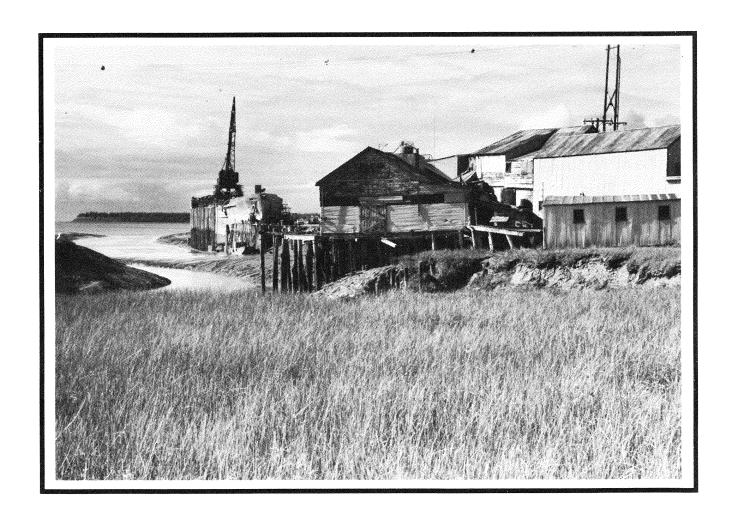
Ship Creek/Waterfront Land Use Plan





Municipality of Anchorage

Department of Economic Development and Planning

August, 1991

SHIP CREEK/WATERFRONT LAND USE PLAN

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Department of Economic Development and Planning Municipality of Anchorage

August 20, 1991 Assembly Ordinance 91-88

The preparation of the transportation chapter in this plan was financed in part by funding provided by the United States Department of Transportation, Federal Highway Administration.

ACKNOWLEDGEMENTS

Special thanks are given to the following members of the Waterfront Development Task Force for their participation in the planning process.

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Jim Barnett Municipal Assembly

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Anchorage Telephone Utility (MOA)
Economic Development & Planning (MOA)
Chugach Electric Association Peggy Mentele Dale Merrell Economic Development & Planning (MOA) Tom Nelson

Peter Poray

Malcolm Roberts Commonwealth North

Bill Robb Cultural & Recreational Services (MOA)

Urban Design Commission
Alaska Railroad Corporation
Downtown Anchorage Association
Alaska Railroad Corporation Marideth Sandler Frank Turpin Jim Yarmon Marv Yetter Alaska Railroad Corporation

Special thanks go to the following members of the Department of Economic Development and Planning for their assistance in putting the study together.

Lisa Ameen, Fred Carpenter, Cathy Hammond, Dave Hunt & Susan Perry

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EXECUTIVE SUMMARY

The lower valley of Ship Creek as it flows into Cook Inlet provides an exciting opportunity to restore and redevelop the origins of Anchorage. Ship Creek could be the design point-of-origin from which ideas and influences emanate. The Ship Creek/Waterfront area, as a redevelopment area, would be connected to the downtown, but separable from it. The emphasis of this report is to make the Ship Creek/Waterfront area the focus of a new development effort.

At the present time, there is a common desire for upgrading and redevelopment of Ship Creek, but it is not clear as to the extent of the area to be redeveloped or the nature of that redevelopment. There is, however, an active effort on the part of the Railroad and the Municipality to cause a change in the use of a large area of Ship Creek. Ownership of the majority of the land recommended for redevelopment is in the hands of the Alaska Railroad and they have been an active participant in the planning process.

It is critical that a land use plan be accepted and agreed to by the major players in the Ship Creek/Waterfront area. This will protect the investments that have been and will be made by both the public and private sectors. Such an adopted land use plan will provide certainty and stability to investors. It will assure investors that incompatible land uses will not arise next to each other.

The proposed land use plan for the study area is as follows:

In the near term, Ship Creek Point and the Depot area (the same area as the Railroad Original Townsite Report area) are intended for investment for retail, office, marine, and other enterprises oriented to the resident and visitor market. The Depot area consists of the area on the south side of Ship Creek running from the old Chugach Electric dam to Ship Creek Point. Some residential uses may be proposed in this area.

The intermediate-term plan assumes the population of Anchorage has grown and that visitor days and spending have increased. Ship Creek North and the Warehouse area would now be slated for redevelopment, and both sides of Ship Creek would become available for redevelopment. The Creek would truly become the focal point for development.

The far-term plan assumes that development has proceeded at Fire Island and that the Alaska Railroad has moved the majority of its facilities to Birchwood. Thus the Waterfront area and the vacated railroad yards would be available for redevelopment.

All scenarios envision a greenbelt along Ship Creek and along the Government Hill Bluff. There may be significant environmental clean-up costs associated with redevelopment in any of these areas. The Whitney-Post and East End areas would remain general industrial.

Overall recommendations given in the plan include:

- adopting the proposed land use plan;
- developing a mixed-use economic district which initially includes the areas of the Depot and Ship Creek Point;
- establishing an overall coordinating body to include at a minimum the Railroad and various agencies of the Municipality;
- establishing special marine zoning along the waterfront and rezoning of the Depot area to allow mixed uses; and
- adopting an Area Meriting Special Attention (AMSA) plan.

Specific land use recommendations are given for each of the subareas in the study area.

1. Greenbelt

A greenbelt should be established along Ship Creek to include portions of the 100-year floodplain area and enough area to include a cross-country skiing/bicycling trail. (See Map 19.) Another greenbelt should be established along the bluff between Ship Creek and Government Hill, continuing around between the Port and Elmendorf Air Force Base. A portion of this greenbelt has recently been established.

Upon adoption of this plan, funding for design and construction of the Ship Creek Greenbelt should be obtained. The greenbelt boundaries should be defined in the field and leases obtained from the Railroad. Negotiations should continue with the Railroad for lease or other use of involved railroad property.

The open space system along Ship Creek, including the promontory park at Ship Creek Point, should be the focal point for redevelopment efforts.

The alignment of the Ship Creek Greenbelt in the Whitney-Post area, especially near Viking Drive, should be carefully evaluated. The Ship Creek Greenbelt Plan should be finalized.

Port of Anchorage

The Port should stay as a port facility, whether it continues with container operations or as a barge facility. Space at the Port should be used for water-related/water-dependent uses.

A market analysis should be done to determine appropriate uses at the Port over the long term with a dual-port strategy.

3. Waterfront

This area, a part of which in recent reports has been termed the South Tidelands, should be maintained for water-related/water-dependent uses. When the leases for uses that are not water-related/water-dependent come up, they should be relocated to other areas and replaced with uses that are water-related/water-dependent.

The general tenor of the area should remain marine industrial.

4. Ship Creek North

Over the long term, this area, a portion of the area called South Tidelands in recent reports and which is south of the existing tank farms, should become part of the redevelopment area so both the north and south shores of Ship Creek may be encompassed by new development. Those portions of the area which are in the AMSA boundary should have uses which are water-related/water-dependent. They should also be people-pleasing and attractive to the visiting public.

The 25-foot minimum stream protection setback from Ship Creek should be enforced.

5. Ship Creek Point

Those uses which are water-related/water-dependent should be allowed.

The ambiance of the area should be developed in such a way that the design creates a more people-oriented area with extension of the Coastal Trail, viewing promontories for sealife, and adequate parking. Any facilities should meet design standards that create an attractive, landscaped area. New industrial development should be limited to fisheries-related or the like which would be compatible with more commercial facilities.

The coastal estuarine marsh should not be filled. A 75-foot setback from Ship Creek should be maintained.

Adequate public access by various modes of travel should be provided to the Point.

The Coastal Trail should be extended to the tip of Ship Creek Point and connect with the Ship Creek Greenbelt. There should be a connection to the current Coastal Trail at Second Avenue with a grade-separated crossing.

6. Depot

This area should be the primary, near-term redevelopment area which encompasses commercial, historical, and recreational uses and is managed to protect and enhance its cultural and natural resources.

The flowing waters of Ship Creek should become the focal point for this area. Activities should be focused on and front on the Creek.

The area should be people-oriented, attracting the local resident as well as the visitor.

Uses should include restaurants, night clubs, hotels, residences, market buildings, restored historic structures, visitor attractions, and a high proportion of garden-like open landscape. Uses should be as oriented to the winter time as the summer for year-round economic support. Night-time activity will be encouraged by having residential uses.

The area should be rezoned to permit mixed uses.

Paths and trails for people, fishing, bicycling, walking, running, cross-country skiing, etc. should be created.

The same design theme should run throughout the Ship Creek/Waterfront redevelopment area. The theme chosen for the creation of the pedestrian bridge across the old CEA dam of the early railroad should be continued.

7. Warehouse

The Warehouse area should gradually shift its emphasis from industrial to commercial.

8. Whitney-Post

This area should remain industrial. There will always be some Railroad presence with rail lines to and from the Port.

The extent and location of hazardous waste locations should be evaluated.

The relationship of this industrial area to other industrial areas in Anchorage should be investigated.

9. East End

This area also should remain industrial.

The Ship Creek/Waterfront Land Use Plan concepts represent a long-term vision for Anchorage, but one which with adequate planning and direction can be accomplished. It would mark a dramatic turnaround for the Ship Creek Valley, which would be an important benefit to all the citizens of Anchorage. It would provide sustainable development, an improvement in the economic climate, and an improvement in the environment.

I. INTRODUCTION

SHIP CREEK REDEVELOPMENT

The lower valley of Ship Creek as it flows into Cook Inlet provides an exciting opportunity to restore and redevelop the origins of Anchorage. This area is shown in Map 1. Flowing urban water can provide the medium for a great diversity of activities. It can be a social as well as economic catalyst, serving commerce, as well as providing an aesthetic appeal.

People have expressed desires for livelier and more participatory activity in public places—in particular the urban riverfronts and waterfronts which possess the aesthetic framework and charisma that make for good entertainment and social interaction. Shops, restaurants, night clubs, hotels, public facilities, arenas, exhibition buildings, theater, restored historic buildings, and a high proportion of garden—like open landscape all combine to make the elements of a people place.

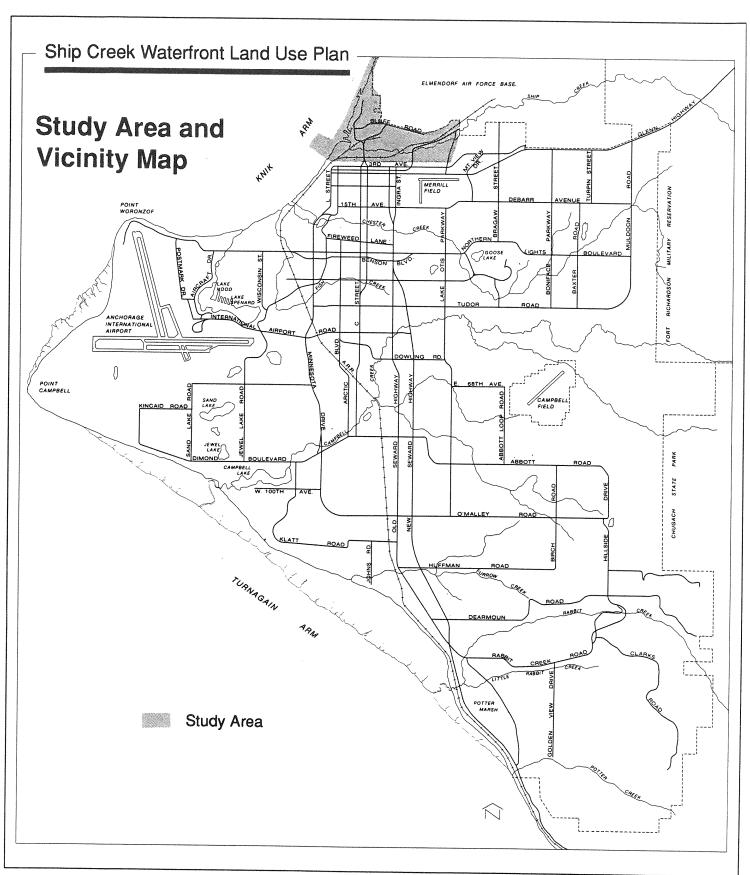
One of the keys to success of mixed use at the waterfront is the way in which dining, entertainment, boating and sailing, artists' and artisans' studios and workshops, and all the other maritime uses that make up a people place are made to work together.

Anchorage has the opportunity to make Ship Creek the focus of a new development effort. Ship Creek could be the design point-of-origin from which ideas and influences emanate. Ship Creek as a redevelopment area would be connected to the downtown, but separable from it.

Making the Ship Creek/Waterfront area transition from industrial to more commercial uses has been the goal of this study. This goal is consistent with previously enunciated goals such as that of the Land Use Task Force's Hospitable Anchorage vision of Ship Creek. Their vision was Ship Creek being developed as a historical, commercial, educational, and recreational area, managed to protect and enhance the cultural, historical, and natural resources.

At the present time there is a common desire for upgrading and redevelopment of Ship Creek, but is is not clear what area is to be redeveloped or the nature of that redevelopment. Each actor has a partial vision for its own limited area. There is, however, an active effort on the part of the Railroad to redevelop a large part of this area as much of the ownership of the area is in their hands.

It is critical that a land use plan be accepted and agreed to by the major players in the Ship Creek/Waterfront area to protect the investment that will be made by both the public and private



sectors. Such an agreed-upon land use plan will provide certainty to investors. It will also provide stability. It will assure investors that incompatible land uses do not arise next to each other to devalue their investment. It is only with a defined land use plan that certainty, stability, and protection of investments will occur.

INDUSTRIAL AREA REDEVELOPMENT

The Anchorage Port in its Master Plan and strategic planning efforts has plans for port expansion, including a dual port concept of expansion to Fire Island. (See Map 2.) It commissioned a study which envisioned the development of Ship Creek Point as a mixed-use development. Even after development of Fire Island, the Port will retain port activities at its present location.

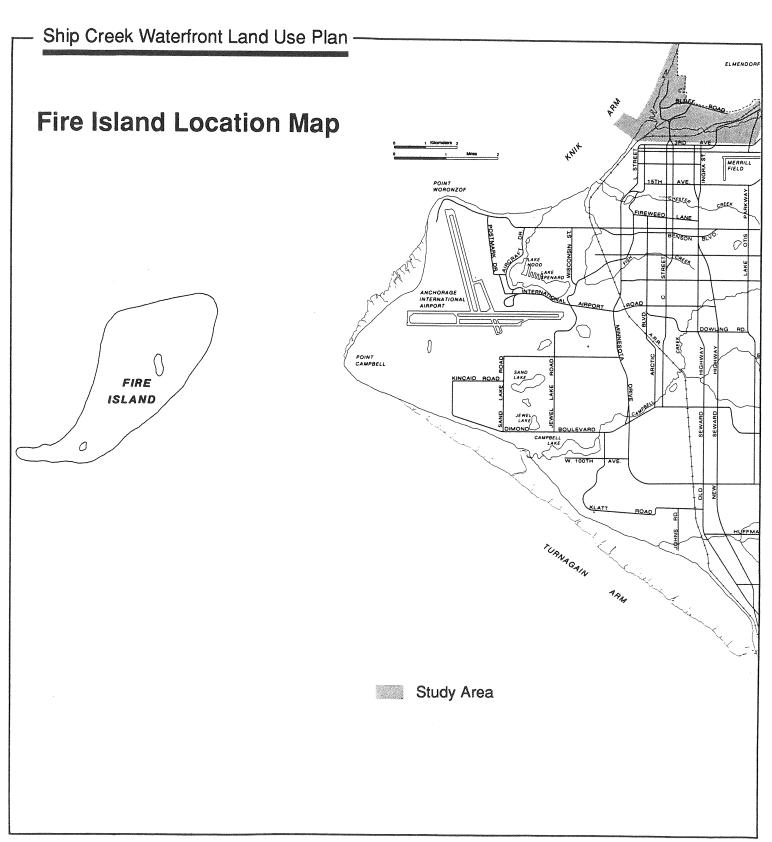
The Alaska Railroad's vision of redevelopment is limited to the area south of Ship Creek. It plans, even after the Railroad's proposed move to Birchwood (which is expected to be years away), to have a sizeable presence remain in Ship Creek Valley. With the Port remaining a Port even after the addition of activity at Fire Island, use of the railroad tracks will continue, thus impacting traffic and movement in the Ship Creek area.

Interviews with the private leaseholders in the area indicate that each has its own plans for future activities. Some of the firms need more storage area. Some would easily move to Fire Island. Others say that they do not plan to move.

Several points become clear. These visions do not necessarily mesh. There are a number of conflicts that need to be resolved. There are diverse private interests. The Municipality is just one player in this diversity of activities. The presence of active rail lines and industrial activity will inhibit commercial, tourist-type redevelopment for certain areas.

Anchorage is unlike other communities in which waterfront/ riverfront redevelopment has taken place. The industry that does occur in the Ship Creek area is still active, although some areas are underutilized. It is not the case that there are many abandoned facilities.

This document takes an in-depth look at the current conditions, the issues, and the conflicts. It elucidates a development strategy and recommendations for future action. The process proposed by the study is one of gradual establishment and expansion of a waterfront and creek commercial zone or area. This process will address the conflicts and eventually resolve them.



RELATIONSHIP TO FIRE ISLAND

This study does not encompass the work necessary to decide the issues regarding most of Fire Island. However, a relationship does exist between redevelopment of the Ship Creek area and Fire Island. Planning for either area cannot be done in isolation.

In the current economic climate, the Port, with the land it currently has and is obtaining or creating, has enough area to operate efficiently in a general cargo context. Redevelopment efforts thus can take place within the Ship Creek area without jeopardizing Port operations for the near term.

With development of new economic interests, alternative port facilities will be needed, which in Anchorage would likely be on Fire Island. The Port of Anchorage's Master Plan calls for a dual-port strategy. Also, new buildings are being proposed by the Matanuska-Susitna Borough for a Matanuska-Susitna Port at Point McKenzie. Thus, redevelopment at Ship Creek does not preclude future development at Fire Island.

STUDY AREA

Ship Creek flows westward out of the Chugach Mountains across the Anchorage Plain into Cook Inlet. The study area focuses on the lower portions of Ship Creek as it flows into Cook Inlet. The study area is bounded by Government Hill and Elmendorf Air Force Base to the north, Reeve Boulevard to the east. To the south it is bounded by Third Avenue east of Ingra, First Avenue west of Ingra to Christensen Drive and then by Second Avenue. To the west it is bounded by Knik Arm. The study area encompasses approximately 1,100 acres. (See Map 3.)

Ship Creek forms a valley throughout the study area with the boundaries of the study area being bluffs above the valley to the north and south.

Department of Economic Development and Planning Municipality of Anchorage. October 1990

II. HISTORICAL RESOURCES OF SHIP CREEK

Ship Creek has seen human activity for many years. The Pacific Eskimo occupied Cook Inlet at least seasonally some time before 1000 A. D. and continued their activities to around 1700 A. D.

In the 1770's and 1780's, there were Tanaina Indians living in the Cook Inlet region living off fisheries and wildlife. Ship Creek was used primarily as a seasonal fishing camp. The Tanaina place name for Ship Creek was "Dgheyaytnu" or Needlefish Creek. It was named for its run of needlefish (or sticklebacks) and was an important fishing site well into the 1900's. The bank on the beach near what would be the Ocean Dock was called "Tak'at."

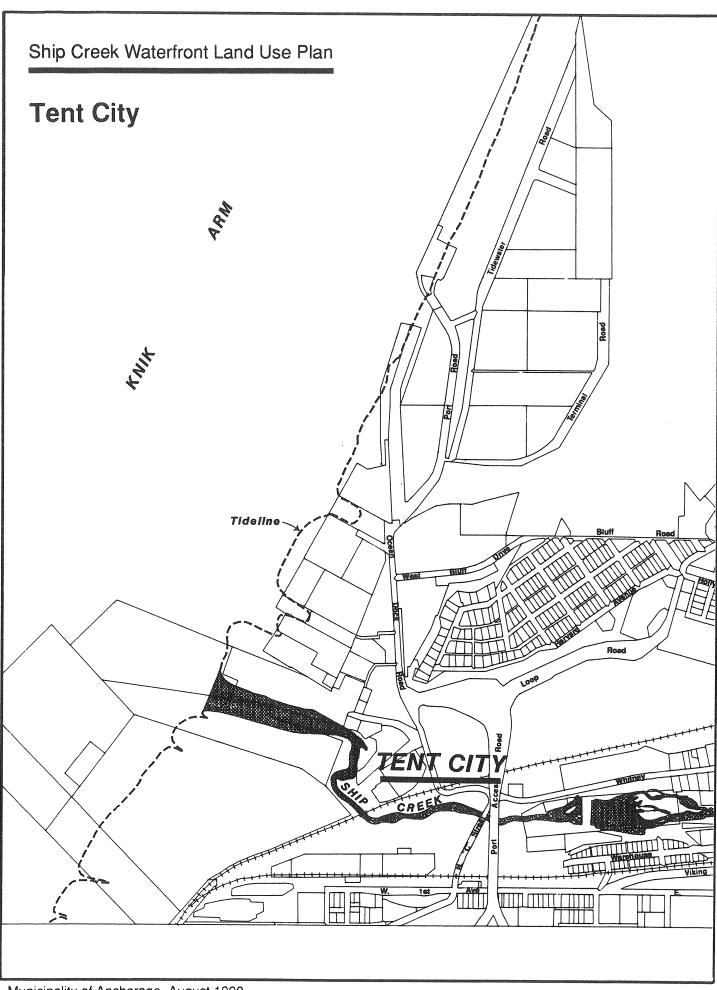
Captain Cook sent ships to explore Knik Arm in 1778 and sailed past Ship Creek. What became known as Cook Inlet in 1792 was originally called Cook's River.

In 1911, there were two families who lived on "squatters rights" at the mouth of Ship Creek. By 1914 two more families were living in log cabins on the flats of Ship Creek. The entire area was known as Ship Creek at the time.

In 1914, the Alaska Railroad Act was passed by Congress and signed into law by President Woodrow Wilson. The Secretary of the Interior appointed an Alaska Engineering Commission which decided to build its field headquarters where Ship Creek flows into Cook Inlet. Rumors about the impending construction of a railroad began to bring people into the area. Once the decision was made about the route, construction of the railroad began in earnest and people began to flock to Ship Creek.

In the spring of 1915, the railroad was being actively constructed. Signs were posted on either side of Ship Creek warning people not to locate there. However, over a thousand tents were pitched on the north side of the creek which ultimately would become the major railroad yard. This area became a "tent city." (See Map 4.) At that time, ships would moor out in the inlet and smaller boats and barges would bring the materials to shore. The area became known as "Ship Creek Landing."

Sanitary conditions down on the flats became a problem. Water was obtained from "springs" or wells and sewage was dumped on the outgoing tide. With the numbers of people now close to 2,000, the natural processes were becoming unable to handle the amount of sewage.



Land up on the bluff south of Ship Creek was set aside by the government for a townsite. This became the "Anchorage Original Townsite" in August, 1915, and is the location of today's downtown Anchorage. The bluff to the north was set aside for permanent employees of the Railroad and is now Government Hill. In laying out the new city, reserves were set aside for special uses. The Terminal Reserve in Ship Creek Valley was set aside to provide railyard and dock space.

An election was held August 9, 1915, to vote on a name for the new town. Both "Ship Creek" and "Anchorage" were contenders, but "Alaska City" won the vote. However, the U. S. Post Office had already established the name Anchorage and it has remained. The name "Ship Creek Landing" was no longer used.

In the fall of 1916, buildings in the Terminal Reserve included a depot, commissary, warehouses, shops, offices, and a power plant.

Originally boats that brought in materials would moor in the mouth of Ship Creek. The materials would be unloaded onto barges or lighters and be brought into shore. This was done until Dock Number One was built in 1917. Ocean Dock was built around 1918 and was closed by the Railroad in the mid-1920's. The first ocean-going vessel to tie up to Anchorage's Ocean Dock did so in 1919.

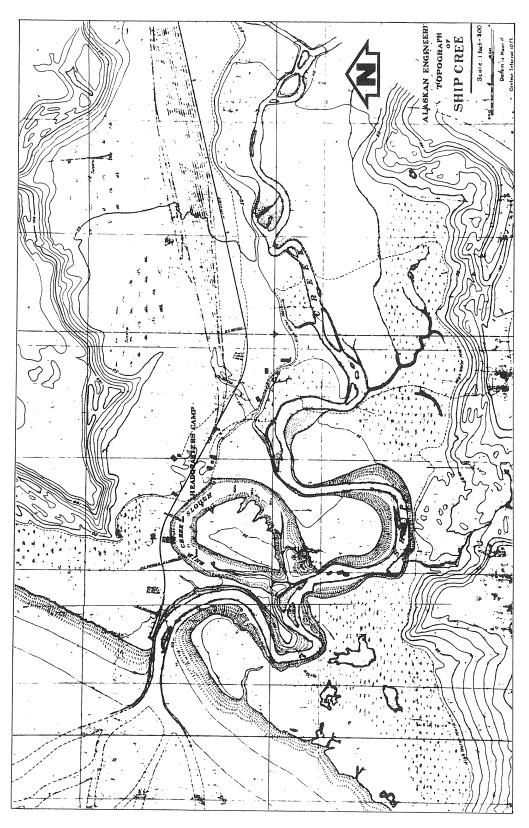
Ship Creek itself was realigned and the marshy areas and shoreline were filled in 1920. (Map 5 shows Ship Creek as it was historically.) However, Ship Creek still enters the Inlet in the same location that it has since 1914.

In 1927, City Dock (later known as ARR Dock) was built. The adjacent cannery docks were built in 1928. Portions of the old docks can still be seen. One old cannery (Emmard's Cannery) and dock is still in operation.

The railroad was completed in 1923, and numerous buildings were built to house all the varying functions of the railroad and serve industrial and warehousing needs.

After World War II, the Railroad experienced significant growth and revitalization. Older wood-frame buildings were replaced with steel-frame buildings, many being built from war surplus materials. Some buildings were actually moved to the site, such as the Alaska Railroad Engine Repair Shop which was moved from Denver, Colorado, in 1948. In 1985, the State of Alaska purchased the Railroad from the federal government. The Railroad is in the State's hands today.

Historic Ship Creek



There are eight remaining buildings in the area that are highly significant. These should be recommended for the National Register of Historic Places according to a 1989 study commissioned by Anchorage Historic Properties, Inc. These are:

W. J. Boudreau Co. (222 Warehouse Avenue)

Emmard Cannery (658 Ocean Dock Road)

B & B Carpenter Shop (Whitney Road)

Anchorage Section House (Whitney Road)

Freight Depot (First Avenue)

AEC Power Plant (Anchorage Railroad Yard)

AEC Cold Storage Facility (Warehouse Avenue)

Warehouse 3 (Anchorage Railroad Yard)

Two other buildings which are significant must wait for National Register designation. This is because they are not 50 years old. They are the Alaska Railroad Depot and the Engine Repair Shop.

The character of Ship Creek today is thus intimately connected to its history. The fishing activities of the Tanaina, the port and docking facilities for the moving of goods from water to land, and the railroad functions all serve to determine the ambience there today and the potential for redevelopment.

Across the nation, efforts have begun to preserve and practically reuse buildings that once played important roles in American technological and industrial history. Examples of such efforts are the conversion of the Lone Star Brewery into the San Antonio Art Museum; the Columbus, Georgia, Iron Works into a major trade and convention center; the Quaker Oats grain silos in Akron, Ohio, into a Hilton Hotel; and reuse of the Central of Georgia Railroad shops as a tourist and convention facility for Savannah.

The 1989 Ship Creek Architectural Survey recommends that a railroad warehouse district be formed along Warehouse Avenue just east of C Street, including the Freight Depot on First Avenue. The period of significance for the district would be from 1916-1950. Most of the buildings were constructed in the 1940's and exemplify local warehouse construction. The regularity of the setbacks and scale of the buildings with their simple, rectangular shape would give the streetscape a uniform character.

Redevelopment of railroad-related warehouse districts have proven to be a success in several communities. Implementation of a full range of district uses from traditional warehousing to retailing, office and residential, and arts and entertainment makes a diverse and strong district marketplace. As discussed later, this area is immediately south of the area being proposed for a brewery. It is part of a larger area designated as the "Depot" area in this study. These two concepts--redevelopment of the depot area, including brewery, and the railroad warehouse district--would well complement each other.

The Port of Anchorage was originally funded by the issuance of general obligation bonds in the 1950's. Construction began in 1959, and the 700-foot Terminal #1 was completed in 1961 when the Port officially opened. In 1964, Sea-Land began negotiating for port facilities. Terminal #2 was constructed in the late 1960's along with the Petroleum, Oil, and Lubricants (POL) Terminal. Tote negotiated for port facilities in 1975, culminating in the completion of Terminal #3, which was finished in 1978 to meet Tote's needs. Smaller projects have continued ever since.

III. NATURAL RESOURCES OF SHIP CREEK

HYDROLOGY

1. General Characteristics of the Drainage Basin

Ship Creek drains an area of 115 square miles. It originates high in the mountain ranges of the Chugach Range and flows over 20 miles to Knik Arm. Most of that area, 90 square miles, is formed beyond the mountain front as a broad alluvial plain largely composed of gravel deposits. The ridge of the Elmendorf moraine forms the northern extent of the basin. Its southern limits have been primarily created via man-made features, roughly coinciding with the Glenn Highway.

Underlying the basin's glacial and alluvial gravel deposits are coarse-grained deposits which are characterized as being highly water-bearing. As the stream flows away from the mountain front, silt and clay deposits, known as the Bootlegger Cove Formation, are found in increasing thickness nearer the coast. These layers are practically impermeable and form the upper limits of a deep artesian aquifer. No significant stream joins Ship Creek in its lower reaches.

Erosion of the various deposits is not easily perceived in the upper reaches of the stream. However, 90 to 100 feet of down-cutting of deposits has occurred toward the stream's mouth, resulting in the exposure of the bluffs of Government Hill and the central business district.

Annual precipitation ranges from 15 inches at downtown Anchorage to 17.5 inches near the mountains. Meltwater accounts for an appreciable portion of Ship Creek's annual volume. Peak flows occur in June, while minimum flows occur in winter.

The water flow of Ship Creek is recorded at two points: one is located 10.5 miles upstream, below the water supply diversion dam near Arctic Valley road; the other gauge is 4.7 miles upstream on Elmendorf Air Force Base. The upper gauge references a mean annual flow of 141 cubic feet per second (cfs) while the lower gauge indicates a mean annual flow of 125 cfs. The mean loss, 16 cfs, in the 5.8-mile stretch between the upper and lower gauges is attributed to recharge of groundwater. Below the 4.7 mile mark, water flow is not lost because of seepage from groundwater and retention of water above the clay layers.

2. Water Use

Water is withdrawn from Ship Creek for consumption and was withdrawn for power plant cooling. For decades Anchorage obtained about 40% of its water supply from Ship Creek. Fort Richardson also obtains its water supply from the Creek. With the Eklutna Lake Water Diversion and Treatment Plant facility, Ship Creek's portion of the Municipality's public water supply has been reduced to 20 percent, still a significant amount.

3. Water Quality

In general terms, the water quality of Ship Creek is degraded as it flows from its source to its mouth. The relatively pristine quality suitable as a source of drinking water is found above mile 10.5.

The lack of data on Ship Creek water quality further downstream has been cited since the late-1970's. Limited water quality studies were undertaken during that time frame and the results are summarized below:

- Total Dissolved Solids (TDS) Violation of the aquatic life standard for TDS occurred in the downstream urban reach for dry weather conditions.
- Iron There was one observed violation of the aquatic life standard and 13 violations of the body contact recreation standard. Most of these violations occurred during dry weather, though some occurred during rainfall conditions.
- Fecal Coliform There were two violations (from a total of three samples) of the aquatic life and body contact recreation standards. These violations occurred under dry weather and rainfall conditions. No data were available for snowmelt conditions.

More recent monitoring indicates that the major water quality problems which occur downstream of the Glenn Highway are due to storm drain outfalls and industrial activity and development. High levels of fecal coliform, suspended sediment, and petroleum hydrocarbons are the result of urban runoff from storm drain outfalls. These water quality violations are primarily associated with storm runoff from parking areas and developed areas along the riparian zone of the creek. Iron from the natural wetland drainage can exceed the aquatic life protection criteria on an intermittent basis.

There have also been problems with polychlorinated biphenyls (PCB) affecting water quality in the area near the Standard Steel leasehold. PCB's are known carcinogens. Monitoring has shown

that the stream itself is clean of PCB's. However, PCB's have been found in the stream sediments near the scrap metal yards. The Department of Health and Human Services' Water Quality Section and the Environmental Protection Agency are continuing to monitor the problem to determine the long-term health effects. Recently PCB's were found in an area just off Post Road.

4. Flooding

A flood hazard report was prepared for Ship Creek by the U. S. Army Alaska District Corps of Engineers. The floodway limits are depicted in that report and in the Municipality's zoning maps. (See Map 6.)

The source of flooding is of two types--that caused by extreme high tides and that caused by excessive runoff. The extreme high tides affect a considerable area between the mouth of the Creek and the old Chugach Electric Association (CEA) dam. Such tides occur approximately every 19 years, and the damage from these tides is currently low because of little development.

Flooding associated with heavy runoff varies by the season of the year. Winter floods are typically the result of glaciation when the water freezes down to the streambed during particularly cold temperatures. This enables water to flow on top of the ice. This process continues until the streambed is higher than its banks, resulting in flooding outside of the typical water course.

Springtime flooding occurs when there is rapid melting of unusually large accumulations of snow. When floods occur in the summer or fall, they are typically the result of an extreme amount of rainfall in a short period of time. Because of the drainage basin characteristics of Ship Creek, floods would be of short duration.

The Corps of Engineers cites a number of potential problems in regard to Ship Creek. Potential obstructions to stream flow, such as the culverts at Post Road, could cause debris to collect, resulting in overflows. Another problem is the storage of floatable materials near the stream. As such materials are carried downstream, they exacerbate the clogging problems identified above and can damage structures in their path.

The intermediate regional flood (IRF) is defined as that flood which can be expected on the average of once every 100 years. It has been calculated using historical data and a model of the drainage basin's characteristics. The peak flow for the IRF is calculated at 2,000 cfs.

MAP 6

Department of Economic Development and Planning Municipality of Anchorage, August 1990

WETLANDS

Intertidal wetlands are found west of the former CEA dam. area extends for approximately three fourths of a mile from mouth of the Creek. It is an area where saline waters from Knik Arm occasionally flood the lower reaches of the Creek. certain areas near the mouth and stream benches up to the dam are characterized by alkali grass, arrow grass and other The tidal estuary to the south of tolerant vegetation. Creek's mouth provides a transition between fresh and saltwater environments. There is often a preponderance of gulls Herring and Gloucous-Winged Gulls) in this area. This is especially true in late summer when they gather to roost molt.

The wetlands above the dam are of two types. First, there riparian wetlands which run parallel to the creek. These are seasonally flooded and their vegetation is characterized by willow and sedges. These areas tend to occur in narrow bands formed in older stream channels. The second type of wetland found at modest distances from the Creek in pockets which are formed by springs and seeps originating from nearby terrain. Because of these water sources, these areas are typically flooded, containing ponded areas characterized by vegetation. Both of these types of wetlands are important to the Creek. This is because they serve to diversify riparian habitat and act as filters to promote good water quality.

VEGETATION AND HABITAT

There are few areas remaining in the Ship Creek Basin which have not been denuded or significantly disturbed. Before 1915, Ship Creek meandered through tidal wetlands in the lower portion of the basin. This area was characterized by extensive mats of salt-tolerant grasses. The slopes of the bluffs and the plateaus north and south of the Creek were heavily forested with spruce and birch. However, today there are relatively few areas which can be characterized as wetlands, as discussed above, or woodlands near Ship Creek.

The basin's vegetation can be characterized as having five types of vegetation. These are vegetation associated with the tide flats, riparian salt-tolerant species, fresh-water riparian vegetation (including stream-side wetlands), isolated wetlands, and wooded bluffs. These different areas provide a limited but rather diverse habitat for bird, mammal, and aquatic life. Plant and animal characteristics of the remaining vegetated areas are discussed below.

1. Tideflat Vegetation near the Mouth of the Creek

During the summer, alkali grass and arrow grass covers the higher, near-shore portions of the tideflats. These grasses are found on the south side of the Creek near its mouth. Farther out on the flats, algal mats are characterized by a rich emerald hue as they mature by mid-summer. These wetlands provide major roosting and late summer molting areas for Upper Cook Inlet gull populations.

2. Riparian, Salt-tolerant Species

Moving upstream to the CEA dam there are slight benches which are covered with silt deposits. Here one finds beach wild rye and blue joint grasses. The slopes above these tide-flooded areas are covered with other grasses and such shrubs as willow and alder.

3. Freshwater Riparian Vegetation

This category includes stream-side wetlands as well as the relatively slender bands of woodlands which adjoin the Creek. Two wetlands are particularly significant. One is located to the north of the Creek upstream of the CEA dam. There, sedges, alder, and willow form a thick cover within the floodplain. This small area within the shadow of downtown is home to snowshoe hare and beaver. Occasionally, moose browse there. In the summer, ducks and gulls find nesting and feeding sites within this area.

Moving upstream it becomes apparent that riparian vegetation is severely limited. Only narrow bands of willow and alder can be found until one gets within a quarter-mile of Reeve Boulevard. There, stands of mature cottonwood grow near the Creek. White spruce and paper birch rise on the better drained benches away from the Creek.

4. Isolated Wetlands

A few widely separated wetlands have been formed in the POL (petroleum, oil, lubricants) tank area and under the south-facing bluffs of the basin. These areas were formed by presumably unintentional damming of water behind such regraded features as roads, railways and oil-spill containment structures. Cattails and other water-dependent species have formed marsh environments in these ponded sites. Mew Gulls and Arctic Terns nest within the Port area wetlands.

5. Wooded Bluffs

The slopes leading down to the basin are covered by fairly dense, deciduous woodlands. Paper Birch and Balsam Poplar are found toward the upper portions of the slopes while alder and willow

are predominant near the toe. The toe of the slopes are typically more heavily saturated. Some steeper sections of the south-facing bluffs have no vegetation at all, giving rise to erosion concerns.

Preservation of this diversity of habitat is an important goal of this study.

SURFICIAL GEOLOGY AND SEISMIC SAFETY

The surficial geology of the lower Ship Creek Basin contains three basin stratigraphic components. The lowest layer was formed by the deposits of sand and gravel during the Pleistocene era.

Over these deposits is the Bootlegger Cove Formation. There is general agreement among geologists that the sediments of that formation were also deposited during Pleistocene time (an epoch dating 1.7 to 2 million years ago). It was during this period that glacial advance blocked off upper Cook Inlet, creating a brackish or, alternating over time, a freshwater lake. Thus, the outwash of glaciers and marine deposits became layered in the form of silts and clays on the bottom of this sizeable lake.

In turn, these lake deposits were covered more recently by the Naptown glaciation, resulting in sand and gravel deposits following the retreat of the ice.

The lower valley of Ship Creek and the bluffs along the coast were carved by two processes. Stream flow in the valley washed away the sand, gravels, silts, and clays which characterize the Naptown material and the Bootlegger Cover Formation. Thus, this exposed the slopes north and south of the Creek. The second influence was the removal of these same general layers via tidal action.

The Bootlegger Cove Formation, composed of varying levels of silts and clays, is responsible for most of the ground failure experienced during severe earthquakes. With a loss of strength in the Bootlegger Cove Formation during a seismic event, gravity comes into play, particularly near slopes and bluffs. This layer is unable to support the weight of other deposits above it. Consequently, some form of ground failure results.

Before the development of the Alaska Railroad yards, much of the Ship Creek Basin was tide flats which were periodically inundated. These tidal marsh deposits are up to four meters thick.

With railroad- and port-related development, various types of fill, including aggregate from barrow pits, slide debris from the 1964 earthquake, and excavated fluvial deposits from Ship Creek, have been used to cover the area. One to three meters of such fill has been introduced. In some instances, tidal marsh deposits were removed prior to the introduction of fill materials. Often, however, fill was merely placed upon the organic silt deposits.

The concern with this practice is the potential to cause problems with settlement and the amplification of some frequencies of seismic accelerations during earthquakes. With stricter regulation of fill in tidal areas via the Corps of Engineers' permitting requirements, the use of proper fill material and more desirable preparation practices can be expected.

Poor drainage is a concern because excess subsurface water can exacerbate potential ground-failure problems during earthquakes. Essentially, excess water makes the sensitive silty clay layers of the Bootlegger Cove Formation more prone to liquefication under seismic stress.

The west side of Government Hill is poorly drained in places and ponding occurs in several locations during wet weather. Additionally, there are water seepages along sections of the slope. There is evidence that unconfined groundwater tends to flow southwesterly, splitting into two movements near Bluff Road. A large portion of flow moves west through the POL tank area and another course heads south through the Loop Road-Old Government Hill School site. These groundwater movements correlate with areas that have failed in previous earthquakes.

Other areas where seepage is a concern includes the bluff east of the old Government Hill School site. At the toe of that bluff, water tends to pond because of poor drainage near the railroad tracks. With the presence of the Elmendorf Power Plant, the question of added instability due to saturated conditions becomes a particular concern.

IV. SHIP CREEK LAND USE

The overall land use character of the lower Ship Creek Valley and adjacent waterfront areas is industrial, although there are scattered commercial uses. Within the general category of industrial uses though, there is a variety of land uses. (See Map 7.) Ownership of land in the study area is shown on Map 8.

The following table lists the acreage figures for existing land use (Map 7) in the study area.

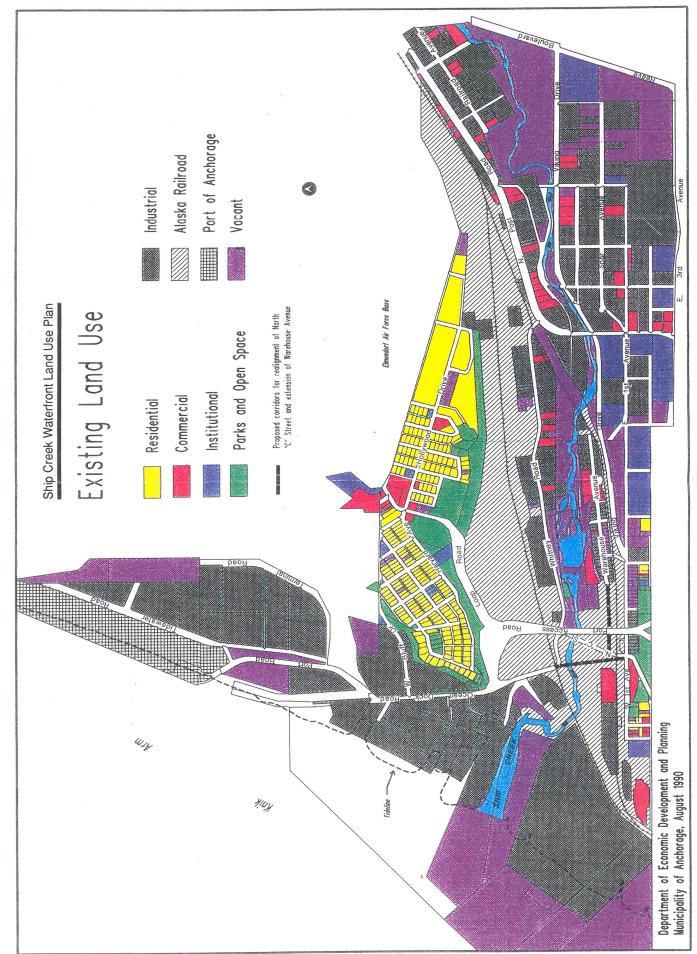
Land Use Category	Acreage	<pre>% of Total Acreage</pre>
Residential	69	6.2
Commercial	40	3.6
Industrial	663	59.4
Institutional	49	4.4
Parks and Open Space	35	3.1
Vacant	261	23.3
TOTAL	1,117	100.0

The Ship Creek/Waterfront Land Use Study area has been divided into 10 subareas: Port, Waterfront, Ship Creek North, Ship Creek Point, Greenbelt, Alaska Railroad Yard, Depot, Warehouse, Whitney-Post and East End. (See Map 3.)

The acreages for these subareas are as follows:

Port	116	acres
Waterfront	85	acres
Ship Creek North	49	acres
Ship Creek Point	60	acres
Greenbelt	262	acres
Alaska Railroad Yard	59	acres
Depot	57	acres
Warehouse	34	acres
Whitney-Post	185	acres
East End	217	acres

The Port area is of course predominated by the Anchorage Port facilities. Both Sea-Land and Tote have their cargo transfer facilities from sea to land transport immediately adjacent to the Port facilities. There is also a Port POL (petroleum, oil, lubricants) terminal tank area which facilitates concrete, fishing, and fuel storage and transport. There is a cement facility and some petroleum-related facilities also in this area.



Two parcels of land (Parcels "A" and "EE") are vacant. The Port is working with the Army Corps of Engineers to make this land available for more Port use.

The Waterfront area is dominated by petroleum-related uses, including close to 100 storage tanks. There is a multitude of underground pipes that connect to the POL terminal. There is also a cement facility in this area.

Ship Creek North has a variety of uses ranging from docking facilities to insulation facilities to a trucking firm. The old Whitney-Fidalgo (Emmard) Cannery discussed above in the historic section is in this area. Also the ship the Limestone is docked here. It was formerly used for storing cement but is no longer being used in this way.

Ship Creek Point is an area of fill being prepared by the Port to create an area for multi-use maritime development. At this time, approximately 15 acres have been filled. The ROMA Design Group did a planning and economic study detailing certain uses to developed in the area. There is now a new study being proposed which would include a financial and market feasibility study determine which uses would be most beneficial. The results also influence the design and location of the proposed multi-purpose dock.

The site uses included in the Phase I Corps of Engineers permit application included boat access ramps, maneuver area, dry boat storage, covered boat storage, open space/trails and vehicular/trailer parking. The Phase II Corps permit application requests the following uses: boat launch facility, boat/trailer parking, short-and long-term boat storage. It also requests the use of a Coastal Trail/open space, public parking, maritime receiving area, commercial marine services, maritime industrial facilities, multi-purpose dock and Cook Inlet Marine/Fishery facilities.

The proposed greenbelt includes the area of the Government Hill bluff greenbelt as recommended in the Anchorage Parks, Greenbelt and Recreation Facility Plan and the Ship Creek Greenbelt as recommended in the draft Ship Creek Greenbelt Plan. The Government Hill bluff greenbelt is in a seismically unstable area and includes the steep slopes leading from Government Hill down to the Ship Creek Valley below. Most of the area is presently owned by the Alaska Railroad. The Ship Creek Greenbelt's width was determined by balancing the land available and promoting the objectives of protection of the Creek's water quality and adequate space for a safe, aesthetically pleasing trail.

The Depot area contains the Alaska Railroad passenger depot, a large amount of vacant land, both the passenger main track and the freight track, and a scattering of commercial and industrial uses. The proposed Glacier Brewery would be in this area.

The Alaska Railroad Yard contains the passenger coach cleaning, inspection and light repair facility, passenger locomotive inspection, fueling and light repair/maintenance, and TOFC (Trailers on Flat Cars) Yard. It also includes an auto storage facility, a small yard for petroleum switch and support, mechanical shops, engineering headquarters, central dispatch, equipment storage, warehousing, and major rail yards. Some of these facilities may be relocated out to Birchwood.

The Warehouse area is located on Warehouse Avenue. It contains several railroad tracks, some commercial uses, and a majority of industrial uses. The cold storage plant noted in the historic section of this report is also in this area. There is a series of older, relatively small lots, predominantly leased by the Alaska Railroad in the area. The floor area use is very high on the developed lots.

The Whitney-Post area centers on Whitney and Post Roads and contains the majority of Ship Creek in the study area. All of the area is Alaska Railroad tracks and facilities and lease lands containing predominantly industrial leaseholds with a smattering of commercial uses, primarily retail stores for equipment. This area contains a mushroom farm as well. The lots are primarily larger lots and many of them are underutilized at present.

The East End area contains a real mix of uses, from a feed store to sand and gravel operations and bus storage. However, the area is primarily industrial. The lots are mostly privately owned lots of greatly varying size, subdivided in a relatively strict grid road network.

Looking at the overall land uses in the study area, certain conclusions appear:

- 1. There is a wide variety of industrial uses in the study area.
- 2. There are substantially fewer commercial land uses.
- 3. There are many petroleum-related facilities, especially storage tanks.
- 4. There are of nonwater-related/water-dependent uses in the area along Cook Inlet in the AMSA (Area Meriting Special Attention) area.
- 5. In the general study area, warehousing is an important land use.
- 6. Much of the study area is owned and leased by the Alaska Railroad.

- 7. There are relatively few port facilities.
- 8. Ship Creek as a resource has been neglected and generally ignored by the adjacent land users.

V. PLANS AND REGULATIONS IMPACTING DEVELOPMENT IN SHIP CREEK

The following plans and regulations will impact development or redevelopment in the Ship Creek area. They provide the framework within which development can occur.

ANCHORAGE BOWL COMPREHENSIVE DEVELOPMENT PLAN

The Anchorage Bowl Comprehensive Development Plan designates the Ship Creek/Waterfront area as entirely industrial. It has as a long-term objective "to protect and preserve the integrity of industrially classified areas for industrial use and related complementary activities."

It may be necessary, in order to see redevelopment which encompasses shops and theaters and other tourist-related activities, ${ t modify}$ Anchorage to the Bowl Comprehensive Development Plan to provide for such uses in the Ship Creek/Waterfront area . It is planned that the Anchorage Bowl Comprehensive Development Plan will be revised next year and that would be the appropriate time for such a change.

ANCHORAGE COASTAL MANAGEMENT PLAN PROGRAM DOCUMENT

The Anchorage Coastal Management Plan designates a coastal zone boundary that includes the port area and all of Ship Creek up into Chugach Mountains. It divides the coastal area into preservation, conservation, and utilization resource policy units. (See Map 9.)

In the "Preservation Environment," there are preservation freshwater wetlands and Zone 4 hazardous lands including earthquake-susceptible high hazard areas. It is a goal of the Anchorage Coastal Management Plan "to protect the basic natural functions served by coastal marshes, freshwater marshes and wetlands." Another goal is to "discourage development in areas designated high hazard."

In the "Conservation Environment," there are a river floodplain, marginal lands (includes moderate ground failure susceptibility), and Class II/III waters. Goals for Class II/III waters are "to protect water quality and manage fish resources in these waters" and "to maintain the quality of these waters at a level which will be suitable for recreational purposes." A policy related to the marginal lands designation is to "require careful site planning before development of marginal lands takes place because of the wide range of problems associated with development."

MAP 9

Department of Economic Development and Planning Municipality of Anchorage, August 1990

Thus, the water quality of Ship Creek should be protected for uses such as fisheries and recreational development. There should be site plan review of new development in marginal areas.

The final environment is the "Utilization Environment" in which most of the Port and Ship Creek to the old CEA dam is designated as urban waterfront. There are several goals here which will impact development at Ship Creek. These include the following:

- "To ensure optimum utilization of the waterfront by water-dependent and water-related uses."
- "To develop a diversity of commercial, industrial and residential uses related to the use and enjoyment of the waterfront..."
- To "provide for public access to the water."
- "To minimize dredge and fill activities within the waterfront..."
- "To facilitate efficient port design, development, and operation while minimizing conflict with resource management objectives."

Additionally, the Anchorage Coastal Management Plan designates the Port of Anchorage area as an Area Meriting Special Attention (AMSA). (See Map 10.) The Plan states, "No specific standards are prescribed for areas meriting special attention, but the policies which will be applied to these areas must preserve, protect or restore the value for which the area was designated. A management scheme is required for these areas which identifies permissible uses, policies and management authorities." The values for which the Port of Anchorage Area AMSA was designated are "water-dependent and related uses, port facilities, support activities and water-related uses." An AMSA plan is in the process of being developed.

OFFICIAL STREETS AND HIGHWAYS PLAN

The Official Streets and Highways Plan (OS&HP) establishes the location, classification, and minimum right-of-way of streets and highways in Anchorage to accommodate the needs of the community in the coming years.

In the Ship Creek area, Ocean Dock Road and Loop Road are minor arterials. Bluff Road and Whitney Road are industrial commercial collectors. The "A/C" overpass is a major arterial. See Map 11 for the OS&HP designations.

MAP 10

Department of Economic Development and Planning Municipality of Anchorage, August 1990

MAP 11

ANCHORAGE MUNICIPAL CODE - TITLE 21

1. Zoning

Zoning regulations identify allowable uses, lot, parking and landscaping requirements. Most of the study area is zoned I-2, Heavy Industrial District. (See Map 12.) The I-2 District is intended primarily for heavy manufacturing, storage, major shipping terminals, and other related uses. Commercial uses including retail and office space are also permitted. Conditional uses include junkyards, heliports, planned unit developments, resource extraction, and permitted uses which involve dispensing of alcoholic beverages.

However, dwellings, except when used as an accessory function to a permitted use, such as hotels, motels and similar lodging are prohibited. To have the full mix of tourist-related facilities, there would need to be the creation of a new waterfront district zone(s) such as is found in other communities.

In the I-2 zone, height of buildings is unrestricted, except for FAA regulations, as is maximum lot coverage by buildings.

The minimum lot size for the I-2 district is 6,000 square feet. The majority of lots within the I-2 area are larger than the minimum size of 6,000 square feet. However, there are lots along Warehouse Avenue which are smaller than this size. Thus, this makes them non-conforming lots of record. The long-term continuation of the use of structures and the uses on the existing lots can continue as long as there is no discontinuance of the use for more than a year or the structure is not more than half destroyed.

2. Floodplain Regulations

The floodplain regulations establish flood hazard districts and regulate uses which may occur within these flood hazard districts. The regulations state that no building or land use permit may be issued unless it can be demonstrated that all federal or state permits necessary, such as the Section 404 permit, have been granted; the structure will be reasonably safe from flooding; and that a special flood hazard permit has been obtained. The regulations also state that in a flood hazard district any encroachments, new construction, fill, obstructions, substantial improvements, and other development or action within the regulatory floodway that would result in any increase in flood levels during the occurrence of a base flood are prohibited.

MAP 12

The limits of the 100-year flood have been used to designate the flood hazard district for Ship Creek. These usually correspond to the area shown as greenbelt in this study.

3. Subdivision Regulations

The subdivision regulations are used to guide the division of land to promote the public health, safety and welfare, to mitigate the effects of incompatible land uses, to provide for the proper arrangement of streets, and to provide for adequate open space. They are also used to assure properly placed utilities, to provide access for fire-fighting apparatus, to provide recreation, to facilitate the orderly and efficient layout and use of the land, and to further the goals and policies of the Anchorage Bowl Comprehensive Development Plan.

4. Parking Lot Landscaping

Parking lot landscaping requirements determine the need for landscaping around parking areas and inside parking areas of greater than 60 vehicles. Parking lot landscaping inside of industrial areas may be confined to a fence, while adjacent to residential uses more use of plant material is required.

5. Erosion and Sedimentation Control

During the subdivision process, all grading, excavating and removal or destruction of natural topsoil, trees or other natural vegetation shall conform to an erosion and sedimentation control plan. This plan is prepared by the subdivider and approved by the Department of Public Works. These regulations also provide that sediment and other pollutants should be removed before runoff waters are allowed to be discharged back into Ship Creek.

6. Stream Protection Setback

There shall be a stream protection setback of a minimum of 25 feet wide on either side of the stream. Within the first 15 feet of this setback, there may be no grading or excavation, no structures or fill, and no vegetation cleared. Within the next 10 feet, there may be limited facilities such as recreation, transportation, utility, and drainage facilities. A recommendation of this study is that this 25-foot stream protection setback be adequately enforced along Ship Creek.

ANCHORAGE MUNICIPAL CODE - TITLE 23

The building code regulations provide for plan checking and monitoring for building permit issuance for construction of buildings. There are also requirements for a geotechnical study

depending upon the severity of the site hazard. As has been noted in the Anchorage Coastal Management Plan mapping, there are areas with high hazard for geotechnical risks.

ANCHORAGE WETLANDS MANAGEMENT PLAN

The Anchorage Wetlands Management Plan identifies freshwater wetlands that provide important ecological or hydrological functions. It also establishes a management plan to provide for their protection. In the floodplain area behind the dam are wetlands classified as preservation wetlands in Ship Creek. The intent of this plan is that preservation wetlands be preserved. If activities are allowed, they would only be ones that further enhance, restore, or preserve the natural character of the land. It is the intention of this plan that there be no development in the preservation wetlands.

ANCHORAGE PARK, GREENBELT AND RECREATION FACILITY PLAN

A greenbelt is proposed along the entire Government Hill bluff in the <u>Anchorage Park</u>, <u>Greenbelt and Recreation Facility Plan</u>. There are no specific recommendations for parks or recreation facilities given in this plan along the Ship Creek flats.

ANCHORAGE TRAILS PLAN

The Anchorage Trails Plan shows several trail corridors running along Ship Creek. These include a cross-country ski trail, a Class I bicycle trail, and a nature trail at Ship Creek Overlook Park. All of these can be accommodated within the Ship Creek Greenbelt being proposed. The Coastal Trail Route Study and the Coastal Trail Plan: Ship Creek to Eklutna recommend that the existing coastal trail be extended from its present terminus, run along Ship Creek and eventually out to Eklutna. The proposal is to extend the Coastal Trail from its terminus at Second Avenue across the railroad tracks with an elevated structure. Then the trail would be extended out to Ship Creek Point. The trail would then connect with the Ship Creek Greenbelt running along Ship Creek, over the CEA dam, and thence out to Eklutna.

VI. MAJOR PLANNING EFFORTS

There are several entities with additional planning efforts for the Ship Creek area that will have an impact on future land use. They include those of the Alaska Railroad, the Port of Anchorage, the leaseholders, the Municipality of Anchorage Department of Public Works, Anchorage Historic Properties, Inc., the U. S. Army Corps of Engineers, and the State of Alaska Coastal Management Program. Each of these will be discussed in turn.

ALASKA RAILROAD CORPORATION

The Alaska Railroad Corporation's (ARRC) Five-Year Plan is an overall financial planning tool guide the Corporation. The Five-Year Plan Update discusses the financial calendar, planning concepts, five-year assumptions, and goals and objectives. It also lays out an operating spending plan including revenue forecasts and capital spending plan. The 1989 Five-Year Plan Update envisions a modest but sustained growth rate through 1994.

The ARRC obtains its revenues from freight, passengers, and real estate. Freight revenues are generated by shipping local coal, export coal, gravel, petroleum, truck/trailer and ocean containers, pipe, and interline and local carload. The intermodal freight line is planned to be straightened. This will encroach on the bluff area of Government Hill which has been requested for a greenbelt. No exact parameters have yet been established.

Passenger revenues come from cruise ship dockings, service to Seward and Whittier, and northbound express service. Some potential new passenger activities suggested in the Five-Year Plan that may impact Anchorage are the possible establishment of a steam train ride between Anchorage and Whittier and between Anchorage and Eklutna.

Real estate revenues depend on the leases of railroad property, the creation of new developments which increase the value of currently leased properties and creating additional leases in and around the vicinity of the ports. These are all included in the Five-Year Plan. The Ship Creek Townsite Project is a project for increasing the value of possible leases in the Depot area. It would do this by upgrading uses in the area to commercial, retail, and tourist-oriented development.

The Five-Year Plan Update concludes that to prosper, since the freight side of the business will be fairly flat in the near term due to competition and the over-capacity in the Alaska market,

the ARRC should emphasize its efforts in its ports and docks. This will have ramifications for development in the Ship Creek area.

The Ship Creek Townsite Project is the result of a study done for the Railroad and the Glacier Brewery proponents entitled "The Original Townsite Study." This study takes off from the premise that the lower Ship Creek area could be redeveloped for recreation and tourism. The architects envisioned a tourist development. The old CEA dam across Ship Creek where there is currently a small public viewing platform, the fish ladder, and the location of salmon fishing during the summer would be upgraded with a pedestrian bridge. The area to the south of Ship Creek would be developed from the CEA dam to the west. Eventually this development would go all the way to Cook Inlet and Ship Creek Point.

Development would be a cooperative venture. The Glacier Brewery would contribute a production facility, plus a public place for tourists and residents to enjoy the products of the brewery. The Railroad would provide landscaping and a fisherman's trail to facilitate both viewing salmon and fishing. The Original Townsite Study envisions the Railroad moving several unused Alaska Railroad-owned historic buildings to the area as well, converting them to a farmer's market or other retail-type usages.

The Municipality of Anchorage would also contribute by straightening and re-aligning North "C" Street, adding a new bridge, and converting the existing North "C" Street bridge for pedestrian use. It would add a pedestrian bridge to the existing Ship Creek (CEA) dam and has extended Warehouse Avenue to the west to connect with North "C" Street. Existing leases within the Original Townsite study area account for approximately 550,000 square feet of building space. The proposed lease areas would add approximately 875,250 square feet.

The Railroad has discussed moving, eventually, some of its facilities to Birchwood/Eagle River. The facilities that would move would be the mechanical shops, the engineering headquarters, central dispatch, equipment storage, warehousing, and major rail yards. The facilities that would remain in the Anchorage yard would be the passenger depot, inspection and light repair facility, fueling facility and light repair/maintenance facility. The TOFC (trailers on flat cars) Yard, auto storage facility and small yard for petroleum switch and support would also remain. The main freight and passenger rail lines would remain along with the rail spur to the Port of Anchorage.

Approximately 50 acres would become available for a different kind of development when that move occurred. However, the move is not expected to occur in the next 10-15 years according to Railroad personnel. There are several obstacles to the move, not

the least of which is finding the revenues to pay for the move. Another problem is that extensive amounts of sand and gravel would have to be removed from the Birchwood site. This sand and gravel may be used only "for railroad purposes," such as straightening curves and making other track improvements. The Railroad has not yet determined the process that would be necessary to make the move.

In any case, the lands would not be sold to the public at large without an act of the legislature. The Railroad intends to continue its policy of leasing, rather than selling the land. There is currently no land use plan for this area. When a land use plan is prepared, it will have to consider that even after the move of certain facilities to the Eagle River area, there will still be a significant amount of Railroad presence near the docks and the Ship Creek area.

Another planning effort undertaken by the Railroad in conjunction with the Municipality of Anchorage and the State Department of Transportation and Public Facilities is a Diagnostic Team review. There are several proposed road changes such as the access to the Ship Creek Point development, the realignment of North "C" Street, and the extension of Warehouse Avenue that would impact railroad track crossings. As a result, a Diagnostic Team was set up to study the proposals and make recommendations. A total of five existing crossings would be impacted and up to four new crossings might be created. Many questions have been raised, such as whether or not crossings are to be at-grade. However, these have not been resolved because at the time of this writing the study was still in process.

Although the Railroad has many leaseholders, there is no overall master plan that directs some types of leaseholders into one area and not into another. If someone wants to lease a parcel, if they apply and can pay, they get it. The Railroad has more land available for lease than it has applicants for the land. There is a standard long-term lease policy which requires rent at fair market value and other standard conditions. There is a section that states that the lessee will comply with all environmental and other laws and regulations. Also, if there should be pollution of any type, the lessee will be obligated to pay for the clean up at its own expense.

Railroad leases are re-evaluated on a five-year schedule regardless of lease term. Tenants will feel an impact of changes in the area even if they don't plan on such changes on their leases. As rents on higher value ground increase, tenants will be looking at alternatives.

The Railroad has a parcel of about 28 acres on Reeve Boulevard which it hopes to make into an industrial park at some point for those lessees being displaced by the Original Townsite Study

plan. In the summer of 1990 through the auspices of the Chamber of Commerce, the site was turned into a re-creation of "Tent City." This celebrated the 75th anniversary of the auction of land which became Anchorage. There were rustic white wall tents lining a boardwalk that wandered through the trees on Ship Creek. There were commercial vendors as well as nightly entertainment.

PORT OF ANCHORAGE

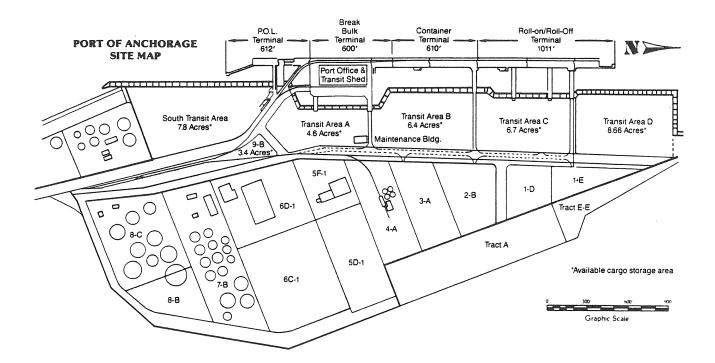
The Port of Anchorage is located just north of Ship Creek along (See Map 13.) Upper Cook Inlet. It has several terminals available. These include Petroleum, Oil and Lubricants Terminals, a 600-foot break bulk terminal, a 610-foot container terminal, and a 1,011-foot Roll-on/Roll-off Terminal. Associated with the terminals is a 38-acre cargo staging area. Anchorage Port Commission and staff have commissioned several planning studies including a Master Plan and Port Waterfront Development Plan which includes the elements of the Northland Development Plan and the South Tidelands Study. Also, there the Transportation Improvement Study, Ship Creek Point (formerly Ship Creek Landing), the ROMA study, and the North Pacific Maritime Center (Fire Island) Study.

The Port of Anchorage Master Plan was developed in 1983 by TAMS Engineers. It envisions the Port as continuing to be the major general cargo center for Alaska. The Plan recommended that the Port provide additional general cargo facilities, acquisition of additional land in the harbor area, and discourage non-cargo uses of waterfront areas. It also recommended that the Port pursue a dual-port strategy with a second port dedicated large-scale industrial use. It is the emphasis of the Master Plan that the Port remain as a port, even with development of another port such as at Fire Island. Eight formal goals established to provide direction for the Port. conclusion of the Plan is that the economic benefits of general cargo business exceed those for bulk cargoes (such as coal) by a factor of 25 to 1.

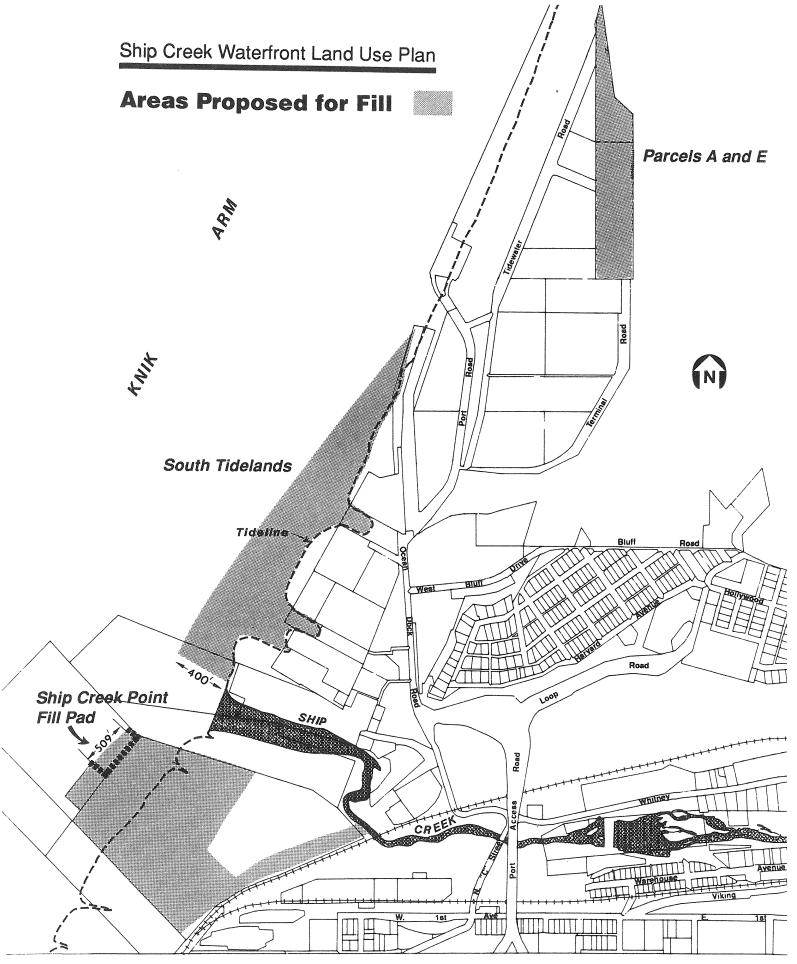
The main thrust of the Waterfront Development Plan and developing of potential acquiring, filling, commercial waterfront in Anchorage. The elements of the Development Plan include five components: fill material at the Anchorage Regional Landfill, construction of a rail siding into the landfill for removal of the fill material, rail cars and personnel to load, transport and unload the fill, sites for disposal, and funds for additional site development. subject to fill and development would include Parcels A and EE, Ship Creek Point full pad, and the South Tidelands. In the long term, potentially the areas now used by Map 14.) Anchorage Dredge and Dock south of Ship Creek Point and the U. S. Air Force land north of the Port could be filled for development.

Ship Creek Waterfront Land Use Plan

Port of Anchorage



Department of Economic Development and Planning Municipality of Anchorage, August 1990



Department of Economic Development and Planning Municipality of Anchorage, October 1990

The South Tidelands study evaluated the potential for filling and development of tidelands lying between the south boundary of the Port of Anchorage and the north bank of Ship Creek. The property in this area is owned by the Railroad and leased to Douglas Management (Lynden), North Star Terminal and Stevedore, MAPCO, Chugach Electric and Lonestar Cement among others. Some of these lessees have their own plans for potential fill which will be discussed below. They feel that the seaward boundary of this area is underutilized and underdeveloped.

The Northland Development Plan which was written in 1988 studied the potential for development of tidelands lands north of the Port as well as the lands to the east of the Port property known as Tracts A and EE. Tracts A and EE are owned by the U. S. Air Force and comprise some 14 acres. The parcels are immediately adjacent to lots leased by Sea-Land and Tote. The lots would potentially be used for container and trailer storage.

This plan also discussed the proposed Transportation Improvement Project which has as its primary objectives linking of Anchorage Port Road and Tidewater Road at Gull Avenue, realignment of Gull Avenue, provision of new accesses to Sea-Land's lease lots and smoothing of the Alaska Railroad's reverse curve near these improvements.

A major effort being undertaken by the Port is the development of Ship Creek Point. This involves the fill of some 60 acres of tidelands to develop marine-related facilities. The original report was commissioned for the Port and done by the ROMA Design Group. It emphasized the potential for tourist-related facilities, such as restaurants, hotel, and retail shops.

Another study was done for the Port by a private firm which reevaluated the findings of the original ROMA study and the financial and market feasibility study.

While nothing is being done presently which would preclude tourist-related developments at a later time, that is not the emphasis at Ship Creek Point now.

The Port of Anchorage has plans for a North Pacific Maritime Center to be located on Fire Island. The basic idea is that a second port would be developed at Fire Island. While eventually some of the port functions now at the Port of Anchorage would move to Fire Island, most economic development would be new to Anchorage. The idea is in its preliminary stages. The access location must be resolved. The issues involved in locating the access include: the expense, approval of the neighborhoods, corridor for crossing the wildlife refuge and compensatory mitigation. A demand analysis must be performed to determine what uses would be at Fire Island and whether they would justify

the public investment. The land on Fire Island is primarily owned by Cook Inlet Region, Inc. (CIRI), and a land agreement/sale with CIRI must be finalized.

There needs to be fine tuning of the estimated total costs for the Fire Island port project. So far, estimates for a road/railway crossing range from \$69-\$166 million. Estimates for utility extension have been given at \$50 million, for placing the Railroad under the airport runway to Point Campbell at \$21 million, for road access to Point Campbell at \$8-\$21 million, and upgrading of the Point Woronzof sewage treatment plan or building of a new sewage treatment plant at \$20 million. No estimates have been given for the cost of a breakwater or for the port facilities themselves.

The location, feasibility, and economics of the new port must be determined. Depending on the chosen location, there will be dredging costs, costs to build a new breakwater, or costs to develop the necessary backup space. There must be a sediment transport and current study and baseline environmental studies performed.

The Port's plan for Fire Island is to create a world-scale North Pacific transportation complex. The Port feels that the property needs at the Port can only be met on Fire Island. It also feels that substantial transportation savings, job formation, and associated economic benefits would be a result of the Fire Island project.

As part of the initial planning for Fire Island, the Municipality had requested the Corps of Engineers to use some of its continuing authority funds for a Section 107 study. This 107 process though is usually for smaller projects with specific dollar amounts that are complete in and of themselves. The Corps did a preliminary reconnaissance study. It concluded that a major project such as Fire Island should be a General Investigation study with funds being authorized by Congress. The Port is working on getting the Upper Cook Inlet Study into the President's budget.

LEASEHOLDERS

Douglas Management has applied for a Corps of Engineers permit for a maritime receiving and deep-water docking facility expansion for breakbulk commodities. The permit would also be for maintenance dredging for 10 years with the dredged material to go into Ship Creek. This project would involve the placement of 1.4 million cubic yards of fill material onto 21 acres of tidelands. This fill would be just north across Ship Creek from the proposed fill of the Port of Anchorage at Ship Creek Point.

It is unclear what the impact of these two projects on each other would be. The proposed structure would be 690 feet long and would extend 1,500 feet seaward of the existing shore.

North Star Terminal and Stevedore Company also has a Corps of Engineers permit application being considered. It requests permit modification for the expansion of its dock and storage area for the loading, unloading, storage and handling of break bulk commodities such as heavy equipment, machinery, cars and trailers. The project involves placement of 1.5 million cubic yards of fill and dredging. It also includes 10 years of hydraulic maintenance dredging and construction of deep-water docking facilities. The structure would be 850 feet long. This proposed fill would be immediately adjacent to and north of the proposed fill by Douglas Management Co.

Hobbs Industries, Inc., had a conceptual proposal to process and ship coal through the Port of Anchorage. Idemitsu Kosan Ltd. (I.K.), a Japanese firm, owns the mining rights at Wishbone Hill, located east of Palmer. It currently proposes to take out 1 million tons per year of surface coal of which there are a total of 14-15 million tons in reserves. I.K. plans to transport the coal by truck to Palmer and to load it onto trains there to haul to the existing Seward facility.

Hobbs Industries, Inc., proposed instead that they transport the coal from the mine to Palmer via conveyor and a rail line extension. It would then go from Palmer to their property at Ship Creek. The existing old CEA power plant at Ship Creek would be converted into a separation plant and a coal storage facility would be created. This coal would then be transported by a closed conveyor system to a ship loading facility to be built at the new Anchorage multi-purpose dock at Ship Creek Point. This plan would require the obtaining of new rail cars as there would be a 65-car train moving 4 times per week.

Interviews with other leaseholders in the port area indicate that they have no plans for extensive future expansion. Some of the leaseholders need more storage area, some of which can be accommodated in other areas of the Ship Creek area, such as Post Road, others by the use of Parcels A and EE.

AREA MERITING SPECIAL ATTENTION (AMSA) PLAN

The Area Meriting Special Attention (AMSA) Plan is a cooperative plan being done under the auspices of the Anchorage Coastal Management Program. This involves the Municipality (Port of Anchorage, Department of Public Works, Department of Economic Development and Planning), Alaska Railroad, the state and federal resource agencies, and the private sector.

Anchorage Coastal Management Planning is a result of both the Federal Coastal Zone Management Act of 1972 and the Alaska Coastal Management Act of 1977. The federal act provides a mechanism to use the nation's coastal resources in a way which protects natural systems and cultural values.

The 1977 Alaska Coastal Management Act established both the Alaska Coastal Management Program and the Alaska Coastal Policy Council. Article 4, 6 ACC 80.16, contains a provision establishing Areas Meriting Special Attention (AMSA). An AMSA is defined as "a specific geographic location within a coastal area which is either sensitive to change or alteration and warrants special management attention or, because of high public value, is identified for future planning studies, protection or acquisition."

In 1981, the Anchorage Coastal Management Plan was adopted by the Municipal Assembly and, in that, an AMSA was established for the Port of Anchorage. As the Port/Ship Creek area was identified as having high public value, it is the only area in the Municipality which can support port/maritime-related uses in the near future. The report notes the small area of the Port, that the site is within the coastal flood plain and is subject to subsidence, mass wasting and other hazards. It also notes that there is a mixed has resulted in ownership pattern which the lack of comprehensive waterfront development plan. The allowable uses in the 1981 AMSA are "water-dependent" uses. The 1981 plan concludes that use of portions of the waterfront area do not utilize this area to the maximum extent possible and waste valuable waterfront areas.

The AMSA planning process has begun. The AMSA Plan will define the area's natural resource values and define what uses are "water-dependent" and "water-related." It will identify uses and activities that will be considered proper and improper with respect to land and water within the area. It will identify the limits of fill.

The goals of the AMSA plan are to provide for orderly water-dependent and water-related maritime development within the identified AMSA management area, to protect important coastal resources, to facilitate fill permit actions and possible required mitigation projects, to obtain a General Fill Permit for tidal mudflats in the active Port of Anchorage waterfront between Ship Creek and Cairn Point, and to provide increased public access to the Anchorage waterfront.

DEPARTMENT OF PUBLIC WORKS

The Department of Public Works is involved in several projects in the Ship Creek area. It funded the original conceptual designs for the North "C" Street re-alignment with a new bridge, the extension of Warehouse Drive, and for a pedestrian crossing on the old CEA dam. All these projects are now in the implementation phase. Through the AMATS process, it is doing a transportation study of the Ship Creek area to determine adequate vehicular and pedestrian circulation. The Department is coordinating possible laying of a railroad spur into the Anchorage landfill and shipping the excess gravel by rail to the Port area for Port projects. The Department is also involved in the Railroad's Diagnostic Team review of actual and potential rail crossings, particularly the access to Ship Creek Point.

ANCHORAGE HISTORIC PROPERTIES, INC.

Anchorage Historic Properties, Inc., is working with the Railroad to save historic properties in the Ship Creek area. Most notably are the Carpenters Shop, Warehouse #3, and the Anchorage Cold Storage building which is privately held. Their 1989 report notes that there are several plans to redevelop the Ship Creek area from its present primarily industrial use to a combination of light industry, retail, commercial, and tourist-related uses. It also notes that many of the planners do not feel that the majority of buildings are feasible enough to redevelop. conclude, "Unless preservation measures are taken, few of the historic buildings will probably survive the extensive development plans envisioned for the area."

GOVERNMENT HILL COMMUNITY COUNCIL

The Government Hill Community Council is working with the Army and the Department of Cultural and Recreational Services to create a Port Overlook Park off Bluff Road in Government Hill. The top priority of the Government Hill Community Council continues to be the preservation of the bluff below Government Hill on Railroad property as a greenbelt. (See Map 15.) As mentioned earlier, some of this bluff area has been leased for greenbelt by the Railroad and some of it is being suggested for use to straighten one of the railroad tracks.

MAP 15

Department of Economic Development and Planning Municipality of Anchorage, August 1990

VII. GOALS AND OBJECTIVES

Land use in the Ship Creek/Waterfront study area is primarily industrial with a scattering of commercial uses.

The thrust of this plan is over time to shift the land uses in some of the area to more people-oriented, higher value land uses. These land uses would reflect Ship Creek's history as the origins of the city and its uses as a commercial center. In the near term, the areas to reflect the higher value land use would be Ship Creek Point and the Depot. In the intermediate term, it would be Ship Creek North and the Warehouse areas. In the far term, it would involve the Waterfront and Alaska Railroad yards.

The following goals and objectives further this thrust.

GOAL #1

- To revitalize portions of the Ship Creek/Waterfront area and support its growth into a viable, tourist-related, people-oriented commercial development.

<u>Objectives</u>

- 1. Make Ship Creek the focal spine along which redevelopment occurs. High-intensity uses would occur as nodes of development.
- 2. Maintain the CEA dam as a viewing and fishing area.
- 3. Include land uses such as a brewery, farm and fish markets, retail, offices, cinemas, theaters, studios, exhibition halls, aquarium, arts and crafts fair.
- 4. Provide restaurants, shops, and other commercial activities which will attract people to Ship Creek, serve Ship Creek visitors, and produce a sense of liveliness and vitality.
- 5. Promote development of hotel facilities to provide 24-hour-a-day use of the area and to enhance the economic feasibility of restaurant and other desired retail uses.
- 6. Establish and promote use of design guidelines for smalland large-scale developments to create a unique and workable redevelopment area.

GOAL #2

To respond to the needs of local residents and tourists for public access to the water, night as well as daytime activities and year-round activities to maximize the use and enjoyment of the Creek and the Waterfront for all.

Objectives

- 1. Develop a pedestrian circulation system that includes constructing a trail along Ship Creek to meet the extension of the Coastal Trail and that also ties in to Ship Creek Point.
- 2. Provide parking and streamside access for fishing.
- 3. Encourage residential housing where appropriate.

GOAL #3

- To protect and preserve the historic character of Ship Creek by generating sufficient revenues to rehabilitate or otherwise protect historic buildings.

Objectives

- Tie in development with the history of Anchorage. Locate the original Tent City. Place signs noting homesteaders' locations.
- 2. Create a Railroad Warehouse Historic District or railroad museum or historic exhibition around the depot.
- 3. Maintain and reuse historic properties such as the Emmard Cannery, the Carpenter Shop, the Freight Depot, the W.J. Boudreau Co. building, the Anchorage Section House, the AEC Power Plant, the AEC Cold Storage Facility or Warehouse Number 3.

GOAL #4

- To promote economic diversification and development in the Ship Creek/Waterfront area.

Objectives

1. Include maritime activities such as boat building and repair.

2. Create and/or retain water-related/water-dependent uses along the waterfront and at Ship Creek Point, such as a small boat harbor, fisheries center, fisheries unloading, transient mooring, and people-pleasing maritime uses.

GOAL #5

- To promote and protect the natural resources of Ship Creek and the waterfront.

Objectives

- 1. Protect the fisheries, beluga whale and other wildlife.
- 2. Provide extensive open space throughout the area which is clearly identifiable, accessible, and varied in character, material, form, and presentation.
- Protect the integrity of views and vistas.
- 4. Establish a Ship Creek and Government Hill greenbelt to include portions of the riverine floodplain, slopes of greater than 25 percent, and those areas with high seismic hazards.
- 5. Retain important coastal and riparian habitat. Keep preservation wetlands intact. Maintain the function of conservation wetlands.
- 6. Preserve and improve the water quality of the Creek and the basin's groundwater. Provide setbacks for storage and buildings. Monitor and enforce storage and disposal of hazardous material. Rehabilitate streamside areas which have been denuded, providing adequate landscaping to assist in filtering runoff.
- 7. Retain the estuarine marsh at the mouth of Ship Creek.
- 8. Limit development on slopes greater than 25 percent and those which present high seismic hazards. Provide adequate drainage systems to seismically sensitive slopes. Develop policies prohibiting the steepening and loading of existing slopes without adequate stabilization measures.
- 9. Provide opportunities for wildlife viewing and interpreting the area's natural history.

GOAL #6

 To integrate the waterfront and Ship Creek into the fabric of the Municipality.

Objectives

- 1. Construct a direct and pleasant pedestrian link between the Downtown and Ship Creek to promote more intensive use of Ship Creek.
- 2. Provide a continuous pedestrian/bicycle facility along Ship Creek from the coast to Reeve Boulevard with connections to nearby neighborhoods and the coastal trail. This should provide a link between the various development opportunities.

VIII. LAND USE PLAN

To a substantial degree, land use has evolved over time in the Ship Creek/Waterfront area with no specific long-range plan regarding efficiency, utility, or compatibility of the various uses. Land owners have released land, expanded, or proposed expansion of land for development without an overall plan in place.

The earliest of such uses included cannery and dock facilities at the mouth of Ship Creek and warehousing in the Warehouse Avenue vicinity. This is discussed previously in the historic resources section of this study.

More recently, uses in the Waterfront area have expanded dramatically in the post-earthquake era. Current developments include the waterfront development at Ship Creek Point and the expansion of the POL (petroleum, oil, lubricants) facility. It also includes proposed new deep-water docks by leaseholders and potential changes in Alaska Railroad operations which may impact the use of classification yards and related railroad facilities.

AREA DESCRIPTIONS

These various interests have released or developed land which form rather distinct patterns. These patterns impact the potential interrelationships of various tracts and the long-range development of the area. These areas can be described as follows:

- 1. The Port of Anchorage facilitates cargo transfer from sea to land transport. It has a POL facility, and facilitates concrete, fishing, fuel and general cargo transport, as well as cargo storage.
- The Waterfront area (termed a part of South Tidelands in recent studies) has a heavy concentration of tank farms and other petroleum-related facilities.
- 3. The Ship Creek North area (termed a part of South Tidelands in recent studies) has port facilities of private interests and non-water-dependent/water-related uses on leased Railroad lands.
- 4. Ship Creek Point is projected for multi-use maritime and tourist-related development.

- 5. The Depot area contains the Alaska Railroad depot and has associated with it a fair amount of vacant land. It is also the area studied in the "Alaska Railroad Original Townsite Study."
- 6. The Alaska Railroad Yards have facilities which are possibly subject to relocation to Birchwood.
- 7. The Warehouse Avenue area, has a series of older, relatively small lots, predominantly leased by the Alaska Railroad with the floor area utilization high on developed lots.
- 8. The Whitney-Post area is composed of Whitney Road and Post Road areas. Whitney Road area contains a series of larger lots, many of which are underutilized at present. The Post Road area is an area of diverse warehousing, outdoor storage, wholesale and industrial uses leased by the Alaska Railroad.
- 9. The East End area is composed of the Commercial Drive area and Third Avenue tracts. The Commercial Drive area contains the Buttress Haul Road tracts, the majority of which are privately owned lots, of greatly varying size, subdivided in a strict grid road network. The Third Avenue Tracts are an area largely composed of Municipality of Anchorage utility and public works uses.

PROPOSED LAND USES

Several questions can be raised about proposed land uses for the Ship Creek/Waterfront area:

- 1. Should there be a greenbelt to function as the focal point in making the proposed commercial redevelopment more attractive?
- 2. Should there be a switch to commercial uses in the Warehouse and Depot areas?
- 3. Should there be a similar switch to commercial uses in the Ship Creek Point and Ship Creek North areas?
- 4. What could happen if Fire Island becomes a reality? Would the tank farm move? Would current users of the Port move? What kind of pressure will environmental rehabilitation put on property use change, particularly in the tank farm area?
- 5. What kind of redevelopment should take place if the Railroad moves to Birchwood?

- 6. Should Whitney-Post and East End areas stay in generalized industrial use? What would be their relationship to other industrial areas in the Municipality?
- 7. Should certain uses, those whose focus stems from water, rail, and highway needs, be promoted?
- 8. Should the Ship Creek area be enhanced from a design standpoint to make it more attractive to residents, visitors, and employees in the area?

As a part of the planning process, the Waterfront Development Task Force addressed these questions in a Saturday session. The results of their discussion are summarized in Table 1 (page 42). Overall, there was agreement that there should be a greenbelt. Most groups felt the Port should stay with port-related industrial uses. There was agreement that the Warehouse area should become commercial and that the Depot area should shift its emphasis to commercial and historic/tourist-related uses. Whitney-Post and East End areas would remain general industrial. It was felt that Ship Creek Point should have a mixed-use development, although there was no agreement on exactly what the definition of mixed use should be.

The primary emphasis of this plan is that the Ship Creek/Waterfront area was historically the heart of the City and could and should shift now from its industrial orientation to a more commercial tourist destination for use by the entire community. The focus of this redevelopment would be Ship Creek itself with a greenbelt on both sides of the Creek. There would be eventual redevelopment on both sides of the Creek from the CEA dam down to the Inlet.

At the present time, there is a common desire for upgrading and redevelopment of the lower Ship Creek Valley, but it is not clear as to the extent of the area to be redeveloped or the nature of the redevelopment effort.

DIFFICULTIES

Associated with any redevelopment efforts, as seen in projects across the nation, are several difficulties. They are:

- Financing investors are hesitant to invest in unproven areas, and in areas where plans and/or regulations are not adequate to protect their investment.
- Conflicts these will be discussed further.
- 3. Underutilization port, waterfront and industrial areas tend to serve as convenient dumping grounds for such uses as

unsalvageable materials storage, refuse, and staging areas. Redevelopment means that new areas must be found for these uses.

- 4. Government jurisdictions there are many federal, state, and local agencies involved in the decision-making for the area.
- 5. Pollution Often there are point as well as non-point sources of pollutants, such as oil leakage that make redevelopment efforts more expensive.
- 6. Public Access There is a need for public access to recreational and open space resources in the area.
- 7. Safe Access There is a need for safe, convenient, and efficient vehicular access to support the redevelopment efforts.

ECONOMICS

However, redevelopment of waterfront areas can be accomplished and has been accomplished by other communities. A study of the Economics of Waterfront Development by Gregory R. Easton made some generalizations about the amount of development that can be sustained by various sized communities. He characterized three areas:

- major metro area with a primary population of 1,000,000, secondary population of 600,000 and 5,000,000 visitors a year;
- small metro area with 150,000 resident population, 100,000 secondary population, and 200,000 visitors; and
- non-metro area with 50,000 resident population, 25,000 secondary population, and 200,000 visitors.

He used penetration rates from major specialty retail centers and recreation attractions in the western United States. He found that the penetration rates vary from 10 to 15 percent for visitors and 15 to 60 percent for residents.

While average spending per person can vary widely depending upon the quality of the attraction or the mix of retail tenants, he found that residents spend more than visitors. Both residents and non-residents spend more in metropolitan areas. He found that total annual spending varied widely from \$4.2 to \$27.5 million in major metropolitan areas, \$.4 to \$2.0 in small metropolitan areas, and \$.2 to \$.7 million in non-metropolitan areas. These levels of spending would support a single facility

of up to 137,500 square feet in a major metropolitan area; 11,400 square feet in a smaller metropolitan area; and 4,500 square feet in a non-metropolitan area.

Anchorage had a 1989 population of 221,870 and 990,000 visitors. This would place Anchorage at slightly larger than a small metropolitan area. Using this data would suggest that Anchorage can support a single facility of something more than 11,400 square feet. These figures are suggestive only, but they do indicate the relationship between population and supportable development. These figures also point up the need for a market study to determine demand for any projects before redevelopment takes place.

The Easton study concludes that:

- Land values for commercial/recreational uses are higher than values for industrial uses in metropolitan areas, though not for non-metropolitan areas.
- Land values for waterfront areas in the majority of cases exceed the value for non-waterfront areas.

The implications from these conclusions are that waterfront sites in smaller communities do provide opportunities for redevelopment but not as strong as those in larger communities. Also in smaller communities he found, "commercial uses do not pay a significant premium over industrial uses and thus do not offer the potential to support water-dependent uses."*

PROPOSED PLAN SCENARIOS

Discussions of the Waterfront Development Task Force (see Table 1), extensive interviews with leaseholders and owners of property, and discussions with the Port and the Railroad have all been input to this study. Also, studies of the redevelopment efforts of other communities were used using all this input. The Ship Creek/Waterfront Land Use Study has generated a proposed land use plan. The plan has near-, intermediate-, and far-term scenarios. (See Maps 16, 17, and 18.)

^{*}Waterfront Revitalization for Smaller Communities (Proceedings of a Conference, April 23 and 24, 1987; Ocean Shores, Washington), Ed. Robert Goodwin, (Seattle, Washington: University of Washington)

TABLE 1

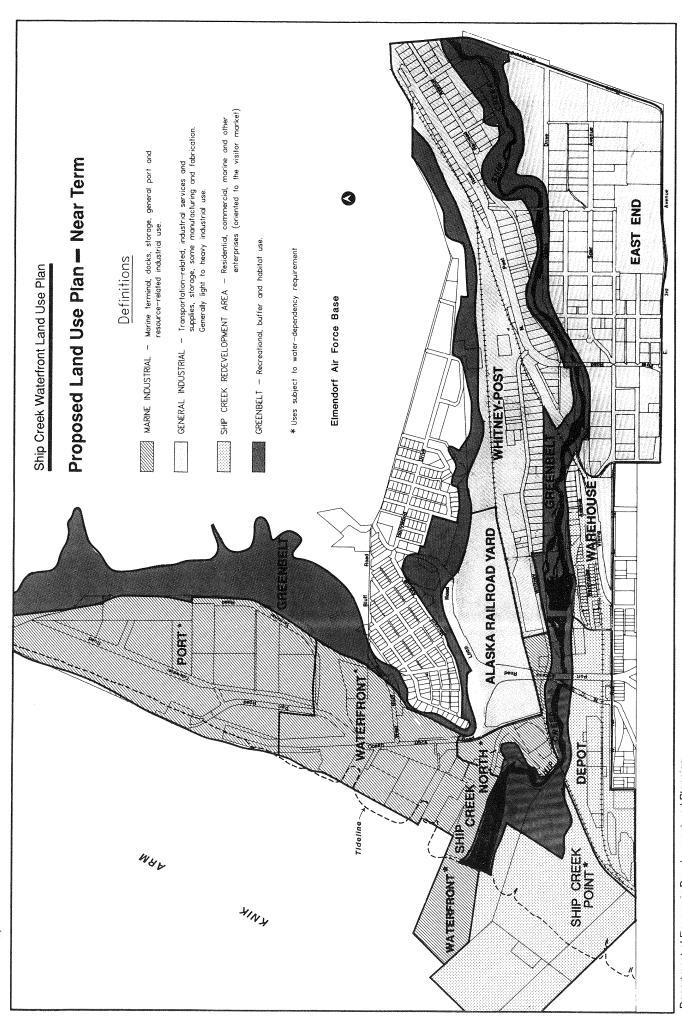
WATERFRONT DEVELOPMENT TASK FORCE: SMALL GROUP LAND USE PREFERENCE BY WATERFRONT/SHIP CREEK AREA

	AREAS	GROUP A1	GROUP B ²	GROUP C (INTERIM PLAN)	GROUP D
	(1) Port	Marine-related; commercial, industrial, residential	Port-related functions; more intensive port development	Port heavy industrial Marine or transportation	Port-related industrial
	(2) ARR Waterfront	Marine-related; commercial, industrial, residential	Port-related functions; more intensive port development	North half - heavy industrial, marine or transportation South half - marine light industrial	Mixed: Marine light industrial Commercial fisheries Residential
	(3) Whitney-Post	Business park/mixed use	Industrial	General industrial and port-related industrial	Port/Railroad Business/Industrial Park
	(4) East End	N.C.	z.c.	General industrial	N.C.
- 4	(5) Warehouse	Commercial	Commercial-related	Commercial	N.C.
2-	(6) ARR Depot	Commercial, emphasis on historic structures	Commercial/historic tourist- related	Marine/light industrial and commercial	Residential, light commercial, tourism, marine light industrial, port-related
	(7) Ship Greek Pointe	Mixed use development	Mixed use	Marine/light industrial	Residential, light commercial, tourism, marine light industrial, port-related
	(8) Greenway	Greenbelt	Greenbelt	Greenbelt	N°C.

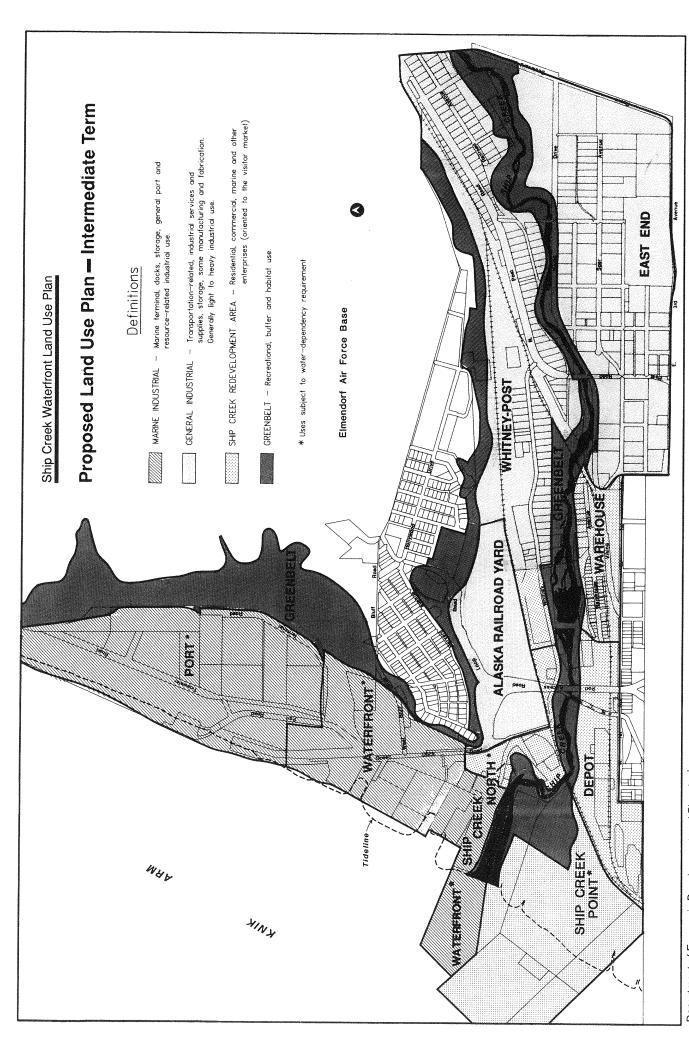
^{1.} Assumption: long-term with ARR at Birchwood and Port at Fire Island

sc.1

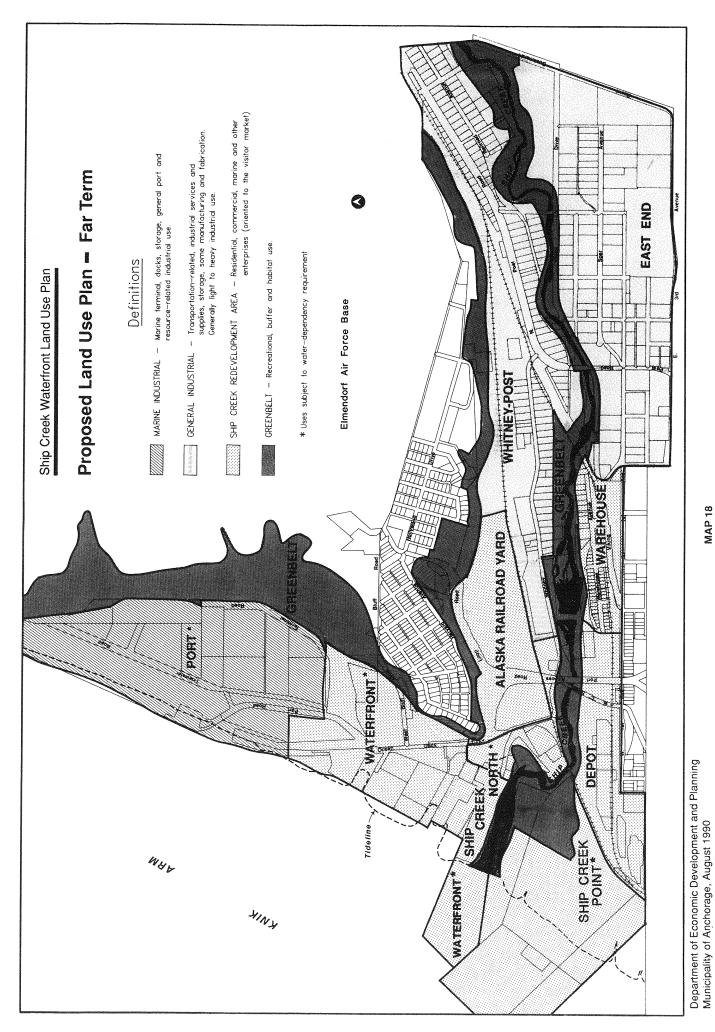
^{2.} Assumption: long-term with Fire Island unaddressed, but in ARR at Birchwood



MAP 16



Department of Economic Development and Planning Municipality of Anchorage, August 1990



MAP 18

Near-Term Development Plan

For the near term, this plan envisions a greenbelt along Ship Creek on both sides of the Creek and another greenbelt running along the bluff of Government Hill. Uses would be open space and passive recreational uses such as trails. The Port, Waterfront, and Ship Creek North areas would remain marine industrial, uses limited to water-related/water-dependent uses. Ship Creek Point and the Depot area would be the first areas to experience a shift to commercial, more tourist-oriented uses. They would the first Ship Creek redevelopment areas. The Port of Anchorage is developing Ship Creek Point, which is subject to waterrelated/water-dependent uses. The Railroad is developing Depot area. The remainder of the Ship Creek/Waterfront Land Study area would remain marine and general industrial.

Marine industrial uses are marine terminal, docks, storage, general port, and resource-related industrial use. General industrial use is transportation-related, industrial services and supplies, storage, some manufacturing and fabrication. Ship Creek Point and the Depot area are the areas intended for investment for commercial, marine, and other enterprises oriented to the resident and visitor market. The greenbelt is for recreational, buffer, and habitat use.

Intermediate-Term Development Plan

The intermediate-term plan assumes that the population of Anchorage would have grown and that visitor days and spending had increased. Both sides of Ship Creek would now become available for redevelopment and the Creek would truly become the focal point. The areas for redevelopment would expand to include the Ship Creek North and Warehouse areas. Thus there would be room and enough support for hotels and other investments. The Port and Waterfront areas would stay marine industrial. The Alaska Railroad yard, Whitney-Post, and East End areas would remain general industrial.

Far-Term Development Scenario

The far-term plan makes the assumption that development has proceeded at Fire Island and that the Railroad has moved the majority of its facilities to Birchwood. As noted above in the discussion on the Railroad plans, the Railroad would still have a considerable presence because the passenger functions and TOFC line would remain. It also assumes that the tank farms would have moved out to Fire Island.

If all this development were to take place, then the Waterfront area and the vacated Railroad lands would be available for extension of the redevelopment area. The Port area would remain

as port, the Greenbelt would be in place, and the Whitney-Post and East End areas would remain general industrial.

This would be a long-term vision for Anchorage, but one which with adequate planning and direction can be accomplished. It would mark a dramatic turnaround for the Ship Creek Valley which would be an important benefit to all the citizens of Anchorage. It would mean both an improvement in the economic climate and also an improvement in the environment.

IX. RECOMMENDATIONS

The Ship Creek/Waterfront area has all the potential to become a major attraction for residents and visitors alike. It has historical interest as the site of the beginnings of Anchorage. It has scenic resources in the waterfront, the tidal estuary, and Ship Creek. It has maritime uses. It has an underutilized waterfront that could be stimulated into becoming an exciting maritime area. All of these components make for a bright new vision for Ship Creek.

The primary recommendation of this study is that the holistic, comprehensive vision for the Ship Creek/Waterfront area in this study be adopted.

This vision would result in the creation of an attractive, cultural, and commercial area, attractive to residents visitors alike, being used winter and summer, day and night. could involve such uses as residential units, hotels, activities, aquarium, marine fisheries center, underwater (under-ice) museum, art galleries, cafes, studios, theater, farmers market, and fish market--the place to go to buy fish. could also include boutiques, retail stores, food concessions, restaurants, night clubs, market buildings, restored historic structures, marine book stores, and other people-oriented activities.

It is critical that a land use plan be accepted and adopted by the major players in the Ship Creek/Waterfront area. This is necessary to protect the investment that will be made by both the public and private sectors. Such an agreed-upon land use plan will provide certainty to investors. It will also provide stability. It will assure investors that incompatible land uses do not arise next to each other to devalue their investment. It is only with a defined land use plan that certainty, stability, and protection of investments will occur.

SHIP CREEK/WATERFRONT DISTRICT

The first step is to create a mixed-use, economic redevelopment district which includes the areas of the Depot and Ship Creek Point. A step has been taken in this direction with the recent agreement between the Alaska Railroad and the Anchorage Economic Development Corporation (AEDC) to find a developer for this area. Another step is the resolution of the Anchorage Assembly endorsing this effort.

SHIP CREEK/WATERFRONT DISTRICT COORDINATING BODY

An over-all coordinating body should be established that would devise a Ship Creek/Waterfront development strategy.

- It would coordinate all the various city agencies and see to it that the public sector delivers its hardware. It would ensure that major players turn their plans into binding commitments in accordance with a development timetable.
- It would supervise the design of public improvements.
- It would serve as a facilitator to bring together agencies and groups to resolve conflicts related to development.
- It would bring about coordination and accommodation among groups.
- It would serve as a fund-raising, mediation, and public participation group.

The reason for recommending a coordinating body over the long term is that it is important to remember that determining the feasibility of a multi-use development requires the skill of many disciplines rather than any single individual. Each discipline introduces a specific set of criteria and a framework which helps to define the overall parameters within which the project may be undertaken.

It might be possible to use the American Institute of Architects' program, the Regional/Urban Design Assistance Teams (R/UDAT) for suggestions for design improvements.

It would need to perform or contract out for a market analysis of the Ship Creek/Waterfront area to determine appropriate combinations of uses. The market study should be broad enough to address the following:

- What is the potential role of this area vis-a-vis other industrial lands in the Municipality?
- Are the platting patterns, transportation facilities, utilities, etc. efficient for long-term development?
- Are there over-riding locational attributes of the Port-Ship Creek Basin which should be used to direct specific industrial uses within the area?
- What is the future role of rail service in the area particularly with potential relocation of rail yards?

- What is the extent of replacement demand for the area? That is, are there firms there now that wish to move from their facilities in view of operational, locational, or other economics?
- To what degree are the existing land uses compatible?

A market analysis is needed to best address the more finite land use planning and development in the area.

The coordinating body would want to examine the relationship of the Ship Creek area to other recreational areas with an eye to attracting more winter activity. Along with this would be the institution of recreational and cultural programs that will attract people to Ship Creek.

One of the first goals would be the implementation of the coastal trail extension from Second Avenue to Ship Creek Point to the Ship Creek Greenbelt as a walking, bicycling, and skiing trail. This would be a first step in creating an image of the Ship Creek/Waterfront area as a people place. Drawing people to the area will support economic activity and viability.

The coordinating body would primarily act as a catalyst for making things happen.

WATERFRONT ZONING, SITE PLAN REVIEW, AND COMPREHENSIVE DEVELOPMENT PLAN

A new zoning district should be established—a marine zone that would encourage and allow mixed—use developments. This zone would also provide that only water—dependent/water—related uses would be allowed. Criteria and performance standards would be developed that relate to waterfront characteristics. There would also be a rezoning of the Depot area to permit a wider range of uses and that would prevent incompatible land uses.

The area to be included in the water-related/water-dependent waterfront zone will be decided by the AMSA planning process.

A related, but different, step would be to designate a special waterfront planning area and recognize this in the Anchorage Bowl Comprehensive Development Plan update.

Areas indicated as "marginal" in the <u>Anchorage Coastal Management Plan</u> should have site plan review instituted to protect those coastal values.

AMSA PLAN

A critical ingredient in development of the Ship Creek/Waterfront area is the completion of an AMSA plan. Many of the questions about the area that is to have water-related/water-dependent uses, the amount and placement of fill and potential mitigation measures must all be decided in the AMSA plan process. This study recommends that the plan be completed in a timely manner with full cooperation by all participating agencies.

WATERFRONT DEVELOPMENT TASK FORCE

The Waterfront Development Task Force has endorsed this broader concept for redevelopment of the Ship Creek/Waterfront area.

LAND USE RECOMMENDATIONS

1. Greenbelt

A greenbelt should be established along Ship Creek to include portions of the 100-year floodplain area and enough area to include a cross-country skiing/bicycling trail. (See Map 19.) Another greenbelt should be established along the bluff between Ship Creek and Government Hill, continuing around between the Port and Elmendorf Air Force Base. A portion of this greenbelt has recently been established.

Upon adoption of this plan, funding for design and construction of the Ship Creek Greenbelt should be put obtained. Negotiations should continue with the Railroad for lease or other use of involved Railroad property.

The open space system along Ship Creek, including the promontory park at Ship Creek Point, should be the focal point for redevelopment efforts.

The greenbelt boundaries should be defined in the field and leases obtained from the Railroad.

The alignment of the Ship Creek Greenbelt in the Whitney-Post area, especially near Viking Drive, should be carefully evaluated. The Ship Creek Greenbelt Plan should be finalized.

2. Port of Anchorage

The Port should stay as a port facility, whether it continues with container operations or as a barge facility. Space at the Port should be used for water-related/water-dependent uses.

MAP 19

A market analysis should be done to determine appropriate uses at the Port over the long term with a dual-port strategy.

3. Waterfront

This area (a part of South Tidelands) should be maintained for water-related/water-dependent uses. When the leases for uses that are not water-related/water-dependent come up, they should be relocated to other areas and replaced with uses that are water-related/water-dependent.

The general tenor of the area should remain marine industrial.

4. Ship Creek North

Over the long term, this area (a part of South Tidelands) should become part of the redevelopment area so both the north and south shores of Ship Creek may be encompassed by new development. Those portions of the area which are in the AMSA boundary should have uses which are water-related/water-dependent. They should also be people- pleasing and attractive to the visiting public.

The 25-foot minimum stream protection setback from Ship Creek should be enforced.

5. Ship Creek Point

Those uses which are water-related/water-dependent should be allowed.

The ambiance of the area should be developed in such a way that the design creates a more people-oriented area with extension of the Coastal Trail, viewing promontories for sea life, and adequate parking. Any facilities should meet design standards that create an attractive, landscaped area. New development should not be allowed that would change the ambiance to strictly industrial.

The coastal estuarine marsh should not be filled. A 75-foot setback from Ship Creek should be maintained.

Adequate public access by various modes of travel should be provided to the Point.

The Coastal Trail should be extended to the tip of Ship Creek Point and connect with the Ship Creek Greenbelt. There should be a connection to the current coastal trail at Second Avenue with a grade-separated crossing.

6. Depot

This area should be the primary, near-term redevelopment area which encompasses commercial, historical, and recreational uses and is managed to protect and enhance its cultural and natural resources.

The flowing waters of Ship Creek should become the focal point for this area. Activities should be focused on and front on the Creek.

The area should be people-oriented, attracting the local resident as well as the visitor.

Uses could include restaurants, night clubs, hotels, residences, market buildings, restored historic structures, visitor attractions, and a high proportion of garden-like open landscape.

Uses should be as oriented to the winter time as the summer for year-round economic support. Night-time activity will be encouraged by having residential uses.

The area should be rezoned to permit mixed uses.

Paths and trails for people, fishing, bicycling, walking, running, cross-country skiing, etc. should be created.

The same design theme should run throughout the Ship Creek/Waterfront redevelopment area. The theme chosen for the creation of the pedestrian bridge across the old CEA dam of the early railroad should be continued.

7. Warehouse

The Warehouse area should gradually shift its emphasis from industrial to commercial.

8. Whitney-Post

This area should remain industrial. There will always be some Railroad presence with rail lines to and from the Port.

The extent and location of hazardous waste locations should be evaluated.

The relationship of this industrial area to other industrial areas in Anchorage should be investigated.

9. East End

This area also should remain industrial.

The Ship Creek/Waterfront Land Use Study concepts represent a long-term vision for Anchorage, which with adequate planning and direction can be accomplished. It would mark a dramatic turnaround for the Ship Creek Valley which would be an important benefit to all the citizens of Anchorage. It would provide sustainable development, an improvement in the economic climate, and an improvement in the environment.

X. TRANSPORTATION ELEMENT

PURPOSE OF STUDY

The purpose of this chapter is to identify the 20-year transportation needs of the Ship Creek and Port of Anchorage industrial areas. This transportation planning effort analyzes various development scenarios on the effects of the transportation system and develops recommendations for project improvements to provide a network of roads and trails that meets these future needs. This chapter was developed as a special project task through the Unified Work Program (UWP) of the Anchorage Metropolitan Area Transportation Study Funding for the work included Federal Highway Administration (FHWA) non-continuing PL-planning funds and Municipality of Anchorage (MOA) operating funds.

LAND USES AND TRAVEL DEMAND

The study area was divided into subareas, as shown on Map 3. The following discussion covers existing land use, projected land use, and a discussion of travel demands for each of the proposed subareas.

1. Port (116 acres)

This subarea is dominated by the Port of Anchorage facilities, along with two major transshipment operations. Current land uses include dock facilities for large, ocean-going freight dockside storage facilities for cargo interchanges to truck and petroleum-product facilities/pipelines, and other petroleum-related facilities (storage, distribution, forth). Recently, the Port has been used during a portion of the summer months for cruise ship landings, since this is the only deep-water dock in the Upper Cook Inlet area. The Port Anchorage handles containerized freight in both bulk and roll-on/roll-off types of service. While handling a vast majority of the local freight needs, the Port also serves as the major shipping point for freight heading to most areas of Alaska north of Cordova.

A current transportation project for the Port subarea is the installation of a weight-in-motion scale. This on-street facility would record vehicle weights, thereby providing valuable data for pavement management of all local area roads. The concept is being reviewed by the Port of Anchorage, the State Department of Commerce and Economic Development (Division of Measurement Standards), the State Department of Transportation

and Public Facilities, and the Federal Highway Administration. Instituting access control measures or re-evaluating truck route designations may be necessary to assist in developing the scale operation. As plans proceed for the scale, the need for access control/truck route designations should be reviewed and coordinated with the other study recommendations.

The vacant lands at the northern section of the Port subarea are being considered for expansion of the port facilities to accommodate additional port-oriented freight services. The major traffic generators for this subarea are freight transshipment firms (Sea-Land, TOTE), which have a very high percentage of container truck shipments. Population growth in the State, with its inherent labor force and economic growth characteristics, will continue to be the driving force behind the continued development of this Port subarea.

A potential areawide project, having a direct impact upon growth in the Port area, would be the development of a second port on Fire Island, located several miles west and south of While final plans have not been completed, study area. initial discussions indicate Fire Island would serve as a base marine-oriented industrial facilities, while the current Port Anchorage transshipment facility remains in its present location. The development of Fire Island will require major financial resources, design and permitting processes, along with The development of Fire Island infrastructure construction. envisioned to produce new uses, complementary with current plans for the Ship Creek study area. The Port subarea is projected to continue its growth in water-related/water-dependent uses.

2. Waterfront (85 acres)

This subarea is directly south of the Port of Anchorage and west of Government Hill Bluff. The predominant land use consists petroleum storage and transfer facilities, along with a Traffic volumes from this subarea handling/storage unit. minor at this time, due to the low trip generation rates these types of storage facilities. The trips mainly consist large-truck traffic performing employee traffic and deliveries throughout the Anchorage Bowl. All of the large-truck traffic based in the study area must pass through this subarea. Numerous conflict points exist between vehicle traffic on Dock Road and the railroad crossings/sidings. These conflicts result in vehicle delays, due to the single access point and the frequent train service on the sidings in the area. subarea and the Port subarea continue expansion, the number conflicts and traffic delays will increase.

3. Ship Creek North (49 acres)

This subarea, directly south of the Waterfront and north of Ship Creek, includes an assortment of industrial facilities including private docks, insulation manufacturing, and "break bulk" (or freight forwarding) shipping firms. Traffic generated by this locality is of minor nature, mostly associated with employee trips and local freight delivery truck trips.

4. Greenbelt (262 acres)

This subarea encompasses the Government Hill Bluff and the 100-year floodplain along Ship Creek. Transportation concerns will focus on pedestrian and trail access, together with a need to reduce vehicle/pedestrian/railroad conflicts.

5. Depot (57 acres)

This subarea, located directly north of the CBD Buttress, contains the ARRC Depot, Administration Building, and various vacant lease lands. Traffic generated to serve the Depot is by both private vehicles and, increasingly, by tour bus operations. Recently, Warehouse Avenue was extended from old "C" Street east to Cordova, to provide better local circulation and access to the new Historical District. The ARRC has recently awarded the construction contract for the new Administration Building west of "C" Street and just south of Ship Creek. The majority of current traffic is access to the Depot, through traffic to other subareas, and truck traffic supporting the numerous distributing facilities along First Avenue and Warehouse Avenue.

The existing one-way northbound connection, "E" Street from Second to First Avenue, will be converted to two-way traffic by the Municipality in September, 1991. Also, preliminary plans have been completed by the Municipality for Waterfront Drive, west from the intersection of old "C" Street and Warehouse Avenue, to provide direct access to Ship Creek Point.

6. Ship Creek Point (60 acres)

Lying directly west of the Alaska Railroad Depot, this subarea is comprised of fill material used to create a work pad intended for industrial, commercial, or tourist-related facilities. Currently only a portion of the fill has been placed, along with the first phase boat ramp and storage yard.

7. Alaska Railroad Yard (59 acres)

This subarea, south of the Government Hill Bluff, east of Ocean Dock Road and north of Ship Creek, serves as the main maintenance and switching hub for the Alaska Railroad. Traffic is directly

related to either employees, service trucks oriented to the maintenance facilities, or through-traffic on Ocean Dock Road. Changes in traffic composition can be expected, due to the potential relocation of some of the Alaska Railroad maintenance facilities to a new site at Birchwood. According to the ARRC, this move is only in the preliminary stages, and details as to removal of specific operating facilities have not been finalized. The ARRC is estimating the move to occur within the next ten years, but expects their switching and freight yards to remain a major influence in this location.

8. Warehouse (34 acres)

This subarea, lying directly east of the Depot and south of Creek, is predominantly Alaska Railroad Corporation lease lands with both commercial (wholesale outlets, office area) industrial uses are of the "light" industrial The uses. industrial type, including warehousing, distribution and light manufacturing. The major traffic generated results from light The and heavy truck traffic and employee vehicle movements. current roadways are in less than satisfactory condition, and include the ARRC crossing at Cordova. With development of adjacent Depot subarea as commercial uses, the Warehouse subarea is anticipated to see a gradual shifting in emphasis from liaht industrial to an expanding commercial orientation.

9. Whitney/Post (185 acres)

Lying directly north of Ship Creek and southeast of the railroad this subarea consists of industrial leaseholds, with outcroppings of commercial usages, primarily construction and building equipment retail stores. Numerous spur tracks provide The lots are large in size, rail access for many of the lots. with many currently underutilized. Traffic is generally heavy and light trucks and employee vehicle trips. The Whitney/Post subarea is projected to remain industrial in nature, subject to the determination of the extent and location of hazardous wastes The eastern access to this entire subarea within the region. utilizes First Avenue, west from Post Road, and the steep Ingra Street incline, from Third Avenue down to First Avenue. additional access using the Viking Drive/Buttress Haul Road was evaluated; but due to the substation construction by ML&P within the road right-of-way, this option is not feasible without incurring major expense to relocate the substation. The extreme steepness of the Ingra access precludes its use during most Realignment of Ingra Street could provide good the winter. access from the Seward Highway Corridor, but some technical problems exist with grade and access to adjacent properties (ML&P) near the ARRC trackage.

ALTERNATIVE ANALYSES:

Three distinct development patterns were analyzed forming the land use scenarios used in this report.

- 1. The AMATS-adopted 2010 socio-economic projections, as delineated by the DEDP Land Use Planning staff;
- 2. A moderate growth projection for the Ship Creek Point, Depot and Warehouse subareas, due to increased tourist activities and added retail and industrial generators primarily focused in the Ship Creek Basin; and
- 3. An expanded employment focus in the Ship Creek Point subarea with construction of hotel, office buildings, and restaurant facilities.

Projected land use for the other subareas in the study area are assumed to remain constant within the three alternatives.

In August, 1989, as part of work efforts undertaken to update the Long-Range Transportation Plan for the Anchorage Bowl, the AMATS Policy Committee approved a specific socio-economic database for the year 1985 and a correlative projection data set for the year 2010. This land use information is the basis of Alternative 1.

As previously noted, at least two separate land use plans for portions of the study area have been developed within recent years. One such study is the "Ship Creek Concept Plan" (Municipality of Anchorage/Port of Anchorage, with the ROMA Design Group, 1988). A background report, which became an integral appendix of the Concept Plan, is the "Transportation Analysis of the Proposed Ship Creek Waterfront Project," prepared by Sverdrup Engineering (referenced here as the ROMA/Sverdrup plan).

The ROMA/Sverdrup plan has served as the basis for much of the municipal work to date in the development plans of Ship Creek Point, by identifying the scope of this subarea as marine industrial and commercial with minor tourist-related facilities. Secondly, a recent economic analysis, by the Anchorage Economic Development Commission, focused on the possibility of the Point subarea being utilized as a major tourist and fisheries attraction, including hotel, restaurant and office space. Combining these two plans together created the "high growth" land use scenario (Alternative 3) tested in this study.

SUMMARY OF ALTERNATIVES CHARACTERISTICS

	Alternative			
	<u> </u>	2	3	
Factor	Adopted 2010 Projection	Moderate Growth Level	Expanded Ship Creek Point	
Employment:			one control of the section of the se	
Retail	246	690	556	
Non-retail	3,293	3,111	3,142	
TOTAL EMPLOYMENT:	3,539	3,801	3,698	
TRIP PROJECTIONS				
Average Daily				

Traffic (in

Vehicle Trips)

In addition to the projected employment figures shown in this table, the Ship Creek Point area was considered to be a "special generator" for computer modeling purposes in Alternative 3. The special generators 20,000-square-foot restaurant, included a quest-room hotel, 225,000 square feet of rental office, 40,000 square feet of leasable retail, and 11 acres of general industrial lands. This resulted in additional loading of approximately 4,000 vehicular generated by the above-shown trips beyond those employment figures.

15,629 ADT 20,456 ADT 24,003 ADT*

The medium growth land use scenario (Alternative 2) is concerned mainly with the Depot. This subarea includes the lands east the Point and along the south bank of Ship Creek. Development here provides a focused retail district with the possible ARRC headquarters, offices, and other relocation of the tourist-associated uses (i.e., micro-brewery, retail shops, creek overlooks). The District will use Waterfront Drive as primary roadway to provide linear continuity. The street is proposed to include wide, decorative paved sidewalks, furniture based upon the early railroad historical period, and expansion of the recreation areas along Ship Creek. The proposal includes a pedestrian bridge spanning the creek and utilizing the existing dam structure. The crossing will also adjoin the Tony Knowles Coastal Trail, which is slated to follow the Ship Creek Greenbelt towards east Anchorage.

CURRENT TRANSPORTATION NETWORK

Transit

The nearest public transit service is Route 14 - Government Hill, which provides half-hour "peak hour" and one-hour "off peak" service from the CBD, across the Port Access facility, Government Hill and Elmendorf Air Force Base (AFB). The public transit schedule is coordinated with the Elmendorf AFB shuttle bus to provide ease of transfer. There is no existing scheduled transit service into the Ship Creek/Waterfront area. Long-Range Transportation Plan (LRTP) for the Anchorage Bowl proposes eventual transit service along Whitney Road. Currently, van pooling or ride-sharing activities see very minor support (MOA/Port of Anchorage is the exception) among the major employers in the study area.

Roadways

Surface transportation for the study area is handled through a series of local roads and collector streets. These area roads are generally developed to minimal MOA standards, with the exception of the Port Access structure ("A/C" Couplet). Most the streets have minimally paved widths with few shoulders parking lanes, are devoid of sidewalks or trails, and need more than average maintenance and repair. These roads do not meet urban standards and will need substantial upgrading. identifies the roadways in the study area, showing the classifications delineated in the Official as Streets Highways Plan (OS&HP), together with the current condition.

Parking throughout the industrial areas occurs on open, unpaved lots and/or along the small portion of streets which are wide enough for parking. As these areas change from the existing light industrial to more intensive development (i.e., historical district, Ship Creek overlooks, micro-brewery with guided tours), the provision of structured parking facilities with increased vehicle access, along with tour bus parking areas, will need to be addressed.

Map 20 shows the 1987 traffic volumes for these roadways as taken from the ROMA/Sverdrup Study. Traffic on these routes includes truck volumes that approach 30% of the total number of vehicles, according to figures from the MOA/Department of Public Works, Traffic Engineering Division. The truck ratio is also shown on Map 20.

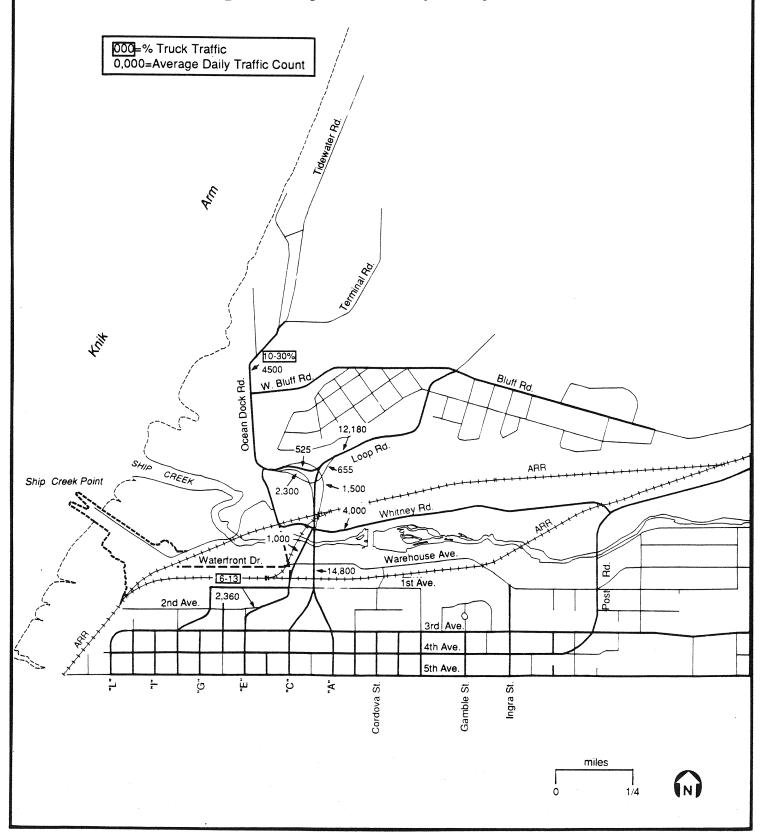
TABLE 2

CURRENT ROADWAY STATUS

Roadway Name	OS&HP Functional Class (used for modeling) Classi- # of fication Lanes	Surface # of
THE STATE AND THE COME STATE S		මේ දෙන දෙන අතර ඇති වෙත ඇති ඇති ඇති ඇති අතර අතර දෙන අතර ඇති අතර
Bluff Road (Ocean Dock - Loop	Road) IA 2 Neighborhood Collector	Strip- 2 r Paving
C Street (First Ave - Whitne	ey) IC 2 Neighborhood Collector (This roadway is under realignment as shown	r design to the
Christensen Drive (Third Ave - First	Ave) IC 2 Neighborhood Collector	Final 2 r Section
First Avenue (Christensen - "C"	St) IC 2 Neighborhood Collector	Final 2 r Section
(Post Road - Wareho	ouse Ave) Local Street	Strip- 2 Paving
("C" St Cordova	St.) Local Street	Final 2 Section
Ingra Street (Third Ave to Warel	nouse Ave) Local Street (poor grade/alignment	Strip 2) Paving
Loop Road (Ocean Dock - Bluf:	f Road) II 2 - 4 Minor Arterial	Final 2 - 4 Section
Ocean Dock Road (Whitney - Loop Roa	ad) IA 2 Neighborhood Collecto (numerous rails)	Strip- 2 r Paving
(Loop Road - Port)	II 2 - 4 Minor Arterial	Strip 2 Paving
Port Access Structure (' (Third Ave - Loop F	A/C" Couplet) Road) III 4 Major Arterial	Final 4 Section
Ship Creek Point Access (Ocean Dock to Inle	t) none 2 Local Street	Strip- 2 Paving
Warehouse Avenue ("C" St - "A" St)	none 2 Local Street	Final 2 Section
("A" St - Post Road	none 2 Local Street	Strip- 2 Paving
Waterfront Drive (""C St - Ship Cree	k Pt) none 2 Local Street	Under 2 Design
Whitney Road (Ocean Dock - Post	Rd) IA 2 Neighborhood Collector	Strip 2 Paving

Ship Creek Waterfront Land Use Plan

1987 Average Daily Traffic (ADT)



Ocean Dock Road north of Loop Road has numerous railroad/roadway crossings. In addition, the Ocean Dock Road extension north of Bluff Road is an approximately one-mile long cul-de-sac, with little likelihood of secondary access being provided, other than through the military lands on the east. As the tank farms along Bluff Road are redeveloped, a possible extension from Bluff Road to Terminal Road could provide a secondary/emergency access way. With the current land use (tank farms) blocking any feasible alignments for this access, a route cannot be designed or constructed until the tanks are removed or relocated. Efforts are currently underway to resolve the potential leaking tanks in this area. If these efforts are successful, a new route for this access has a greater chance of being accomplished.

Alaska Railroad Yard

The industrial character of the area dictates the presence of numerous railroad/roadway crossings by both mainline and spur tracks. In an effort to reduce these anticipated conflicts to a minimum, a joint effort between the ARRC and several local agencies was initiated. Guidelines were developed for the railroad crossings in this area. This effort culminated in the Diagnostic Team Report, Lower Ship Creek Crossings, which outlines actions to be taken at each of the crossings (eight existing and one proposed). (See Map 21.)

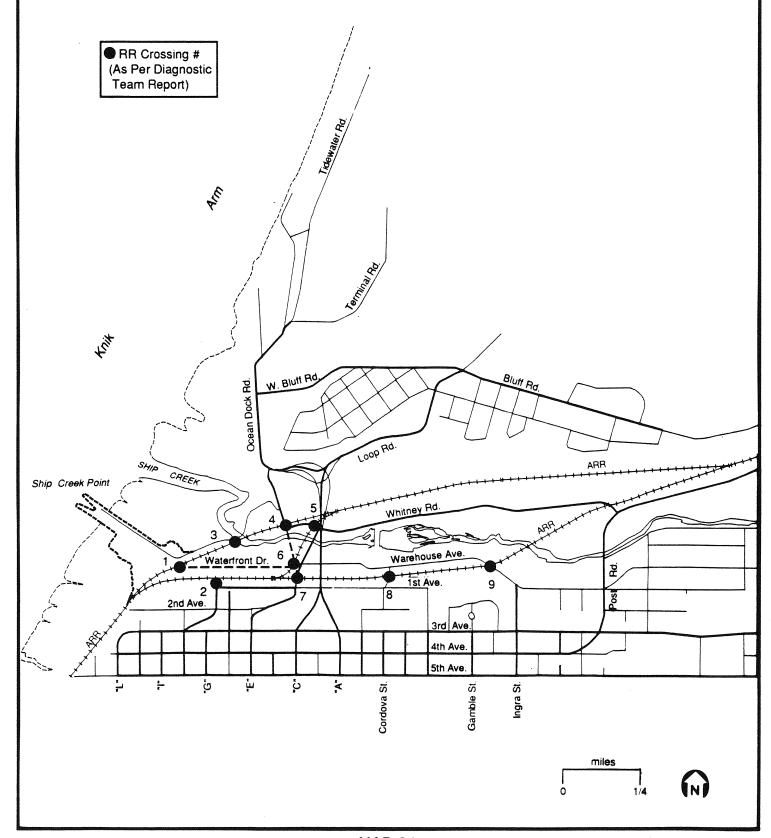
The recommendations of the above-referenced report included the need to improve sight distances, provide flashing crossing lights, and interconnect traffic signals and railroad crossings to ensure the tracks are clear during train movements. The team review of the crossing at Cordova Street between First Avenue and Warehouse Avenue suggested the eventual removal of this crossing when Warehouse Avenue and First Avenue roadways along with the Ingra Street crossing were all improved to their final configurations.

The following is a recommended list of crossing improvements:

- Waterfront Drive to Ship Creek Point, Crossing of Freight
 Main: Proposed at-grade signalized crossing, with
 rubberized surface. Include proposed bike trail with road
 crossing.
- O Proposed Second Avenue Overcrossing to Ship Creek Point: Implementation on hold until further analysis of needs and costs of improvement.
- O <u>Proposed Coastal Trail Crossing over ARRC Yard Track:</u> Further study pending final alignment of Coastal Trail.

Ship Creek Waterfront Land Use Plan

Railroad Crossings



- Ocean Dock Crossings: Upgrade crossing with consideration of signalization and prevention of waiting turning vehicles from blockage of track.
- o <u>Whitney Road Crossing (at pocket track)</u>: Further upgrade with Whitney Road improvements to consider vertical grade problems.
- ARRC Pocket Track Crossing of C Street at Warehouse Avenue:
 ARRC recommended the elimination of this crossing; but if it remains, it is to be rubberized and signalized.
- o "C" Street Crossing, north of First Avenue: Keep horizontal alignment of roadway through the trackage and switch area.
- O <u>Cordova Street Crossing</u>: Eliminate when access is provided at west end of Warehouse Avenue at C Street.
- o <u>Ingra Street Crossing</u>: Improve vertical roadway grade and signalize crossing.

Pedestrian

Currently, the only sidewalks and/or trails in the study area are the northern terminus of the Tony Knowles Coastal Trail near Second Avenue, the sidewalks down Second Avenue (roadway and hill) to the ARRC Depot, and the pedestrian sidewalk along the west side of the Port Access structure between the downtown area and Government Hill. The lack of existing sidewalks or trails throughout the Depot, Warehouse, Greenbelt, and Ship Creek Point subareas must be addressed.

Trail/sidewalk improvements are mentioned in the various design efforts for Ship Creek Point and the proposed historical townsite development, but the final design and locations have not been adopted. This plan recommends the establishment of a cross-country skiing/bicycling trail along the Ship Creek Greenbelt. That trail would then be connected from Ship Creek to the Ship Creek Point area and on to the existing Coastal Trail network.

The Tony Knowles Coastal Trail connection to Ship Creek Point has two options at present. The first option includes the partial filling of the wetlands and the construction of an extension to the Coastal Trail along the north side of the railroad tracks from Elderberry Park north to the proposed Ship Creek Point. The second option includes the construction of an overpass at the north end of the Coastal Trail near Second Avenue, proceeding across the railroad tracks, with a surface trail to Ship Creek Point. Both options would extend the existing trail to the Point. The second option would provide direct, safe trail access from the CBD to Ship Creek Point and avoid potential concerns

with activity occurring in the wetland areas not covered under current permits.

A safety concern with the development of trails and sidewalks in this particular area is the conflict arising between those facilities and the industrial traffic and railroad crossings necessary for the economic viability in the area. The goal of providing trails and walkways throughout the area will require close coordination at the time of site-specific project design.

TRAVEL DEMAND ANALYSIS

Based upon the three analyses, the MinUTP computer modeling simulation process generated future travel demands for the area. The roadway configuration used to analyze this demand was the 1996 committed transportation network, as identified in the AMATS FFY 1991-1995 Transportation Improvement Program (TIP), with the upgrading of the existing roads to municipal standards for two-lane urban streets.

In general, the 1996 committed network includes existing roadways and those facilities scheduled for upgrade or new construction in the existing municipal and ADOT/PF Capital Improvement Programs. The only area roadway shown on the 1996 committed network and the FFY91 TIP is improvement of Whitney Road, from Ocean Dock Road to Post Road. This project is schedule for design in 1993, with construction in 1994--at a total cost of \$4,000,000. The committed network input also assumes the other local roadways (First Avenue, Warehouse Avenue, Waterfront Drive, "C" Street Realignment, Ocean Dock Road, Bluff Road) are all upgraded to municipal urban standards within the year 2010 planning horizon.

Based upon the three 2010 analyses and the 1996 committed roadway network as noted above, the projected travel demands were modeled using the MinUTP system. The resultant projected total daily traffic volumes for the area follow:

TOTAL PROJECTED TRAFFIC VOLUMES SHIP CREEK/WATERFRONT AREA TRAFFIC ZONES

	Adopted 2010 Alternative	Moderate Growth Alternative	Ship Creek Point High Growth Alternative
Total Daily Vehicle Trips	15,629	20,456	24,003
% Increase over Adopted 2010 Plan		31%	54%

The projected traffic volumes for each alternative are shown in Map 22.

In general, the projected travel demands under any of the three analyses can be handled on the existing roadways, with the assumption that each of those roadways is improved to the municipal standard for two-lane urban roads. The projected trip demands produced volume-to-capacity ratios with levels of service in the "C" range, well within acceptable limits.

The intersection of Warehouse Avenue and C Street as realigned may require signalization in the future, but only as warrants are met. The intersection of Ocean Dock Road and Whitney Road will probably require, at a minimum, a southbound left-turn pocket along with potential signalization interconnect to the railroad signal to prevent vehicles from blocking the cross tracks.

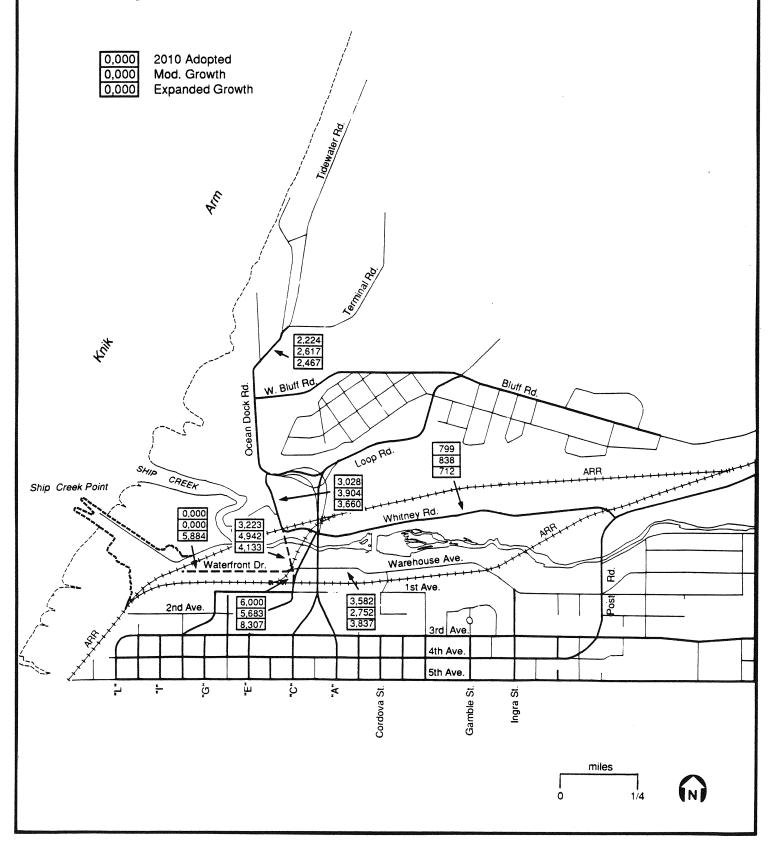
Even with the high development potential for the Ship Creek Point area, the current system of roadways along with the proposed development of Waterfront Drive can handle even the high-growth-projected traffic demands. The proposed construction of the Second Avenue/Christensen Drive roadway overpass of the railroad trackage to the Ship Creek Point area would only provide minimal additional capacity to the Ship Creek Point area at a maximum expenditure, due to the high cost of the bridge facility. A greater return for the use of the funds would include upgrading the other roadways, railroad crossings, and trail facilities in this area.

One of the major concerns noted with the proposed Depot and Ship Creek Point areas deals with employee and tourist access to these facilities. With the majority of the visiting tourists being housed in the CBD area and the steep sidewalk drop down the hill area between Second Avenue and First Avenue to the proposed tourist areas, foot travel access will probably not handle more than 15 to 20% of the tourist demands to this area. The only future transit system scheduled for this area includes a route along Whitney Road oriented more to employment traffic than specific tourist routings.

A possible tourist access alternative to walking down the Buttress, taking a taxicab, or driving a private vehicle is the use of a transit shuttle service. A shuttle service on frequent headways could cover the CBD tourist lodgings, the Downtown Transit Center, the Depot area, and Ship Creek Point. The Buttress parking area at Third Avenue and "E" Street could be utilized as a pickup point for persons headed to the Depot area. They could park in the Buttress lots and use the shuttle service to the lower areas. Dependent upon the type of redevelopment activities and their resultant densities in the area, this

Ship Creek Waterfront Land Use Plan

Projected ADT Volumes, 2010



shuttle could also provide area employees transfer service to and from the downtown Transit Center.

Certain issues cannot be detailed until the area development plan is in its final stages of implementation. These issues include: (1) when and if shuttle service is needed; (2) possible funding sources for the shuttle; and (3) shuttle service headways and routings. The intensity of development at Ship Creek Point will have a major effect on the type and frequency of transit service needed to this area. Until final plans are implemented, the shuttle service should be considered as an option which needs further refinement/evaluation as final construction approaches.

Any plans for the Depot area should also include, as integral elements, off-street parking facilities and motorcoach and/or transit bus parking areas. This will help alleviate the anticipated demand for parking, reduce conflicts between the driving public and on-street parking activities, provide better accessibility, and aid in the visibility of shuttle service.

AIR QUALITY ANALYSIS

Anchorage is a non-attainment area for carbon monoxide emissions. The varying Vehicle Miles of Travel (VMT) for the three modeling alternatives for the Ship Creek area will have a minor effect on the areawide VMT. The projected 2010 VMT for the area is approximately 4,800,000 miles. For this area, the growth in VMT from the existing comprehensive plan VMT level to the high growth scenario is an increase of approximately 30,000 VMT. This results in an overall area annual growth rate increase from 1.31% to 1.34%, well below the 2.5% allowable level.

The road projects as included in the recommendations do not increase the number of lanes, but improve the numerous substandard streets and provide new pedestrian facilities and trails. As the development occurs, especially within the Depot and Ship Creek Point areas, this plan recommends that a detailed transit and parking analysis be prepared and implemented along with the most viable methods for providing access to the area. With air quality review of each roadway project at the time of design, along with the inclusion of transit and pedestrian facilities as noted in this study, the air quality impacts, due to even the high level of development, should be well within desirable and allowable limits.

SUMMARY OF TRANSPORTATION CONCERNS

The major concerns with the current transportation system in the Ship Creek/Waterfront area are:

- 1. Roadway construction: minimal construction and design standards of most of the existing roadways;
- 2. Secondary access to the Port: lack of a secondary/emergency access to the Port of Anchorage area;
- 3. Roadway/Railroad:
 - a. <u>Congestion</u>: current truck/train congestion on Ocean Dock north of Loop Road;
 - b. Rail Crossing Safety: numerous crossings which affect overall safety concerns for the area;
- 4. Ship Creek Point Access: vehicular access to the proposed Ship Creek Point Development; and
- 5. <u>Pedestrian Facilities</u>: lack of continuous and/or coordinated area pedestrian facilities or trails.

AREA TRANSPORTATION RECOMMENDATIONS

Based upon the study analysis, the transportation recommendations for the area include the following items (see Map 23):

Roadway Construction

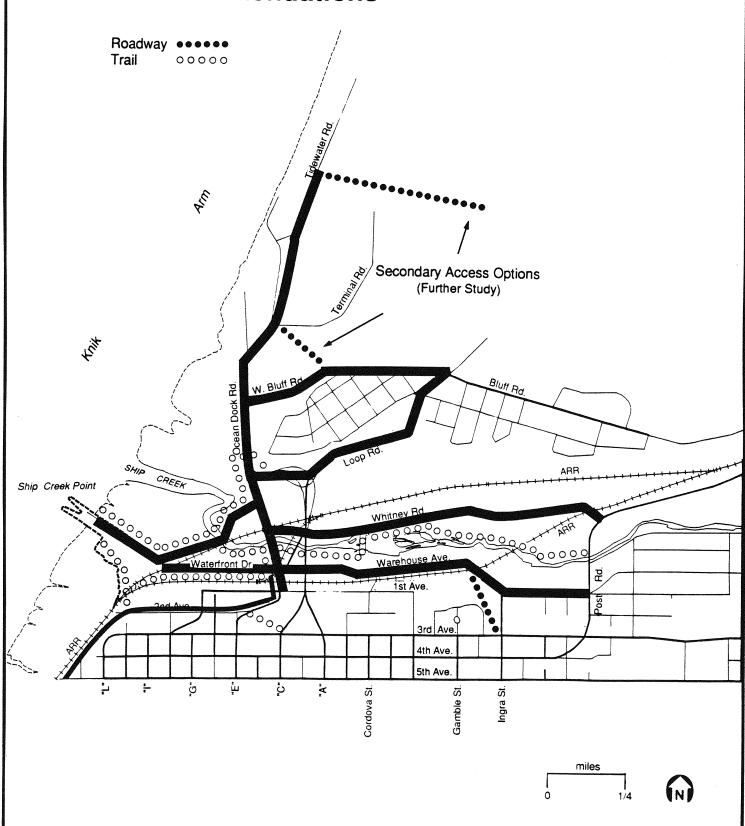
The roadway system is an integral facet in determining viability of any development/redevelopment in the area. majority of roads reviewed in this analysis need to be improved to municipal urban standards. In the redevelopment areas which incorporate commercial applications, full urban improvements must include curbs, gutters, sidewalks and/or trails, illumination, drainage, and so forth. Roads that would be this category include First Avenue, Warehouse Avenue, Waterfront Drive, "C" Street Extension (from Ocean Dock to First Avenue), the north access road to Ship Creek Point, and Whitney Road. Table 3 (page 66) is a listing of the improvements recommended for each facility.

Secondary Access to the Port Subarea

The current Ocean Dock/Tidewater Roads result in a roughly one-mile long cul-de-sac serving the Port of Anchorage. Two possible routes could provide secondary/emergency access. The

Ship Creek Waterfront Land Use Plan

Plan Recommendations



ROADWAY RECOMMENDATIONS*

Bluff Road Collector Standard with curb/gutter (Ocean Dock - Loop Rd) (C/G), trail/sidewalk one side "C" Street (1st Ave - Whitney) Collector w/curb and trail/sidewalk Christensen Drive (3rd Ave - 1st Ave) No change (1st - Ship Creek Pt) No Construction First Avenue (Christensen - "C" St) No Change, add sidewalk north side Ingra Street 2-Lane connector on new alignment (1st Ave to 3rd Ave) technical design constraints) Loop Road (Ocean Dock - Bluff Rd) No Change Ocean Dock Road (Whitney - Loop Road) Collector Standard with C/G, trail/ sidewalk on one side (west), SB--EB turn pocket, with appropriate rail signalization (Loop Rd - Port Area) 2-Lane Minor Arterial, with SB--EB left-turn pocket at Loop Road, C/G, trail/sidewalk one side (east) Port Access ("A/C" Couplet) (Third Ave - Loop Road) No Change Ship Creek Point Access (Ocean Dock to Water) No Change but add trail facilities Warehouse Avenue ("C" St - "A" St) No Change, add northside sidewalk and/or trail with Historic District ("A" St - Post Road) No Change, unless area development alters from smallwarehouse distribution to retail uses (then road needs C/G and sidewalks Waterfront Drive ("C" St - Ship Creek Pt) Collector, with trail/sidewalk Whitney Road Collector Street. Special creek (Ocean Dock - Post Rd) bank erosion concern in area west of existing "C" Street. *The project specific design features will be determined during the design phase of the individual project and may vary from the suggestions included in this table.

two alternatives are: (1) a connection from Terminal Road up the escarpment to Bluff Road or (2) an access from the north Port area ascending the bluff through the military property. Each route will require detailed design and negotiation to determine if either alternative is feasible and buildable. This study recommends that the Port of Anchorage schedule preliminary engineering for these and any other possible routes, leading to eventual construction of a secondary roadway.

Railroad/Roadway Crossings

Based upon the results of the Diagnostic Team Study, the rail crossings, as noted herein, should at minimum be improved to rubberized crossing surface standards, the Cordova Street Crossing should be removed following complete upgrade of the Ingra Street Crossings, and the construction of the Whitney Road and Ocean Dock intersection should include crossing signalization to prevent vehicles standing on the tracks.

Ship Creek Point Access

The existing access to Ship Creek Point from Ocean Dock Road, together with the completion of the proposed Waterfront Drive, will fulfill the necessary access needs under each of the alternatives. The proposed over-the-tracks access structure from Second Avenue and Christensen Drive provides little improvement to the area's accessibility and is not recommended by this analysis.

Pedestrian Facilities

Pedestrian orientation for much of the proposed development in the Ship Creek/Waterfront area will require an extensive effort to provide access capabilities and facilities. The Buttress parking and the CBD/Ship Creek transit shuttle service are options that must be pursued as development of the Depot area proceeds. Following is a listing of the minimum improvements needed to the trail and sidewalk facilities:

- o <u>Sidewalks</u>: As noted within the discussion on the recommended roadway improvements, most roadway facility construction should include sidewalk and/or trail improvements.
- o <u>Tony Knowles Coastal Trail</u> (extension to Ship Creek Point: Construct the Trail Overpass at Second Avenue and continue trail to Ship Creek Point.

- Tony Knowles Coastal Trail (extension to Government Hill):
 Provide extension of trail from Second Avenue at "E" Street,
 descending to connect into "C" Street and eventually to the
 Ship Creek Greenbelt Trail.
- Tony Knowles Coastal Trail (Waterfront Drive/Warehouse Avenue): Construct the trail with the Waterfront Drive roadway project to provide connection from the existing Coastal Trail near Second Avenue to the proposed trail crossing at Ship Creek Dam as described in the land use plan.
- o <u>Transit</u>: Further review and evaluation of increased transit service to the study area should consider such options as expansion of the existing system, a CBD shuttle bus system, or other methods to provide pedestrian and employee access.

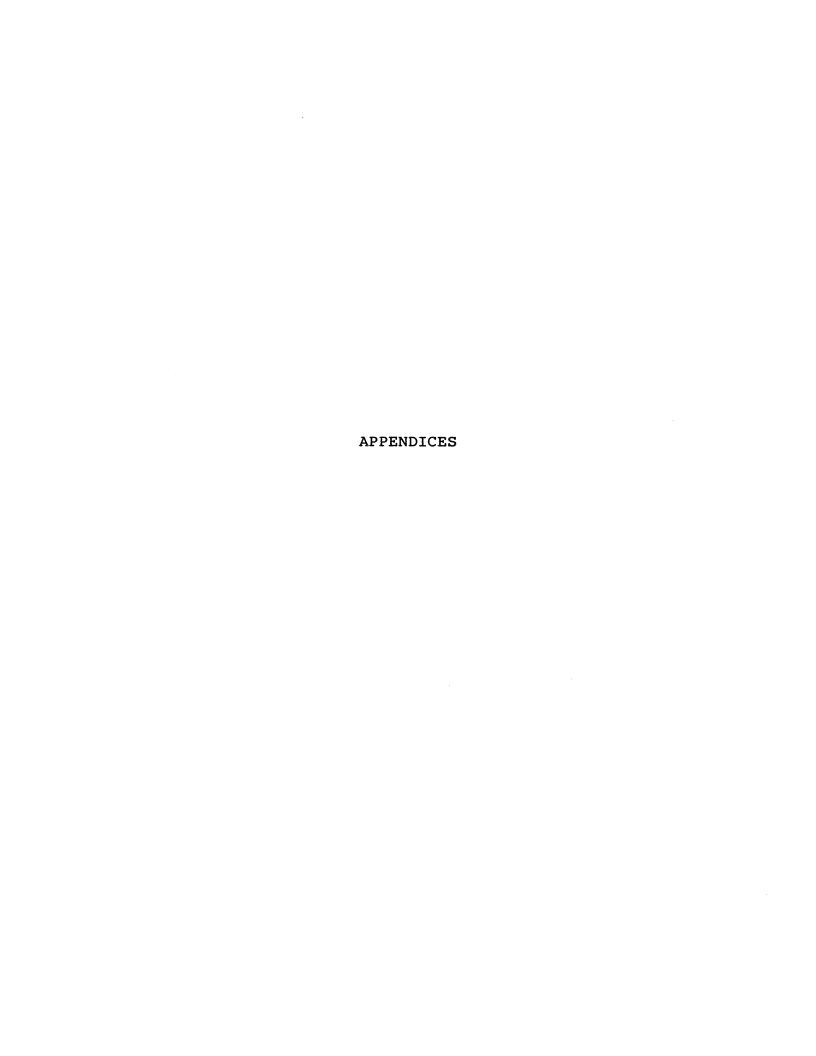
CONCLUSIONS

The future transportation needs for the Ship Creek/Waterfront area will require a coordinated, systematic upgrading of existing roadways and trails, but minimal capital expenditures will be required for "new" roadway projects. Only the development of Waterfront Drive, the realignment of "C" Street, and the upgrading of the eastern access route at Ingra Street are necessary new roadway projects.

The impacts of various land use patterns as proposed for the Ship Creek Point area will not necessitate any additional access needs other than the construction of the proposed Waterfront Drive.

The pedestrian access needs of the area can be handled through the development of a coordinated extension of the Coastal Trail through the area to connect with the Ship Creek Greenbelt Trail, and the inclusion of sidewalks/bike trails with most of the roadway projects.

This plan recommends that as development occurs the municipal Transit Department complete a subarea review to determine if system expansion or shuttle service should be implemented. A possible transit shuttle or other similar service could be implemented to bring tourists and employees from CBD locations to the various development sites in the area. Increased emphasis on employee carpooling and other ridesharing techniques should be promoted by the major employers in the area, such as the Alaska Railroad Corporation.



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APPENDIX A

GOALS FOR THE COASTAL MANAGEMENT PLAN PRESERVATION, CONSERVATION AND UTILIZATION ENVIRONMENTS

Preservation Environment Goals

- 1. Natural areas should remain free from all development which would adversely affect their natural character.
- 2. The intensity and type of uses permitted should be restricted to maintain natural systems and resources in their natural condition.
- 3. Uses which consume the physical and biological resources or which may degrade the actual or potential value of the preservation environment should be prohibited.
- 4. Uses and activities in locations adjacent to natural areas should be strictly regulated to ensure that the integrity of the preservation environment is not compromised.

Conservation Environment Goals

- 1. New development should be restricted to that compatible with the natural and biophysical limitations of the land and water.
- Commercial and industrial uses other than forestry, agriculture, energy facilities, fisheries and mining should be discouraged.
- 3. Diverse recreational activities which are compatible with the conservation environment should be encouraged.
- 4. Development which would be of a hazard to public health, safety, or the general welfare, or would materially interfere with natural processes, should not be allowed.
- 5. Residential development should be regulated to maintain an overall density based on the carrying capacity of the land, or should be high density cluster units with open space and buffer zones surrounding it.
- 6. Within the flood hazard zone, development within the floodway should be prohibited.
- 7. In areas with poorly drained soils or in the marginal lands resource policy unit, residential, commercial, and industrial development should not be allowed unless connected to a sewer line.

- 8. Development should be regulated so as to minimize the following:
 - erosion or sedimentation;
 - adverse impacts on land and aquatic habitats;
 - degradation of the existing character of the conservation environment.
- 9. The Municipality of Anchorage should encourage sustained yield management of natural resources within the conservation environment.
- 10. Industrial, commercial, and residential development should not encroach on Class II or Class III Waters.

Utilization Environment Goals

- 1. Emphasis should be given to development within already developed areas.
- 2. Priority should be given to water-dependent and water-related uses over other uses. Uses which are neither water-related nor water-dependent should be discouraged.
- 3. Multiple use of the shoreline should be encouraged.
- 4. To enhance future waterfront development and to ensure maximum public use, industrial and commercial facilities should be designed to permit pedestrian-oriented waterfront activities consistent with public safety and security.
- 5. Aesthetically pleasing design should be actively promoted by means of sign control regulations, architectural design standards, planned unit development standards, landscaping requirements, viewshed requirements, and other such means.
- 6. Development should not significantly degrade the quality of the environment, including water quality, nor create conditions which would accentuate erosion, drainage problems, or other adverse impacts on adjacent environments.
- 7. Redevelopment and renovation of existing areas should be encouraged in order to accommodate future users and make maximum use of the coastal resource.

- 8. New development in rural areas should reflect the character of the surrounding areas by limiting residential density, providing permanent open space, and maintaining adequate building setbacks from coastal and inland waters.
- 9. Recreational access to coastal areas should be encouraged. Recreational facilities should be located and designed to minimize conflicts with incompatible uses, activities, and user groups.
- 10. Industrial and commercial uses in the rural areas should be restricted to those associated and in character with this environment.

APPENDIX B

TRANSPORTATION PLANNING MODEL USAGE

Model Database Information

Alternative	Roadway Network	Land Use Data
1985 Base System	1985.DAT	BRUCE2.DAT
2010 Adopted	1996SC.DAT	EMP10.DAT
Moderate Growth	1996SC.DAT	EMP10SC2.DAT
High Growth	1996SC.DAT	EMP10SC.DAT

This study used the current MinUTP Transportation Planning model as calibrated and adopted by the Anchorage Metropolitan Area Transportation Study (AMATS). This model provides travel and traffic projections based upon predictions of future land use, housing stock, and trip generation factors. While the model provides estimated demands for future trips and traffic volumes on a system-wide basis, final traffic projections on a project-by-project basis may require some additional technical review.

APPENDIX C

SHIP CREEK/WATERFRONT ALTERNATIVE LAND USE EMPLOYMENT FIGURES (number of employees)

RETAIL EMPLOYMENT					иои	N-RETAIL	EMPLOY	MENT
TAZ #	Base	Adopt.	Mod.	High	Base	Adopt.	Mod.	High
	1985	2010	Growth	Growth	1985	2010	Growth	Growth
3	22	27	25	27	388	525	610	606
6	36	45	45	45	350	709	400	762
7	68	86	70	86	259	364	260	364
9	0	0	0	0	13	0	25	0
10	142	0	0	0	0	51	51	51
11	11	0	200	200	243	300	825	161
12	60	76	200	186	215	786	160	562
13 20 254	10 0 0	12 0 0	10 0	12 0	89 66	138 136	90 120	138 136
292	0 0 =======	0 0 ======	0 140	0 0	140 64	152 132	140 430	152 210
Total	Employme 349	ent 246	690	556	1827	3293	3111	3142

Special Traffic Analysis Zone #577 (Ship Creek Point)

TAZ #577 is a sub zone of TAZ #11. The following trips are in addition to the trips shown for TAZ #11. These trips are based upon the DEDP projected trip ends. The initial trip ends were factored by the MinUTP model to maintain the necessary production and attraction trip end balance.

High Growth Rate Home Based Person Trips Home Based Other Trips	1,324 3,630
Non-Home Based Trips	1,788
Total Zone #577 Person Trips	6,742

Source: DEDP, internal working paper on Land Use Projections

APPENDIX D

TOTAL TAZ TRIP ENDS

Traffic Analysis Zone	1985 Base-year Data	Adopted 2010 Plan Alternative	Moderate Growth Alternative	Ship Creek Pt High Growth Alternative
3		2224	2522	2498
6		1317	883	1419
7		2440	1879	2436
9		0	114	2430
10		495	466	501
11		1166	5475	3123
12		5367	4141	5315
13		793	541	753
20		608	525	589
254		671	592	629
292		548	3318	844
577		0	0	5896
Total Dai:	======== Lv	_ = = = = = = = = = = = = = = = = = = =		
Vehicle Tr		15629	20456	24003
% Change	from Adopte	d 2010 Plan	31%	54%