	+	+	+	+	+	
Jogging & Running				+			−				−	−	−		+	+	+		
X-Country Skiing			+	+		+	−	+	+	+		−	−		+	+			
Run, Ski & Bike Racing				+			−				−	−	−	−	+				
Bicycling	+	+	+	+	+	+	−	+	+	+	−	−		−					
Horseback Riding			+			+	−	+	+		−	−	−						
Snowmobiling		−			−	−	−	−	−	−									
Dirt Bike Trail Riding	−	−			−	−	−	−	−	−	+								
Dirt Bike Racing		−	−		−	−		−	−	−									
Camping	+	+	+	+	+	+	−	+	+										
Nature Study/ Field Trips	+	+	+			+	−	+											
Birdwatching		+	+			+	−												
Hunting	+	−	−	−	−	−													
Picnicking	+	+	+	+	+														
Playground Use		+	+	+															
Outdoor Sports		+																	
Sightseeing		+																	
Cultural Entertainment																			
Fishing																			

LEGEND

+ COMPATIBLE

− INCOMPATIBLE

NO RELATIONSHIP

*Indication of compatibility in this matrix is subjective and intended to illustrate general relationships only.

FACILITY REQUIREMENTS/ACTIVITIES MATRIX

	MAJOR USER GROUPS	Children to 10 years	Teenagers to 18 years	Adults 18 + years	FACILITIES REQUIRED	Use Area Close To Access Point	Vehicular Access	Parking Cars And/Or Buses	Benches/Seating	Restrooms/Water	Shelter	Garbage Removal	Maintenance Access	Storage Area	Signs	Stage or Classroom	Picnic Tables/Grills	Playground Equipment	Bird Blind	Telescopes	Viewpoint	Variety of Scenery	Visual Buffer For Use	Noise Buffer For Use	Observation Platforms	Campsites	Special Surface Treatment	Paving Necessary	Large Cleared Area
CORRIDOR USES																													
W[illegible]king & Hiking		✓	✓	✓		○	○	○		○					○							●	○		○	○	○		
Jogging & Running			✓	✓		○	○	○		○					○							●	○				●		
X[illegible]ountry Skiing		✓	✓	✓		○	○	○					○		●							●	●				●		
Run, Bike & Ski Racing			✓	✓		○	○	○					●		●							●	●				●	○	
Bi[illegible]cling		✓	✓	✓		●	○	○					●		●							●	●			○	●	●	
H[illegible]seback Riding			✓	✓		●	○	○							●							●	●				●		
Sn[illegible]wmobiling			✓	✓		●	○	○							●							●	●	●			●		
D[illegible] Bike Tr[illegible] Riding			✓	✓		●	○	○							●							●	●	●			○		
SITE USES																													
D[illegible] Bike Racing			✓	✓		○	○	○							●								●	●			○		
Camping		✓	✓	✓		○	○	○		●	○	●	●		●			○			○	○	●			●	○		○
N[illegible]ure Study/ F[illegible]d Trips		✓	✓	✓		●	●	○	○	○	○		○	○	●	○	○		○	○		●	●		○	○				
Birdwatching		✓	✓	✓		○	○	○			○				○				○	○			●		○	○			
H[illegible]ting				✓		○	○	○							●				○		○		●	○					
Picnicking		✓	✓	✓		○	○	○	●	○	○	●	●		○		○	○				○	○						○
P[illegible]ground Use		✓				●	○	○	○	○		○	●	○	○		○	●					○	○		○			○
Outdoor Sports		✓	✓	✓		●	○	○	○	○		○	●	○	○		○	○						○			○		●
S[illegible]t Seeing			✓	✓		●	○	○	○	○	○	○			●		○			○	●	●	○		●				○
Cultural Entertainment			✓	✓		●	●	●	●	●	●	○	●	○	●	○	○					○	○	○						○
F[illegible]ing		✓	✓	✓		○	○	○							●		○						○			○			

LEGEND: ● Required ○ Optional □ Not Required

SITE OPPORTUNITIES MATRIX

	Ship Creek Dam	Railroad Terminal	Resolution Park	Elderberry Park	Nulbay Park	Bootlegger Cove Log House	Westchester Lagoon	AMSA #1 Fish Creek	Lyn Ary Park	Earthquake Park	Earthquake Park Picnic Pullout	Auto Pullout Near Airport Access Rd.	AMSA #2 Point Woronzof Fossil Beds	Point Woronzof Overlook	End of Old Clay Products Rd.	Point Woronzof Archaeological Site AMSA #3	Pt. Campbell - Pt. Woronzof Wetlands AMSA #4	Pt. Campbell Recreation Area	AMSA #5 Pt. Campbell Sand Dunes	Klatt Rd. Scenic Area	John's Park	Oceanview Park Extension	Seward Highway Overlook	Trailhead Area	South End of Potter Marsh	AMSA #6 Andesitic Dike	Rabbit Creek Park
EDUCATIONAL OPPORTUNITIES																											
Geological Processes			●						●	●	●	●	●	●	●	●	●	●	●				●			●	
Biological Systems	●						●	●		●			●			●	●	●	●	●	●	●			●	●	
Historic/Cultural Interest	●	●	●	●		●				●						●		●							●		
Man/Nature Interactions	●	●	●			●	●	●	●	●		●		●	●	●			●	●		●	●		●		
RECREATION OPPORTUNITIES																											
Existing Use Area	●		●	●	●		●		●	●	●	●							●		●		●				
Potential Use Area						●		●					●	●	●	●	●	●		●		●		●	●	●	●
VIEWING OPPORTUNITIES																											
Unusual Scenic Value			●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●		●		●
PUBLIC ACCESS																											
Existing Pedestrian/ Eq. Access	●	●	●	●	●	●	●	●	●	●	●	●		●	●				●	●	●	●	●		●	●	●
Existing Bicycle Route							●			●																	
Existing Vehicular Access	●	●	●	●	●	●	●		●	●	●	●							●	●	●	●	●		●	●	●
Potential Access Point								●					●	●	●	●	●	●		●				●			
LAND OWNERSHIP																											
Present Municipal Ownership			●	●	●		●		●	●	●	●							●		●						●
Present State Ownership								●									●						●	●	●		
Present Federal Ownership	●	●				●							●	●	●	●		●									
Potential Public Ownership																				●		●				●	

Birdwatching

- Natural bird habitat,
- Separation from noise or motorized vehicles where possible,
- Bird blinds in remote areas.

Hunting

- Minimum distance from residences, roads and high use areas is one-half mile,
- Migratory waterfowl habitat.

Picnicking

- View area or destination point,
- Wind or rain shelter - vegetation or other,
- Area for grill and tables,
- Restrooms and access as appropriate.

Playground Use

- Close to schools, residences or other gathering places,
- Level grassy or cleared area,
- Variety of equipment or experience.

Outdoor Sports

- Large, level, grassy area,
- Access for maintenance,
- Close to schools, residences or other gathering places,
- Drainage, lighting.

Sight Seeing

- View point, may be elevated,
- Logical connection to trail or access,
- Variety of viewshed or experience.

Cultural Entertainment

- Building, shelter, natural amphitheater or large cleared areas,
- Seating on grass, benches, or chairs,
- Close to major access or trail,
- Separation from noisy uses,
- Facility design to reflect intended uses.

Fishing

- Access to natural or stocked fish populations.

Dirt bikers use the sand dune area in Kincaid Park during the summer.

Master Plan Methodology

The development of the Master Plan was the major effort of this project. Preferred and alternative trail routes are described in relation to the Master Plan criteria outlined at the end of this section. The theme areas are described in the Master Plan Concept. Master Plan mapping was done schematically at 1:25,000 scale. The corridor was then located on a combination of 1" = 100' scale topographic/platting maps and 1" =200' scale topographic maps. The corridor could not be mapped through the Point Campbell Military Reservation because no topographic maps were available for that area. Corridor route selections were based on field observations of the twenty miles of shoreline, topographic information, land ownership constraints and legal considerations.

Numbers listed before items in the Master Plan discussion relate to locations on the schematic Master Plan map. The Areas Meriting Special Attention (AMSA's) are described in more detail in the next chapter.

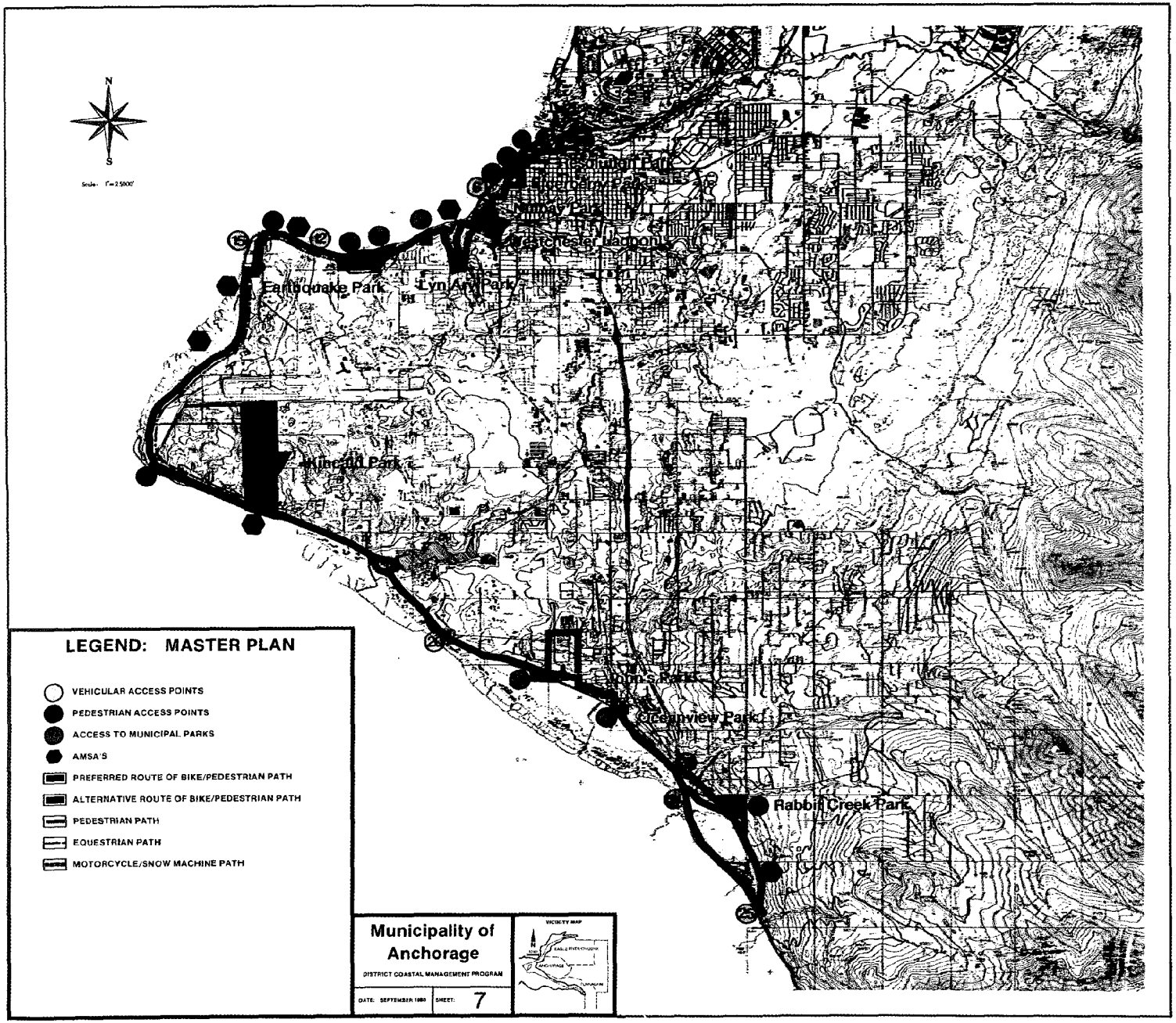
Master Plan

Site 1. The **Ship Creek Dam** is the logical origin for the Master Plan due to the historical significance of this area. It was at this site that Anchorage's "Tent City" was established early in this century. The dam also allows linkage with the proposed Ship Creek Greenbelt. Facility designs for the site are based on its current high use as a salmon and waterfowl viewing area, a unique opportunity in the urban area of Anchorage. The site plan for viewing platforms, parking and pedestrian access to the water's edge is proposed by the Division of Parks and Recreation, and is included in Appendix C of this report. The design accommodates current use and protection from the high voltage electric equipment operated by Chugach Electric. It is anticipated that the electric facility may become obsolete in the near future. If so, additional opportunities for public access may be possible across the dam.

The coastal trail route begins at the dam and continues near the north bank along Whitney Road. This should be a Class III route (paved bike

MASTER PLAN SITES

1) Ship Creek Dam
2) Railroad Station
3) Resolution Park
4) Elderberry Park
5) Nulbay Park Beach Access
6) Bootlegger Cove Log House
7) Westchester Lagoon
8) Fish Creek
9) Lyn Ary Park
10) Earthquake Park
11) Earthquake Park Picnic Pullout
12) Pt. Woronzof Picnic Playground
13) Pt. Woronzof Fossil Beds
14) Pt. Woronzof Overlook
15) Old Clay Products Road Scenic Area
16) Tanaina Archaeological Site
17) Pt. Woronzof - Pt. Campbell Wetlands
18) Pt. Campbell Recreation Area
19) Pt. Campbell Sand Dunes
20) Klatt Road Scenic Area
21) John's Park
22) Oceanview Park Extension
23) Seward Scenic Overlook
24) Trailhead Area
25) Potter Marsh Nature Center
26) Andesitic Dike
27) Rabbit Creek Park


N
S
Scale: 1"=2,500'
Earthquake Park
Lyn Ary Park
Rabbit Creek Park
LEGEND: MASTER PLAN
VEHICULAR ACCESS POINTS
PEDESTRIAN ACCESS POINTS
ACCESS TO MUNICIPAL PARKS
AMSA'S
PREFERRED ROUTE OF BIKE/PEDESTRIAN PATH
ALTERNATIVE ROUTE OF BIKE/PEDESTRIAN PATH
PEDESTRIAN PATH
EQUESTRIAN PATH
MOTORCYCLE/SNOW MACHINE PATH
Municipality of Anchorage
DISTRICT COASTAL MANAGEMENT PROGRAM
DATE: SEPTEMBER 1980
SHEET: 7
VICINITY MAP

path with shoulder, separated from the road) with vegetation and elevation buffers. The Ship Creek crossing should be made via a bicycle bridge between the existing "C" Street and railroad bridges. A separate structure is preferred to the modification of either existing bridge for both economic and aesthetic reasons. After Ship Creek, a class IIC route (along the road, with route signs and a painted bicycle corridor) will rejoin "C" Street and continue east on 1st Avenue.

Site 2. The **Alaska Railroad Station** facilities proposals include bicycle parking and a bulletin board area for posting and distributing trails and educational information. The route will be designated with signs and painted lines.

The ARR station serves as a transportation hub and is a logical place for the trail to join the local and regional network. The route may also form an important link here with the proposed "Anchorage Old Town," a cluster of relocated historic buildings. Excellent opportunities to discuss Anchorage's historical and architectural heritage would be possible if the "Old Town" plan were realized.

Site 3. **Resolution Park** will be reached by one of the following three alternatives:

Alternative 3a: West 1st Avenue and the base of the slope bordering the G.S.A. property would be utilized to provide access to the foot path below Resolution Park. A stairway from the Resolution Park structure would enable pedestrians to get down to the trail below. The route would continue within the railroad right-of-way and easements to join Elderberry Park. At M Street it would meet Alternative 3b on West 5th Avenue.

Alternative 3b: A Class IIC route roadway trail identified with painted lines and signs) follows West 1st Avenue from the Railroad Station to Christiansen Drive, to West 3rd Avenue and on to Resolution Park on 3rd and "L" Streets. From the park, the Class IIC route turns from L Street down the hill to West 5th Avenue. Drawbacks include heavy traffic, a steep hill on 5th Avenue, and one-way traffic on L Street.

Alternative 3c: A third possibility is to establish alternative (a) as a recognized and maintained pedestrian route while using (b) for bicycles.

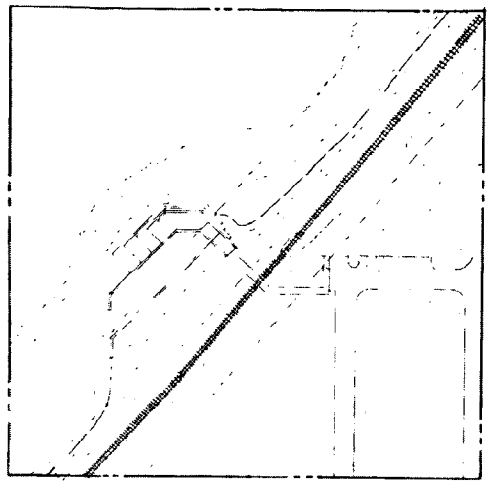
Site 4. Access to **Elderberry Park** will provide restrooms, parking, and play equipment. One of Anchorage's oldest homes, the Oscar Anderson House, has been preserved on site as a point of historic interest.

Site 5. A Class II route (a marked bike lane) along the roads from N Street to West 7th Avenue and "O" Street, would provide a link with **Nulbay Park**. Parking, picnic areas and a tot-lot are available here. In addition, Nulbay Park provides an excellent opportunity for pedestrian access to the beach, via an existing roadbed and gravel pad across the railroad tracks. This is the site of the proposed Nulbay Park Beach Access platform with a stabilized path to the beach. This is designed to accommodate existing use patterns. This is the only opportunity north of Point Woronzof to be far enough out from the shoreline to obtain views back to the coast. Points of interest that could be emphasized at this site are the port facilities (for example, port history, navigation information and types of ships and cargo) and Bootlegger Cove geology.

The pedestrian route from the viewing facility will continue along the beach to an existing dirt drive at the log house north of Westchester Lagoon. Several drainage culverts may have to be lengthened or diverted to avoid the pedestrian path.

Site 6. The ***Bootlegger Cove Log House*** is currently owned by the railroad and consideration should be given by the Municipality to acquire it as a cultural facility when the present occupant leaves. In addition to an interesting history and high aesthetic value, the building's layout, stable condition, and present use by a potter make it ideal for the proposed use as a craft and cultural events center.

The bicycle route would proceed as a Class IIC (along the roadway, with signs and painted bike lane) from Nulbay Park along O Street, to West 8th, to Stolt Lane, West 11th Avenue, Bootlegger Cove Drive and U Street to the northwest corner of Westchester Lagoon.



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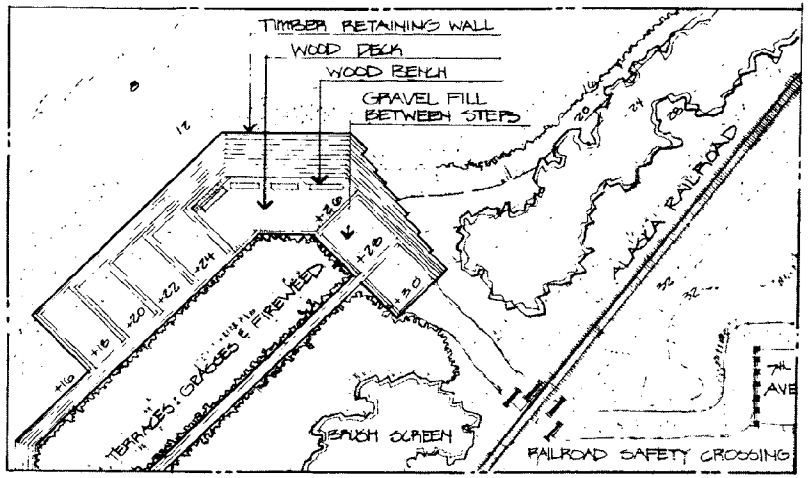

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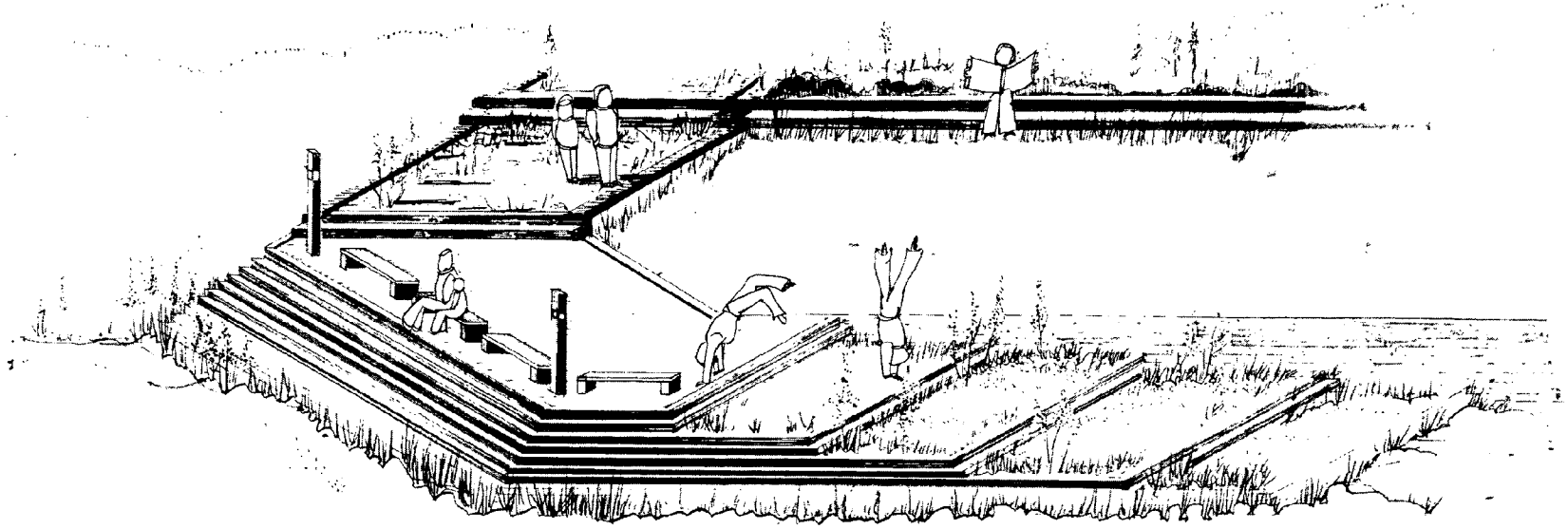

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Site Plan: NUSAY PARK BEACH ACCESS

DISTRICT COASTAL MANAGEMENT PROGRAM

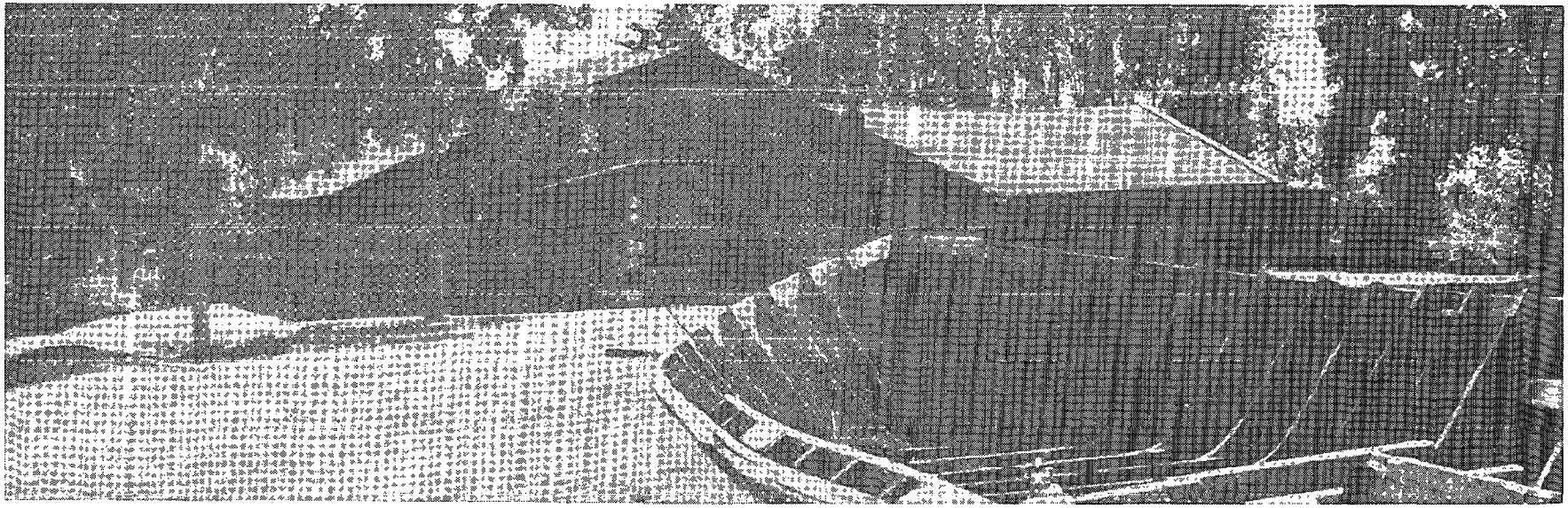
MUNICIPALITY OF ANCHORAGE

SCALE: NORTH

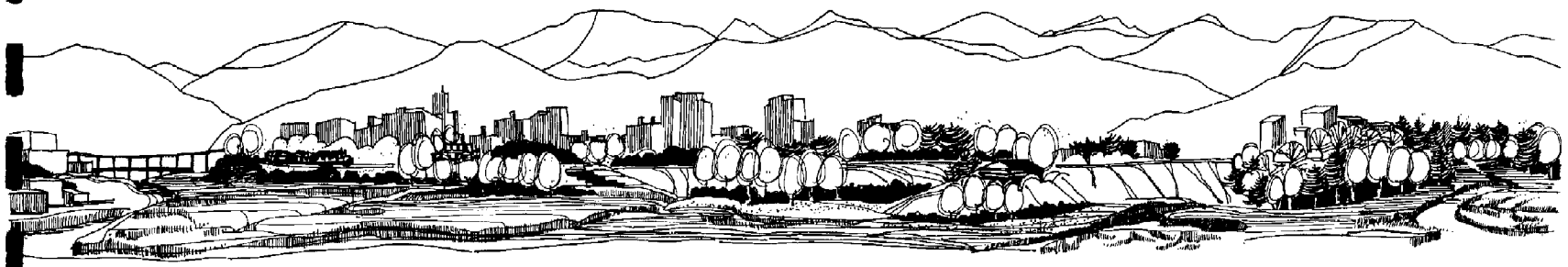
Site 7. Existing facilities at **Westchester Lagoon** include parking, picnicking, and trails along the north side. Proposals include a loop trail around the lagoon with 18 exercise stations where joggers stop to do sit-ups, pull-ups or other calisthenics. This "par course" would be ideal for use during lunch breaks and after work for downtown employees as well as area residents. More extensive definition of the west end of the lagoon includes development of the bike trail around the lake and a planting plan to screen the embankment. This area provides a rare inland view, focusing on inland water, neighborhoods, foothills and mountains. The less developed south side of the lagoon and a small brackish marsh in the southwest corner offer opportunities for viewing wildlife in an urban setting. The trail route would rise up to the railroad tracks near the south west corner of the lagoon. A view across the Knik Arm could be enjoyed without climbing the embankment or walking along the railroad tracks. The railroad tracks would be crossed at an existing road. The trail would continue within the railroad right-of-way along a cleared woodland roadbed which is parallel to but above the tracks.

Site 8. The route proceeds along the existing pedestrian path in the right-of-way sloping down to the **Fish Creek** estuary, the first Area Meriting Special Attention. Though flanked closely by residential development, this stream estuary provides an excellent opportunity to describe riparian environments, estuary vegetation, sand dunes and waterfowl. A pedestrian boardwalk is suggested for nature study which could be easily accessible from nearby schools. There are four alternatives for routing pedestrians and cyclists around the mouth of Fish Creek:

> Alternative 8a: The trail would follow existing paths around the creek at approximately the 20 foot contour, crossing the creek with a small bridge and spanning minor drainages with culverts. On the south bank the path would stay at the same elevation, just above the line of dense vegetation. This would provide opportunities for views of the marsh and the Knik Arm through the existing trees. Short stretches of boardwalk will add to the variety of experiences and allow for more sensitivity to topography. The path would cut up



Bootlegger Cove Log House, built by soldiers during W.W. II, is presently owned by the Alaska Railroad. Master Plan Site #6.



PROJECT SUMMARY

Ship Creek to Earthquake Park

1 SHIP CREEK DAM
- • Existing public use area
- • Proposed greenbelt connection
- • Historic, biological interest
- ° High voltage equipment area
- ° Industrial setting
- ° Ownership: DOT, ARR, Chugach Electric

CORRIDOR
- • Use of existing roads
- ° Cost of new bridge
- ° Road crossings, inter sections

2
- • Coordination with existing transportation network
- • Restrooms, parking, information
- • Historical context
- ° Traffic patterns

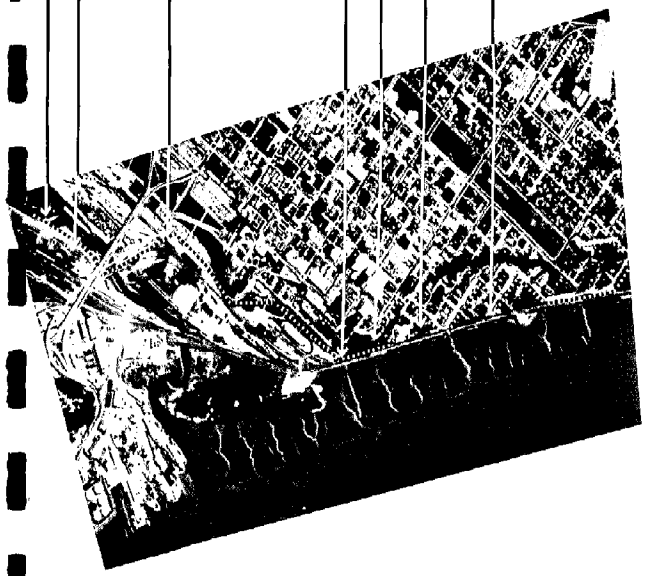
COASTAL CORRIDOR
- • Good potential as footpath
- • Views along coast
- ° Land ownership: ARR, GSA, private
- ° Inadequate easement width
- ° Steep slope, near RR tracks

INLAND CORRIDOR
- • Use of existing roads
- ° Departs from coast temporarily
- ° L St. one-way traffic
- ° Steep hill on 5th Ave.
- ° Intersections

3 RESOLUTION PARK
- • Existing view platform
- • High use area
- • Excellent scenic value
- ° Difficult access to coastal corridor

4 ELDERBERRY PARK
- • Existing parking, restrooms, play equipment
- • Oscar Anderson House

5 NULBAY PARK
- • Existing parking, playground
- • Existing railroad crossing at grade, beach access area
- • Coastal views from gravel pad
- • Within RR right of way



6 BOOTLEGGER COVE LOG HOUSE
- • Historic and aesthetic value
- • Prime location for public facility
- • Use of existing RR crossing
- • Association with artistic tradition
- ° Cost of acquisition and maintenance
- ° Alaska RR ownership

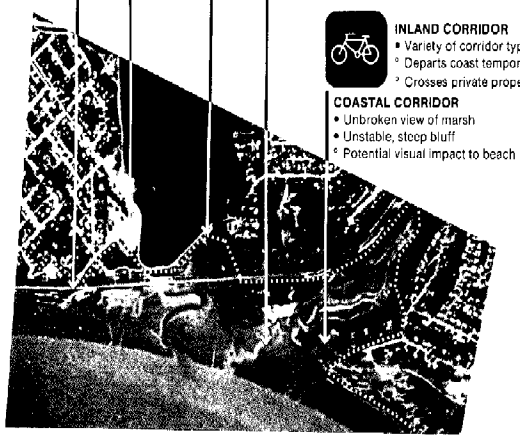
7 WESTCHESTER LAGOON
- • Terminus of existing bikeway
- • Proximity to downtown and residences
- ° Within Alaska RR right of way

LAGOON TO FISH CREEK CORRIDOR
- • Existing RR crossing
- • Trail at separate grade
- ° Alaska RR right of way
- ° Proximity of private land

8 FISH CREEK AMSA
- • Unique coastal area
- • High scenic, educational, biological value
- • Proximity to city and schools
- ° Private ownership to tidelands
- ° Engineering and construction costs for sensitive wetland area

INLAND CORRIDOR
- • Variety of corridor type
- ° Departs coast temporarily
- ° Crosses private property

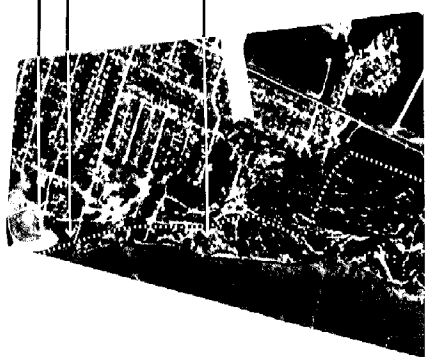
COASTAL CORRIDOR
- • Unbroken view of marsh
- • Unstable, steep bluff
- ° Potential visual impact to beach



9 LYNARY PARK
- • Existing park facilities, restrooms and parking

LANDSLIDE AREA CORRIDOR
- • Sandy beachlike area
- • Landslide education area
- • Variety of terrain
- ° Private property ownership

10 EARTHQUAKE PARK
- • Earthquake education
- • Views over trees to city
- • Existing trails, parking



• = opportunity

° = constraint

= Site

= Corridor

= Area Meriting Special Attention

Sheet 1

the slope through a storm sewer easement with an existing foot path on it to the road and continue as a Class IIC route (with painted bike lane and signs) along Loussac Drive to Marston Road. From Marston Road it is recommended that a trail easement be established to provide coastal access.

Alternative 8b: The route will continue as in Alternative 8a to the sewer easement. Instead of turning to the road on the west side of the estuary, it would continue along the slope below residential property lines. At the northwest corner of the estuary, the path would be built just above the beach (cut into the slope) and would gradually ascend to the top of the slope. This alternative may be subject to construction constraints due to the unstable clay slope.

Alternative 8c: An alternative pedestrian boardwalk and path would follow the same route as Alternative 8b, while the bicycles are routed as in Alternative 8a. This would result in less visual and construction impact. A small extension of the boardwalk into the sand dune area is suggested, with stairs to the beach. The beach path would remain in its natural condition and would rejoin the bicycle route at the top of the slope, connected by a stairway. Access for handicapped people would not be provided in this option, because movement along the beach would be difficult for them.

Alternative 8d: Another pedestrian alternative trail would involve separation from the bicycle route on the northeast side. People would walk across the estuary on a boardwalk to the sewer easement. On the west side they could choose to go up to the road on the bike path, or around the bluff on a pedestrian walkway. Stairs would lead up from the beach to the bicycle path near Marston Road.

Site 9. Access into **Lyn Ary Park** will be along the west side. Facilities already planned for this park include playing fields, vehicular access, restrooms, water and play equipment. Existing coastal trails through the disturbed landslide area will be used for access from Lyn Ary to Earthquake Park, but upgraded for safe public use.

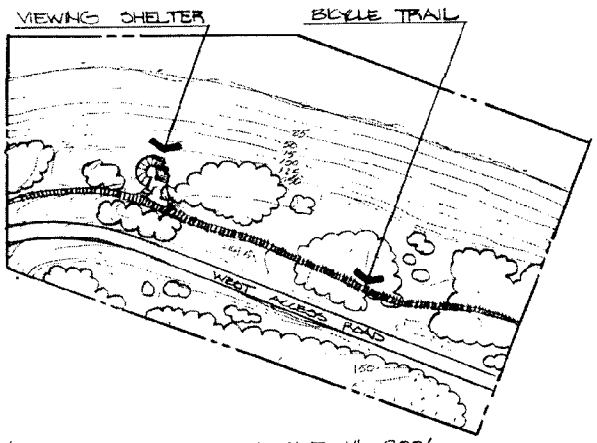
Site 10. In **Earthquake Park** the trail would gradually head up the slope near the park boundary along existing trails. It may be necessary to bridge Hood Creek here. The Parks and Recreation Division is currently developing facility designs for the park. Consideration could be given to including restrooms, more signs and educational literature, aerial photographs showing the landslide area as it appeared in 1964, and considerable trail and stairway improvements. Because of its heavy use by tourists, the Park is an ideal location for an educational facility. The existing Northern Lights bicycle trail ends at Earthquake Park. Continuation to the next pullout will be via a Class III route, a separate trail leading west.

A pedestrian beach loop that connects to the bicycle trail at each end of the park could be developed. It is important to maintain the rugged undeveloped nature of the park because it illustrates the magnitude of the landslide that occurred here.

Since it is currently posted as an equestrian route, Earthquake Park is the start of a proposed equestrian/running trail around Point Woronzof and Point Campbell to Kincaid Park. It would consist of an unpaved path separate from the paved bike route wherever possible.

Site 11. The **Earthquake Park Picnic Pullout** has an excellent view of the park's disturbed landform and the city shoreline in the background. It provides opportunity for discussing earthquakes in the context of the changing shoreline. Selective pruning of the treetops may be necessary to preserve this view in the future. From the picnic area a Class III bike path (separated from the road) will parallel the road to Point Woronzof. It will pass the airport fence, which extends to the bluff, and cross a small ravine on a separate bridge. Thereafter the right-of-way of Old Clay Products Road can be used for trail placement. A portion of the old 'corduroy' roadbed at the head of this dirt road may be worth saving for its historic interest.

Site 12. The main bicycle route would continue along Clay Products Road at the top of the bluff to an existing auto pullout area. This is the site of the proposed **Point Woronzof Picnic Playground**. The pullout offers the last good view of the urban waterfront before the trail curves around the end of Point Woronzof. Proposals for the site include parking, picnic and play areas.



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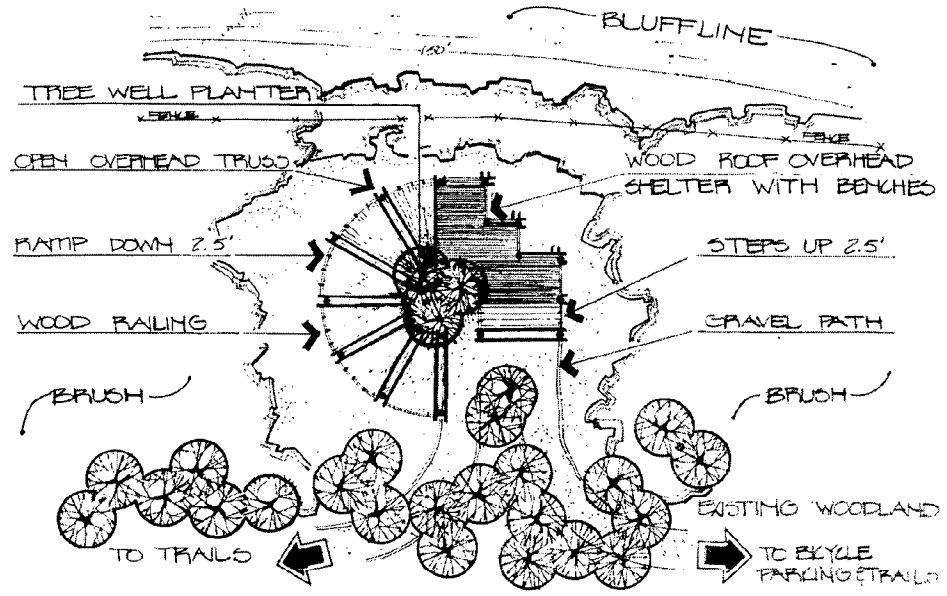

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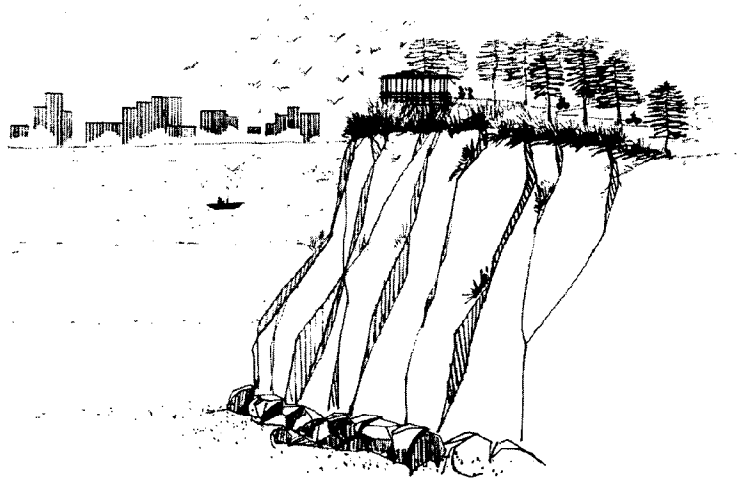
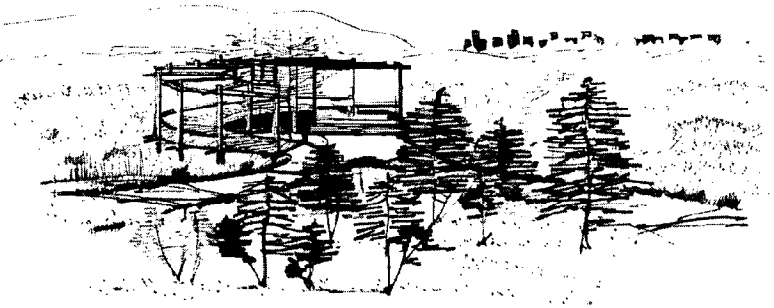


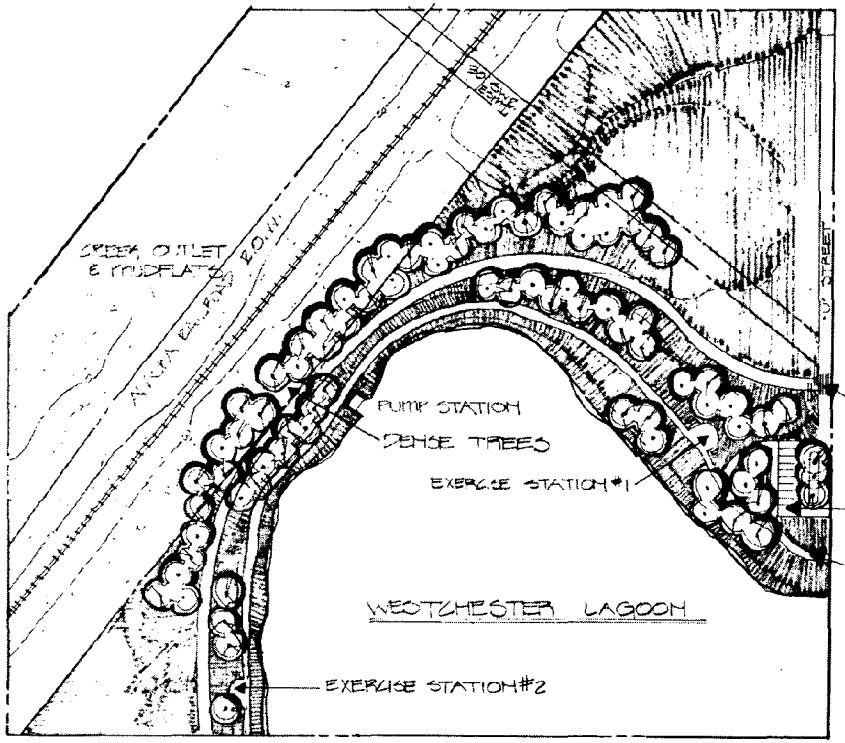


Site Plan: PT. WORONZOF OVERLOOK

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: NORTH



PLAN SCALE: 1"=100'

VIEW LOOKING WEST

BICYCLE TRAIL

PARKING: 10 CARS

PARCOURS TRAIL

7

Site Plan: WEST END WESTCHESTER LAGOON

DISTRICT COASTAL MANAGEMENT PROGRAM **MUNICIPALITY OF ANCHORAGE**

SCALE: NORTH

Site 13. The **Point Woronzof Fossil Beds** (AMSA #2) are found in the rapidly eroding bluff west of the creek crossing and continue to the end of the Bootlegger Cove Clay deposit. Pedestrian access can be provided to the beach via a footpath on the west side of the ravine. At low tide, pedestrians can hunt for fossils in the exposed clay and walk the beach as far as the airport's north-south runway gravel extraction site (Master Plan Site 15). There another pedestrian access path would be provided to the top of the bluff. Both access trails will require some improvements, signs and maintenance; however, no special provisions will be made along the beach.

Site 14. Approximately 400 yards further down the Old Clay Products Road bicycle route, a **Point Woronzof Overlook** is proposed. A small pullout with a viewing platform on a hill just east of the airport radar station would be accessible only from the bicycle route. This point offers an excellent 360° view of the Anchorage Bowl and Cook Inlet environs.

Site 15. At the **End of Old Clay Products Road** is the gravel extraction site (end of the north-south runway). No design proposals can be made since the duration of the excavation and plans for regrading the site are unknown. A bicycle trail easement, adequate setback from the bluff edge, and potential vehicular access for the excellent view of Mt. Susitna, the Alaska Range, Fire Island, and Turnagain Arm vistas should be provided. This area appears on the Airport Master Plan as park area. Pedestrian access to the beach would be available along an existing graded jeep trail down the bluff.

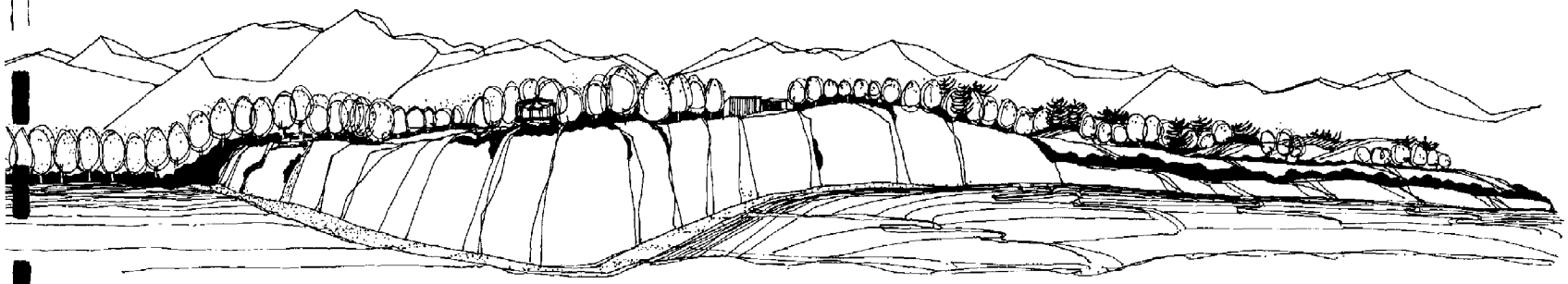
After the gravel pit site, the path would run parallel to the airport access road. Around the sewage treatment plant, the trail would pass through a mature mixed woodland. Unpleasant odors are frequent in this area. South of the treatment plant the path intersects and follows a twenty foot cleared underground electrical easement. Next the trail would intersect with an oil pipeline easement just north of the airport east-west runway. The trail along the easements is well separated from the bluff edge, and it has been cleared for maintenance vehicle access in the past. This part of the route provides the longest stretch of canopied woodland corridor. Occasional views out to the water can be seen through the trees.

Aerial view of Point Woronzof in 1977, showing the Fossil Bed area from the lower left to the change of elevation in the bluff. Master Plan Site #13. The Point Woronzof Picnic Pullout site is the clearing in the foreground.

Site 16. The **Tanaina Archaeological Site** (AMSA #3) is approximately one-quarter mile south of the sewage treatment plant and west of the oil pipeline easement. The bicycle corridor should remain on the east side of the easement in this area to avoid damage to the site and allow greater flexibility for research and possible development of this archaeological site.

Site 17. The views through the trees from the easement corridor look out over the **Point Woronzof-Point Campbell Wetlands** of AMSA #4. A viewing platform-bird blind in the marsh is proposed for this area. The wetlands will probably become part of the Potter Game Refuge.

Room will have to be left for the bike route through (or at the end of) a fence being built by the airport along the northside of the east-west runway. The Design and Construction Division of the Department of Transportation at the airport has stated that there is no apparent need to fence the end of the runway since there is grade separation and a vegetative barrier. The high noise level associated with air traffic is offset by the inherent interest of observing low-level aircraft approaches. The trail would follow the oil easement until it reaches the shore. Thereafter the corridor will continue through woodland at the top of the bluff around Point Campbell.



PROJECT SUMMARY

Earthquake Park to Point Campbell

11 EARTHQUAKE PARK PICNIC PULLOUT
- • Canopied birch woodland
- • Views of city and Earthquake Park
- • Existing use area

12 PT. WORONZOF PICNIC PLAYGROUND
- • Skyline views
- • Existing vehicular access
- ° Near airport approach zone

13 PT. WORONZOF FOSSIL BEDS AMSA
- • Beachcombing and education area
- • Pedestrian path access
- ° Rapid bluff erosion, seasonally dangerous area

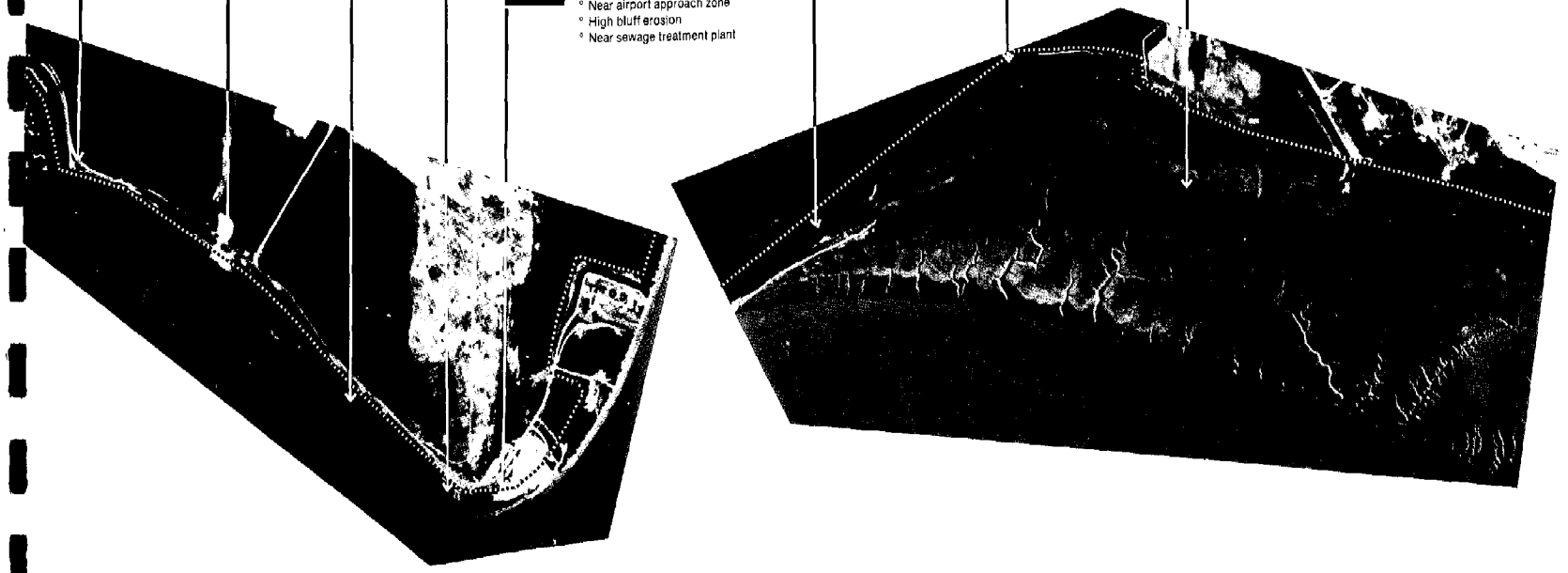
14 PT. WORONZOF OVERLOOK
- • 360° view, educational value
- ° In airport approach zone

15 CLAY PRODUCTS ROAD SCENIC AREA
- • Panoramic view
- • Existing pedestrian beach access
- ° Near airport approach zone
- ° High bluff erosion
- ° Near sewage treatment plant

16 TANAINA ARCHAEOLOGICAL SITE AMSA
- • Historic and education area
- • Deciduous woodland canopy
- ° Public access may cause damage to site
- ° Occasional unpleasant odors from sewage plant

BLUFF TOP CORRIDOR
- • Filtered, coastal views
- • Use of existing underground utility easements
- • Wildlife viewing opportunities
- ° Moose habitat area
- ° Crossed by airport approach zone

17 PT. WORONZOF - PT. CAMPBELL WETLANDS AMSA
- • Waterfowl and shorebird viewing
- • State ownership
- ° Near airport approach zone
- ° Hunting presently permitted



• = opportunity

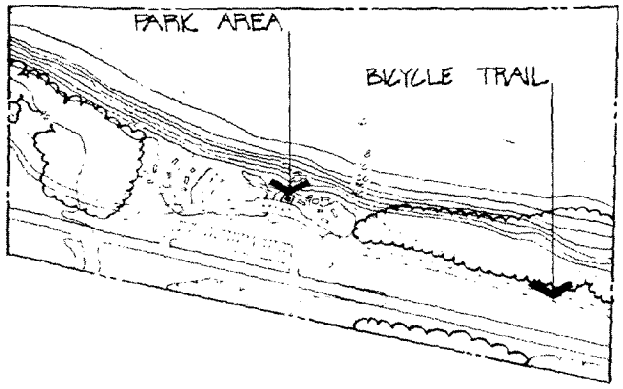
° = constraint

= Site

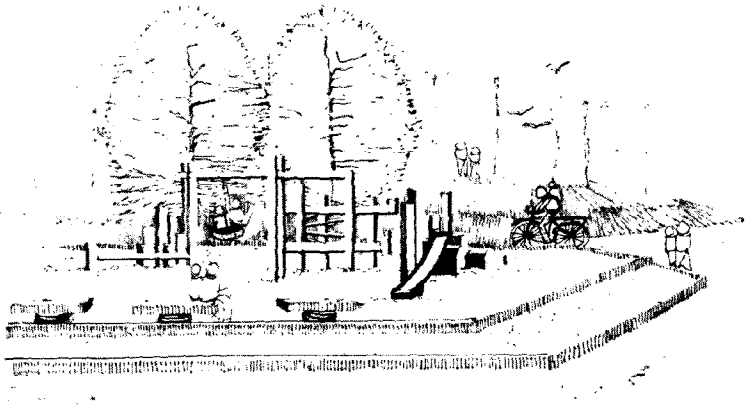
= Corridor

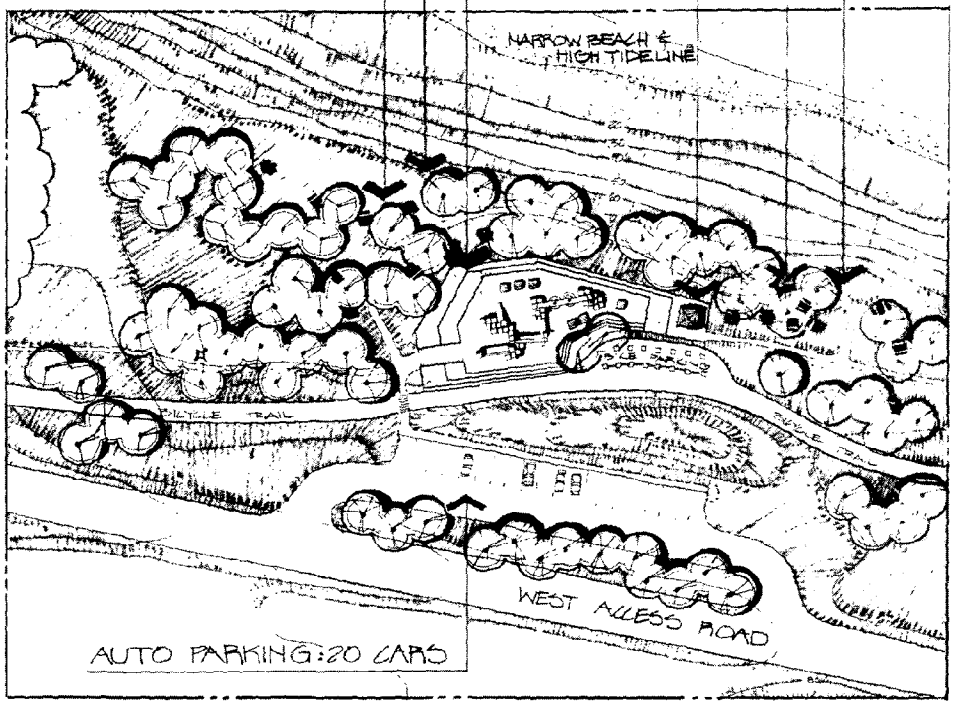
= Area Meriting Special Attention

Sheet 2



PLAN SCALE: 1" = 200'





PLAN SCALE: 1" = 50'

12

Site Plan: PT. WORONZOF PICNIC PLAYGROUND

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: NORTH

Site 18. If the Point Campbell Military Reservation becomes Municipal Property and kept as parkland it is proposed that a **Point Campbell Recreation Area** be established.

A picnic area and campground could be developed in the extreme southwest corner of the park. While the primary corridor would continue along the bluff to Kincaid Park, several alternative equestrian and off-road vehicle routes are possible. The currently active airport gravel pit west of the east-west runway could be used as a dirt bike race course. Possible access to the course would be via a trail over the hummocky terrain, one way on each side of the airport fence between the pit and existing vehicle parking at Little Campbell Lake in Kincaid Park.

This air photograph shows the shoreline between Campbell Lake and Point Campbell.

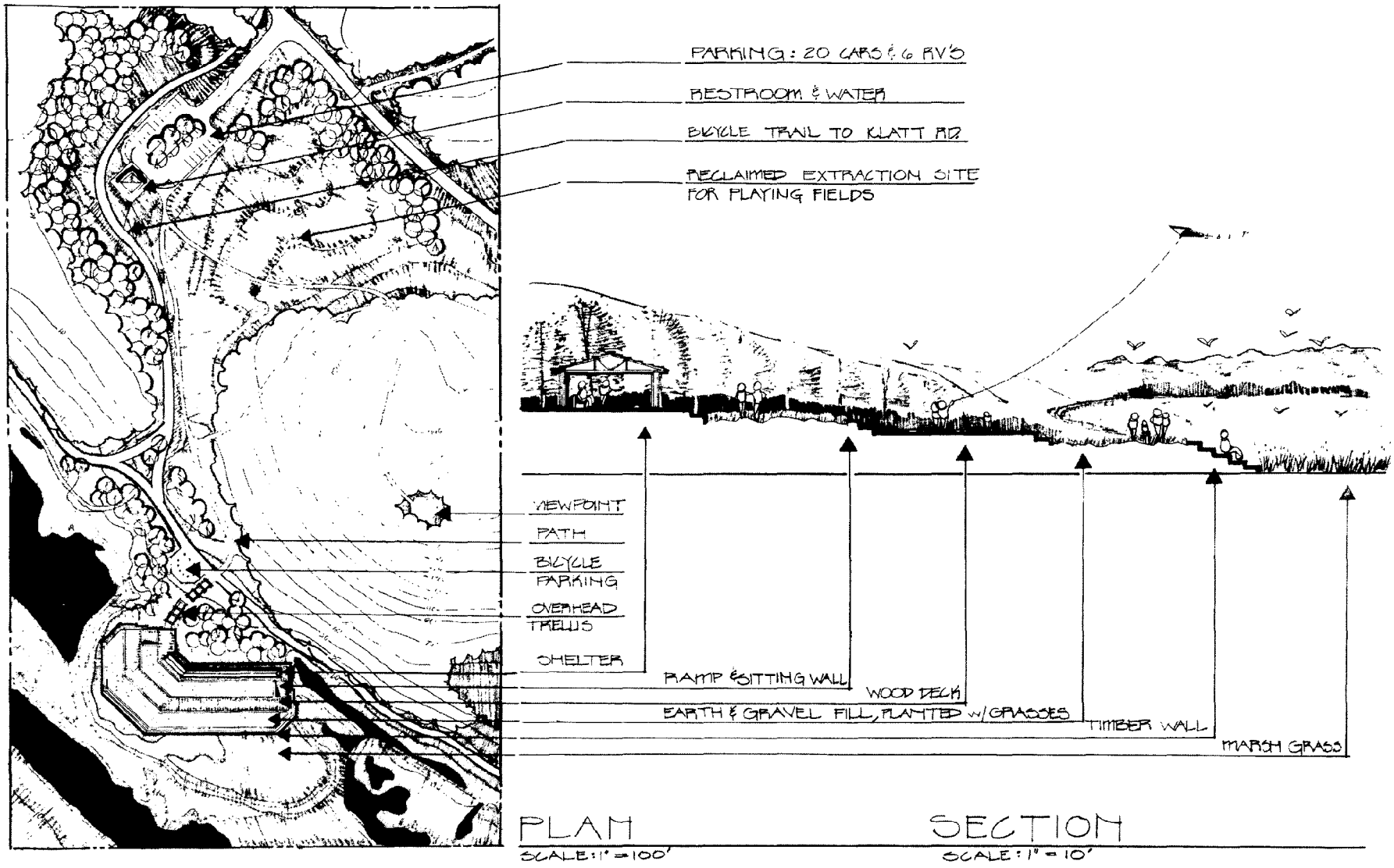
A secondary equestrian loop, to enable a sufficient buffer from motorized vehicles, will depend on acquisition of the military property by the Municipality . When the coastal route reaches Kincaid Park, an equestrian corridor will loop back to the north through the park to the coast north of Point Campbell. One further consideration is the possible location of a petrochemical plant pipeline shore facility at Point Campbell. Any plans for the use of Point Campbell should consider the location and impact of this possible pipeline facility.

Site 19. The coastal corridor would remain at the top of the bluff until it reaches the **Point Campbell Sand Dunes** (AMSA #4) where it begins gradually dropping in elevation to follow the line of heavy vegetation at the toe of the slope, near the 20 foot contour. The corridor will stay at this approximate elevation, just above the 100 year flood line, curving where necessary to avoid property lines.

At Campbell Creek two alternatives are suggested: one based on property ownership patterns and the other based on physical engineering factors.

> Alternative 19a: The preferred route from both an aesthetic and environmental point of view is to follow the slope eastward at the creek outlet and cross the creek at an existing culverted vehicular access road.
>
> Alternative 19b: An alternative proposal is to cross the creek at a wider point with a long (1000-1500 foot) boardwalk across the estuary to the opposite bank. This alternative is likely to be less advantageous because of engineering difficulties and extreme environmental conditions.

In either case, the path continues southward at the toe of the bluff after Campbell Creek. There are several possibilities for gaining access to the Bayshore West subdivision along existing greenbelt easements.



20

Site Plan: KLATT ROAD SCENIC AREA

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: 1"=100' NORTH

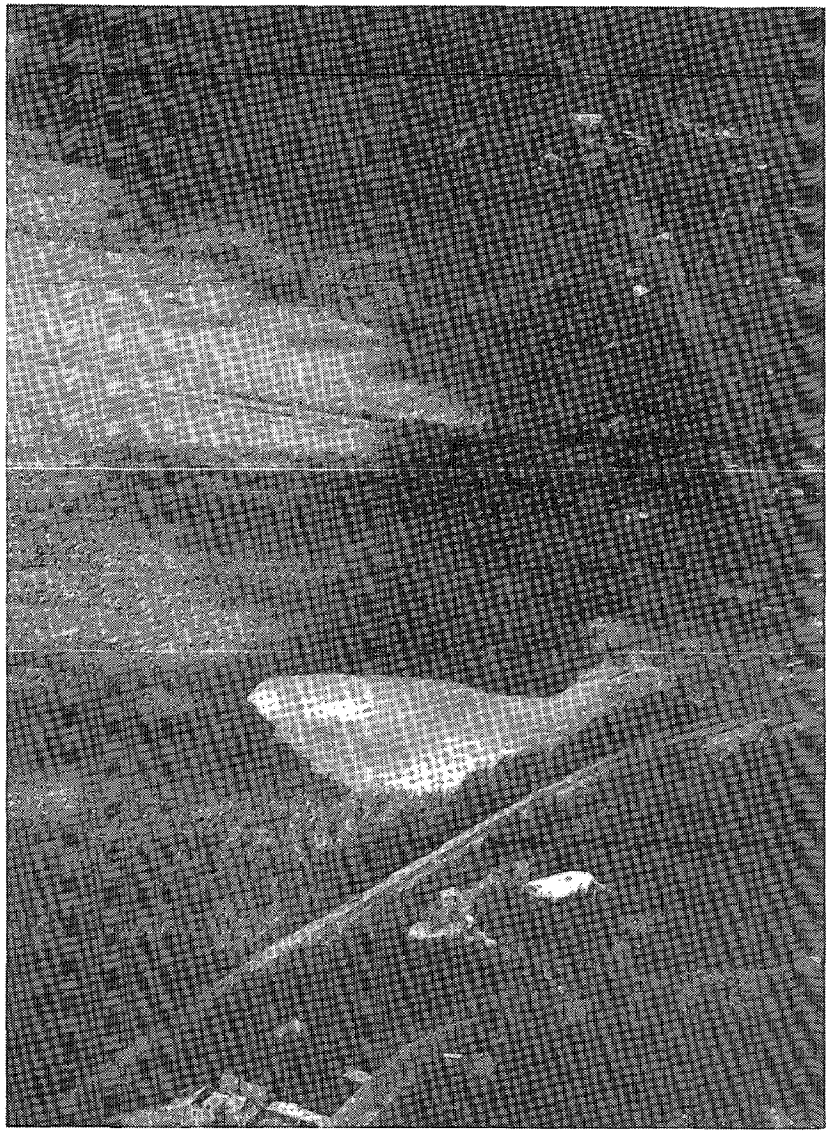
Site 20. At the site of the proposed **Klatt Road Scenic Area**, restoration and reuse of an existing disposal area and former gravel pit is proposed. Its proximity to Klatt Road makes it an ideal access point. The existing fill area onto the marsh affords good opportunity for observing shore wildlife and tidal processes. With development of the gravel pit and pad it would be suitable for a picnic and viewing area. Design proposals include parking for cars and buses, rest rooms, water, bicycle parking, and viewing decks with shelters.

The path continues along the base of the bluff before beginning a gradual ascent of the slope. Upon reaching the top of the slope the path will enter the west end of Shore Drive as a Class IIC route (a painted bike lane and signs). At the east end of Shore Drive, a sewer easement can be followed to John's Park. Boardwalks or a trail with numerous culverts may be required to allow adequate drainage across the route.

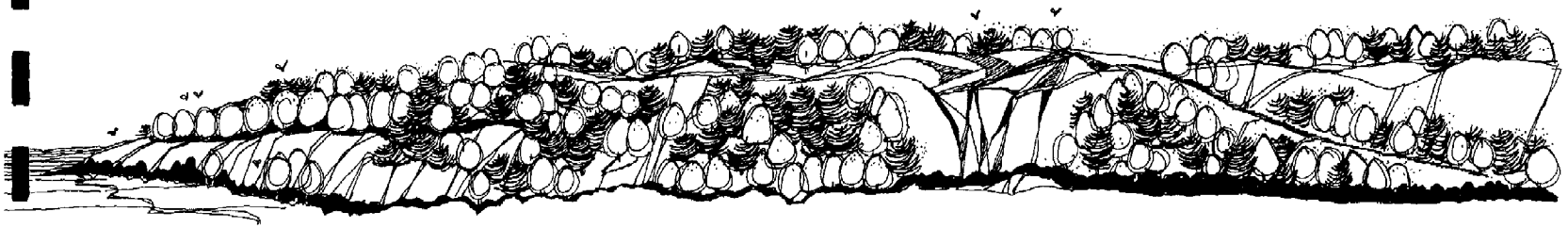
Site 21. In **John's Park**, existing Park and Recreation Division trail proposals can be utilized to provide access around Furrow Creek to the opposite bluff to connect with nearby residential development. From John's Park two alternative routes to the next access point are suggested:

> Alternative 21a: A Class IIC route along the road from John's Road to Oceanview Drive, then to Reef Place, would provide access to an extensive fill area in the marsh. The Municipality is currently considering acquiring this area as an extension of Oceanview Park.
>
> Alternative 21b: The trail would return to the toe of the bluff through John's Park and continue along the coast on a boardwalk or on an easement across private property lines below the bluff in Oceanview.

Site 22. From the **Oceanview Park Extension**, the route would proceed below the bluff to join an existing jeep trail along the base of the slope below the railroad tracks. This is a densely wooded corridor offering views through the alders to Potter Game Refuge wetlands. There are many places to accommodate rest stops and picnic facilities.



The landfill area near Oceanview is slated for Municipal acquisition for park purposes.



PROJECT SUMMARY

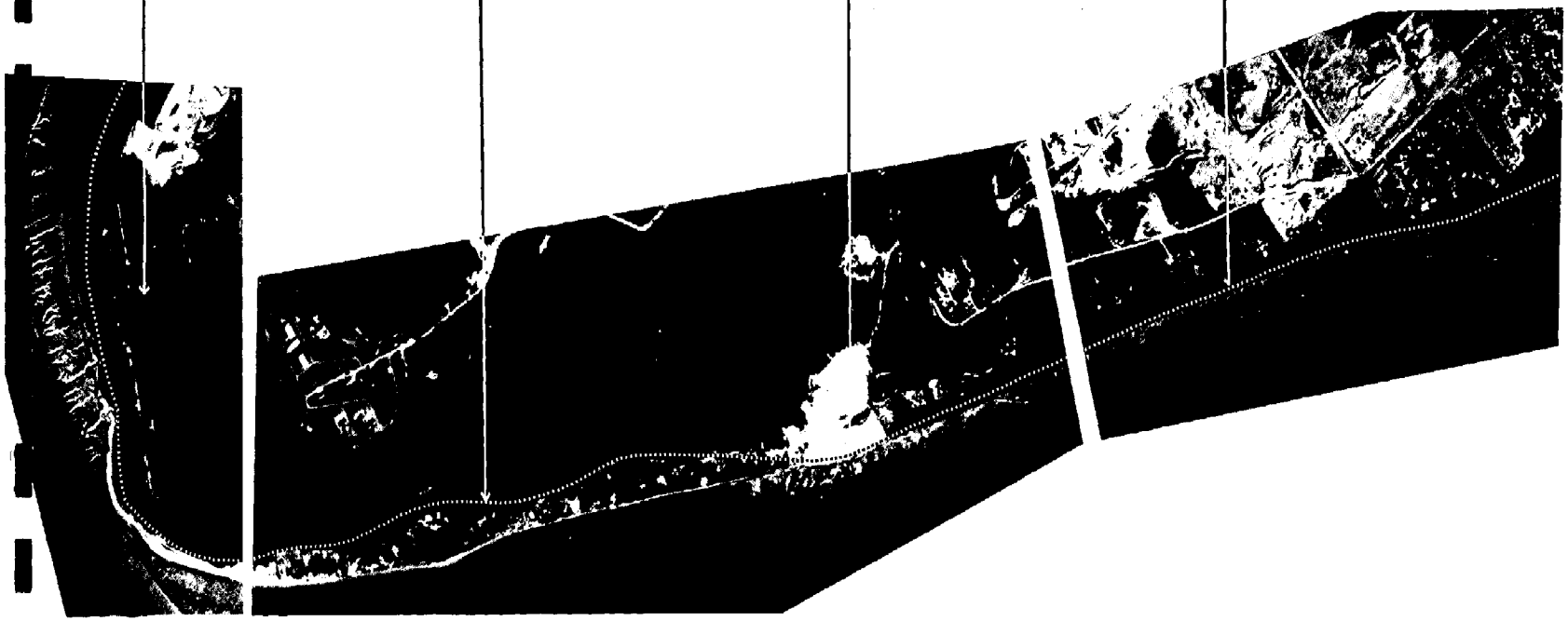
Pt. Campbell to Campbell Creek

18 PT. CAMPBELL RECREATION AREA
- • Remote, undeveloped area
- • Extensive viewing opportunities
- • Connection to Kincaid Park
- ° Military ownership
- ° Airport noise, north side
- ° Moose habitat area

BLUFFTOP CORRIDOR
- • Wildlife viewing potential
- • Undeveloped natural woodland
- • Variety of terrain and scenery
- ° Military ownership
- ° No topographic maps at large scale

19 PT. CAMPBELL SAND DUNES AMSA
- • Geology, landform education area
- • Views of entire region
- • Part of Kincaid Park
- ° Established dirt bike race area
- ° Traditional use for dumping and rifle shooting
- ° Insufficient information about dune movements

LOWER BLUFF EDGE CORRIDOR
- • Wildlife viewing, marsh vegetation
- • Mountain and inlet views
- ° High cost of construction on slope
- ° Boardwalks needed to avoid private property



• = opportunity

° = constraint

= Site

= Corridor

= Area Meriting Special Attention

Sheet 3

PROJECT SUMMARY

Campbell Creek to Oceanview

CAMPBELL CREEK INLAND CORRIDOR
- • Use of existing creek bridge and paths
- • Connection to Campbell Lake residential area
- • Views inland across lake
- ° Private land ownership

CAMPBELL CREEK BOARDWALK CORRIDOR
- • Avoids property ownership problems
- ° Boardwalk over open water at high tide
- ° Ice, wind, tide and substrate conditions poor
- ° High visual impact on estuary
- ° High cost of construction and maintenance

LOWER BLUFF EDGE CORRIDOR
- • Views of Potter Game Refuge Inlet, Kenai Mountains
- • Mixed woodland understory
- ° Cost of stabilizing slope

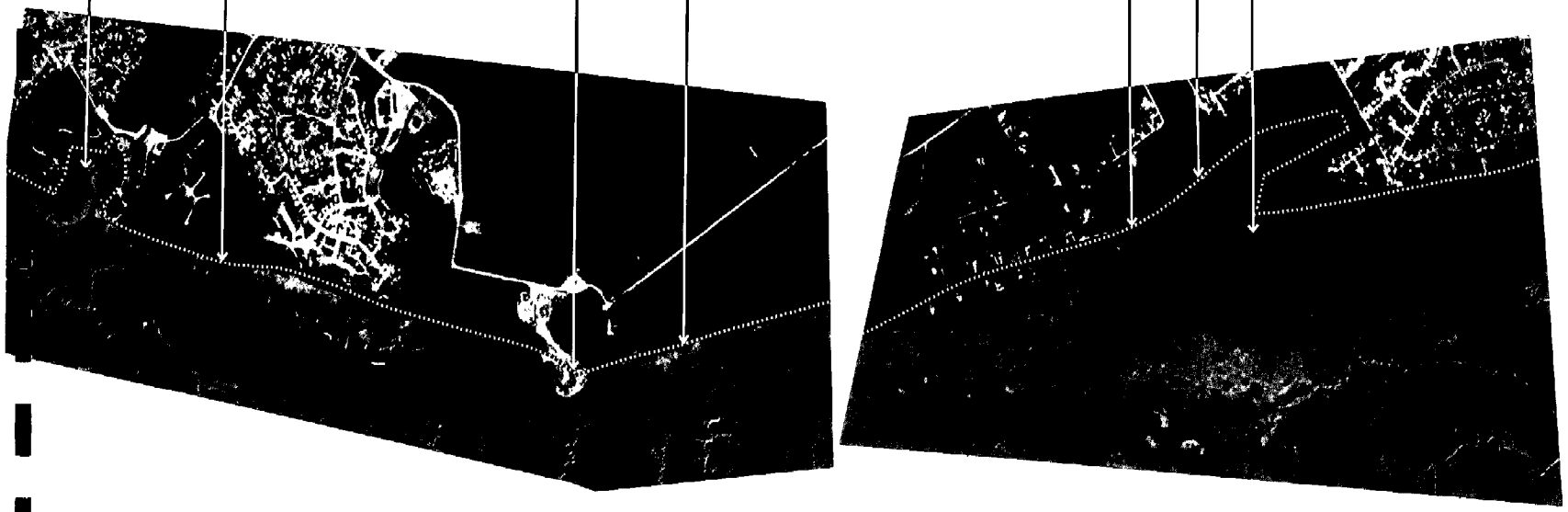
20 KLATT ROAD SCENIC AREA
- • Unusual high hill for viewing
- • Reuse of current eyesore
- • Waterfowl viewing opportunities
- ° Privately owned site
- ° Traditional use as a dump area

LOWER BLUFF EDGE CORRIDOR
- • Marsh wildlife and vegetation
- • Filtered woodland views
- • Connections to Bayshore neighborhoods
- ° Private property extends below bluff
- ° Ravine crossing

BLUFF TOP CORRIDOR
- • Existing road and sewer easement
- • Upland woodland deciduous canopy
- • Access from Shore Drive
- ° Limited views
- ° Wetland construction limitations

21 JOHN'S PARK
- • Linkage with park system
- • Riparian nature education area
- • High quality understory vegetation
- ° Lower slope nearly impenetrable vegetation

LOWER BLUFF EDGE CORRIDOR
- • No vehicle conflicts
- ° Engineering constraints
- ° Limited views
- ° Private property conflicts
- ° Cost of construction on slope



• = opportunity

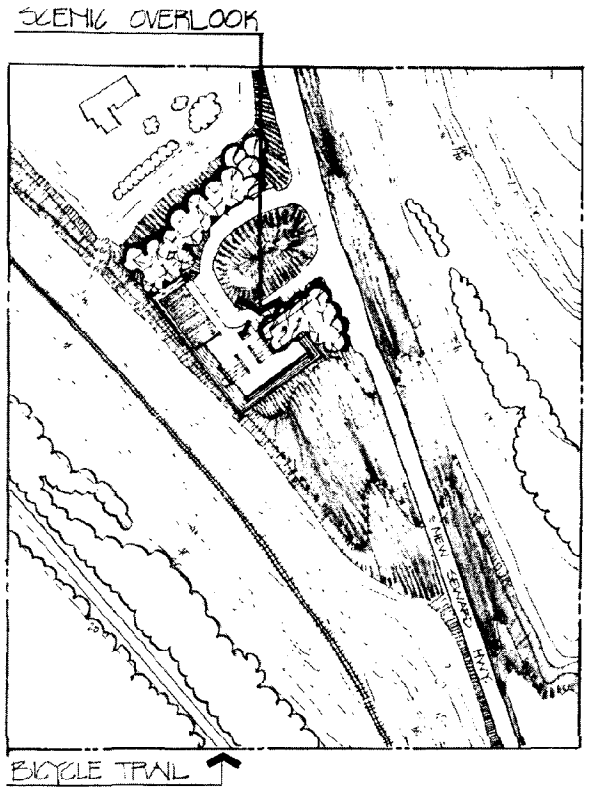
° = constraint

□ = Site

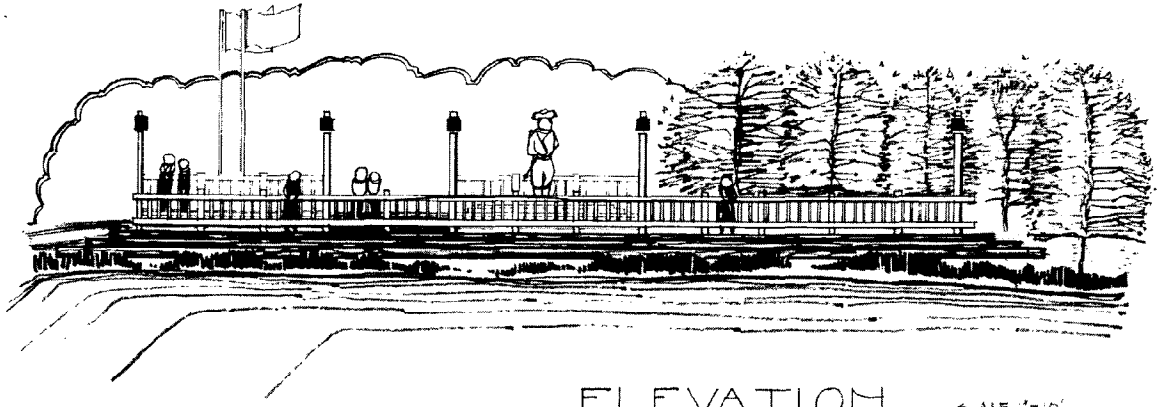
= Corridor

□ = Area Meriting Special Attention

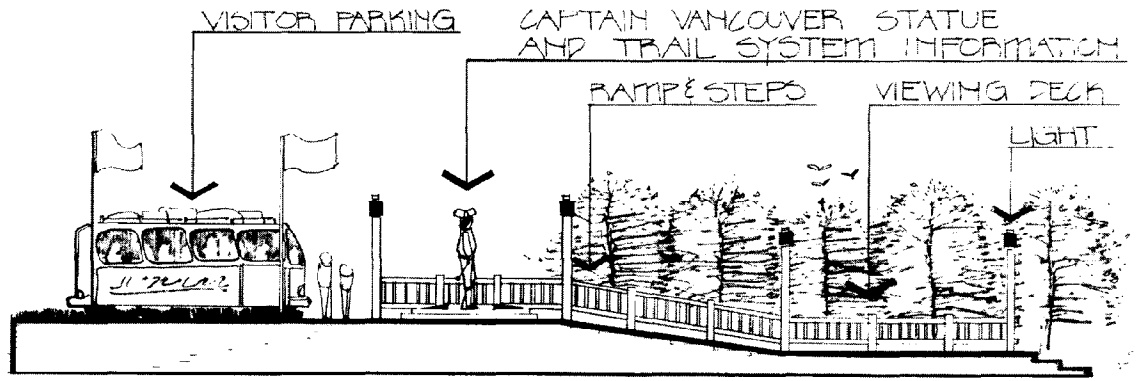
Sheet 4



PLAN SCALE 1" = 100'



ELEVATION SCALE 1" = 10'



SECTION SCALE 1" = 10'

23

Site Plan: NEW SEWARD SCENIC OVERLOOK

DISTRICT COASTAL MANAGEMENT PROGRAM **MUNICIPALITY OF ANCHORAGE**

SCALE: NORTH

Site 23. The bicycle/pedestrian route would continue along the jeep trail below the **Seward Scenic Overlook** and the steep railroad embankment. The Overlook provides an excellent view of the area's regional context. It is a much-used, readily accessible area which serves as a gateway to the Turnagain Arm. It has merit as an educational point for geology, history, biology and shoreline dynamics. Signage will direct people to the trailhead nearby, and to the Nature Center at Potter Marsh. Consideration might be given to the recognition of Captain Vancouver, who anchored in Turnagain Arm and was responsible for recognizing it as an arm of the sea.

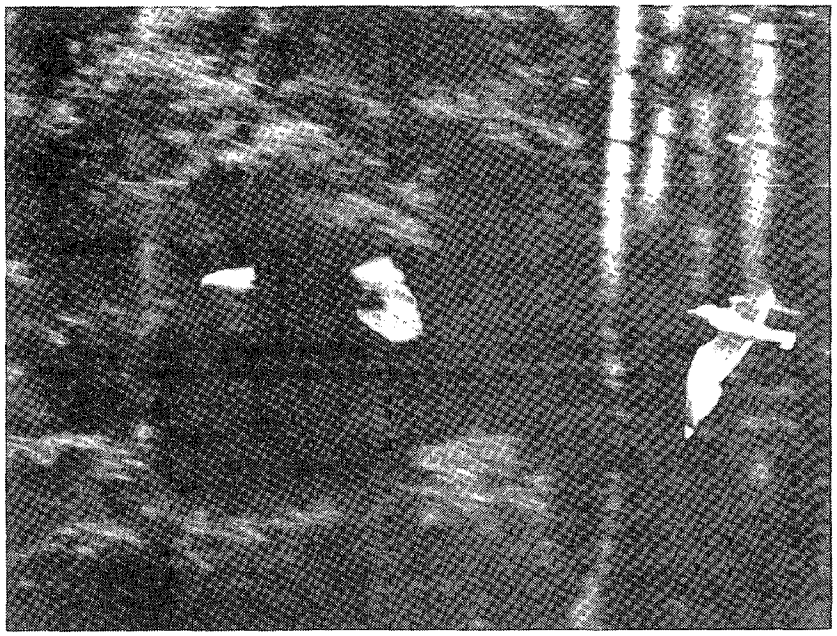
Site 24. The **Trailhead Area** would be located near the rifle range now owned by the Department of Fish and Game. Parking facilities and a tunnel for the trail underneath the railroad tracks and Seward Highway would be constructed. On the east side of the Highway, a modified IIA bike route (a grade-separated route off the road's shoulder) will pass through the existing and proposed Potter Marsh pullout areas and continue to the nature center at the south end of the marsh.

Site 25. The site of the proposed **Potter Marsh Nature Center** is presently occupied by the state highway weigh station, the relocation of which is planned by the Department of Weights and Measures. Facilities proposed include classroom facilities, parking, restrooms, and viewing platforms. It could serve as a cooperative center, operated by the U.S. Forest Service, the Alaska Division of Parks, the State Department of Fish and Game, and the Municipality of Anchorage. It is possible that the Potter Section House, a historic building located just south of the weigh station, could serve as an information center instead. Plans for both facilities will have to be coordinated between the various agencies. Information distributed would include wildlife education and recreation opportunities in Chugach State Park, Chugach National Forest, the Seward Highway and coastal recreation areas. The bicycle trail will continue north as a Class IIA route along the west side of Old Seward Highway until it reaches the wooded area on the west side of the road. At this point the path will leave the road and follow the slope to allow views of marsh through the trees.

Site 26. The bicycle trail leads to the **Andesitic Dike** (AMSA #6) which is located on the east side of the Old Seward Highway, approximately three-quarters of a mile from the Nature Center. Off-road parking for 5 or 6 cars is suggested near the dike to accommodate educational field trips. Additionally, this parking would provide access to a boardwalk and bird blind which could extend into the marsh on the opposite side of the road.

Site 27. The bicycle trail will continue through the wooded slope area until it reaches **Rabbit Creek Park**. There access could be provided to connect with local greenbelt and trails associated with Rabbit Creek.

At the north end of Potter Marsh, contours and property boundaries will be followed in bringing the trail across the marsh to complete the loop trail, and return to the trailhead under Seward Highway.



A seagull chases a troublesome bald eagle at Potter Marsh.

PROJECT SUMMARY

Oceanview to Potter Marsh

OCEANVIEW BLVD.
- • Pleasant residential area
- • Low cost to establish and maintain
- ° Traffic conflicts, parking

22 OCEANVIEW PARK EXTENSION
- • Access down bluff already graded
- • Proximity to residential area
- • Views of Turnagain Arm and Potter Game Refuge
- • Potential Parks and Recreation ownership
- • Reuse of present eyesore

OCEANVIEW LOWER BLUFF CORRIDOR
- • Established jeep trail
- • Vertical separation from RR
- ° Crosses private property

23 NEW SEWARD SCENIC OVERLOOK
- • Outstanding regional views
- • Established use pattern
- ° High speed highway access
- ° Steep, unstable bank

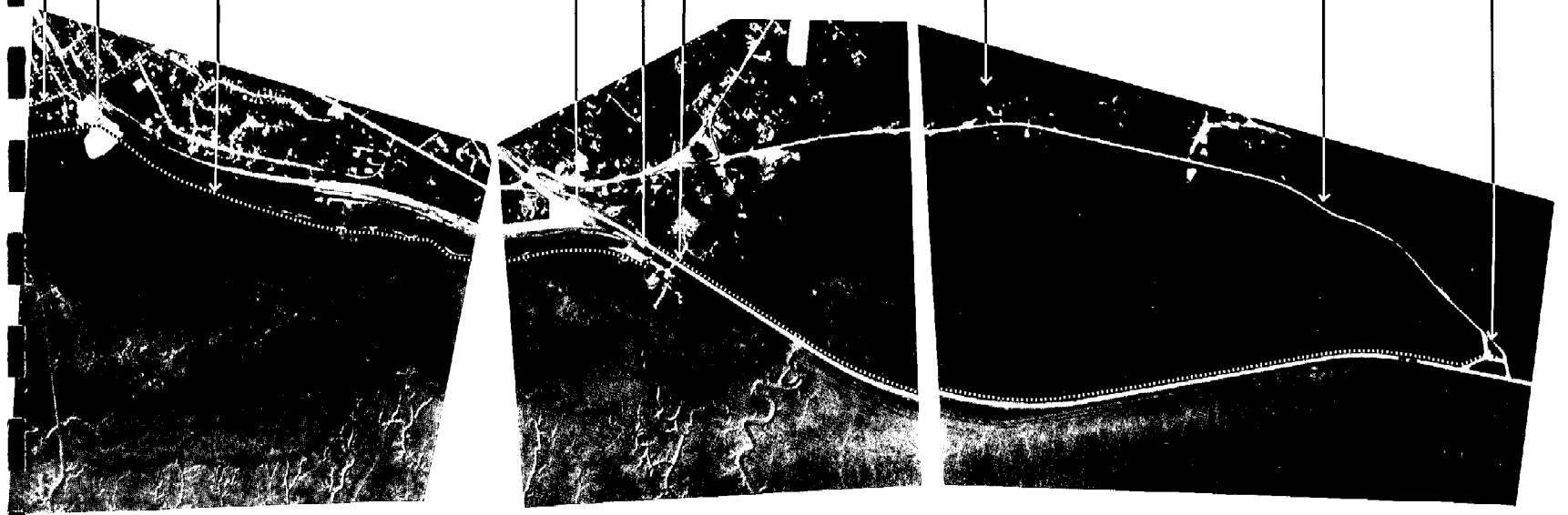
24 TRAILHEAD AREA AND UNDERPASS
- • Logical connection with transportation and activity centers
- • State ownership
- ° Proximity of rifle range
- ° High construction cost of tunnel under highway

NEW SEWARD HIGHWAY CORRIDOR
- • Enclosed viewshed
- • Wildlife viewing and aesthetic quality
- ° High speed traffic
- ° Potential expansion of highway to four lanes

25 POTTER MARSH NATURE CENTER
- • High habitat, scenic, education value
- • Proximity to major N-S route
- • Cooperation with State and National Park, Fish & Game Dept.
- • High public demand
- ° Proposed interchange for major subdivision entrance
- ° Traffic, potential road improvements
- ° Environmental sensitivity

26 ANDESITIC DIKE AMSA
- • Educational value
- • Coordination with nature center
- ° Potential road improvement conflict

27 RABBIT CREEK PARK
- • Connection with Chugach trail system
- • Access to growing residential area
- ° Park is currently undeveloped



• = opportunity

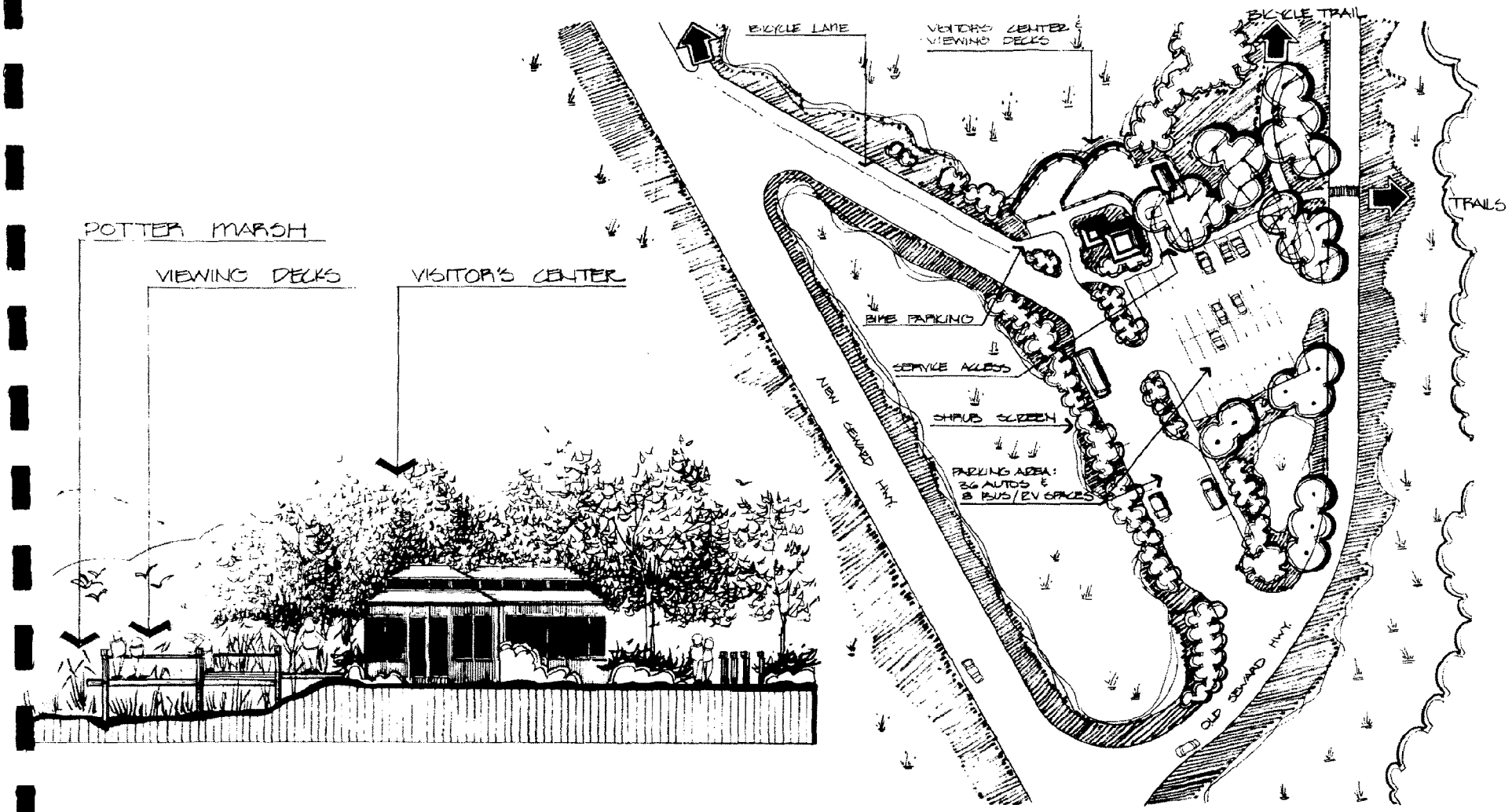
° = constraint

= Corridor

= Site

= Area Meriting Special Attention

Sheet 5



SECTION SCALE: 1" = 10'

PLAN SCALE: 1" = 50'

25

Site Plan: POTTER MARSH NATURE CENTER

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: 1"-50' NORTH

CHAPTER IV AREAS MERITING SPECIAL ATTENTION

- Fish Creek Management Plan
- Point Woronzof Fossil Beds Management Plan
- Tanaina Archeological Site Management Plan
- Point Campbell-Point Woronzof Wetlands Management Plan
- Point Campbell Sand Dunes Management Plan
- Potter Andesitic Dike Management Plan
- Potter Marsh Management Plan

Fish Creek Management Plan

Area Meriting Special Attention #1

Fish Creek flows approximately six miles from the Tudor Road and Lake Otis area west and north to Bootlegger Cove on the Knik Arm. It serves as a storm sewer for much of the residential and commercial land within its drainage area of 5.6 square miles. The Fish Creek Restoration Project (1976) addressed the management issues in the area between Northern Lights Boulevard and Spenard Road. This plan addresses the approximately three-quarters mile of the creek which is located north of Northern Lights Boulevard. The study area has been divided into two segments, one between Northern Lights Boulevard and the Alaska Railroad tracks, and the other from the railroad tracks to Bootlegger Cove. There are no gauging records for stream flow in Fish Creek, but the Corps of Engineers has prepared a Special Flood Hazard report for this drainage (1975).

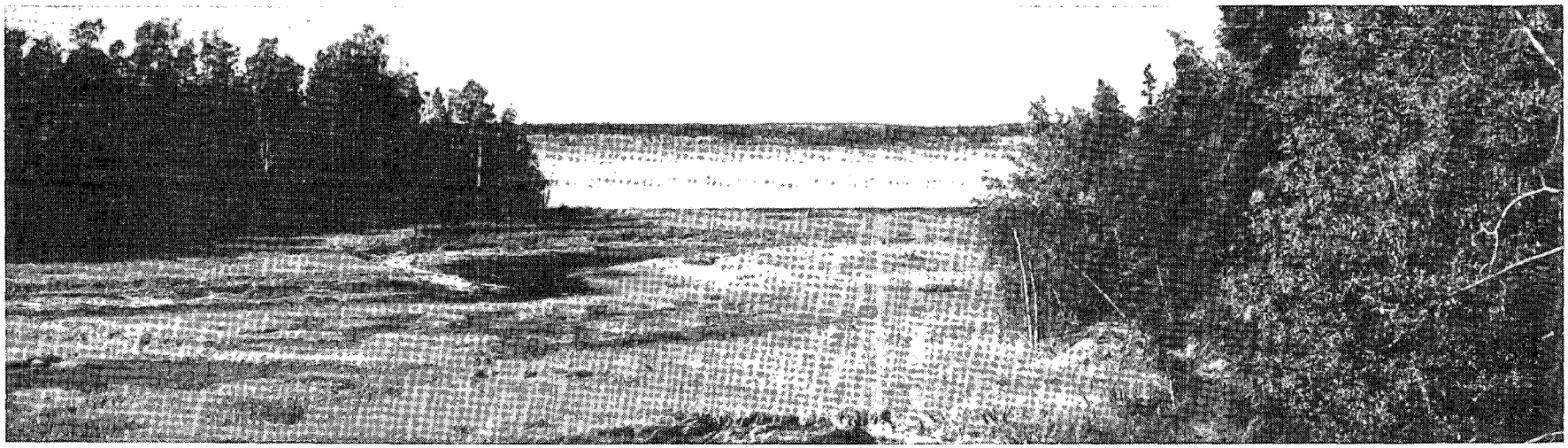
Segment 1: Northern Lights Boulevard to the Alaska Railroad tracks culvert.

The creek crosses Northern Lights Boulevard in a culvert and flows through residential areas in a well-defined channel. A new subdivision is being developed immediately adjacent to the drainage. Road construction and surveying for this development has already taken place. Spoil has been dumped into the wetlands during construction. It is not known whether or not the filling has taken place with the approval of the Corps of Engineers. No slope stabilization has taken place, and extensive sedimentation of the channel has resulted. Bulldozed earthen material and trees are encroaching in the drainage channel. **This activity is causing the kind of environmental damage that designation of Fish Creek as an AMSA was intended to prevent.**

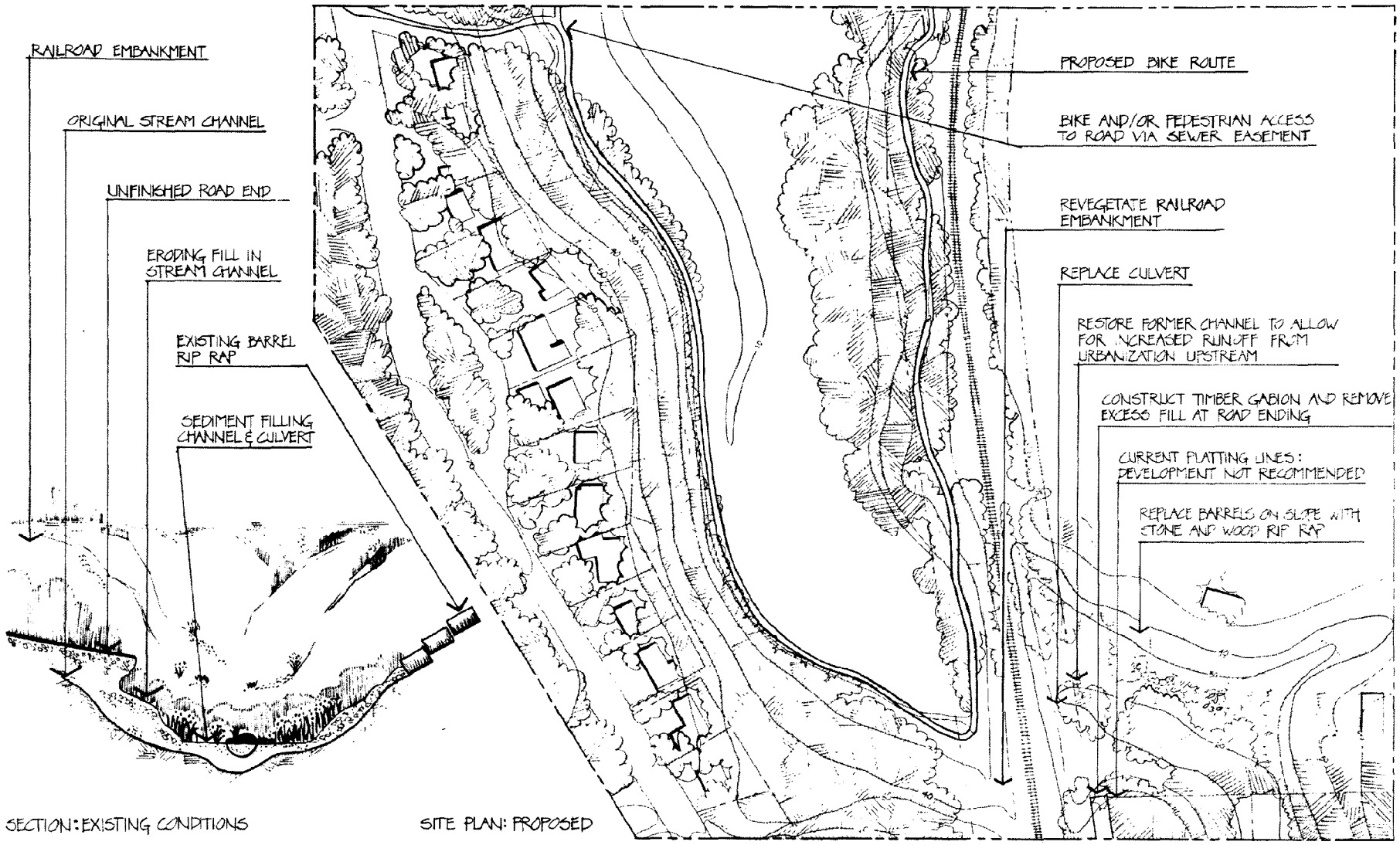
The creek channel above the railroad tracks is completely choked with sediment and debris. Consequently, the stream channel is no longer recognizable. The only culvert that drains the area is almost filled with sediment. This prevents normal flow of water and causes flooding at high flow. Secondary culverts with a larger diameter are so far above the water level that they probably serve as drainages only after severe ice and snow buildup in the spring.

Segment 2: Alaska Railroad tracks crossing to Bootlegger Cove.

Beyond the railroad tracks, the creek flows into a tidal estuary. With the exception of a large fill area near the mouth, the estuary is still in relatively pristine condition. The salinity gradient and vegetative cover



The mouth of Fish Creek largely remains in its natural state.



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AMSA Site Plan: FISH CREEK

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: NORTH

have been affected by the reduced fresh water flow in recent years. Although the railroad embankment has been in place since 1918, the sedimentation problem has been greatly aggravated by new development and road construction. The recreation/open space quality of this part of Fish Creek is quite high, both because of its proximity to residential areas and schools, and because of its scenic and biological assets. It is the only estuary in the Anchorage Bowl which features a sand dune with relatively undisturbed dune grasses. Because the wooded edge of the estuary north of the tracks has been preserved, and residential development in this area has adequate setbacks, a number of unusual species of shorebirds and waterfowl feed here. The estuary itself has high scenic, nature study and open space value.

The location of the creek in a heavily urbanized area increases its value as a public resource. Ownership of the tidelands is Municipal, except in the area of the Alaska Railroad right-of-way. North of the railroad tracks, individual property ownership extends to the 100 year floodplain except near the mouth of the estuary. South of the tracks, however, private ownership extends to the centerline of the stream channel on both sides.

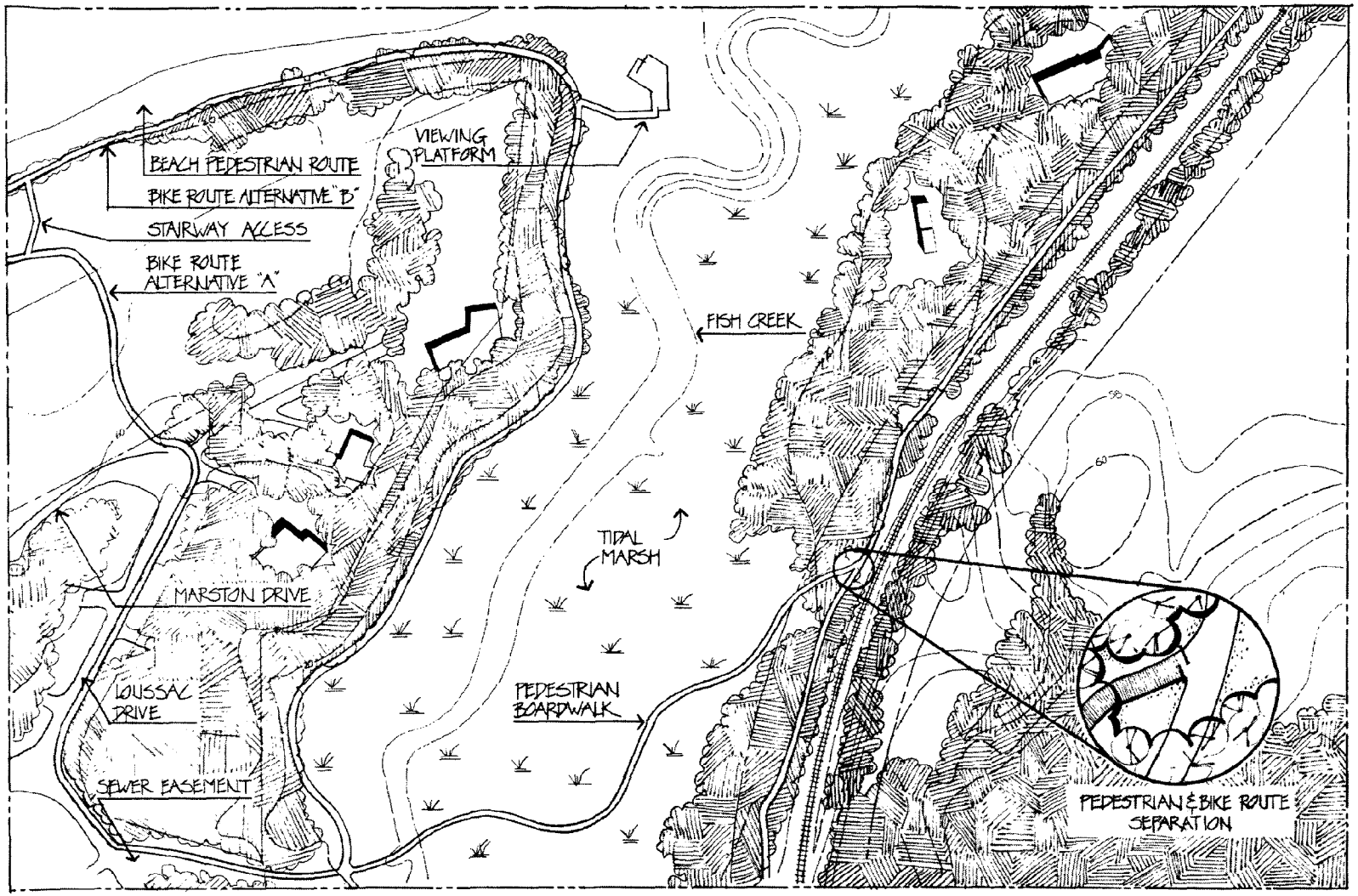
The future of this delicate coastal wetland is being threatened by upstream development. Increased sediment load and runoff volume are already changing species composition in the marsh. The site is in immediate need of restoration. Development in either segment 1 or 2 would change the hydrologic quality of the estuary.

In the context of the Coastal Access, Resource Protection and Scenic Areas Plan, several alternatives have been proposed to provide public access to the area. The most reasonable is to bring a coastal bicycle route across the railroad tracks from Westchester Lagoon at an existing (driveway) intersection, and follow a cleared roadbed which is separated from the railroad tracks by a buffer of trees and a small hill. The bicycle/pedestrian path would circle the marsh on existing pathways above the 100 year floodplain. A boardwalk limited to pedestrian use would cross the estuary, allowing closer observation of the estuarine vegetation and wildlife. A second boardwalk would protect the small dune area. Nature trail information signs and widened areas for seating and educational displays could appear at regular intervals along the boardwalk.

Recommendations:

The segment of Fish Creek between the railroad culvert and Northern Lights Boulevard should receive immediate attention. Development of land within the 100 year floodplain should not be allowed in this area. Although Floodplain Zoning Regulations require a special permit and construction restrictions, they do not provide adequate protection for this area. It is hoped that the Coastal Management Plan will be able to prevent unsuitable development in both segments 1 and 2. All construction should be halted in this area until slope stabilization efforts reduce the sediment load in the creek to the satisfaction of the Corps of Engineers and CZM requirements. Aesthetic factors should be considered when choosing slope stabilization techniques. Any building construction that takes place should be considered when choosing slope stabilization techniques. Any building construction that takes place should have a 50 foot setback horizontally from the 100 year floodplain as measured by the National Flood Insurance Study (the 'Intermediate Regional Flood' of the Corps of Engineers Special Flood Hazard Report). Development of land that is contiguous with the floodplain will be subject to design review for consistency with the intended use of the area for nature study. Slopes should be revegetated immediately after construction, using local species. The culvert beneath the railroad tracks should be cleared out on a regular basis by the Alaska Railroad, and consideration should be given to installing a larger culvert if it is demonstrated that this would not lead to greater sedimentation load in the estuary. The installation of trash racks upstream from the culvert is recommended to reduce culvert plugging. The estuary should be closely monitored to allow recognition of any threats to its viability.

Development of the nature trail should be in a park-like setting as a logical connection to the coastal access routes and the Chester Creek Greenbelt-Westchester Lagoon parcourse system. Protection of the biological and physical systems should be the highest priority in development of this area for recreational use.



8

AMSA Site Plan: FISH CREEK

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: 1"=100' NORTH

Point Woronzof Fossil Beds Management Plan

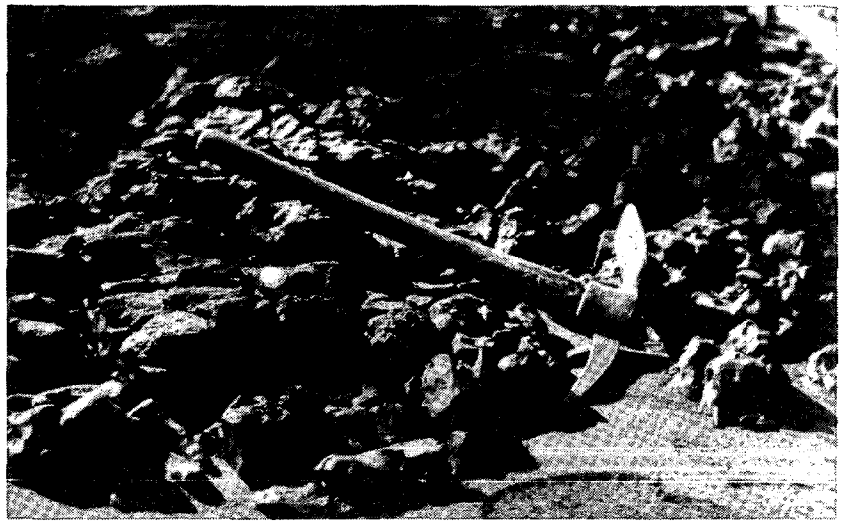
Area Meriting Special Attention #2

The Bootlegger Cove Clay deposit between Earthquake Park and the end of Point Woronzof contains the only known fossil bed in the Anchorage area. The fossils are mostly shells of mollusks, approximately 14,000 years old. The area has been studied extensively by Henry Schmoll of the United States Geological Survey, who served as a consultant in the development of this plan.

The fossils are scattered about twenty feet below the top of the clay layer which underlies peat sand deposits at Point Woronzof. The bluff is very steep and actively eroding (up to two feet per year) at this site. The Bootlegger Cove Clay is re-exposed each spring as erosion occurs on the bluff. The deposit is easily accessible from the beach except at extreme high tide. The fossils are in a discontinuous layer that is one to four feet in depth, while the exposed clay in which they are found is twenty to sixty feet deep. The layered deposits at Point Woronzof illustrate the geologic history of the area. The clay deposit is probably marine in origin, since it contains the shells of saltwater species. This is evidence that sea level was considerably higher at the time that this deposit was formed, probably in an interglacial interval. The clay is of interest in relation to its role in the 1964 landslide, its use by local potters in ceramics, and its importance in the hydrologic cycle of the region. The overlying deposits of sand and gravel are of glacial origin. Additional educational opportunities include viewing erosion processes, such as slumping, mud flows, tidal erosion and deposition, and bluff recession.

Recommendations:

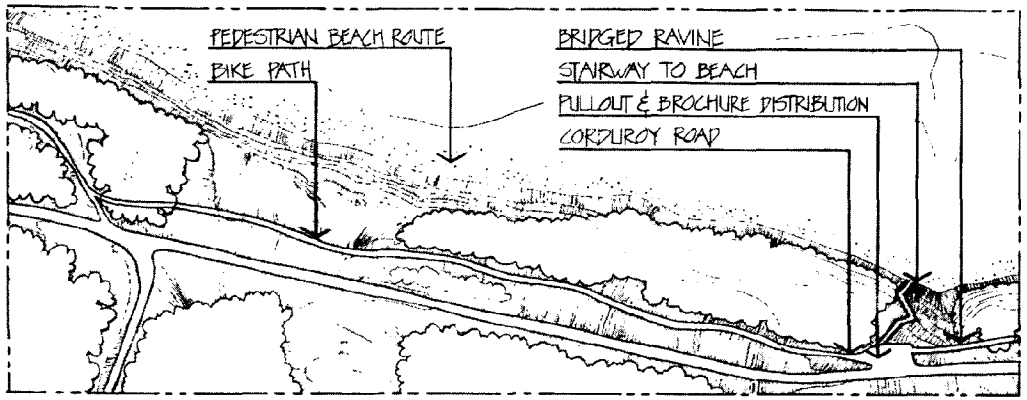
Access to the area will be provided by a coastal bicycle route. Pedestrian access down to the beach would be on a stairway adjacent to the small ravine near the Earthquake Park Picnic Pullout. Parking for two to three cars is available at the intersection of Old Clay Products Road with the Sewage Treatment Plant Access Road. The stairs down from the road and bikeway would be built when the proposed bicycle route is constructed. Both would require extensive slope stabilization to control bluff erosion.



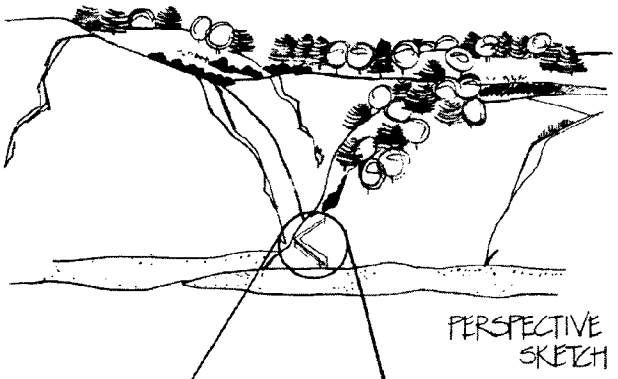
Bootlegger Cove Clay oozes out over the sand, forming smooth, irregular castings on the beach (Knik Arm).

A sign which explains how this area illustrates dynamic landscape processes should be placed near the top of the stairway. Caution signs, regarding high tides and seasonal mudflows, should also be posted. The beach access point should be closed during hazardous periods. This would be a good place for a tide table and warnings about bluff erosion, quicksand and tidal currents. The pedestrian walk along the beach would continue to the graded jeep trail at the present gravel extraction site at the end of Old Clay Products Road (if the graded trail is maintained). An educational brochure for the fossil beds will be prepared. It should be explicitly stated in the educational brochure or signs that the value of the area to the community will be reduced by removal of fossils from the site. However, it is unlikely that the supply will be exhausted because new fossils are constantly being exposed through the erosion process.

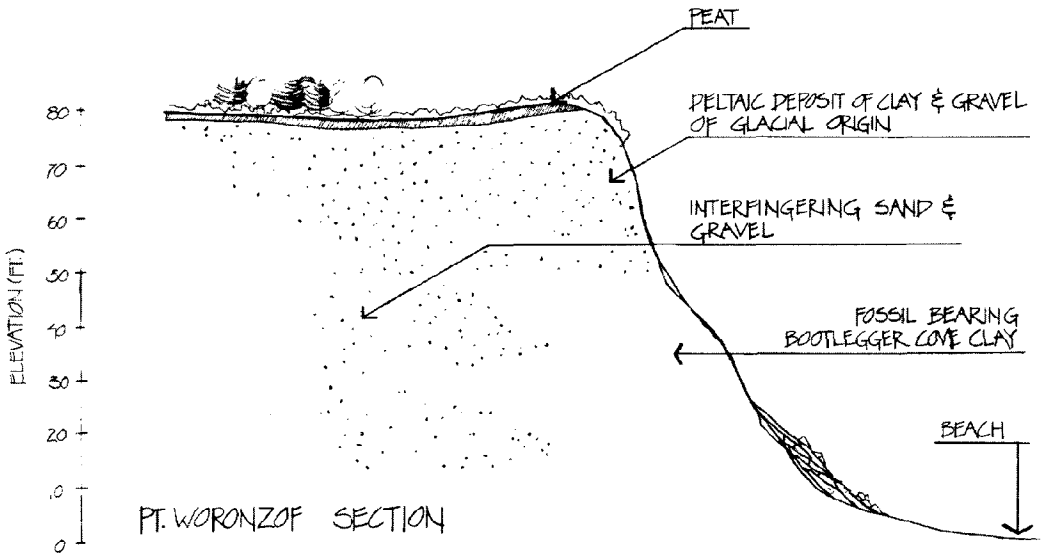
It is not recommended that this site be developed extensively. Although small numbers of fossil hunters will have no impact on the area, large numbers would contribute significantly to bluff erosion. The areas should be checked regularly to make sure that providing public access does not cause excessive damage to the area.



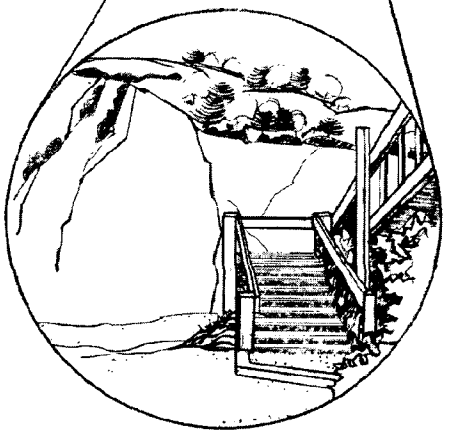
SITE PLAN



PERSPECTIVE SKETCH



PT. WORONZOF SECTION

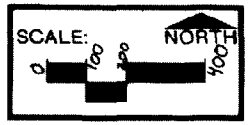


STAIRWAY TREATMENT

13

AMSA Site Plan: PT. WORONZOF FOSSIL BEDS

DISTRICT COASTAL MANAGEMENT PROGRAM **MUNICIPALITY OF ANCHORAGE**



Tanaina Archaeological Site Management Plan

Area Meriting Special Attention #3

The Tanaina Archaeological Site is located near the bluff edge, approximately one-half mile south of the Sewage Treatment Facility on Point Woronzof. Preliminary archaeological work has been done in this area by Doug Reger, State Archaeologist, who served as a consultant in the development of this plan. Alaska Methodist University was involved in excavation of one house pit in 1967. The site consists of eight house pits, several storage pits, the roof of a grave house, several grave pits, and a midden and sweat house below the bluff. This is the only known archaeological site in the Anchorage Bowl.

The nation known as the Tanaina are Northern Athapascan Indians. Their former territory included the entire land area around Cook Inlet and its tributary streams. This site was probably the location of a seasonal fishing village. The more permanent shelters used by the Tanaina consisted of an excavated pit with a log structure over it. The semi-subterranean house, known by the Russian term "barabara," was characteristically used during the cold months. Less permanent structures were often used in the summer. Since this site is not located near any major streams, it may have been located here for fishing access to Cook Inlet.

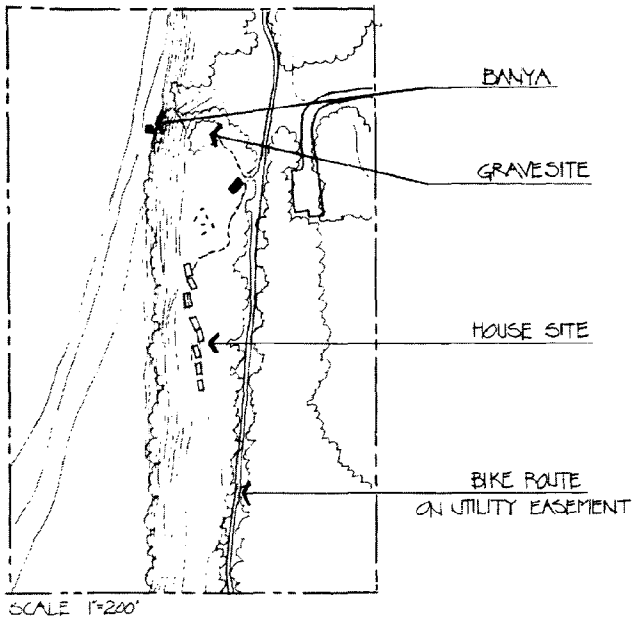
There are three distinct areas of this village site. The grave area is on top of the bluff, and consists of several pit areas and a grave house roof. Below the grave area is a "banya," or steam house. The banya is probably more recent than the rest of the remains. Rusted tin cans and cracked bones (a 'midden' deposit) were found near it. The house pits are probably "prehistoric," since they have been tentatively dated prior to 1741 (the time of Bering's explorations). The house pit area is approximately one-eighth mile south of the grave area. Most pits consist of two rectangular rooms, connected by a doorway or passage.

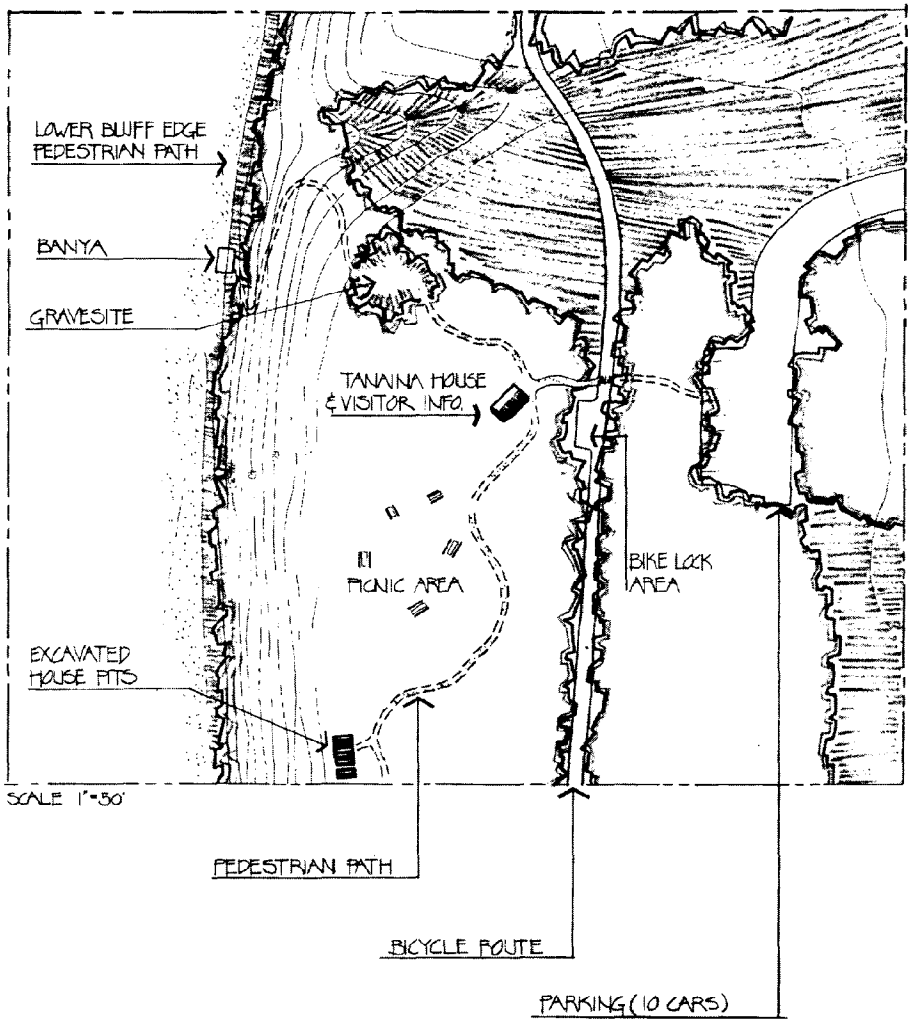
Although this site is not easily accessible, it has already been damaged by activities related to gravel extraction. One house pit has been bisected by a bulldozer cut, and there is evidence of digging with power equipment near the grave area. Although the underground electric easement passes nearby, it was deliberately routed inland to avoid damaging the site.

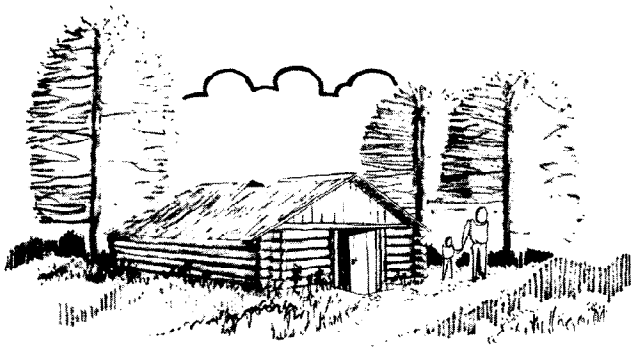
Recommendations:

The site should be thoroughly studied before trail access is provided because of its fragile nature and potential archaeological importance. Ideally, thorough excavation of several house pits and the grave area should take place under the direction of a professional archaeologist before the trail is completed. If it is determined that the site is eligible for the National Register of Historic Places, it would be appropriate to have a Tanaina culture interpretative facility at this location. The site could be made accessible to vehicles by constructing an auto turnout from the Airport West Access Road. A model "barabara" or shelter could serve as a trail connection for the coastal route, the wetland areas and the steam house below the bluff. If the site is not significant enough to warrant nomination to the National Register, an excavated house pit could still be fenced off for display purposes. In this case, the trail system would provide the only access to the site. A small picnic area and educational materials would be the only development recommended.

If there is no possibility of a thorough archaeological investigation before the trails system is constructed through the area, it is important that adequate consideration be given to preventing vandalism from occurring at the site. No information should be posted relating to the site until it has been investigated, and access to the area from the trail should be limited. The trail should be built on the east side of the electric easement in this area.







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AMSA Site Plan: TANAINA ARCHAEOLOGICAL SITE

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: NORTH

Point Campbell-Point Woronzof Wetlands Management Plan

Area Meriting Special Attention #4

The wetlands between Point Woronzof and Point Campbell are owned by the State of Alaska. At present there are no specific management provisions for this area other than general tideland restrictions under state statutes. Ownership above the bluff includes Municipality, State Department of Transportation, Federal Aviation Administration, and U.S. Army. The wetlands consist of pebble beach areas, tidal wetlands and mudflats. The unique vegetative community supported by the wetlands is important habitat for migratory waterfowl and shorebirds. This area is used extensively in early spring and late fall for feeding. It is the most remote area of the coast in the Anchorage Bowl, and still supports duck hunting activity. The approach zone for the airport east-west runway crosses the wetland near its center. The area has high scenic, educational and recreational value.

The steep slope along the tidelands is vegetated and more stable than the vertical bluff type. However, tidal erosion and deposition are changing the shape of the tidal land area constantly. The heights of the mudflats has changed noticeably within the last few years (Schmoll). The landscape dynamics have shifted considerably after the 1964 earthquake.

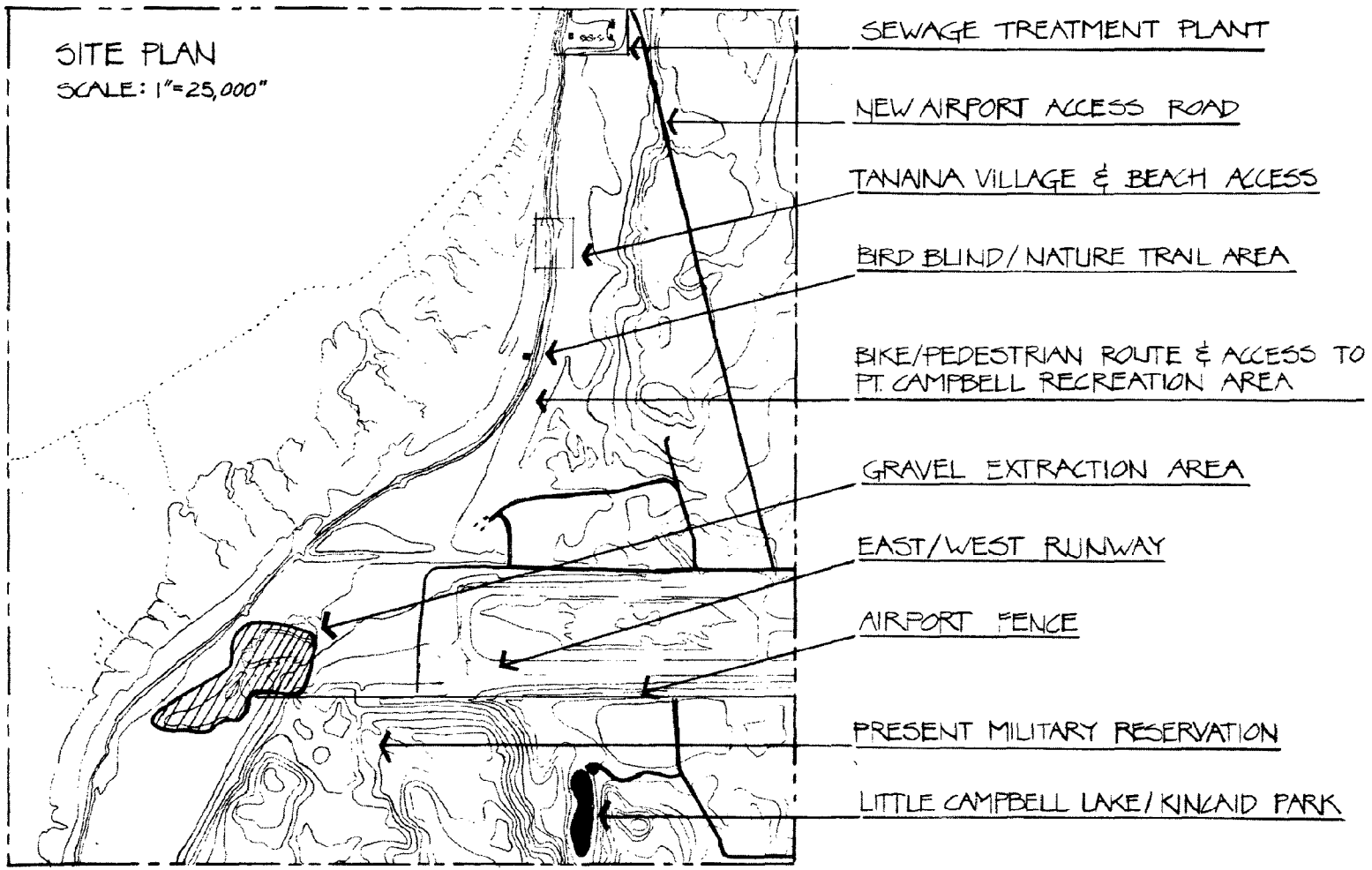
Recommendation:

The proposed coastal bicycle/equestrian/pedestrian trail would provide access to this area. The trail would be located near the top of the bluff, with access points leading to a bird blind and nature trail below. Facilities should be of an informal nature, only accessible to pedestrians. Access down to the coast would be established in the vicinity of the proposed east-west fence that extends to the bluff along the north side of the airport runway. A winding, stabilized dirt or gravel path should be established near the Tanaina Archaeological Site and the Point Campbell Recreation Area after these two sites are developed. No hunting would be allowed after these public access facilities are constructed. The District Coastal Management Plan states that:

> The site should be designated as a state game refuge, administered by the State Department of Fish and Game and included and made part of Potter Game Refuge. Nature trails should be developed and public access provided. A management plan should be prepared jointly by the Municipality of Anchorage and the Alaska Division of Parks and Department of Fish and Game.

Point Campbell wetlands.

At the present time, the Municipality is working out a Memorandum of Understanding with the Department of Fish and Game, concerning compliance with the Anchorage District Coastal Management Program. This is the first step in developing the cooperative management plan. The arrangements for the Point Campbell-Point Woronzof wetlands should be made in conjunction with the plans for the Potter Nature Center and the management of Potter Marsh. The site plans for the area included in this report are in concept form only. This is due to the present difficulty of access to the wetlands from the military base, and the extensive gravel extraction and construction activity near the end of the east-west and north-south airport runways. No base topographic map is available for the area of the Nike Missile Base. Specific siting of the bird blind and nature trail should take place after the Municipal land selection situation has been settled, since this will affect most of the upland areas adjacent to the wetlands. A visitor brochure will be developed as a guide to the wildlife and scenery of this area.



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AMSA Site Plan: PT. CAMPBELL PT WORONZOF WETLANDS

DISTRICT COASTAL MANAGEMENT PROGRAM **MUNICIPALITY OF ANCHORAGE**

SCALE: NORTH

Point Campbell Sand Dunes Management Plan

Area Meriting Special Attention #5

The Point Campbell Sand Dunes are migrating northward at the bluff edge of Kincaid Park. Although in the past dunes have formed along the top of the bluff closer to Point Campbell, those are all stabilized by vegetation. Gravel extraction at Kincaid Park apparently activated this dune. A combination of the use of the bluff edge as a dump area and the dirt bike racetrack on the site have provided plenty of loose sand for dune formation. Aside from the fact that these cliff head dunes are unique in the Anchorage area, the gravel deposits and deltaic features visible here are most unusual from an educational standpoint. The layers of sand and gravel are exposed due to the gravel extraction activities, which allows the opportunity to view cross sections of the deposits. Another valuable asset of this location is the height of the dunes adjacent to the pit area. From the northern dune, views of the entire region are excellent. It is probably the best place in the area to describe the glacial history of Anchorage. Evidence of all five glacial advances are visible from this spot. Anne Pasch, a Professor of Geology at Anchorage Community College, and Henry Schmoll of the U.S. Geological Survey, served as consultants in the development of this plan.

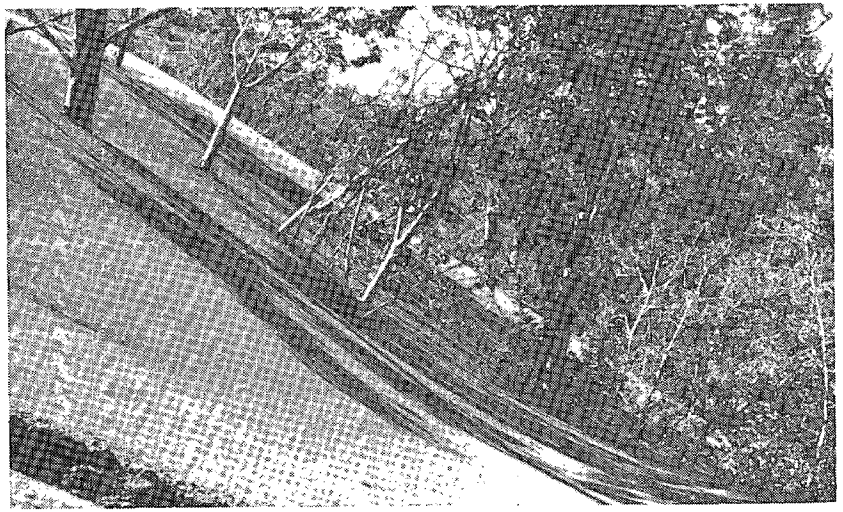
One of the major difficulties in this area has been conflicts between trail bikes and other park uses. Since the geology of this site is of particular interest, it is important that students be allowed safe access. The former use of the area as a shooting range has not been completely discouraged, and the area often reverberates with the sound of guns. The site is also used as a dump area; this activity continues despite the Municipality's efforts to stop it.

The former pit area is presently designated as a motorcycle racetrack, and it receives heavy use. It is not a particularly appropriate location for this activity, but since a precedent has been set, it will be quite difficult to relocate the racetrack. Most of the paths in Kincaid Park were intended for use by skiers, pedestrians, and equestrians. The use of these trails by dirtbikes has caused a great deal of damage, and makes them unsafe and unpleasant for pedestrians.

Although it is quite obvious that dirt bike scars are obliterating several important geologic features of the sand dunes, it is not clear whether the damage is of a permanent nature. Examples of dune features being damaged are wind ripple marks, buried soils horizons and dune bedding deposits. According to Jim Stewart of the Alaska Motorcycle Association, who has been watching the area closely since 1975, the tracks left by the dirt bikes are of a temporary nature due to the shifting sands. It is quite possible that the use of motorized vehicles is not harmful to the surficial geology of this area, but motorized uses are incompatible with the other activities that go on in this vicinity.

Recommendations:

Limiting automobile and dirt bike to this area has traditionally been a problem, but the Parks and Receation Division has been using fencing and signage to try to control dirt bike use. The master plan for Kincaid Park is being prepared for the Parks and Recreation Division by Group III Design, landscape architects. It is hoped that the coastal zone management recommendations will be considered in their design. Rules for motorcycle use should be posted. These should include a map of dirt bike trails and hours of use of the track. Riders will be



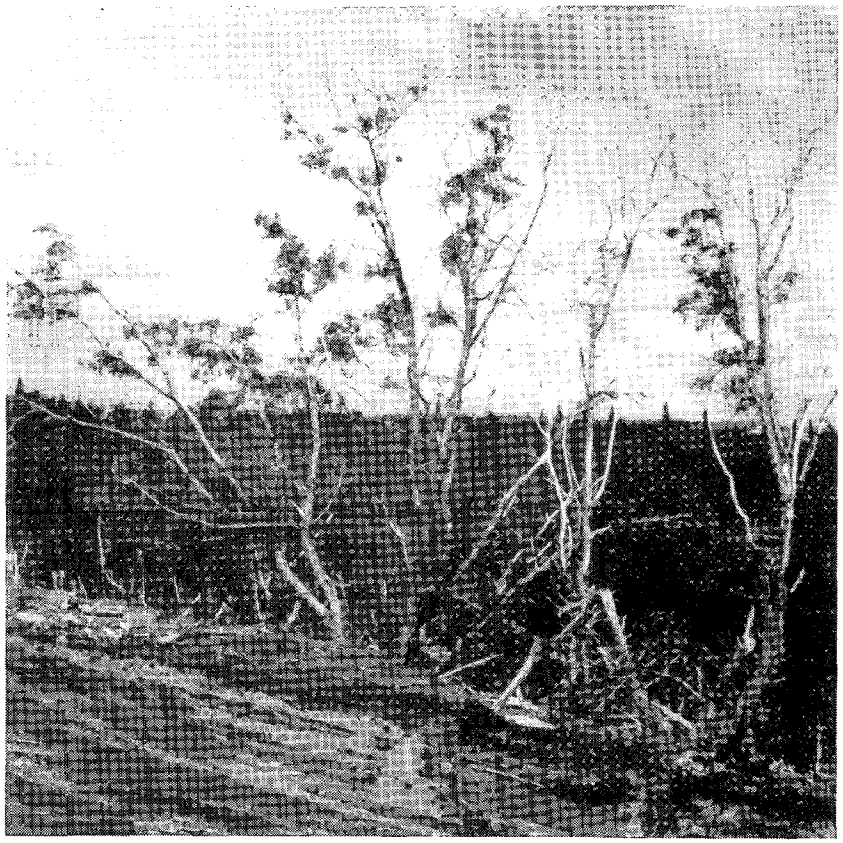
The Point Campbell Sand Dunes (Master Plan Site 19) are shifting northward, burying trees as they move.

required to wear helmets, to have silencers on their bikes and stay off of the road. The track and trails will be closed for a short period in the spring when conditions are muddy.

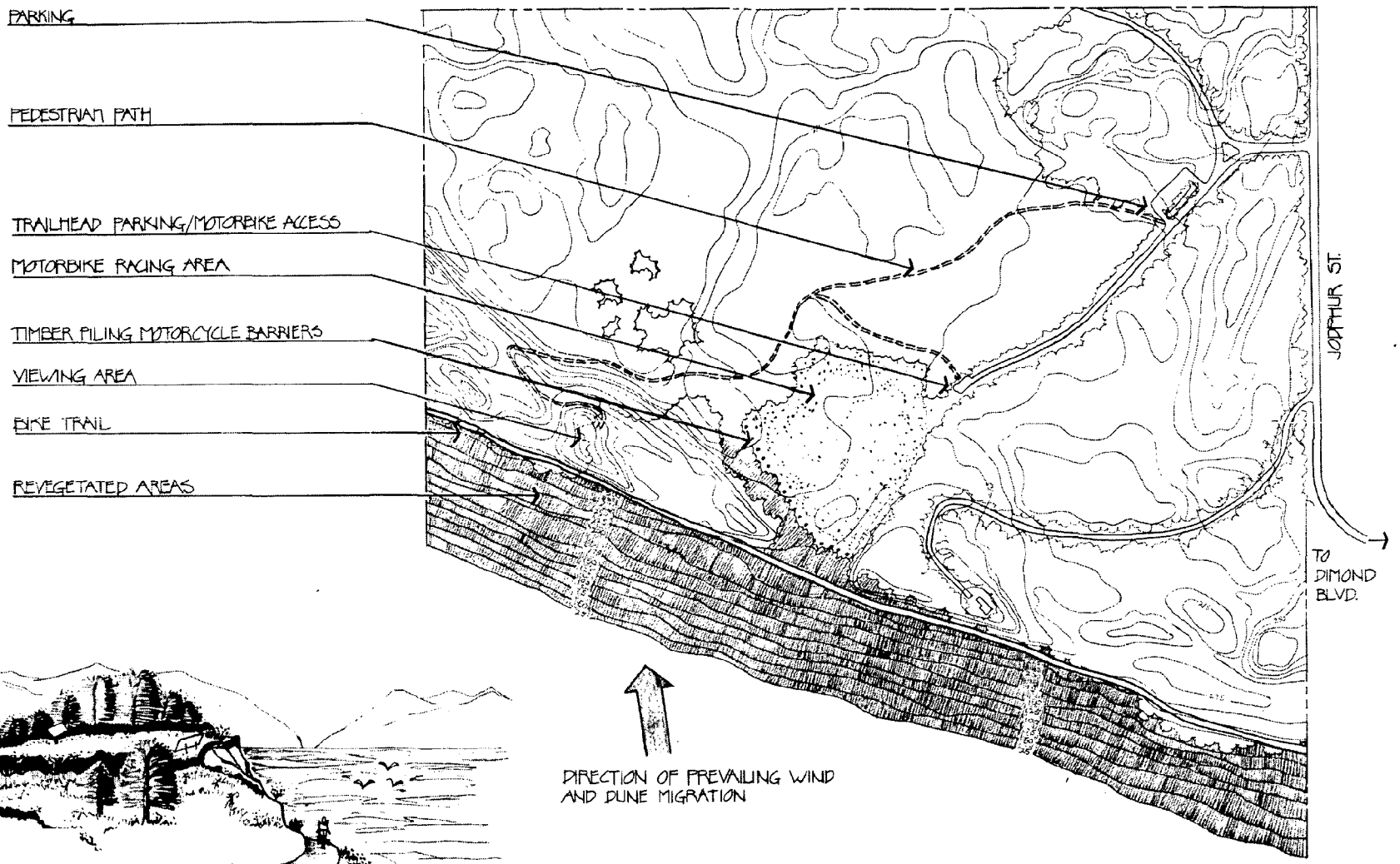
At present, the motorcycle club has no alternative race track area, and though use of gravel pits and roadside trails is prevalent, there is no satisfactory cross-country dirt bike trail. A number of alternative sites for motorized vehicle use have been identified in the **Areawide Trails Plan.** The alternatives proposed within the coastal zone are addressed here:

Kincaid Park (the site of this AMSA): The existing racetrack is feasible on a restricted basis, though as the park takes on a more urban nature due to increasing population in the vicinity, it may have to be phased out. The higher westerly dune should be off limits for trail bikes, and there should be assigned times during the week when motorized vehicle use is not allowed on the whole site. This will enable class field trips and public visits to the area without distracting loud noises nearby. It is recommended that two weekday mornings, and one afternoon (preferably Friday) be reserved for educational use of the area. The effect of reducing the trail bike activity on the hillside dune area should be monitored closely, to determine whether motorbike activity is actually responsible for the dune migration by preventing vegetative cover from stabilizing the slope. An observation area should be established at the top of the hill, with an inconspicuous stabilized trail through the vegetation on the west side. The trail should circle outside the race track, through the woods. No motorized trail use will be allowed outside of the gravel pit area within Kincaid Park. Motorized vehicles will have to observe a setback from the coastal bicycle route, which will pass between the race track and the bluff. In return for restricting use at this end of Kincaid Park, a separate new staging area, cross-country motorcycle trail and racetrack area should be established. The staging area would be composed of a one-way circuit of trails south of the airport fence. The trail will go to the very large gravel pit area at the end of the east-west airport runway (also identified in the **Trails Plan**). Plans for regrading this area should be done cooperatively with the motorcycle club to allow the best possible facilities for its use. This trail location is very suitable because it concentrates noisy uses near the airport approach zone and allows dirt bikers to have trailriding opportunities they had not had previously.

The trail bike area just north of the east-west runway identified in the **Trails Plan** is not suitable for trail bike use, due to its proximity to the detoxication center. This pit is not extensive; consequently, it does not warrant development for bike use. Access to the site is also a problem. The last alternative that has been identified within the coastal zone is the gravel pit at Point Woronzof (Master Plan Site #15). Since motorized trail use is not coastal-dependent, inland alternatives are preferable. The viewing and coastal access opportunities available at Point Woronzof outweigh the site opportunities for motorcycles.



Eroding dune shows classic dune bedding deposits and buried soil horizons.



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AMSA Site Plan: PT. CAMPBELL SAND DUNES

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: NORTH

Potter Andesitic Dike Management Plan

Area Meriting Special Attention #6

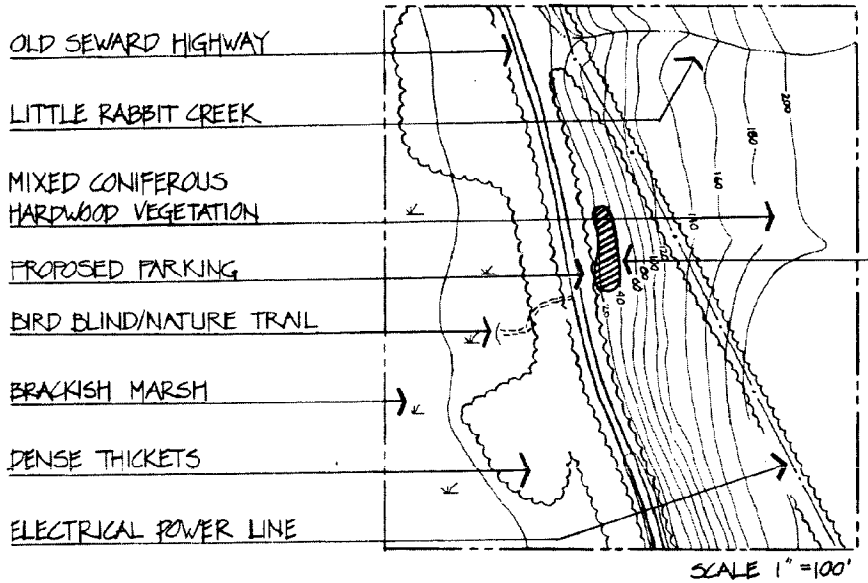
The Potter andesitic dike is an outcrop of bedrock of volcanic origin. It is located approximately three-quarters of a mile north of the weigh station along the Old Seward Highway. The dike consists of a light-colored rock face that has been exposed by blasting for road construction. The exposed area is approximately twenty feet high in the center, sloping down to ground level at each end. The site is quite near the electric powerline, about one-tenth of a mile south of where the power line converges with the road. The rubble at the bottom of the dike, and angles of cleavage illustrate joint patterns in the rock. This area is used regularly for geology field trips, since it is the only igneous (volcanic) dike exposed in the Anchorage area.

Recommendations:

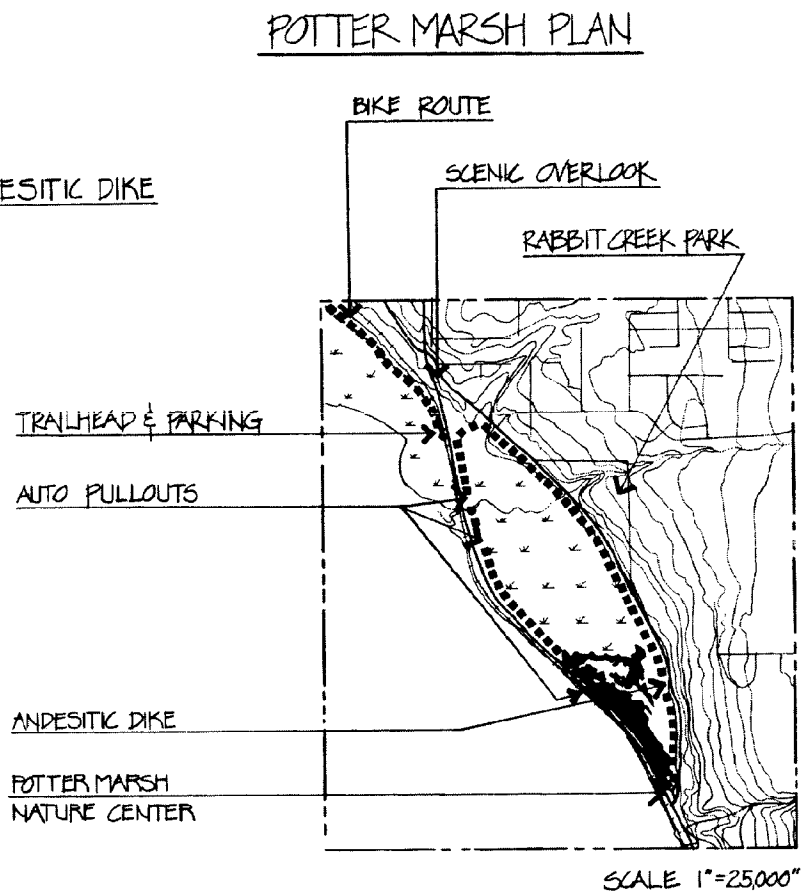
There is a muddy area between the road and the dike which is being used as fill area for road construction. It has no direct connection with a culvert or stream bed, and should be graded to allow parking for three or four cars. The rubble at the base of the dike should not be disturbed during construction, because it is important in illustrating the weathering process.

The coastal bicycle/pedestrian route will pass on the far side of the Old Seward Highway. A painted bicycle/pedestrian on-grade crossing should connect the trail to the dike. A collection of local rock types and educational information could be displayed at the Potter Marsh Nature Center (see Potter Marsh Management Plan). The trail between the nature center, the boardwalk/bird blind and the dike would allow a natural history education loop. A user brochure will be developed for this area.

The Andesitic Site is found on the ridge northeast of Potter Marsh.



ANDESITIC DIKE AREA



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AMSA Site Plan: ANDESITIC DIKE

DISTRICT COASTAL MANAGEMENT PROGRAM

MUNICIPALITY OF ANCHORAGE

SCALE: NORTH

Potter Marsh Management Plan

Although Potter Marsh has not previously been identified as an Area Meriting Special Attention (AMSA), it is recommended that it receive special consideration for AMSA designation. It is extremely important that an official management plan be written for the area in order to clarify permissible land uses in the area. The marsh is presently under the jurisdiction of the State Department of Fish and Game. The Department has indicated an interest in working out a management plan with input from other sources, such as the State Division of Parks, the Municipality, and the Audubon Society.

Potter Marsh is probably the habitat area of highest public value in the Anchorage Bowl. It attracts students, tourists, and residents in large numbers because of easy access, excellent birdwatching opportunities and high aesthetic quality. The future of the marsh is dependent on sensitive construction techniques in the residential areas upstream from the marsh. Proposed new roadways and pullout areas may also encroach on marsh habitat areas.

It is recommended that water quality testing programs be initiated to build a data base for measuring impacts in the marsh. More rigorous bird counts and vegetation analysis should be done on a regular basis to allow substantiation of habitat value. Access to the east side of the marsh is now limited for birdwatchers, and observation platforms and interpretive facilities should be considered for this area.

Proposed plans for Potter Marsh are included in the Andesitic Dike AMSA site plan. The nature center could distribute information relating to wildlife and coastal resources through a cooperative effort of the Alaska Department of Fish and Game and the State Division of Parks. Efforts to develop these plans would require coordination with plans for the historic Potter Section House, located just south of Potter Marsh on the Seward Highway. A bicycle trail would pass in a tunnel under the Seward Highway from the Trail Head Area. This route would continue adjacent to the road along the Seward Highway, but follow the twenty foot contour through the vegetation as it loops back on the east side. A boardwalk and bird blind connected to the bike route would allow birdwatchers a better vantage point to view marsh species along the Old Seward Highway.

One automobile pullout would be constructed near the north end of the marsh along the Seward Highway. Preliminary designs for this pullout have been proposed by the Department of Fish and Game. Two others have been proposed, but these would probably not be necessary if the nature center plans are carried out. Parking would be available for 36 cars and 8 buses in the nature center lot and pedestrian access would be possible around the marsh.

The Arctic tern is a regular summer visitor at Potter Marsh.

CHAPTER V

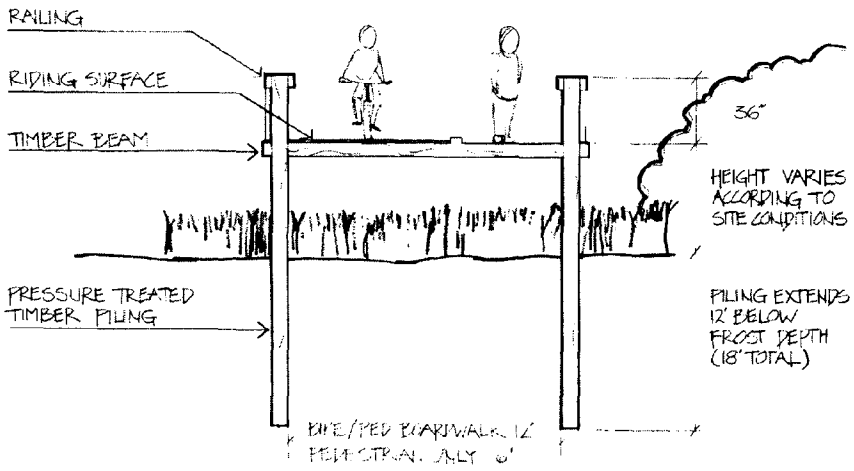
CONCLUSIONS AND RECOMMENDATIONS

- Conclusions
- Recommendations

Implementation

It is the intent of the Coastal Management Program to use existing local control mechanisms to implement its plans. These include zoning, subdivision, floodplain and other local regulations that presently control land use. Such tools can be used to provide zoning, setback requirements and right-of-way dedication procedures.

There are some land and water uses which require additional management controls. These uses are addressed in the context of the Coastal Management Plan and within this report. Once the plans are approved by the Coastal Policy Council and the Municipal Assembly, compliance with these recommendations is required. The Coastal Policy Council is responsible for establishing whether the District is actually in compliance with its own Coastal Management Plan. Through Federal 'consistency' and State 'compliance' regulations, land and water uses in State and Federal jurisdiction also have to comply with the District Plan.



TYPICAL CORRIDOR DETAILS: BOARDWALK TREATMENT

Tools for Establishing Public Access:

1) Gift

- Opportunities provided by proximity to the trail system and recreation areas would increase the value of the property, encouraging landowners to donate land for public use. A potential incentive to the donor would be the tax benefits of such a gift.

2) Public Purchase

- Fee simple title: Purchase of land at market value.
- Easement purchase: Obtaining partial interest in land for specific use. Property may be revalued for tax purposes to provide incentive to landowner.
- Eminent domain: Condemnation of private land for public purposes with full compensation to the owner.

3) Litigation and Legislation

- Prescription: Allows public access through land remaining in private ownership. Prescriptive use rights can be established based on existing use patterns. Existing footpaths to the coast might be used to establish easements in this manner.
- Dedication: May be implied or explicit; established by owner's acquiescence in sustained public use. Dedication is implied if it can be proven that the owner knows of this public use and has not tried to stop it.

4) Land Trading and Transfer of Development Rights

- Developer would dedicate land for public use in exchange for equally valuable lands elsewhere.
- Developer would trade right to develop land in exchange for right to develop elsewhere more intensively. Transfer of development rights commonly involves purchasing the rights from another developer.

5) Post Disaster Acquisition

- Federal purchase of property rather than compensating the insured to rebuild after a natural disaster. Precedent has been set by the National Flood Insurance Program.

6) Preferential or Deferred Tax Assessment

- Tax benefits for establishing public access easements and preservation of land for open space uses. Includes penalty provisions for owners who renege on the terms of the agreement.

7) Lease Agreement

- Municipality would establish a rental agreement with the owner for use of the land for a specified period of time.

8) Release from Liability Clause

- The trail easement contract would provide the landowner with assurance that they will not be liable for trail-related accidents that occur on their land.

The view from the Seward Highway overlook: The Potter Game Refuge, Fire Island and mountains across Cook Inlet

Conclusions

- The implementation and development of the facilities recommended in this report should be overseen jointly by the Planning Department and the Department of Cultural and Recreational Services. The key to a successful Coastal Management Program is consistency. It is recommended that one firm be hired to do all the design specifications for the facilities and trails in order to achieve integration of the various elements. If development were to proceed in a haphazard fashion, it would be very difficult to control environmental impacts and quality in coastal facilities.

- The implementation of this plan should proceed in phases. Although in some cases construction of the trail could be expected to precede site development, in the more sensitive ecological areas construction should be synchronized to avoid bringing in heavy equipment more than once. Construction of boardwalks in wetlands will have to be timed to correspond with freezeover in the fall. Facilities closest to existing population centers should be developed first. Ties to existing trails and parks also should receive priority. Management recommendations for the AMSA's should be compiled within the initial implementation phases.

- The educational concept of this coastal plan could provide community support for the project through coordination with local schools. Anchorage Community College, the University of Alaska and the Anchorage School District will all benefit from the use of educational materials, nature trails and coastal access areas provided by this plan. Biology, geology, art and history classes will cover material relevant to the "Landscape Dynamics" theme. Development of educational brochures or a study of the dune movement at Kincaid Park, for example, would make excellent student projects. The School District has a science consultant who might be of assistance in organizing such projects.

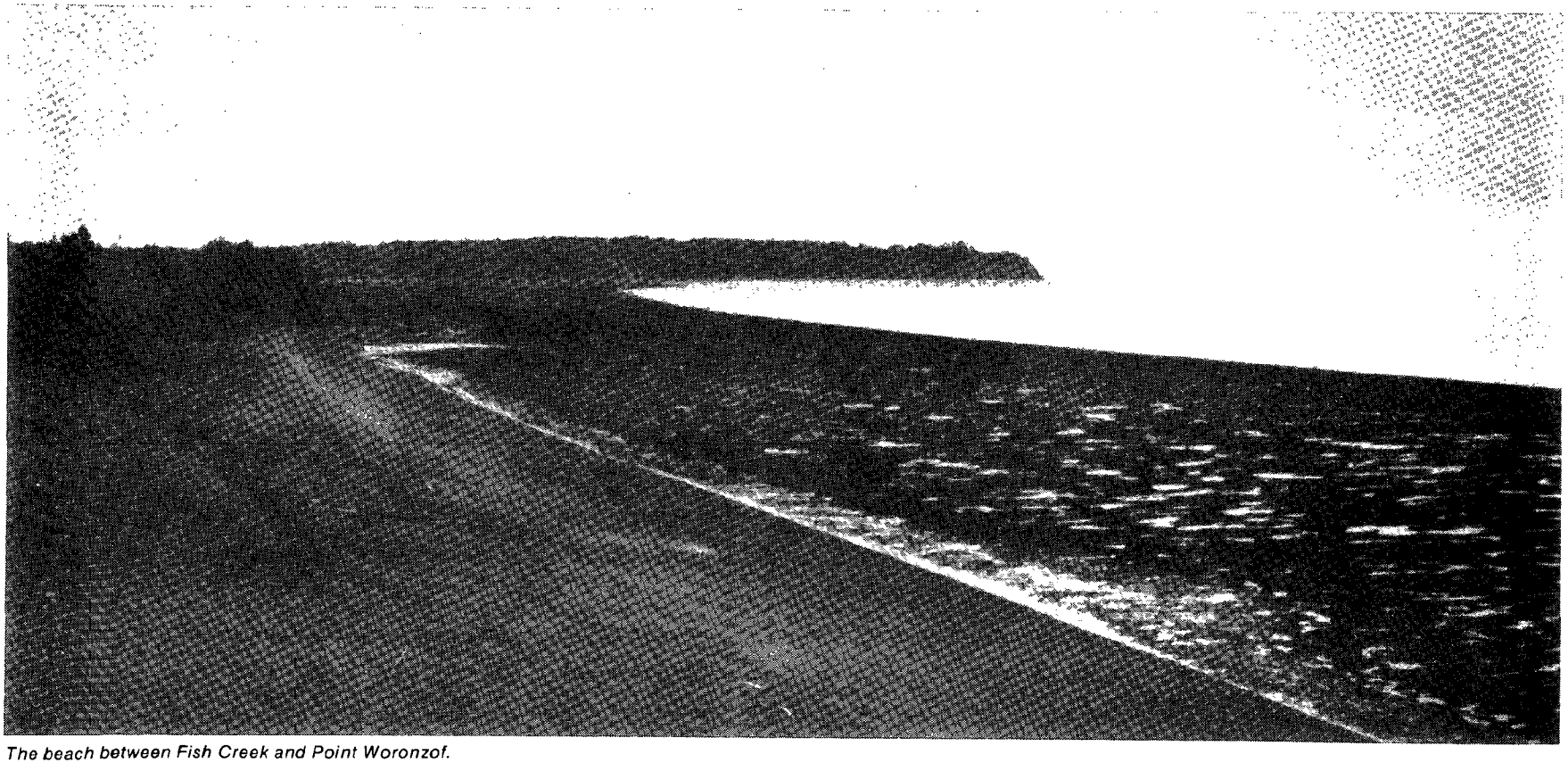
- Community involvement can be further encouraged by organizing hikes, races and field trips on the coastal trails through such organizations as the Boy and Girl Scouts, Nordic Ski Club, University Outing Club, Audubon Society, or the Dimond Range Horse Club. The Alaskan Motorcycle Club and the Snowmobile Club could help police the trails used by motorized vehicles and encourage their members to respect regulations. Community groups and homeowners associations would almost certainly want to be involved in locating trail connections that affect their neighborhoods. They could also be helpful in maintenance of trails and facilities. All of these organizations can contribute significantly to the development of the coastal recreation system.

- The Municipality should consider a "design review" process for visual quality control in coastal development. The Urban Beautification Commission, an advisory board consisting of local architects, landscape architects, and planners could advise the Planning Department on aesthetic considerations for development within the coastal viewshed.

- There is already some duplication of Coastal Management efforts between State, Federal, and Municipal agencies. It is recommended that coordination take place of agencies involved in Coastal Management activities in this area. Currently, the National Marine Fisheries Service, the State Office of Coastal Zone Management, Division of Parks, Department of Environmental Conservation, and Department of Community and Regional Affairs, as well as the Municipal Planning Department are involved with coastal management activities in Anchorage. It would be advantageous to have regular interactions between these agencies to assure cooperation between them.

- Private ownership of tideflats should be discouraged as a matter of policy. Although the State and Municipality own most of the tidelands, private ownership extends into many of these coastal areas. This is a really difficult situation, since wetlands regulations restrict development and result in a reduction of land values. Private ownership of parcels within the area of the Potter Game Refuge reduces the potential effectiveness of management of the refuge. Access to the shore is also made very difficult where private ownership extends into tidal areas.

- Most of the populated region of the Anchorage Bowl is near the coast. The importance of the coastal trail system as a linking element for the urban area should not be underestimated. A comprehensive brochure describing the coastal system, its facilities and educational concepts should be prepared. This information should be available at all transportation centers, parks, information stands, and at the access points for the trail system.



The beach between Fish Creek and Point Woronzof.

Developing Facilities Along the Corridor

Along the corridor there are a number of special sites - some accessible by car, some by the trail - which can be enhanced by cultural and recreation facility development. These sites, which include parks, stream courses, overlooks and natural areas, were described in the Master Plan chapter. The development of these facilities should be primarily coordinated through the Department of Cultural and Recreation Facilities. Already a number of these sites are slated for acquisition or development. It is recommended that facility development be balanced geographically and prioritized according to potential benefits to the most number of people. The following objectives should be considered in funding and development. Estimated costs are based upon similar public improvements and are expressed in 1980 dollars.

Presently Slated for Development

- Ship Creek Dam site
- Lyn Ary Park
- Earthquake Park development (a phase of the suggested Master Plan development)
- Ocean View Park extension (acquisition)

Short-Term Objectives

The following should be scheduled in planning and capital improvement programs during the next three years.

- Nulbay Park: the pedestrian walk along the shore should be coordinated with possible parkland acquisition in the area and developed (estimated cost: $25,000).
- Westchester Lagoon: exercise trail (cost would depend on whether or not the trail is to be gravel/woodchip or asphalt in composition).
- Fish Creek area: boardwalks (estimated costs are included in trail development costs).
- Earthquake Park: completion of pedestrian boardwalk and shore access platforms (estimated cost: $100,000).
- Fossil Beds: parking and access stairway (estimated cost: $25,000).
- Archaeological site: investigation under State Office of History and Archaeology and/or university auspices should be completed.
- Point Campbell Sand Dunes: buffers, picnic area and pedestrian improvements (estimated cost: $50,000).
- Klatt Road Park improvements: acquisition and park development (estimated cost of facility improvements: $125,000.) (Acquisition cost must be determined.)
- Oceanview Park extension: ball field development (estimated cost: $75,000).
- New Seward Highway overlook (phase one): parking, decking and landscaping (estimated cost: $200,000).
- Potter Marsh Nature Center: parking, pavillion, decks and landscaping (estimated cost: $250,000).
- Potter Section House improvements: preservation, parking, restrooms, viewing platform, and landscaping (estimated cost: $200,000).

Mid-range Objectives

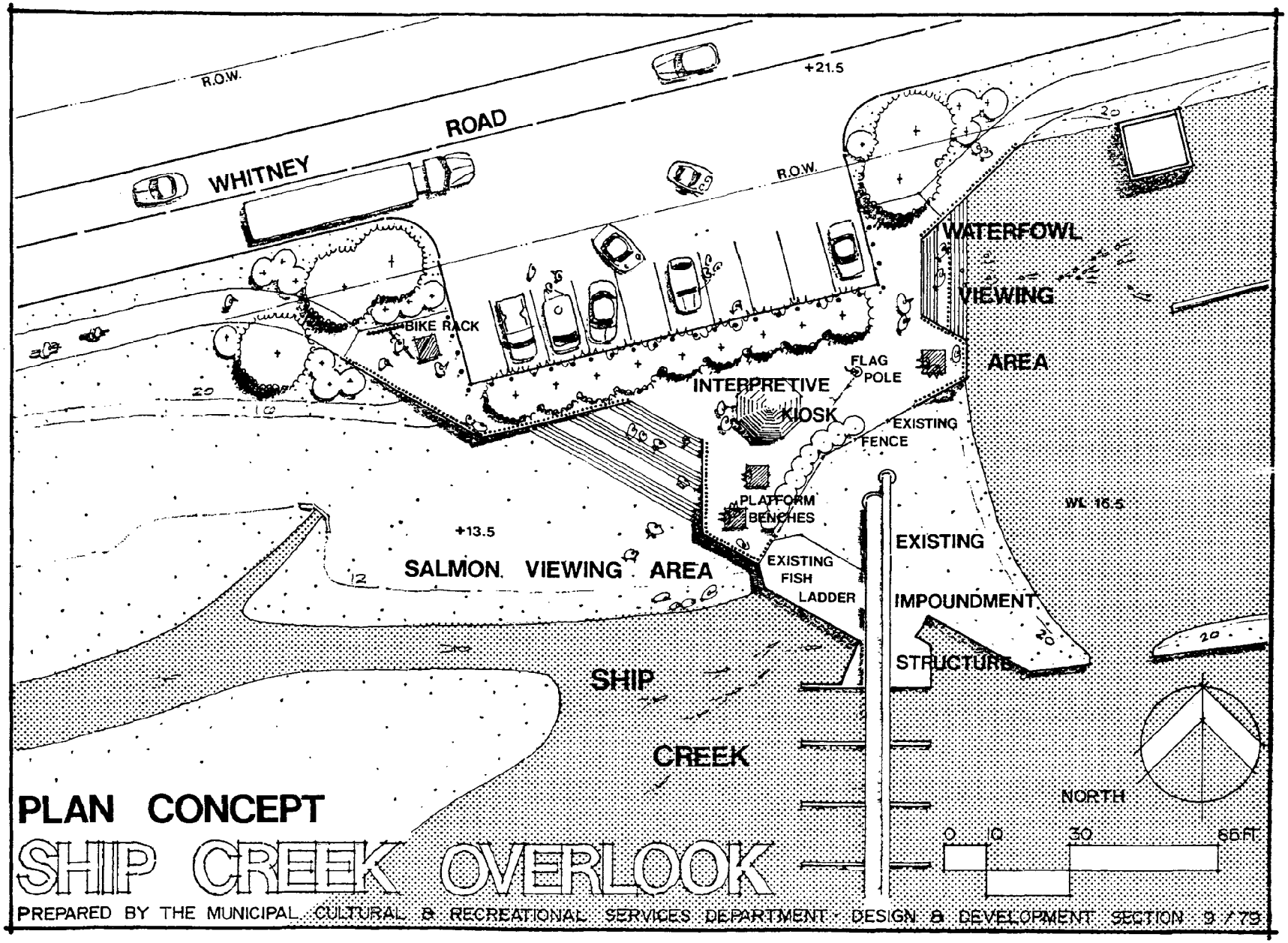
The following should be scheduled in planning and capital improvement programs between 1985 and 1990. Costs should be estimated when these improvements are programmed.

- Point Woronzof Overlook site: platform and related improvements.
- Point Woronzof Playground
- Point Campbell Wetland Facilities

Long-range Objectives

The following should be also considered.

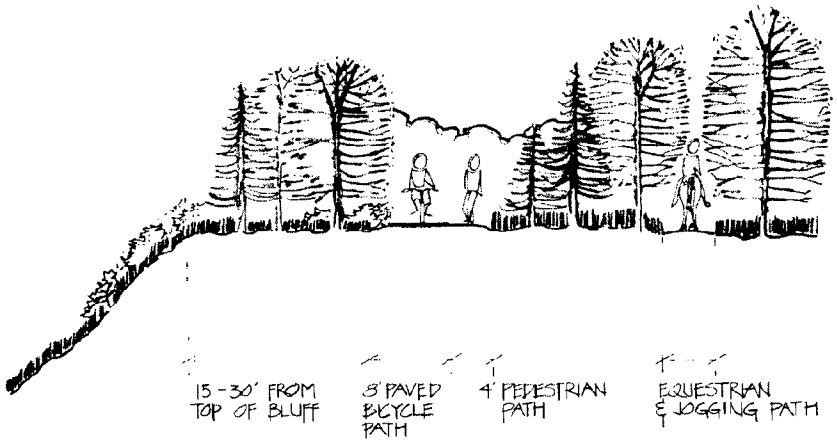
- Bootlegger Cove Log House: craft-center facility. This structure is presently owned by the Alaska Railroad and leased. When the leasing policy is terminated, the house, which has long been used as a potter's studio, could be converted into a craft facililty.
- New Seward Highway Overlook: in 1792 Captain Vancouver anchored off the coast at this site. As a commemorative, in similar style to Resolution Park, a Vancouver Statue and platform should be considered.


R.O.W.
WHITNEY ROAD
R.O.W.
+21.5
BIKE RACK
WATERFOWL VIEWING AREA
FLAG POLE
INTERPRETIVE KIOSK
EXISTING FENCE
PLATFORM BENCHES
WL 16.5
+13.5
SALMON VIEWING AREA
EXISTING FISH LADDER
EXISTING IMPOUNDMENT STRUCTURE
SHIP CREEK
NORTH
0 10 30 66 FT
PLAN CONCEPT
SHIP CREEK OVERLOOK
PREPARED BY THE MUNICIPAL CULTURAL & RECREATIONAL SERVICES DEPARTMENT - DESIGN & DEVELOPMENT SECTION 9/79

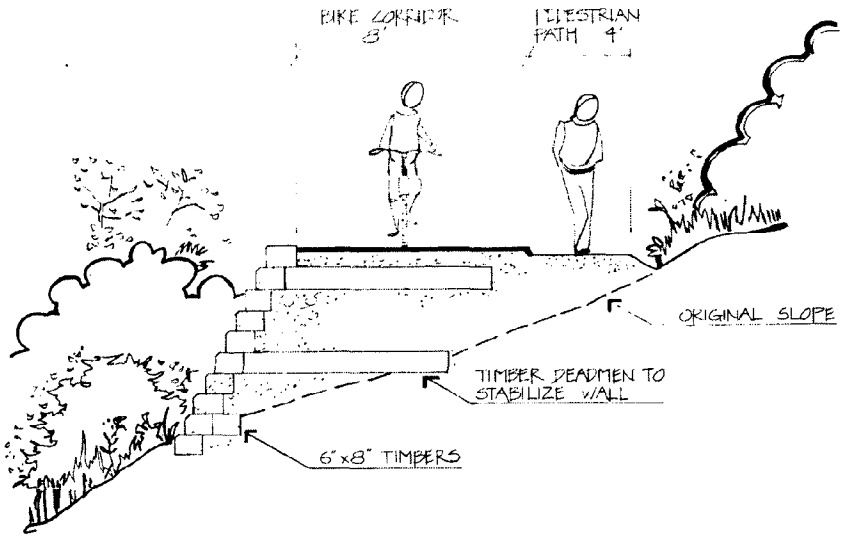
Developing the Coastal Trail System

The trail is the primary means to connect neighborhoods with the various cultural and recreational opportunities along the corridor. The trail itself will be approximately twenty-four miles in length. Of that total, about seven miles are in private ownership, most of which is undeveloped. Easements will have to be acquired across privately-owned parcels. It is projected that approximately $3,100,000 will be necessary for trail corridor acquisition, including settlement costs.

The trail will go across a variety of terrain, providing a diversity of scenic and recreation experiences. The development costs will vary depending upon the slope, soils and related construction parameters. Boardwalks will be necessary where marshes and streams exist. Over twenty-two miles of the trail will be a gravel-base, asphalt trail. This is the standard bike trail which has previously been developed through Anchorage greenbelts. The design and engineering costs of this trail system are estimated to be $900,000. The projected construction cost of the twenty-two paved miles, including slope stabilization, is to be $4,500,000. An additional $1,500,000 is projected for bridge and boardwalk construction.



TYPICAL CORRIDOR DETAILS: BLUFFTOP/WOODLAND SECTION



TYPICAL CORRIDOR DETAILS: LOWER BLUFF EDGE PATH

Summary

Easements	
Easement acquisition	$2,000,000
Negotiation and Documentation	550,000
Legal Services	550,000
Subtotal	($3,100,000)
Trail Development	
Engineering, design and surveying	$ 900,000
Construction:	
Paved trail (22 miles)	4,500,000
Bridges and boardwalks (2 miles)	1,500,000
Subtotal	($6,900,000)
Total trail cost	$10,000,000

Recommended Sequence of Trail Development

Two major segments of the trail corridor are particularly important to its overall development. One is the area from Downtown to Earthquake Park; the other is from Kincaid Park to Potter. These two segments are adjoined by a number of neighborhoods, including Inlet View, Turnagain, Sand Lake, Bayshore, the Klatt area and Oceanview.

The trail should be developed along these two segments first for three basic reasons: (1) residential areas and existing parks will be connected to the trail as a first aspect of corridor development; (2) some of the residential areas, especially south Anchorage, will be served by bike trails for the first time, and (3) the trail will be established and corridor opportunities will not be foreclosed by development. The following are recommended in order of priority.

(1) Trail development from Downtown to Earthquake Park and Kincaid Park to Potter, including easement acquisition, surveying and design, and construction.

(2) Trail development from Earthquake Park to Kincaid Park, including easement acquisition, surveying and design, and construction.

Mixed spruce and birch woodlands screen the corridor near Klatt Bog.

APPENDIX A
APPLICABLE STANDARDS

Use: Recreation

6 AAC 80.060. Recreation

Districts shall designate areas for recreational use. Criteria for designation of areas of recreation use are:

(1) the area receives significant use by persons engaging in recreational pursuits or is a major tourist destination; or

(2) the area has potential for high quality recreational use because of physical, biological, or cultural features.

This standard obligates the districts to provide for the recreational needs of their areas by stipulating that areas shall be designated for recreational use.

Project Response:

Field checks of the entire coast from Potter's Marsh to Ship Creek allowed observation of present use patterns. Wherever practical, existing use areas were incorporated into the Master Plan to protect public access for recreational purposes. In cases where present use is incompatible with environmental standards or ownership patterns, design and regulatory restrictions were considered to minimize conflict.

The resource analysis allowed identification of areas with high scenic, biological or human interest values. These locations were mapped and incorporated as elements in the Master Plan. Specific recreational needs of the community were considered in development of site limitations, to determine the best land use from a recreational standpoint.

Use: Historic, Prehistoric and Archaeological Resources

6 AAC 80.150. Historic, Prehistoric, and Archaeological Resources

Districts and appropriate State agencies shall identify areas of the coast which are important to the study, understanding, or illustration of national, State, or local history or prehistory.

The standard requires attention to historic, prehistoric and archaeological values by the districts and State agencies.

Project Response:

Through field checks, research and interviews, coastal resource information related to the history and prehistory of Anchorage was assimilated into the Master Plan concept. The Plan emphasizes the historical context of the urban waterfront, transportation networks, military activities, historic buildings, and the proposed "Anchorage Old Town." Educational opportunities have been identified along the coastal trail system. In addition, the Point Woronzof Archaeological Site is given detailed consideration as an Area Meriting Special Attention.

Geophysical Hazards

6 AAC 80.050. Geophysical Hazards Areas

(a) Districts and State agencies shall identify known geophysical hazard areas and areas of high development potential in which there is a substantial possibility that geophysical hazards may occur.

(b) Development in areas identified under (a) of this section may not be approved by the appropriate State or local authority until siting, design, and construction measures for minimizing property damage and protecting against loss of life have been provided.

The standard requires study by the State and local governments to identify hazard areas, but limits the mandatory scope of such studies to areas where development is likely or where there is a suspected hazard.

Project Response:

Hazard areas in the Anchorage Bowl have been identified by the Harding-Lawson study (1979). This information has been incorporated into the environmental synthesis used to identify opportunities and constraints. The resource protection plan suggests land uses and development that is suitable for hazard areas. The Master Plan identifies areas that are best used as open space and low impact recreation to avoid safety problems and potential property damage. However, compliance with 6 AAC 80.050(b) is being addressed in separate Geophysical Hazards study and report.

Air, Land and Water Quality

16 AAC 80.140. Air, Land and Water Quality

In addition to setting standards for major uses and activities on the coast, the Alaska Coastal Policy Council has identified and promulgated standards for eight major habitats. These standards are designed to protect and preserve these habitats, regardless of the use or activity which takes place within them. Therefore, in addition to satisfying an applicable use standard, a use or activity in a specified habitat must meet the relevant habitat standards. Habitats include:

(a) 1) offshore areas;
2) estuaries;
3) wetlands and tideflats;
4) rocky islands and seacliffs;
5) barrier islands and lagoons;
6) exposed high energy coasts;
7) rivers, streams and lakes; and
8) important upland habitat.

The key standard applicable to all of these habitats is:

(b) The habitats contained in (a) of this section must be managed so as to maintain or enhance the biological, physical, and chemical characteristics of the habitat which contribute to its capacity to support living resources.

Project Response:

Management plans for estuaries, wetlands and tideflats, seacliffs, lagoons, high energy coasts, and streams are developed for the Anchorage Bowl in the discussion of landscape types. Policies for these areas are identified in the Anchorage Coastal Management Plan. Areas of significance as wildlife habitat are outlined in the discussion of the vegetation and habitat map. It is not within the scope of this project to manage offshore waters for sport commercial and subsistence fisheries; islands and rivers are not included in the project boundary. The resource protection considerations are designed to mitigate any existing environmental problems within the scope of the project, and to enhance valuable coastal resources. The educational goal of the plan is to increase the awareness of local people and visitors to the natural processes of the dynamic landscape.

Areas Meriting Special Attention-Article 4, 6 AAC 80.16

A. Means - delineated geographic area within the coastal area which is:
(1) sensitive to change or alteration and warrants special management attention, or
(2) which because of its value to the general public, should be identified for current or future planning, protection, or acquisition.

B. These areas include:
(1) areas of unique, scarce, fragile or vulnerable natural habitat, cultural value, historical significance, or scenic importance;
(2) areas of high natural productivity or essential habitat for living resources;
(3) areas of substantial recreational value or opportunity;

(4) areas where development of facilities is dependent upon the utilization of, or access to, coastal waters;
(5) areas of unique geologic or topographic significance which are susceptible to industrial or commercial development;
(6) areas of significant hazard due to storms, slides, floods, erosion or settlement;
(7) areas needed to protect, maintain, or replenish coastal land or resources, including coastal flood plains, aquifer recharge areas, beaches and offshore deposits;
(8) potential estuarine or marine sanctuaries;
(9) areas important for subsistence hunting, fishing, and food gathering; and
(10) areas with special scientific values or opportunities.

Project Response

Six Areas Meriting Special Attention were identified by the Coastal Management Program. Requirements for the resource protection and public access plan include development of management plans and site designs for each of the AMSA's. The Master Plan concept provides the AMSA's with special designations along the trail corridor and incorporates them into the overall educational scheme. In most cases, recommended treatment includes development of an interpretive facility. The Areas Meriting Special Attention for the Anchorage Bowl (as listed in the Coastal Management Plan) are:

1) Urban Waterfront*
2) Point Woronzof Fossil Beds
3) Point Woronzof Archaeological Site
4) Fish Creek Restoration
5) Point Campbell-Point Woronzof Wetland
6) Point Campbell Sand Dunes
7) Potter Andesitic Dike

*No special management plan was developed for the urban waterfront, although the Master Plan incorporates corridor and facility details in this area. The Port of Anchorage is currently conducting a Comprehensive Port Development and Master Land Use Plan, the results of which will be used to prepare a management/land use plan for the water front.

APPENDIX B

The following criteria, defined by Mann in *Aesthetic Resources of the Coastal Zone*, are required to be addressed in the Anchorage District Scenic Resources Inventory:

Topographic complexity: an index of the diversity as well as the relative relief of an areas landforms (vertical qualities);

Shoreline complexity: an index of the irregularity of the coastal interface between land and water (horizontal qualities);

Vegetative integrity: unity of vegetative species of land forms within a single shorescape viewshed;

Shore dynamics: the visual impressions of tides, currents and weather;

Ecosystem continuity: the visible manifestations of shore ecology, such as marshes, inlets, flats, and barrier beaches seen within a single shorescape viewshed;

Pictorial composition: arrangement of scenic elements, varies with viewing orientation and is a determinant of best veiwpoints for given vistas;

Color (hue) ingredients: color of natural elements (earth, vegetation, water, sky); a criterion that varies with seasons, daylight and weather;

Vividness: a summary quality which expresses the uniqueness and impressiveness of one or more of an area's other qualities;

Near/far contrast: the juxtaposition between foreground or middleground and horizon forms; greatest when the nearer forms are distinct and the horizon forms, beyond water surfaces, are blued by haze and appear two-dimensional;

True to form rurality: a landscape possessing forms and materials both natural and man-made, typical or classic, natural, semi-natural or agricultural areas;

True-to-form townscapes: a townscape possessing forms and materials, both man-made and naturalized, typical of the region's architectural styles;

Human dynamics: visible manifestations of human activity associated with the coastal zone (e.g., clamming, fishing, shipping, swimming), which are of human scale and interest;

Absence of detractions: freedom from incompatibilities introduced by natural forces (e.g., storm-eroded slopes) or by man;

Instructive qualities: characteristics of geological, botanical, or other scientific interest, or which shed light on other qualities of the coastal zone;

Uniqueness (scarcity): an index of value based on rarity; a quality subject to broad interpretation dependent on the experience and expectations of the individual viewer;

Endangerment (issue-real): an index of the aesthetic quality of concern for resources facing real or imagined destruction;

Sensitivity to change: a judgmental indicator of the extent to which a shorescape unit possesses components which would be blocked, overshadowed, replaced, or otherwise damaged by the intrusion of objects or functions of moderate or average magnitude.

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- — Environmental Data and Information Services
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- — Office of Coastal Zone Management

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