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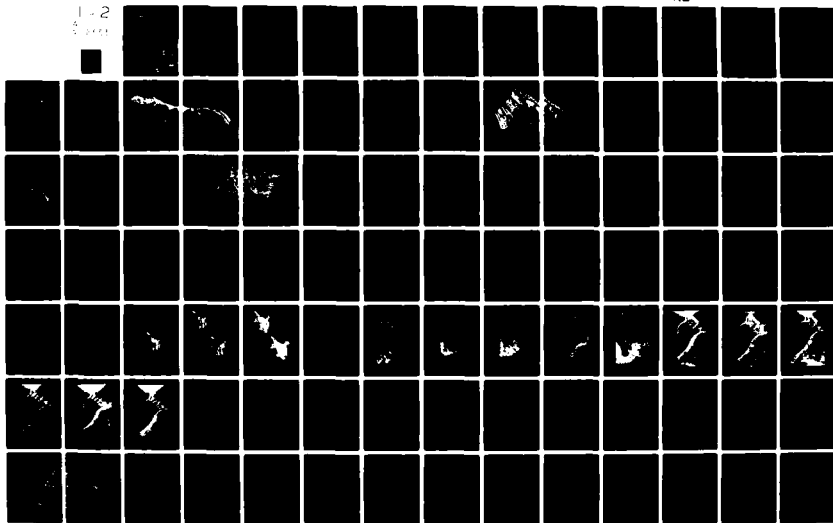
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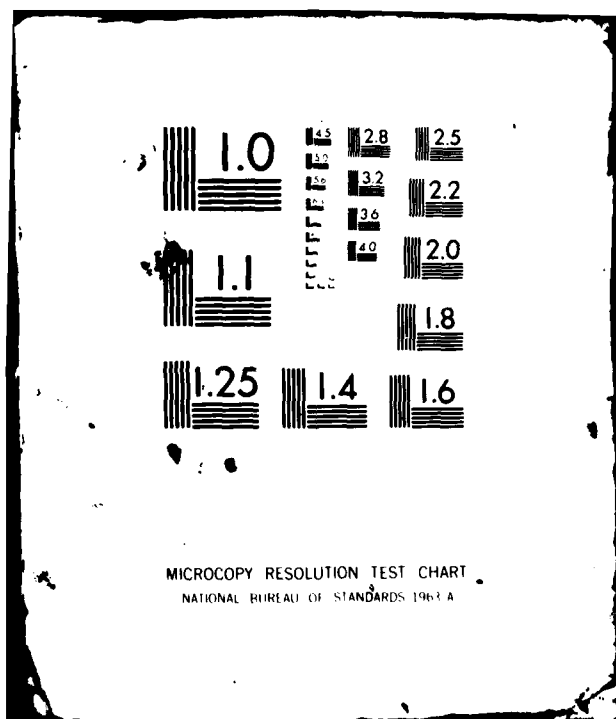
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COMMENCEMENT BAY STUDY

Land and Water Use



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In the 20-month period ending December 1981, Dames & Moore (Seattle) assisted by four subcontractors completed a Phase I effort to collect baseline data and provide a detailed description of the natural and human systems of the Commencement Bay area in the southern Main Basin of Puget Sound in Washington State.			

Data, interpretations, and conclusions in this report are those of the authors.



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COMMENCEMENT BAY STUDIES
TECHNICAL REPORT

VOLUME II

LAND AND WATER USE

for

U.S. Army Corps of Engineers
Seattle District

December 1981

Author:

Steven A. Johnston, Dames & Moore

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1.0 HUMAN USE OF LAND AND WATER

1.1 INTRODUCTION

The Land and Water Use Technical Report is an element of the Commencement Bay Studies (COBS) undertaken by the U.S. Army Corps of Engineers, Seattle District (the Corps) to establish biological and human environmental data on the existing conditions on which to base assessment of future projects, plans, and policies in the Commencement Bay study area. This technical report is responsive to that portion of the Corps' Statement of Work (SOW) for the COBS studies that govern Land and Water Use (Section 3.10.3 in the SOW), Zoning, Land/Water Use Plans and Policies (Section 3.10.4), and Water-Related Cultural Resources (Section 3.10.6).

This technical report responds to the requirements in the Corps SOW as indicated in Table 1.

1.2 EXISTING LAND USE

1.2.1 GENERAL

Commencement Bay provides the avenue of access for waterborne transportation both to the Tacoma CBD and the port industrial flats at the southeast terminus of the bay. The CBD supports a mix of urban uses but is dominated by high-intensity commercial activity. The port industrial area also supports a mix of industrial and commercial with heavy and medium industrial uses dominant. These high-intensity urban/industrial uses along the bay generate a significant amount of commercial vessel traffic. The CBD and port industrial flats are served by two transcontinental railroads and a freeway system. In addition to its industrial/commercial use, the urban population of the greater Tacoma area uses the bay and its shorelines for a variety of recreational uses, including pleasure boating, sportfishing, and hiking, and for other recreational and education pursuits.

TAB 1**KEY TO RESPONSES TO WATER AND LAND USE TASK STATEMENT OF WORK**

Required Element from SOW		Location in Report
3.10.3 Land and Water Use		
a. Existing land and water use in the study area		Section 1.0
b. Historical trends in land and water use		Sections 1.4, 1.5
c. Trends in filling, loss of intertidal or wetland area		Section 1.5
d. Dredging and disposal sites		Section 1.5
e. Locations, types, and description of industrial and commercial development		Section 1.2
f. Land and tidelands ownerships (public and private), large single ownerships, and tideland leases		Sections 1.6, 1.7
g. Description of land and water use forecasts from city, county, or regional planning documents		Section 2.0
h. Ship movements and numbers in Commencement Bay by size, class, and type		Section 1.4
3.10.4 Zoning, Land/Water Use Plans and Policies		
a. Summary descriptions of zoning designations and allowable densities in the study area		Section 1.3 and Appendices
b. Summary descriptions of adopted city and county plans and policies in effect in the study area		Section 2.4
c. Summary descriptions of adopted local land or water use policies, such as steep slope, wetland preservation, or open space policies, and the location of such resources in the study area		Section 2.4
d. Summary discussion of regional plans or policies and any subregional plans		Section 2.4
e. Summary descriptions of federal and state policies for the study area, including critical area designations, coastal zone management policies, wetlands or biological resource preservation policies, and a summary of the locations of such areas		Sections 2.1, 2.2, 2.3, 2.4
3.10.6 Water-Related Cultural Resources		
a. Summary descriptions of the location, general use, size, capacity of, and status of important cultural resources and the need for marinas		Sections 1.2, 1.4
b. Inventory or public access to waterfront areas and public boat launches		Section 1.4 (public boat launches) Section 1.5 (public access)
c. Summary descriptions of areas used for educational or scientific purposes		Section 1.4

This section presents an inventory of land uses and use intensities in the study area. Generally, land uses vary widely within the greater study area, but are primarily urban in nature. To facilitate an inventory of existing land uses, the study area has been divided into three subareas: (1) the south shore subarea, (2) the port industrial subarea, and (3) the north shore subarea (see Figure 1). In the sections below, industrial, commercial, residential, and open space uses will be characterized within each of these subareas. It should be re-emphasized that the study area proper is limited to 200 feet from the shoreline in most cases, with the base of the bluffs constituting the landward edge of the study area within the south and north shore subareas. This designation of study area boundaries limits the types of land uses found in those portions of the study area. Therefore, the sections below will also describe significant land uses located just outside, and potentially affecting, the study area.

Parts of the study area are located in four municipalities: the City of Tacoma, City of Fife, Town of Ruston, and unincorporated Pierce County. The Port of Tacoma is also accorded land use planning responsibility over much of the port industrial area by state law (Revised Code of Washington [RCW] 53.20). Figure 2 depicts municipal boundaries as they relate to the study area; the area of port jurisdiction area is superimposed.

1.2.2 THE SOUTH SHORE SUBAREA

1.2.2.1 General

The south shore subarea constitutes that portion of the study area extending eastward from Point Defiance to the landward end of (and including) both sides of City Waterway (see Figures 1 and 3), a distance of about 7 miles (11 kilometers). This subarea supports the greatest variety of land uses within the study area. The westernmost portion of this subarea is dominated by Point Defiance Park which remains in a generally natural state, with steep slopes rising from narrow sand and gravel beaches. The easternmost three-fourths of the shoreline has been

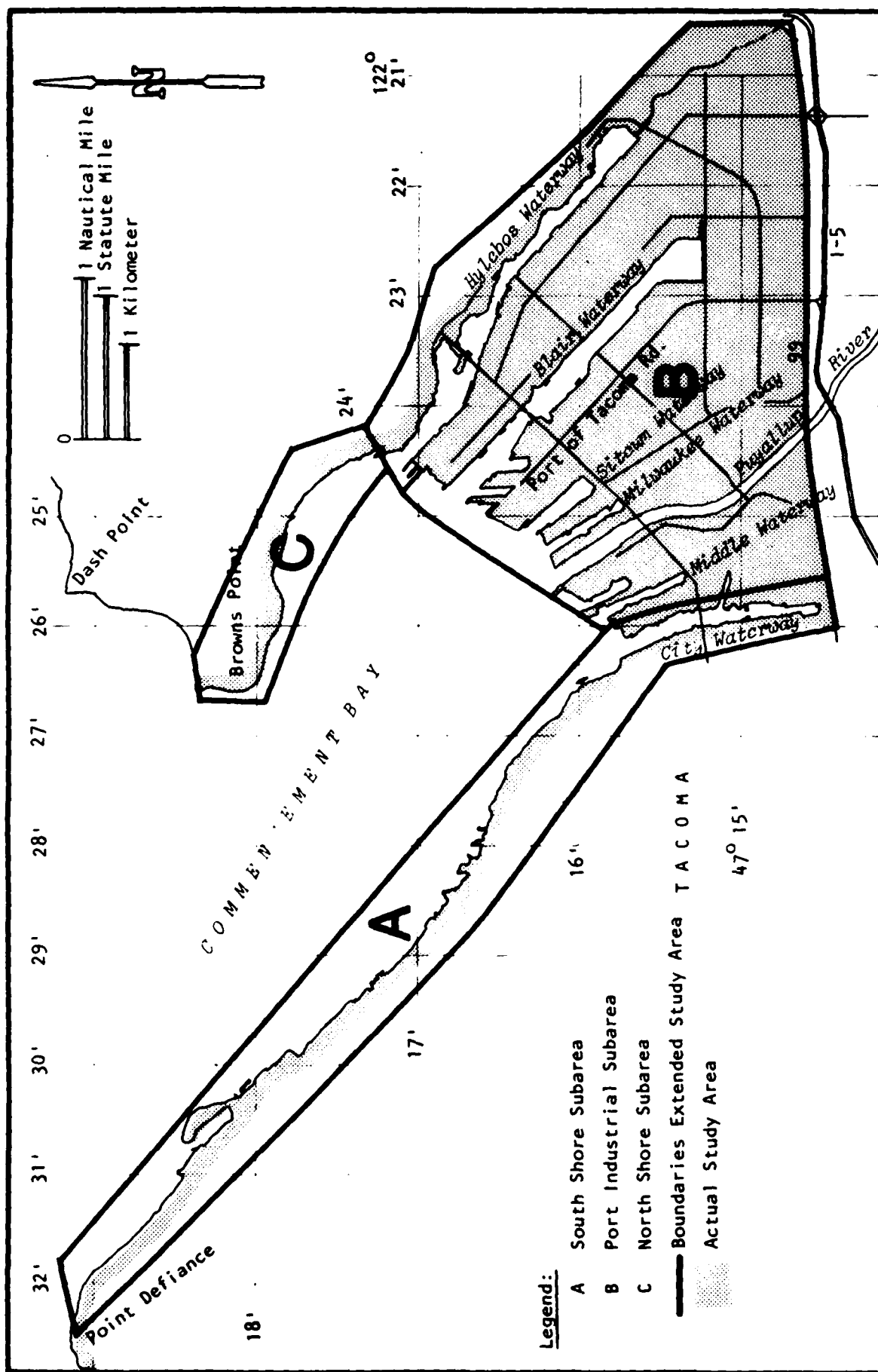


FIGURE 1
LAND USE SUBAREAS

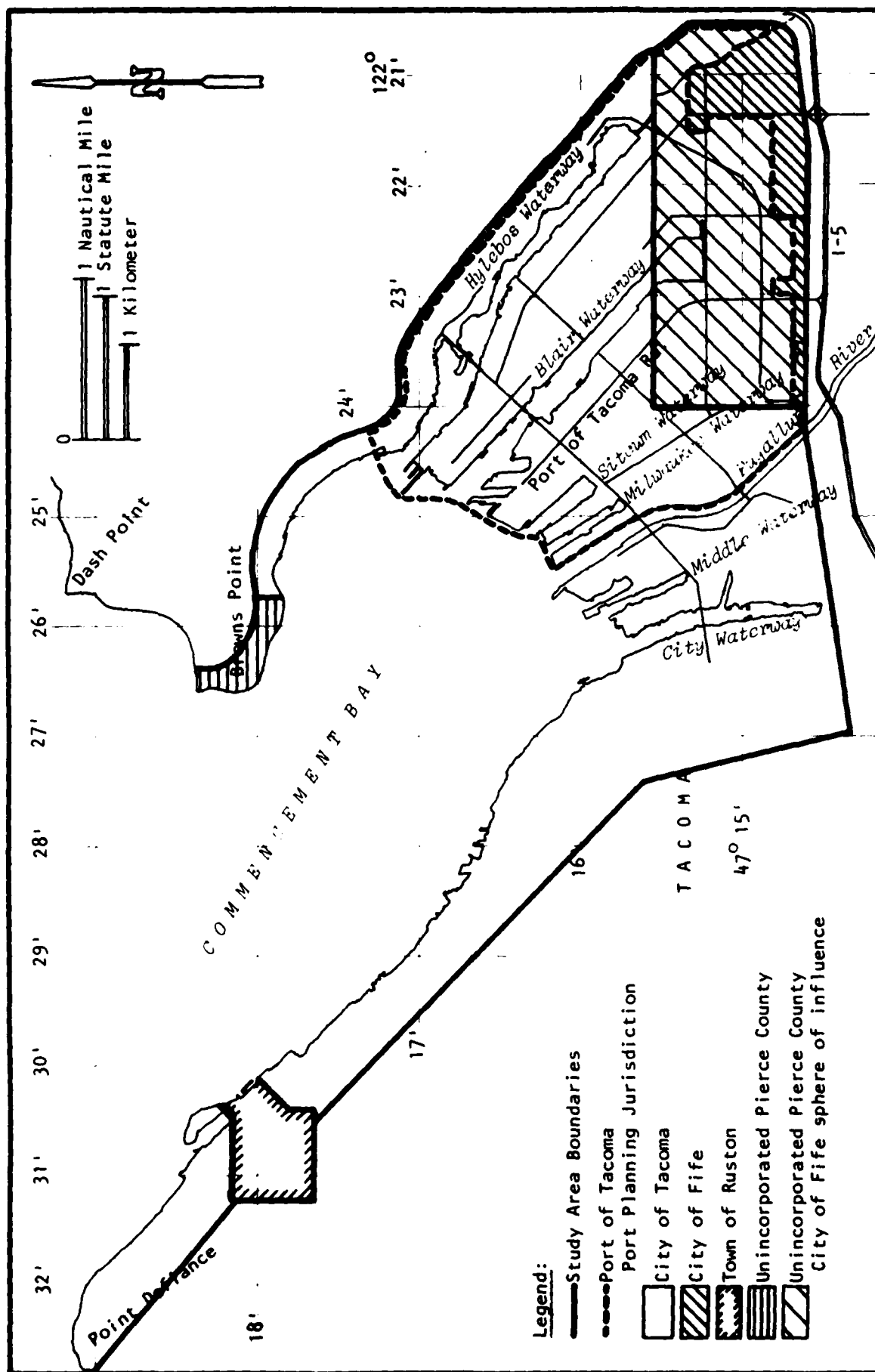
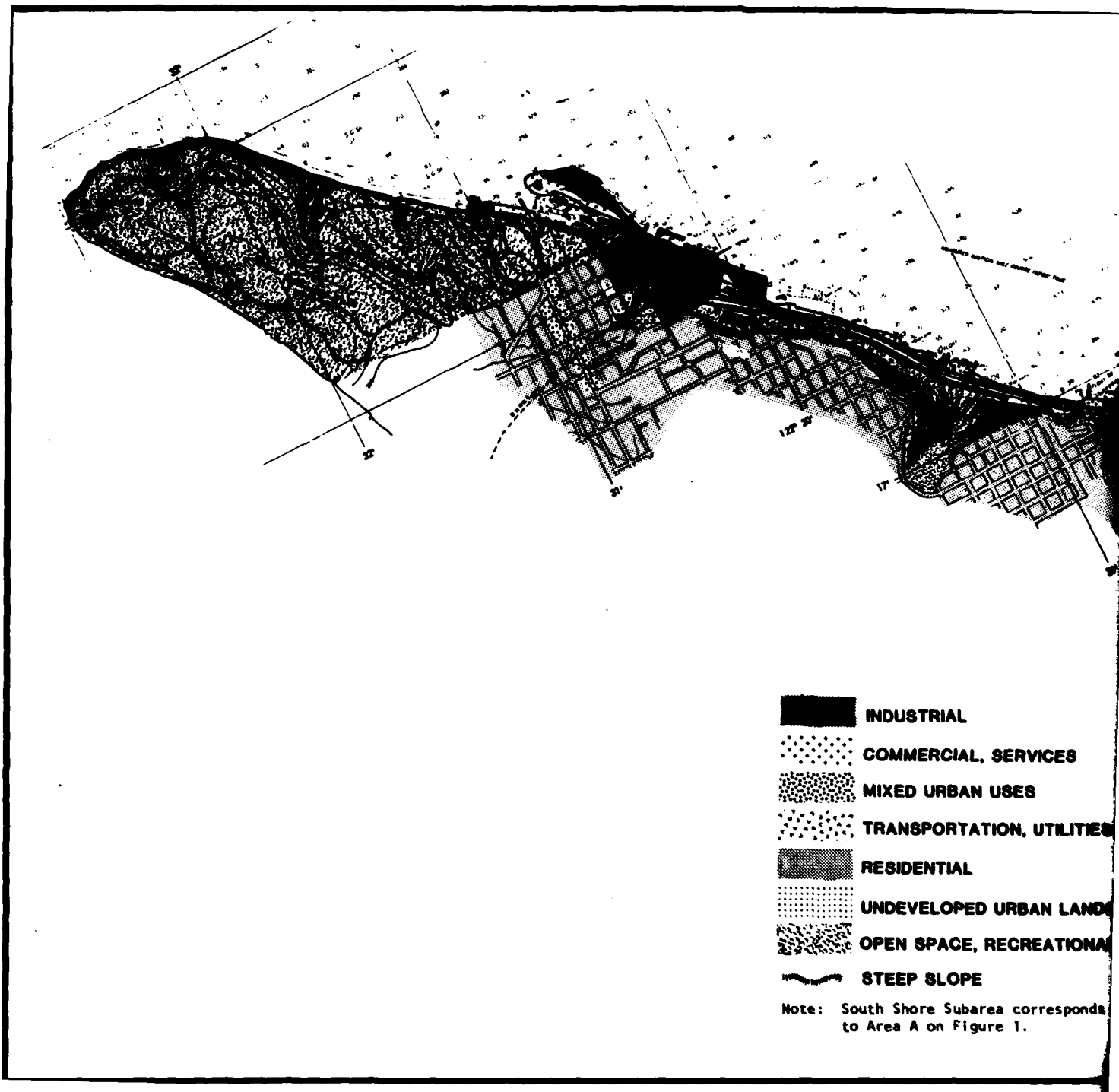


FIGURE 2
PLANNING JURISDICTIONS
IN EXPANDED STUDY AREA



INDUSTRIAL
 COMMERCIAL, SERVICES
 DENSE URBAN USES
 TRANSPORTATION, UTILITIES
 RESIDENTIAL
 DEVELOPED URBAN LANDS
 OPEN SPACE, RECREATIONAL
 STEEP SLOPE

Shore Subarea corresponds
 to A on Figure 1.

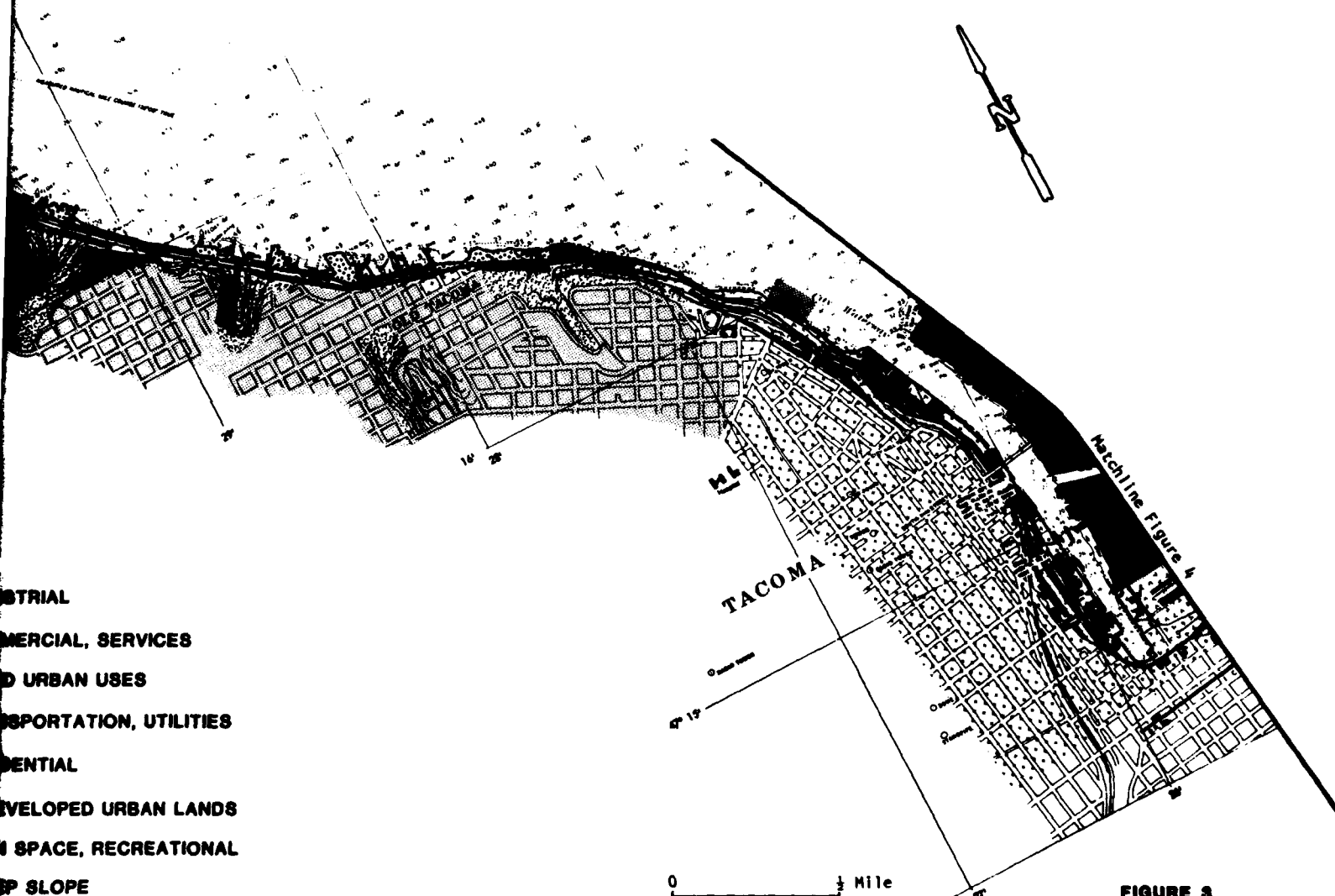


FIGURE 3
 EXISTING LAND USE
 SOUTH SHORE SUBAREA

extensively modified. A narrow shelf of land, created historically by undercutting the steep slopes along the shoreline and supplemental filling and riprapping, now supports Ruston Way, Schuster Parkway, and the mainline of the Burlington Northern Railway. Landward of this narrow shelf, steep slopes rise 200 to 300 feet above sea level.

1.2.2.2 Industrial Uses

Several significant industrial uses are distributed along the south shore of Commencement Bay. The ASARCO copper smelter, located 2 miles (3.2 kilometers) east of Point Defiance, is the largest, most visible industrial use along the south shore. The smelter produces refined copper and industrial by-products from copper-bearing ores and concentrates. The smelter is served by railroad, highway (via Ruston Way), and water transport. Ores and concentrates are delivered to the smelter primarily by ship; finished product is transported from the smelter principally by rail. ASARCO is a significant contributor to the local economy with over 800 full-time employees.

Light industrial uses along Ruston Way/Schuster Parkway east of ASARCO are widely scattered and are almost exclusively water-oriented. This 2-mile (3.2-kilometer) stretch of shoreline was once dominated by water-oriented industrial uses at the turn of the century (see Section 1.5 below). Remains of pilings supporting these structures still are visible. The present industrial usage is limited to a few boat yards and the Port of Tacoma Grain Terminal near the entrance to City Waterway.

Industrial uses along City Waterway consist of machine shops, foundries, petroleum storage facilities, marine works, lumber and plywood manufacturers, metal works, and other medium-to-light uses. Many of these uses are water-oriented, although several depend on rail or highway for transport of process materials and product.

1.2.2.3 Commercial Uses

Along Ruston Way, commercial uses are widely distributed, with seafood retailers, engineering and architectural firms, restaurants, and other commercial establishments located at intervals along its length. One notable concentration of commercial uses occurs at Old Tacoma, located approximately 1 mile (1.6 kilometers) west of the edge of the CBD. Commercial uses at this location consist of specialty retail shops and neighborhood-oriented commercial services. Three major marinas are located along the south shore between the entrance to City Waterway and the ferry landing in Point Defiance Park (see Figure 9 in Section 1.4.3 below).

The Town of Ruston, the site of another concentration of predominantly neighborhood-oriented commercial uses, is located just outside the study area to the south of the ASARCO smelter.

Commercial development on the south shore is concentrated along City Waterway. Commercial activities on the waterway include both water-oriented uses (five marinas [see Figure 9 in Section 1.4.3 below] and several restaurants) as well as nonwater-oriented uses (several warehousing establishments and wholesale goods distribution centers).

The Tacoma CBD, located just south of the study area boundaries, is one of the major commercial centers of the region. In the CBD, high-intensity commercial uses are interspersed with office and institutional uses.

1.2.2.4 Residential Uses

Residential uses occupy only a very small percentage of the land along the south shore of the study area. Substantial residential developments within the subarea boundaries are located on Waterview Street near Ruston and at Old Tacoma. Residential uses along Waterview Street consist of about 30 single-family homes. Residential areas at Old Tacoma consist of more concentrated single-family and multi-family uses.

Other limited residential uses are scattered along the landward side of Ruston Way between Waterview Street and Old Tacoma. Although residential development along the south shore of the study area is sparse, residential uses constitute the primary land use just outside of the study area boundary between the Tacoma CBD to the east and Point Defiance Park to the west. In fact, this area, which generally includes the West End, North Slope, Central, and CBD planning areas of Tacoma (see footnote at bottom of page 2-23), supports a forecasted 1980 population of over 80,000 persons, or slightly greater than one-half of the city's total population (derived from Tacoma Planning Commission 1978). Residential uses in this area include both single- and multi-family structures, although detached single-family uses dominate. Multi-family residences are generally concentrated near the CBD, along major north-south arterials such as Pearl Street, Orchard Street, and Union Avenue, and east-west arterials such as South 19th Street and 6th Avenue.

1.2.2.5 Recreational/Open Space Uses

Several significant recreational/open space lands are located within 200 feet of the south shore of Commencement Bay. The northeast portion of Point Defiance Park (a 698-acre city park) comprises the westernmost portion of the south shore of Commencement Bay. Point Defiance Park is generally well-used and is the site of the city zoo, historic exhibits, gardens, and other comprehensive public recreation services and facilities.

Commencement Park, located at the foot of McCarver Street near the Old Town Dock, consists of a small public park and beach. Old Town Park, a 1-acre neighborhood park, is located just outside the study area at North 30th and Steele. Firemans Park, a 1.4-acre city park, is located in the CBD near the west shore of City Waterway. While these parks all receive use both from regional and local residents, Point Defiance Park serves a more widespread population and is generally more regional in character. Use of Point Defiance Park is extensive. Old Town Dock and Firemans Park receive moderate regional use, local use of these facilities prevails. Use of Old Town Park is generally light and local.

Several recreational/open space areas are located just outside the south shore subarea. Garfield Park, a 10-acre wooded open space used by local residents for recreational purposes, is located near the southern study area boundary at North 8th Street and Borough Road. Puget Park, which consists of the southern half of Puget Gulch, and Jane Clarke Playfield, at North 39th and Ferdinand Streets, are also located less than 1 mile (1.6 kilometers) south of the study area.

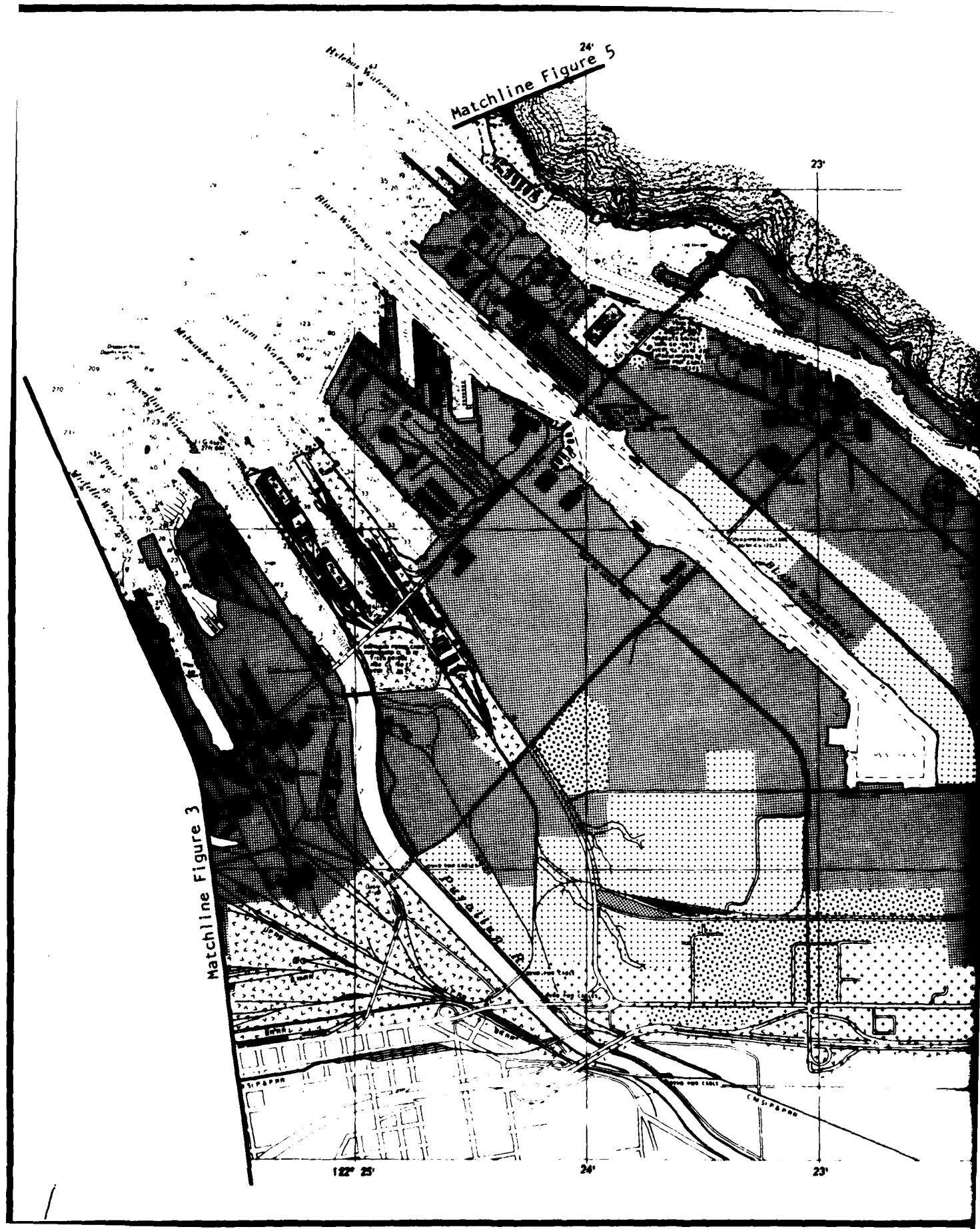
In addition to designated parks, several additional open spaces are available for recreational use within the south shore subarea. These include portions of Puget and Buckley Gulches and publicly-owned shorelines along Commencement Bay. Several public piers near Old Town and portions of public access beaches are used for sportfishing and crabbing. Playfields at Stadium High School on North "E" Street and Ruston School near the ASARCO smelter are located just outside the study area. Use of these areas is light to moderate and is generally local in nature.

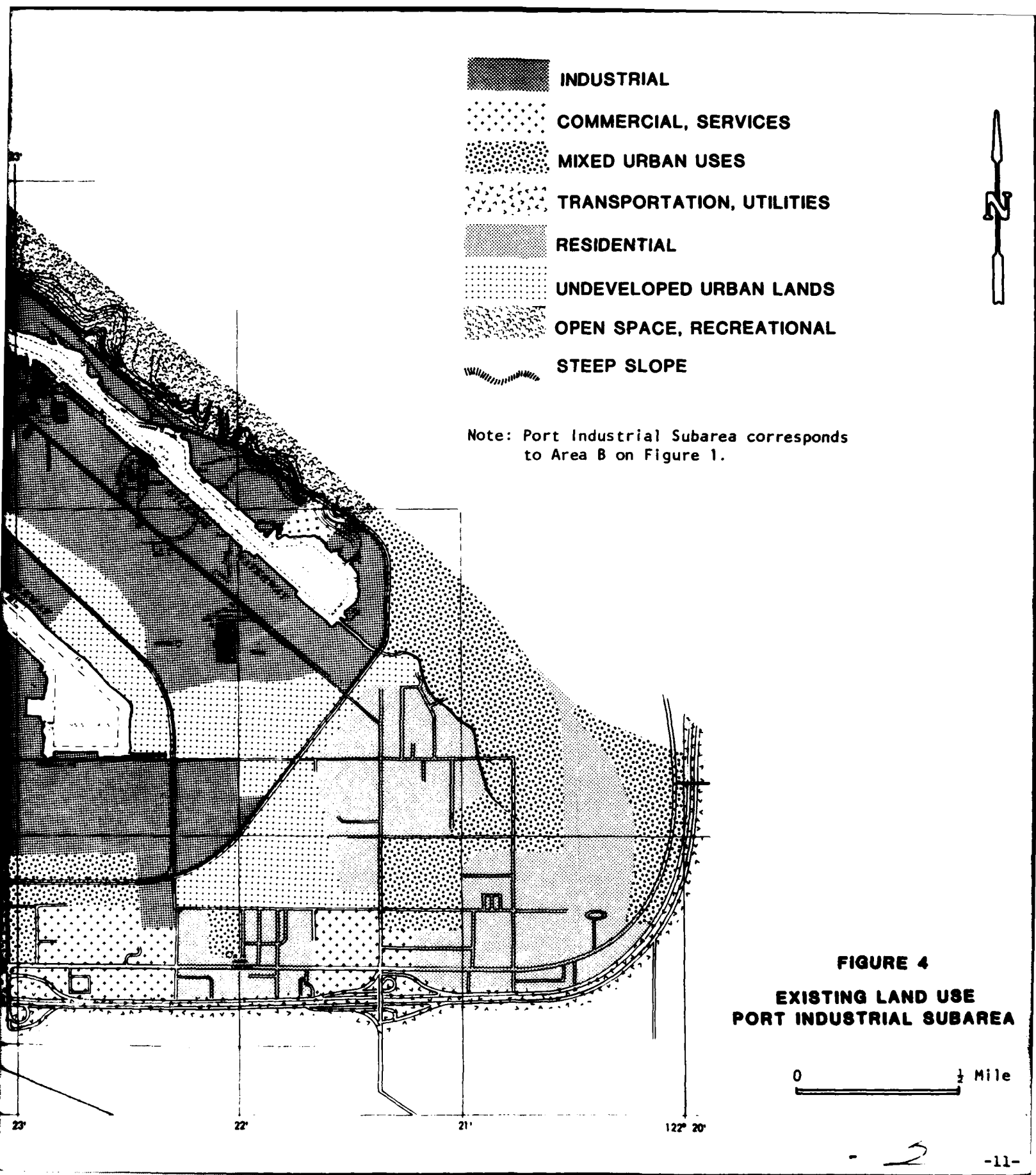
Ruston Way and Schuster Parkway, both located within the study area, support recreational uses to the extent that they are designated as both scenic and bicycle routes by the City of Tacoma. Bayside Trails, a system of designated city hiking trails, extends for 2-1/2 miles (4 kilometers) through a 20-acre greenbelt above Schuster Parkway (Tacoma Planning Commission 1978). These facilities are used moderately to extensively by regional and local residents.

1.2.3 THE PORT INDUSTRIAL SUBAREA

1.2.3.1 General

The port industrial subarea extends from the northeast shore of the City Waterway (opposite the CBD) to Marine View Drive at the base of the bluffs overlooking Hylebos Waterway and landward to Pacific Highway, Highway No. 99 (see Figure 4). This subarea encompasses about 8 square miles and includes Middle, St. Paul, Milwaukee, Sitcum, Blair, and Hylebos Waterways, the mouth of the Puyallup River, and all adjacent land uses. This area was created historically by the incremental filling of





natural tidal flats by man. Fill necessary to construct the peninsulas between waterways and improve landward portions of the port industrial area has been largely dredged from the waterways and Puyallup River (see Section 1.5.2 below).

1.2.3.2 Industrial Uses

Heavy and light industrial uses are the dominant land uses in this subarea (see Figure 4). Most of the heavy industrial uses are now or have been water-oriented and as such are concentrated along the various waterways. Principal industries located within this subarea include the St. Regis Paper Company facility on the St. Paul, Puyallup, and Wheeler-Osgood Waterways; the railyards between the Puyallup and Milwaukee Waterways; the Port of Tacoma loading and storage facilities between Milwaukee and Blair Waterways; U.S. Oil and Refining between the Puyallup River and Blair Waterway; Concrete Technology and Domtar Chemical on the Blair Waterway; the Port of Tacoma Industrial Yard, Reichhold Chemicals and Kaiser Aluminum between Blair and Hylebos Waterways; and Hooker Chemical, Sound Refining, Pennwalt Chemical, Tacoma Boatbuilding, and Weyerhaeuser Lumber on Hylebos Waterway. Numerous light industrial and warehousing facilities are distributed along the waterways and arterials of the port industrial subarea. Industrial uses in the subarea are generally served by water, vehicular, and rail transport. (Land ownership within the port industrial subarea is discussed in Section 1.6.3 below.)

1.2.3.3 Commercial Uses

Commercial uses within the more industrially developed portions of this subarea are generally widely scattered. Such uses principally consist of warehousing establishments; distribution facilities for food, equipment, and paper products; and commercial services such as restaurants and banks. These latter uses are principally located along E. 11th Street and Port of Tacoma Road, major arterials serving the industrial area. A few commercial uses are distributed around the intersection of E. 11th Street and Marine View Drive. One marina, located on Blair Waterway (see Figure 5 below), is located in this subarea.

The most concentrated commercial development in this subarea is located along Pacific Highway, which forms the southeast boundary of this subarea as well as the study area. Commercial intensity along this arterial is greatest at the intersection of Pacific Highway and 54th Avenue, where several small shopping centers are located along with restaurants, gas stations, banks, and other commercial services. Additional commercial uses are distributed along Highway 99 southeast to the Tacoma CBD and west/northwest toward Federal Way.

Four marinas are located in this subarea. Three are located on the north shore of the Hylebos Waterway; one is located on Blair Waterway (see Figure 9 in Section 1.4.3 below).

1.2.3.4 Residential Uses

Residential uses in the port industrial subarea are generally limited to an area between the landward terminus of Hylebos Waterway and Pacific Highway to the south and east. Single-family residential uses dominate in this area. Other single-family uses and some limited multi-family (duplex, small apartment complexes) are distributed along Pacific Highway and in small residential pockets located off arterials in the southeast portion of the subarea.

Several substantial residential areas are located just outside the port industrial subarea (study area) boundaries to the east and north. Areas to the east include residential areas of Fife and Milton. Residential areas of Northeast Tacoma, including the neighborhoods of Crescent Heights and Cedar Heights, are situated to the north of the subarea boundaries. Residential uses in these areas are dominated by single-family detached housing; some multi-family residential uses are located along major arterials in Fife and Milton.

1.2.3.5 Recreational/Open Space Uses

There are virtually no designated recreational land uses in the port industrial subarea, although E. 11th Street and Highway 99 are designated

City of Tacoma bicycle routes (see discussion of the city's Interim Outdoor Recreation and Open Space Plan in Section 2.4.2.3 below). The subarea does support a substantial amount of open space, most of it designated for future industrial/commercial use. Much of this open space is owned by the Port of Tacoma and is located between the existing concentration of industrial uses along the waterways and Pacific Highway to the southeast.

Just outside the study area boundaries, to the north of Hylebos Waterway and Marine View Drive in Northeast Tacoma, open space is abundant. Much of this open space will likely be developed in the future, as it is currently zoned for residential use and is in an area where substantial residential growth is forecasted. On the other hand, some open space is located on the steep face of the bluffs or in gulches overlooking Marine View Drive and the port industrial subarea (see Figure 4). Some of this open space is owned by the City of Tacoma; current plans, such as the city's Northeast Tacoma Plan (see Section 2.4.2.3 below), provide for continuing public ownership of such lands for recreational use (Tacoma Planning Commission 1979).

Lands designated for recreational use that are located just outside the port industrial subarea in Northeast Tacoma include the North Shore Golf Course, N.E. Tacoma Park, a public viewpoint on Highline Road, School District 10 property west of the golf course, and a future park site on Browns Point Boulevard at 35th Street N.E. The city has also recommended the acquisition of additional lands in Northeast Tacoma for future recreational development. In addition, the city has proposed the development of bicycle and pedestrian trails along Marine View Drive (Tacoma Planning Commission 1979).

1.2.4 NORTH SHORE SUBAREA

1.2.4.1 General

The north shore subarea is that portion of the study area consisting of the shoreline of Commencement Bay extending from the mouth of Hylebos

Waterway to Browns Point, a distance of approximately 3 miles (5 kilometers) (see Figure 5). Land uses in this subarea generally consist of mixed, low-intensity uses. This subarea is characterized by steep slopes (up to 60 percent) rising to 200 to 300 feet above sea level in the eastern portion of the subarea, decreasing in height to approximately sea level at Browns Point to the extreme west of the subarea. The slopes are generally wooded to the east, gradually transitioning to urban vegetation interspersed with open spaces to the west.

1.2.4.2 Industrial Uses

There are virtually no industrial uses within this subarea; industry along the north shore of the Hylebos Waterway does not extend west of the E. 11th Street Bridge.

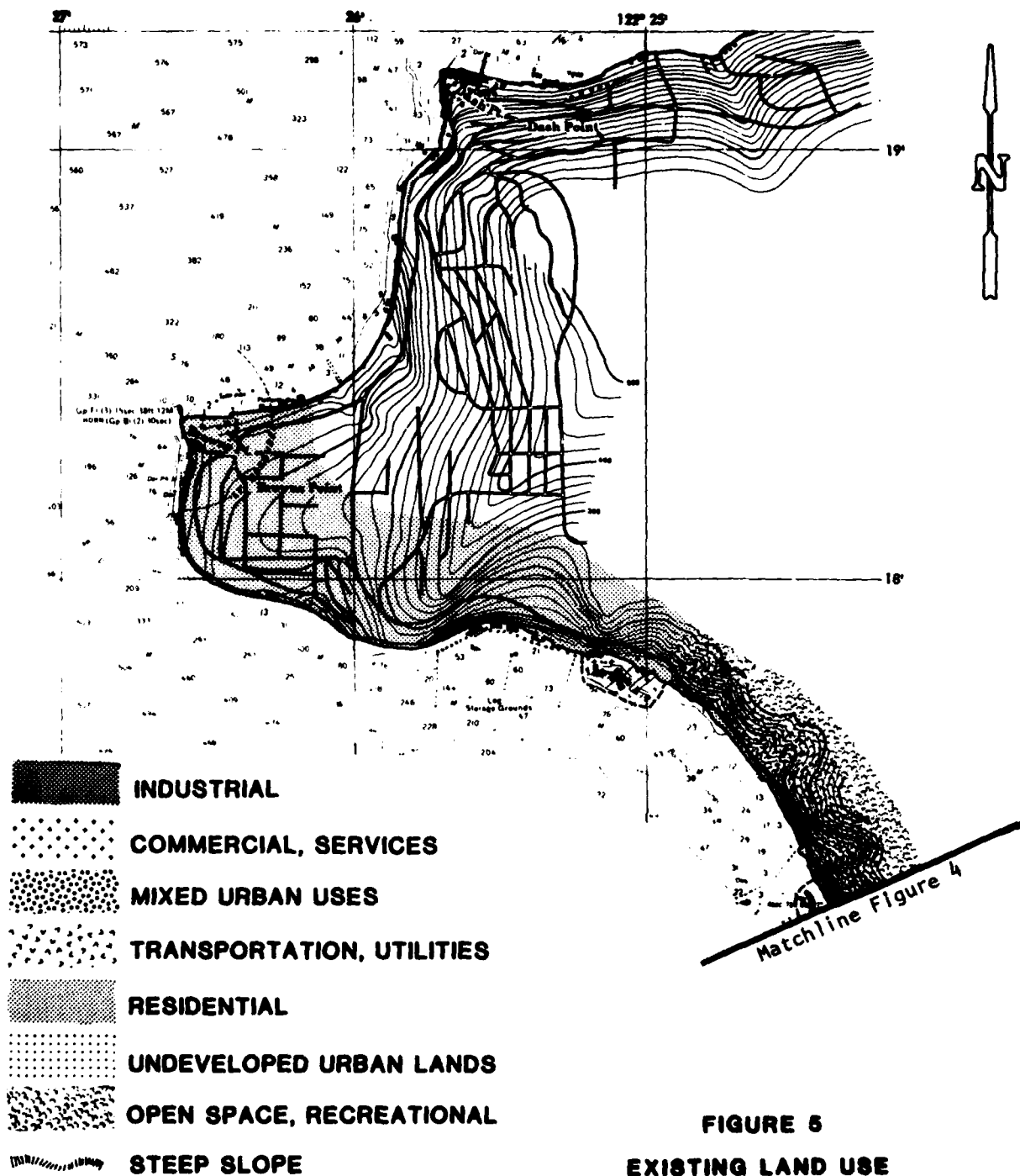
1.2.4.3 Commercial Uses

Commercial uses within the north shore subarea are few and well-distributed. Three of the more significant commercial uses in this subarea include the Cliff House Restaurant and two marinas (see Figure 9 below) on Marine View Drive.

1.2.4.4 Residential Uses

Some limited single-family residential uses are located in the north shore subarea; these are mostly found in two general locations. About 20 to 30 residences are situated on tidelands between the shoreline of Commencement Bay and Marine View Drive east of the Tyee Marina. For the most part, these single-family residences are older; many are constructed on pilings. Another group of single-family residences is located along the shoreline extending west from the Cliff House Restaurant, then north to Browns Point.

Substantial additional residential development is located just outside the north shore subarea in Northeast Tacoma. This area contains the neighborhoods of Hyada Park on Browns Point, Browns Point Heights,



Note: North Shore Subarea corresponds to Area C on Figure 1.

FIGURE 5
EXISTING LAND USE
NORTH SHORE SUBAREA

0 $\frac{1}{2}$ Mile

and Harbor View Heights. These neighborhoods are again primarily composed of detached single-family housing, with limited and widely dispersed multi-family uses (i.e., small multiplexes).

1.2.4.5 Recreational/Open Space Uses

Publicly-owned shorelines along Commencement Bay in the north shore subarea are used by regional and local residents for recreational purposes such as hiking, sportfishing, and wading. Marine View Drive is designated as a scenic automobile route by the City of Tacoma (see Section 2.4.2.3 below). A private park, beach, and boat launch facility are located at Browns Point. Other designated recreational areas located outside of the subarea include a neighborhood playground at Meeker Junior High School and a future park site north of the intersection of 45th Street N.E. and High Point Road (Tacoma Planning Commission 1979). A state park and community park are located at Dash Point, 2 miles (3 kilometers) northeast of Browns Point.

Open spaces available for recreational use are distributed throughout the area just north of the subarea (study area) boundaries. However, these areas are zoned and planned for future development as uses other than recreational.

1.3 ZONING

1.3.1 GENERAL

As indicated above, the study area is located within the boundaries of four municipalities or jurisdictions: the City of Tacoma, City of Fife, Town of Ruston, and unincorporated Pierce County (see Figure 2). The zoning for each municipality is discussed below as it affects the study area. Permitted densities, building height, bulk, setback, and other data for Tacoma and Pierce County are provided in the appendix to this report.

Correlation between existing land uses and zoning is generally good, although some nonconforming uses do exist within the study area.

1.3.2 CITY OF TACOMA

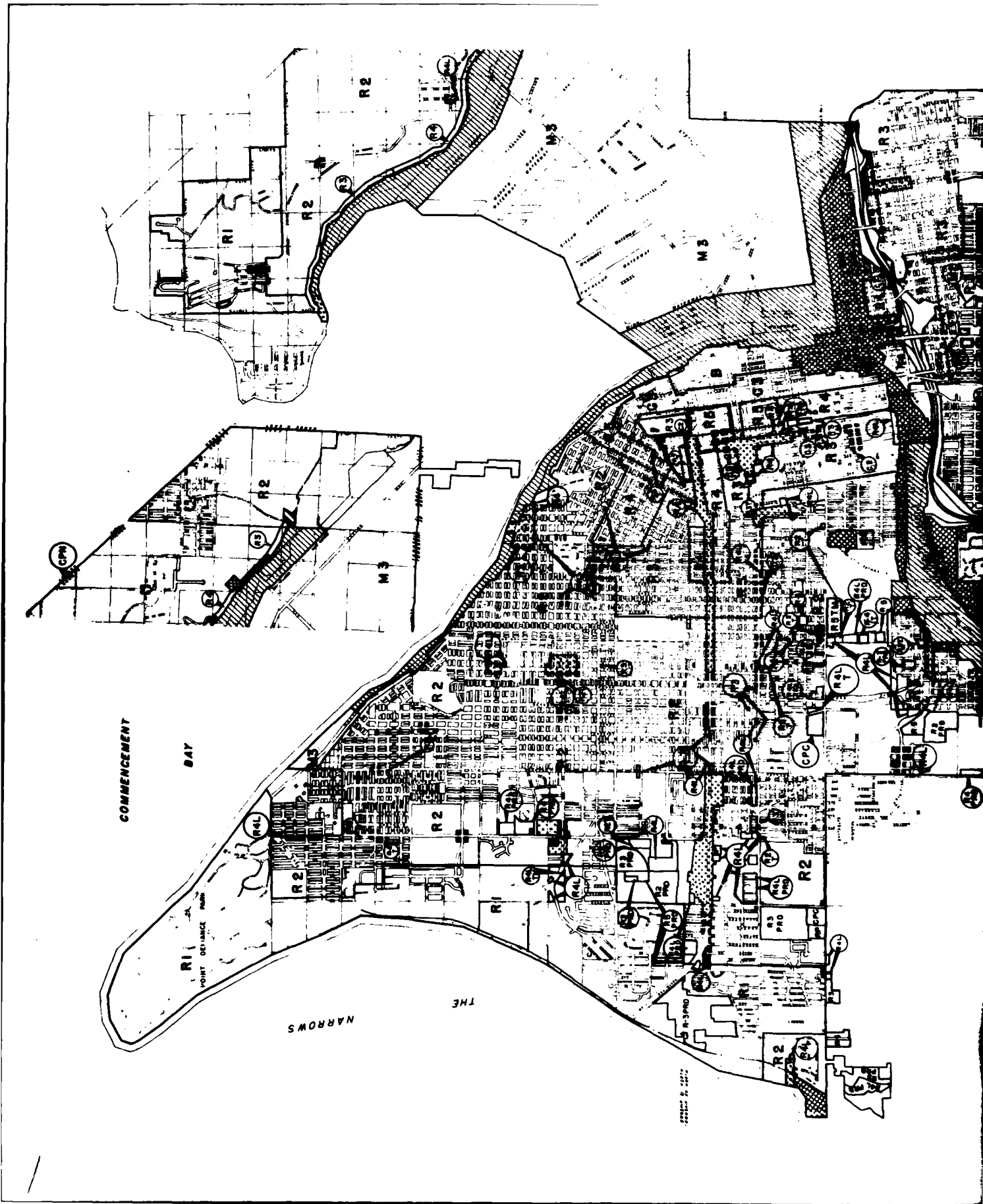
Over 80 percent of the study area is located within the City of Tacoma. Zoning for the City of Tacoma, including the study area, is depicted in Figure 6. Since the COBS study area proper consists of those lands located within 200 feet of the shoreline (see Section 1.2.1), development in the study area is not subject to rezoning restrictions, but rather to guidelines contained in the City of Tacoma's Master Program for Shoreline Development (see discussion in Section 2.4.2.3 below). Shoreline designations are depicted in Figure 26.

Significant zoning classifications within the expanded study area include R-1 (one-family dwelling) corresponding to the urban park at Point Defiance* and portions of Northeast Tacoma; M-3 (heavy industrial) corresponding to the ASARCO copper smelter and that portion of the port industrial area located within city boundaries; M-2 (heavy industrial) corresponding to water-oriented industries along City and Hylebos Waterways; and R-3 and R-4 (multiple-family) along the top of the bluff above the north shore subarea (Hylebos Waterway and the north shore of Commencement Bay).

1.3.3 TOWN OF RUSTON

The Town of Ruston has zoning jurisdiction over a portion of the study area that comprises approximately one-half of the ASARCO copper smelter site (see Figure 2). This area is zoned M-1 (industry) by the Town of Ruston and represents the only land within the town limits zoned for manufacturing use (Town of Ruston 1981). The Town of Ruston proper is located just south of the study area boundaries. With the exception of commercially zoned (C-1) lands extending for one-half block on the west side of Pearl Street from North 49th Street to the entrance to Point Defiance Park, all other lands in the Town of Ruston are zoned for residential use (R-1).

*While lands comprising Point Defiance Park are zoned residential, these lands are used as a park under a special use city permit.



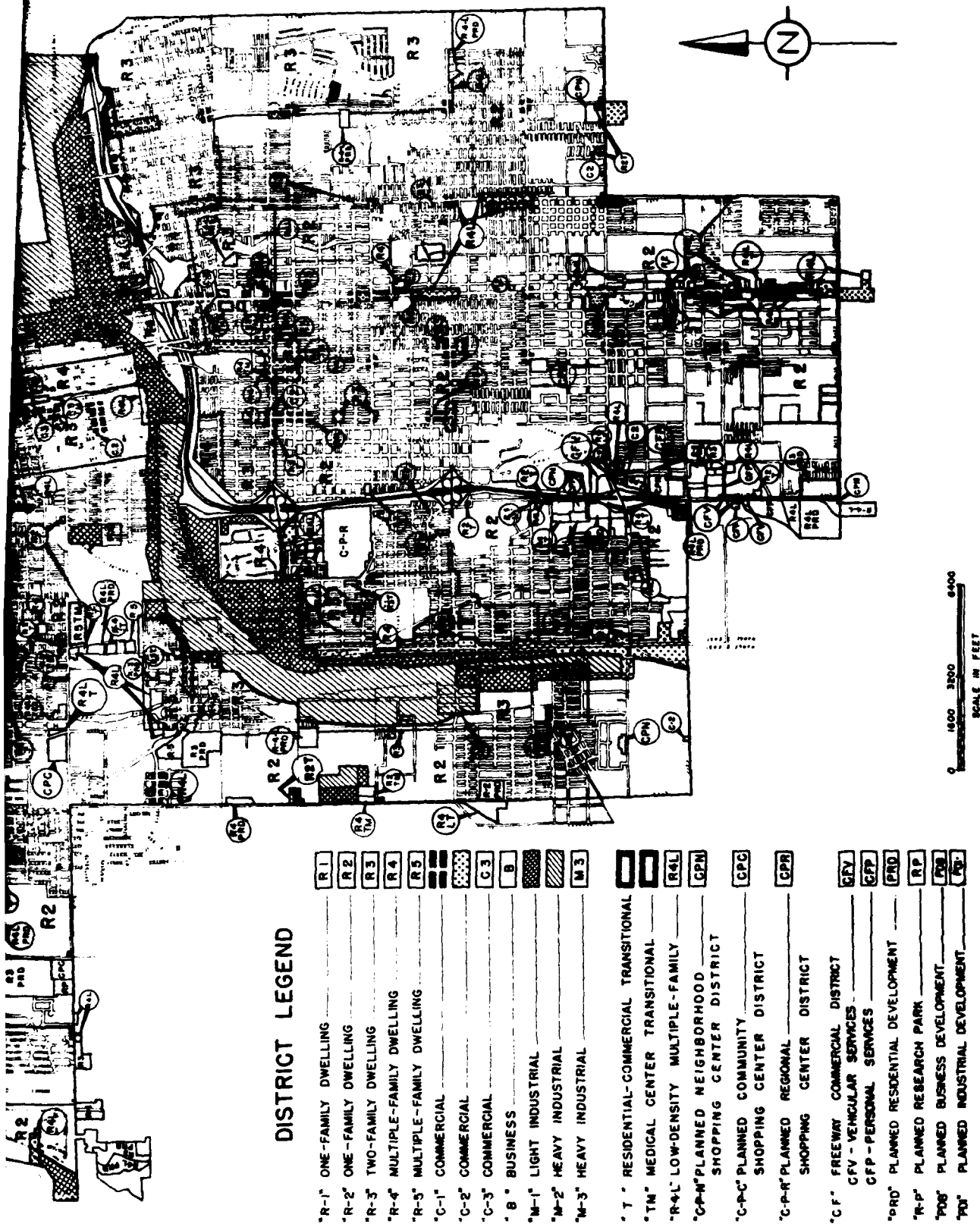


FIGURE 6
ZONING - CITY OF TACOMA

1.3.4 CITY OF FIFE

A relatively small portion of the study area located just north of Pacific Highway is within the municipal boundaries of the City of Fife (see Figure 2). This area is zoned for mixed commercial (C-2, C-3, C-4) and manufacturing uses (M-1, M-3, and M-4). Scattered residential uses in this area are permitted under both manufacturing and commercial zoning designations. Zoning within Fife is shown in Figure 7.

1.3.5 UNINCORPORATED PIERCE COUNTY

The remaining part of the study area located outside of the City of Tacoma (Browns Point and part of the port industrial area) is under the jurisdiction of Pierce County. Like those shoreline areas under the jurisdiction of the City of Tacoma, areas within 200 feet of the shoreline in Pierce County are not subject to zoning, but rather to guidelines contained in the Shoreline Master Program for Pierce County (see Section 2.4.2.2 below). Within the expanded study area, the Browns Point area (which is predominantly residential) is primarily zoned RE (Residential Estate) and SR (Suburban Residential). The former designation permits single-family dwellings, schools, and churches, while the latter designation permits RE uses, plus two-family dwellings on larger lots.

That portion of the port industrial area located between the City of Tacoma and City of Fife is also in unincorporated Pierce County (see Figure 2). While the City of Fife comprehensive plan seeks to extend Fife's "sphere of influence" to this area, Pierce County retains planning and zoning jurisdiction in this area. Pierce County zoning permits development of both light manufacturing (M-1) and heavy manufacturing (M-2) uses for those portions of the port industrial area under county jurisdiction. These uses are consistent with the plans and policies of the surrounding municipalities of Tacoma and Fife.

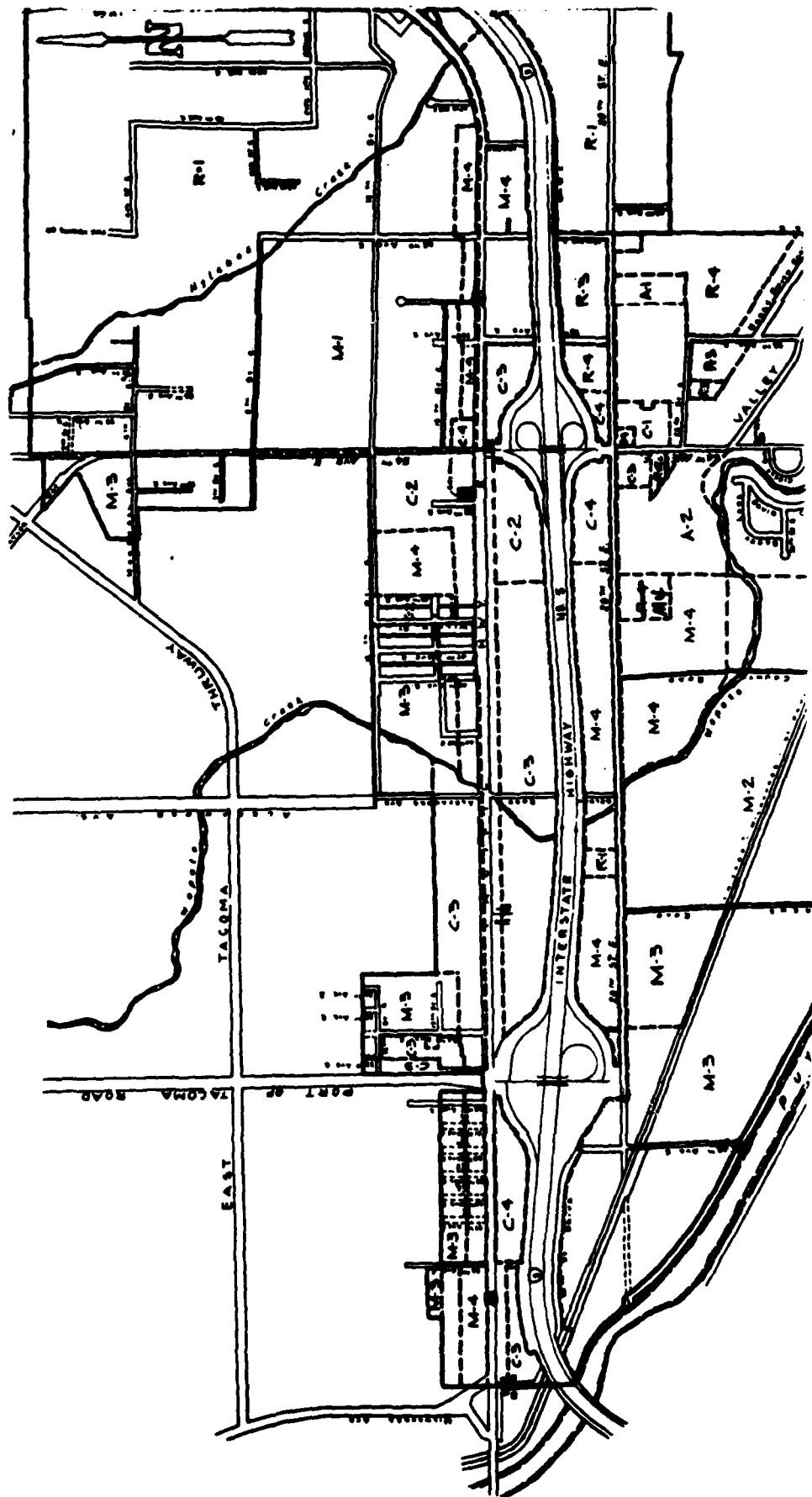


FIGURE 7
STUDY AREA ZONING - CITY OF FIFE

1.4 EXISTING WATER USE

1.4.1 GENERAL

The waters of Commencement Bay, the industrial waterways, and the mouth of the Puyallup River are used extensively for a variety of industrial, commercial, and recreational purposes. In the sections below, the extent of such usage will be characterized.

1.4.2 INDUSTRIAL/COMMERCIAL USE

1.4.2.1 Vessel Traffic/Trends

The marine waters of the study area provide a route of access and egress for ships and barges transporting products to and from the industrial and commercial facilities of the port industrial area. Larger vessels approaching Commencement Bay transit in designated Puget Sound shipping lanes that extend from Admiralty Head in northern Puget Sound southward to their terminus about 1 mile northwest of Browns Point. These lanes constitute part of the U.S. Coast Guard's advisory Puget Sound Vessel Traffic Service (PSVTS). Vessels bound for the City and Port of Tacoma or a Commencement Bay anchorage area proceed to the entrance of the bay (to a point just past the dredge material disposal area located midway between Browns Point and Old Tacoma [see Figure 13 below]) where they await tug services. Tugs then escort the vessels to the designated anchorage area in Commencement Bay or other destinations within the port industrial area.

Table 2 presents data on the number of vessel movements within Commencement Bay in 1978, the most recent year for which comprehensive vessel traffic data have been compiled by the U.S. Army Corps of Engineers (1978). Data in Table 2 present the direction of travel (inbound or outbound), whether the vessel was self-propelled or nonself-propelled (towed), and general vessel type (dry cargo, passenger, tanker, tug/towboat).

TABLE 2
VESSEL TRIPS IN COMMENCEMENT BAY(a)
1978

	Inbound	Outbound
<u>Self Propelled</u>		
● Passenger and Dry Cargo	7,347	7,399
● Tanker	85	86
● Tugboat/Towboat	8,747	8,737
<u>Non-Self Propelled (Barges)</u>		
● Dry Cargo	965	899
● Tanker	<u>955</u>	<u>974</u>
Total	18,099	18,095

(a) Data from: U.S. Army Corps of Engineers (1978).
Data exclude domestic fishing craft, military vessels.

Commercial vessel traffic data compiled by the Port of Tacoma (1980a) indicate that there were 479 vessel arrivals at and 635 departures from port facilities in 1978. There were 489 arrivals and 661 departures in 1979, the last year for which complete data are available. Projected 1980 data indicate an estimated 552 arrivals and 713 departures. These data include only those vessels calling on facilities owned or operated by the Port of Tacoma. Port of Tacoma data are not broken down into vessel types; however, general cargo, container, log ships, and grain ships comprise an estimated 70 to 80 percent of all large vessels (about 175 feet or more in length) calling at Commencement Bay facilities. Ore ships and other bulk carriers constitute the remainder (Port of Tacoma 1980).

The disparity between U.S. Army Corps of Engineers data and Port of Tacoma data for 1978 is due to several factors. While Port of Tacoma data include only those generally larger vessels (175-900 feet in length) that use designated Port of Tacoma facilities, the Corps of Engineers' data include: (1) ferry trips from Point Defiance to Tahlequah on Vashon

Island (nearly 6,500 arrivals and departures from Point Defiance per year), and (2) all vessels (except fishing boats and military vessels) calling on all facilities or anchorages in study area waters.

Data collected since 1955 by the U.S. Army Corps of Engineers, Seattle District (1955, 1960, 1965, 1970-1978) and presented in Table 3 indicate that the number of total vessels arriving and departing Commencement Bay in 1978 (18,095 vessels) represents about a 27 percent decrease over 1955 totals (22,945 vessels). When compared against total vessel traffic data for 1965 (28,626 vessels), this decrease is even more dramatic (58 percent). Part of this disparity is due to the use of generally larger vessels, resulting in more cargo capacity per average vessel (see Table 3); the remainder is due to economic and market conditions affecting vessel transport of goods and products to Commencement Bay on- and offloading facilities.

As indicated in Table 3, the number of tankers entering and departing Commencement Bay in the 1970s represents a substantial decrease since the 1950s and early 1960s. Again, this decrease is partially due to a dramatic increase in the size of the average tanker using study area waters. The year in which fewest tankers (39) used study area waters was 1974. This was at least partially attributable to the Arab oil embargo in late 1973. Tanker traffic volume on Commencement Bay has remained relatively stable since the mid-1970s.

The sector of vessel traffic that is most volatile in terms of dramatic increases and decreases in numbers is the "Towboat or Tugboat" sector. While this sector comprises a stable percentage of the vessel total (between 46 and 51 percent) in all but one year between 1970 and 1978 (39 percent in 1974), tugboats comprised a significantly greater percent of total traffic (57 to 66 percent) in 1955, 1960, and 1965. The inordinately large number of tugboat/towboat trips in 1965 resulted in the single greatest total number of vessel trips in Commencement Bay in any of the study years. For the most part, the percentage of vessel traffic in other sectors has remained relatively stable in relation to total vessel trips.

TABLE 3

Sheet 1 of 6

COMMENCEMENT BAY VESSEL CALLS BY TYPE AND SIZE (DRAFT) (a,b)

Trips and Drafts of Vessels, 1955

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
31	2	5	--	--	--	7	2	--	--	--	--	2
30	3	13	--	--	--	16	11	--	--	--	--	11
29	8	11	--	--	--	19	16	3	--	--	--	19
28	30	3	--	--	--	33	26	2	--	--	--	28
27	21	8	--	--	--	29	24	5	--	--	--	29
26	24	6	--	--	--	30	33	6	--	--	--	39
25	30	9	--	2	--	41	18	9	--	--	--	27
24	24	12	--	1	--	37	32	8	--	--	--	40
23	33	14	--	--	--	47	39	11	--	--	--	50
22	40	6	--	3	--	49	46	16	--	--	--	62
21	49	5	--	--	--	54	38	3	--	--	--	41
20	43	6	--	--	--	49	40	7	--	--	1	48
19	47	6	--	5	--	58	37	11	--	--	--	48
18	43	1	--	3	11	58	36	18	--	3	4	61
17	35	5	6	--	1	47	43	10	6	--	1	60
16	103	4	18	2	18	145	112	5	21	--	1	139
15	37	2	--	1	47	87	23	3	--	--	8	34
14	55	4	37	2	15	111	47	1	38	--	3	89
13	48	2	92	3	5	150	53	5	94	2	5	159
12 and less	6,646	62	12,898	1,709	452	21,767	6,660	61	12,886	1,709	524	21,840
Total	7,321	184	13,051	1,731	547	22,834	7,336	184	13,045	1,714	547	22,826

Trips and Drafts of Vessels, 1960

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
34	--	1	--	--	--	1	--	1	--	--	--	1
33	1	2	--	--	--	3	--	1	--	--	--	1
32	1	1	--	--	--	2	3	--	--	--	--	3
31	3	18	--	--	--	21	5	5	--	--	--	10
30	5	10	--	--	--	15	23	4	--	--	--	27
29	6	7	--	--	--	13	19	6	--	--	--	25
28	14	13	--	--	--	27	15	5	--	--	--	20
27	20	9	--	1	--	30	25	8	--	--	--	33
26	28	8	--	--	--	36	19	12	--	--	--	31
25	23	9	--	1	--	33	26	16	--	--	--	42
24	18	15	--	--	--	33	20	8	--	--	--	28
23	31	10	--	--	--	41	40	10	--	--	--	50
22	49	9	--	--	8	66	45	7	--	--	2	54
21	51	9	--	--	--	60	55	7	--	--	--	62
20	48	13	--	--	6	67	57	10	--	--	3	70
19	59	2	--	--	--	61	51	4	--	--	--	55
18	69	5	2	--	--	76	58	33	2	--	--	93
17	44	3	4	--	--	51	26	4	4	--	--	34
16	38	1	20	--	10	69	25	--	20	--	1	46
15	118	--	53	2	51	224	114	--	52	--	7	173
14	28	--	140	--	22	190	25	--	140	--	6	171
13	55	--	90	--	9	154	69	3	92	--	3	167
12 and less	6,081	76	11,667	1,519	384	19,729	6,082	75	11,609	1,514	467	19,749
Other	--	--	--	--	2	2	--	--	--	--	2	2
Total	6,790	221	11,976	1,523	492	21,002	6,802	219	11,919	1,514	491	20,945

(a) Data from: U.S. Army Corps of Engineers (1955, 1960, 1965, 1970-1978).

(b) Data do not include domestic fishing craft, military vessels.

TABLE 3

Sheet 2 of 6

Trips and Drafts of Vessels, 1963

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
39	--	1	--	--	--	1	4	--	--	--	--	4
38	--	2	--	--	--	2	--	--	--	--	--	--
37	--	1	--	--	--	1	1	--	--	--	--	1
36	--	3	--	--	--	3	3	1	--	--	--	4
34	--	1	--	--	--	1	1	--	--	--	--	1
33	1	2	--	--	--	3	2	--	--	--	--	2
32	1	7	--	--	--	8	5	3	--	--	--	8
31	4	2	--	--	--	6	11	3	--	--	--	14
30	8	2	--	--	--	10	18	2	--	--	--	20
29	20	1	--	--	--	21	26	1	--	--	--	27
28	21	1	--	--	--	22	36	2	--	--	--	38
27	33	4	--	--	--	37	30	3	--	--	--	33
26	14	6	--	--	--	20	40	4	--	--	--	44
25	20	5	--	1	--	26	22	2	--	--	--	24
24	20	6	--	--	--	26	38	14	--	--	--	52
23	32	5	--	--	--	37	40	7	--	1	--	48
22	64	4	--	--	5	73	44	4	--	--	3	51
21	43	7	--	--	--	50	36	--	--	--	--	36
20	70	5	--	--	15	90	48	4	--	--	9	61
19	53	5	--	--	1	59	57	2	--	--	--	59
18	43	2	2	--	--	47	39	11	2	--	--	52
17	36	--	1	--	--	37	20	2	1	--	--	23
16	30	--	29	18	51	128	14	3	31	--	22	70
15	74	--	24	--	53	151	52	--	24	--	9	85
14	4	1	27	2	12	46	5	2	26	--	4	37
13	36	--	89	9	60	194	26	1	93	12	29	161
12 and less	6,997	--	18,832	1,305	403	27,537	6,984	--	18,831	1,332	524	27,671
Total	7,624	73	19,004	1,335	600	28,636	7,602	71	19,008	1,345	600	28,626

Trips and Drafts of Vessels, 1970

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
39	3	2	--	--	--	5	1	--	--	--	--	1
38	--	2	--	--	--	2	--	--	--	--	--	--
37	1	1	--	--	--	2	1	--	--	--	--	1
36	1	2	--	--	--	3	1	1	--	--	--	2
35	8	2	--	--	--	10	6	--	--	--	--	6
34	3	2	--	--	--	5	1	1	--	--	--	2
33	3	--	--	--	--	3	10	1	--	--	--	11
32	10	7	--	--	--	17	17	--	--	--	--	17
31	7	9	--	--	--	16	18	--	--	--	--	18
30	10	4	--	--	--	14	39	5	--	--	--	44
29	22	5	--	--	--	27	34	2	--	--	--	36
28	21	3	--	--	--	24	43	7	--	--	--	50
27	38	2	--	--	--	40	48	4	--	--	--	52
26	43	2	--	--	--	45	58	3	--	--	--	61
25	42	3	--	--	4	49	74	3	--	--	2	79
24	50	--	--	--	3	53	59	4	--	--	--	63
23	55	2	--	--	3	60	59	6	--	--	--	65
22	70	4	--	--	2	76	56	3	--	--	1	60
21	35	--	--	--	4	39	44	3	--	--	--	47
20	84	2	--	4	3	93	58	3	--	3	2	66
19	79	2	--	--	19	100	60	14	--	--	1	75
18	75	1	--	--	5	81	35	3	--	3	--	41
17	47	2	--	--	4	53	16	1	--	--	1	18
16	31	2	18	--	13	64	12	--	16	--	3	31
15	62	--	167	--	10	179	41	1	100	6	3	151
14	18	1	124	--	16	159	12	--	124	7	26	169
13	22	1	268	--	19	310	16	--	274	1	9	300
12 and less	8,564	2	9,358	1,419	374	19,717	8,561	1	9,367	1,416	434	19,799
Total	9,404	65	9,875	1,433	479	21,246	9,400	66	9,881	1,436	482	21,265

TABLE 3

Sheet 3 of 6

Trips and Drafts of Vessels, 1971

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Tugboat or	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Tugboat or	Dry Cargo	Tanker	Total
40	1	--	--	--	--	1	--	--	--	--	--	--
39	--	1	--	--	--	1	--	--	--	--	--	--
38	--	4	--	--	--	4	--	--	--	--	--	--
37	2	--	--	--	--	2	--	--	--	--	--	--
36	2	3	--	--	--	5	3	--	--	--	--	3
35	4	--	--	--	--	4	2	--	--	--	--	2
34	2	--	--	--	--	2	4	--	--	--	--	4
33	3	4	--	--	--	7	1	1	--	--	--	2
32	8	5	--	--	--	13	15	1	--	--	--	16
31	3	8	--	--	--	11	11	2	--	--	--	13
30	5	4	--	--	--	9	21	1	--	--	--	22
29	15	2	--	--	--	17	34	3	--	--	--	37
28	14	2	--	--	--	16	36	1	--	--	--	37
27	24	2	--	--	2	28	43	1	--	--	1	45
26	30	1	--	--	--	31	42	--	--	--	--	42
25	30	1	--	--	--	31	48	1	--	--	--	49
24	32	1	--	--	--	33	49	7	--	--	--	56
23	48	1	--	--	--	49	41	1	--	--	--	42
22	60	2	--	--	7	69	30	7	--	--	1	38
21	53	--	--	--	1	54	37	7	--	--	--	44
20	57	1	--	--	15	73	37	8	--	--	2	47
19	71	--	--	--	4	75	34	5	--	--	--	39
18	42	1	--	--	14	57	17	5	--	--	3	25
17	16	1	1	--	11	29	15	1	1	--	2	19
16	8	1	1	1	43	54	4	--	3	--	1	8
15	31	--	7	1	4	43	19	--	8	--	2	29
14	8	1	198	9	6	222	10	--	199	--	28	237
13	2	--	165	4	10	181	5	--	143	3	1	152
12 and less	7,266	3	9,427	1,470	423	18,589	7,270	--	9,426	1,476	507	18,679
Total	7,837	49	9,799	1,485	540	19,710	7,828	52	9,780	1,479	548	19,687

Trips and Drafts of Vessels, 1972

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Tugboat or	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Tugboat or	Dry Cargo	Tanker	Total
40	3	--	--	--	--	3	--	--	--	--	--	--
39	1	1	--	--	--	2	--	1	--	--	--	1
38	--	1	--	--	--	1	--	1	--	--	--	1
37	2	1	--	--	--	3	--	1	--	--	--	1
36	--	4	--	--	--	4	6	--	--	--	--	6
35	2	1	--	--	--	3	5	--	--	--	--	5
34	--	--	--	--	--	--	10	--	--	--	--	10
33	2	6	--	--	--	8	7	1	--	--	--	8
32	4	6	--	--	--	10	18	4	--	--	--	22
31	9	8	--	--	--	17	34	1	--	--	--	35
30	13	3	--	--	--	16	43	4	--	--	--	47
29	20	7	--	--	--	27	44	4	--	--	--	48
28	19	4	--	--	--	23	52	5	--	--	--	57
27	30	1	--	--	--	31	47	3	--	--	--	50
26	47	1	--	--	--	48	61	5	--	--	--	66
25	48	4	--	--	--	52	57	2	--	--	--	59
24	53	1	--	--	--	54	56	8	--	--	--	64
23	61	3	--	--	--	64	53	7	--	--	--	60
22	64	2	18	--	5	89	98	1	18	--	--	77
21	65	2	--	--	--	67	39	3	--	--	--	42
20	74	2	--	--	30	106	41	2	--	--	1	44
19	76	--	1	--	1	78	36	5	1	--	1	43
18	52	4	--	2	4	63	13	6	--	--	--	19
17	22	--	--	1	34	57	6	3	--	--	8	17
16	11	1	--	2	45	59	6	1	--	1	4	12
15	9	2	22	1	4	36	6	3	23	1	1	34
14	1	1	140	--	1	143	3	3	147	--	27	180
13	1	8	195	10	18	232	--	--	191	14	2	207
12 and less	7,274	--	9,825	1,502	474	19,075	7,284	--	9,812	1,493	577	19,146
Total	7,963	74	10,201	1,518	616	20,372	7,965	74	10,192	1,509	621	20,361

TABLE 3

Sheet 4 of 6

Trips and Drafts of Vessels, 1973

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
40	2	--	--	--	--	2	--	--	--	--	--	--
39	--	--	--	--	--	--	1	--	--	--	--	1
38	8	2	--	--	--	10	3	--	--	--	--	3
37	5	3	--	--	--	8	8	--	--	--	--	8
36	2	8	--	--	--	10	41	2	--	--	--	43
35	6	4	--	--	--	10	19	2	--	--	--	21
34	6	3	--	--	--	9	7	1	--	--	--	8
33	8	1	--	--	--	9	14	1	--	--	--	15
32	16	12	--	--	--	28	31	6	--	--	--	37
31	10	8	--	--	--	18	19	5	--	--	--	24
30	22	3	--	--	--	25	41	5	--	--	--	46
29	14	--	--	--	--	14	26	2	--	--	--	28
28	23	3	--	--	--	26	47	--	--	--	--	47
27	30	1	--	--	--	31	55	2	--	--	--	57
26	38	1	--	--	--	39	51	2	--	--	--	53
25	35	2	--	--	12	49	50	3	--	--	2	55
24	57	2	--	--	--	59	64	6	--	--	1	71
23	48	1	--	--	7	56	37	2	--	--	4	43
22	59	2	9	--	2	72	51	3	8	--	--	62
21	56	1	--	--	2	59	24	5	--	--	--	29
20	76	1	--	--	51	128	38	5	--	--	5	48
19	81	1	--	--	8	90	23	--	--	--	--	23
18	44	2	--	--	8	54	16	2	--	1	6	25
17	22	2	--	7	4	35	15	2	--	3	2	22
16	9	--	4	9	26	48	13	4	5	2	6	30
15	5	1	26	6	3	41	1	--	24	--	3	28
14	5	2	156	16	1	180	3	--	150	2	36	191
13	5	3	235	48	29	320	3	6	245	32	3	289
12 and less	7,238	--	9,909	1,344	312	18,803	7,233	--	9,913	1,385	397	18,928
Total	7,930	69	10,339	1,430	465	20,233	7,934	66	10,345	1,425	465	20,235

Trips and Drafts of Vessels, 1974

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
41	1	--	--	--	--	1	--	--	--	--	--	--
40	1	--	--	--	--	1	--	--	--	--	--	--
39	2	--	--	--	--	2	2	--	--	--	--	2
38	4	1	--	--	--	5	5	--	--	--	--	5
37	7	4	--	--	--	11	4	--	--	--	--	4
36	7	--	--	--	--	7	46	--	--	--	--	46
35	2	2	--	--	--	4	8	--	--	--	--	8
34	8	1	--	--	--	9	7	--	--	--	--	7
33	13	3	--	--	--	16	12	1	--	--	--	13
32	12	6	--	--	--	18	21	3	--	--	--	24
31	9	6	--	--	--	15	24	1	--	--	--	25
30	17	4	--	--	--	21	27	1	--	--	--	28
29	21	1	--	--	--	22	30	2	--	2	--	34
28	22	2	--	--	--	24	42	2	--	--	--	44
27	32	2	--	--	--	34	50	2	--	--	--	52
26	29	--	--	--	--	29	44	1	--	--	--	45
25	43	1	--	--	20	64	41	3	--	--	9	53
24	42	--	--	--	2	44	39	3	--	--	3	45
23	42	2	--	--	9	53	32	3	--	--	3	38
22	37	1	6	--	8	52	22	3	7	1	5	38
21	32	2	--	1	3	38	16	3	1	--	2	22
20	38	--	--	--	17	55	24	--	--	--	5	29
19	50	1	--	1	1	53	13	4	--	1	--	18
18	34	--	--	2	4	40	18	2	--	3	1	24
17	21	--	--	27	--	48	7	--	--	11	--	18
16	8	--	7	16	14	45	4	1	6	2	11	24
15	5	--	3	6	2	16	404	--	3	2	--	409
14	--	--	156	5	1	162	--	1	154	3	59	217
13	--	--	181	27	17	225	--	--	177	3	7	187
12 and less	12,308	--	8,681	1,002	290	22,281	11,913	1	8,683	1,060	273	21,930
Total	12,847	39	9,034	1,087	388	23,395	12,855	37	9,031	1,088	378	23,389

TABLE 3

Sheet 5 of 6

Trips and Drafts of Vessels, 1975

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
40	2	2	--	--	--	4	--	1	--	--	--	1
39	2	2	--	--	--	4	1	--	--	--	--	1
38	5	4	--	--	--	9	3	--	--	--	--	3
37	--	1	--	--	--	1	4	--	--	--	--	4
36	3	4	--	--	--	7	41	1	--	--	--	42
35	3	1	--	--	--	4	7	1	--	--	--	8
34	9	2	--	--	--	11	23	1	--	--	--	24
33	7	1	--	--	--	8	10	4	--	--	--	14
32	4	6	--	--	--	10	31	2	--	--	--	33
31	5	4	--	--	--	9	18	1	--	--	--	19
30	13	1	--	--	--	14	31	4	--	--	--	35
29	23	2	--	--	--	25	30	3	--	--	--	33
28	23	4	--	--	--	27	40	2	--	--	--	42
27	26	1	--	--	9	36	30	3	--	--	1	34
26	30	3	--	--	--	33	46	6	--	--	--	52
25	33	1	--	--	7	41	55	3	--	--	5	63
24	44	3	--	--	2	49	44	2	--	--	2	48
23	33	--	--	--	--	33	36	3	--	--	--	39
22	60	3	--	--	9	72	16	1	--	--	3	20
21	45	1	--	--	--	46	18	1	--	--	--	19
20	52	1	--	1	10	64	21	2	--	3	5	31
19	47	1	--	--	--	48	12	3	--	--	--	15
18	36	3	1	--	--	40	6	5	1	2	--	14
17	19	2	2	24	5	52	1	--	2	12	4	19
16	7	--	6	13	20	46	--	--	4	4	7	15
15	2	--	19	4	7	32	--	--	21	5	1	27
14	--	4	130	8	5	147	--	1	130	10	54	195
13	--	--	129	1	7	137	1	--	119	--	--	120
12 and less	6,541	1	6,956	640	341	14,479	6,541	1	6,976	661	349	14,528
Total	7,074	58	7,243	691	422	15,488	7,066	51	7,253	697	431	15,498

Trips and Drafts of Vessels, 1976

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
42	--	4	--	--	--	4	4	3	--	--	--	7
41	2	--	--	--	--	2	--	--	--	--	--	--
40	1	2	--	--	--	3	5	--	--	--	--	5
39	--	4	--	--	--	4	5	--	--	--	--	5
38	4	4	--	--	--	8	11	--	--	--	--	11
37	--	4	--	--	--	4	6	--	--	--	--	6
36	5	6	--	--	--	11	39	5	--	--	--	44
35	6	3	--	--	--	9	12	5	--	--	--	17
34	2	1	--	--	--	3	21	--	--	--	--	21
33	7	5	--	--	--	12	26	5	--	--	--	31
32	5	8	--	--	--	13	27	7	--	--	--	34
31	12	5	--	--	--	17	22	--	--	--	--	22
30	15	5	--	--	--	20	39	1	--	--	--	40
29	20	5	--	--	--	25	33	5	--	--	--	38
28	20	--	--	--	--	20	38	4	--	--	--	42
27	28	3	--	--	3	34	41	5	--	--	2	48
26	35	2	--	--	--	37	46	7	--	--	--	53
25	31	4	--	--	2	37	67	7	--	--	--	74
24	29	2	--	--	2	33	54	5	--	--	--	59
23	27	3	--	--	19	49	28	1	--	--	8	35
22	64	3	--	--	9	76	35	6	--	2	8	51
21	58	1	--	--	2	61	18	1	--	--	1	20
20	61	1	57	--	8	127	14	6	61	--	5	86
19	39	1	--	2	3	45	10	4	--	5	3	22
18	35	1	--	--	14	50	7	2	--	--	1	10
17	15	1	2	6	10	34	4	1	1	1	3	10
16	3	3	16	3	38	63	1	1	13	1	11	27
15	2	1	27	1	2	33	--	--	29	1	2	32
14	2	1	242	7	4	256	--	--	240	16	83	339
13	--	2	48	5	7	62	--	1	53	1	4	59
12 and less	6,887	--	7,170	635	534	15,146	6,887	--	7,168	632	536	15,133
Total	7,337	85	7,562	659	657	16,300	7,418	82	7,565	699	657	16,381

TABLE 3

Sheet 6 of 6

Trips and Drafts of Vessels, 1977

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
42	--	10	--	--	--	10	1	4	--	--	--	5
40	--	--	--	--	--	--	--	1	--	--	--	1
39	4	1	--	--	--	5	3	--	--	--	--	3
38	3	--	--	--	--	3	5	--	--	--	--	5
37	2	2	--	--	--	4	13	1	--	--	--	14
36	6	2	--	--	--	8	60	2	--	--	--	62
35	5	4	--	--	--	9	17	2	--	--	--	19
34	6	4	--	--	--	10	20	2	--	--	--	22
33	8	2	--	--	1	11	12	--	--	--	--	12
32	11	4	--	--	--	15	34	6	--	--	--	40
31	7	5	--	--	--	12	20	1	--	--	--	21
30	17	2	--	--	--	19	25	2	1	--	--	28
29	25	6	--	--	--	31	26	7	--	--	--	33
28	33	3	--	--	--	36	48	7	--	--	--	55
27	30	3	--	--	5	38	50	1	--	--	5	56
26	43	2	--	--	--	45	96	7	--	--	--	103
25	52	2	--	--	--	54	64	5	--	--	--	69
24	42	4	--	--	4	50	40	4	--	--	1	45
23	63	2	--	--	2	67	27	5	--	--	1	33
22	80	--	--	--	--	80	40	1	--	1	--	42
21	44	2	--	--	--	46	17	--	--	--	--	17
20	64	3	6	--	25	98	13	4	6	--	2	25
19	35	3	7	--	10	55	13	5	7	--	10	35
18	33	1	2	1	8	45	8	1	--	--	3	12
17	13	1	1	--	17	32	3	1	--	1	8	13
16	3	2	31	5	34	75	2	2	31	--	56	91
15	1	--	40	6	1	48	4	--	45	5	14	68
14	3	--	421	1	15	440	2	--	413	--	73	488
13	--	2	187	1	5	195	4	--	202	1	7	214
12 and less	6,955	2	7,563	842	713	16,075	6,945	2	7,551	833	694	16,025
Total	7,588	74	8,258	856	840	17,616	7,612	73	8,256	841	874	17,656

Trips and Drafts of Vessels, 1978

Draft (feet)	Inbound						Outbound					
	Self Propelled Vessels			Non-Self Propelled Vessels			Self Propelled Vessels			Non-Self Propelled Vessels		
	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total	Passenger and Dry Cargo	Tanker	Towboat or Tugboat	Dry Cargo	Tanker	Total
42	--	8	--	--	--	8	--	3	--	--	--	3
41	--	--	--	--	--	--	2	--	--	--	--	2
40	1	--	--	--	--	1	2	--	--	--	--	2
39	3	1	--	--	--	4	5	1	--	--	--	6
38	5	3	--	--	--	8	10	1	--	--	--	11
37	3	4	--	--	--	7	6	--	--	--	--	6
36	2	1	--	--	--	3	56	--	--	--	--	56
35	2	6	--	--	--	8	22	4	--	--	--	26
34	5	--	--	--	--	5	20	1	--	--	--	21
33	4	--	--	--	--	4	17	2	--	--	--	19
32	6	3	--	--	--	9	23	--	--	--	--	23
31	4	5	--	--	--	9	19	1	--	--	--	20
30	14	4	--	--	--	18	38	2	--	--	--	40
29	24	3	--	--	--	27	32	7	--	--	1	40
28	112	7	--	--	--	119	131	4	--	--	--	135
27	35	4	--	--	--	39	58	4	--	--	--	62
26	59	3	--	--	--	62	76	4	--	--	--	80
25	57	6	--	--	--	63	54	4	--	1	--	59
24	65	2	--	--	--	67	42	5	--	--	--	47
23	40	4	--	--	5	49	31	5	--	--	--	36
22	50	2	--	--	--	52	28	6	--	--	--	34
21	38	5	--	1	--	44	20	4	--	--	--	24
20	70	4	--	--	15	89	27	4	--	--	3	34
19	43	5	--	12	17	77	13	6	--	9	13	41
18	29	1	6	--	1	37	6	6	4	5	7	28
17	14	--	6	--	19	39	6	--	3	2	5	16
16	5	1	53	2	77	138	4	--	48	3	71	126
15	11	--	60	2	1	74	--	3	59	2	1	63
14	2	--	404	6	16	428	3	1	419	3	67	484
13	1	3	447	4	4	459	--	3	465	4	5	477
12 and less	6,643	--	7,771	938	800	16,152	6,648	5	7,748	870	801	16,072
Total	7,347	85	8,747	965	953	18,099	7,399	86	8,737	899	974	18,095

Port of Tacoma vessel call data for the period 1970-1980 are presented in Table 4. The difference between inbound and outbound totals is primarily due to the shipbuilding sector of the Port of Tacoma; vessels constructed at shipyards in the port are counted as outbound traffic. The number of vessels visiting the port has increased steadily since 1974; this is consistent with the recent rapid growth of the port as well as the regional economy.

TABLE 4
PORT OF TACOMA VESSEL CALLS

<u>Year</u>	<u>Inbound</u>	<u>Outbound</u>
1980	552	713
1979	489	661
1978	479	635
1977	370	544
1976	351	515
1975	274	427
1974	266	399
1973	313	452
1972	312	514
1971	230	405
1970	281	600

Data from: Port of Tacoma (1980).

1.4.2.2 Other Commercial/Industrial Uses

In addition to serving as vessel routes to and from local industrial/commercial uses and anchorages for vessels awaiting on- and off-loading at port industrial facilities, the marine waters of the study area are used for log storage and as intake cooling water for industrial processes.

Designated log storage areas and booming grounds in the waters of the study area are depicted in Figure 8. The practice of storing logs awaiting processing or transport in the water is likely to decline in the future due to increasing evidence that such storage may impose severe localized water quality impacts. As environmental pressure and increases in dry land storage techniques directed at fire prevention and sustained

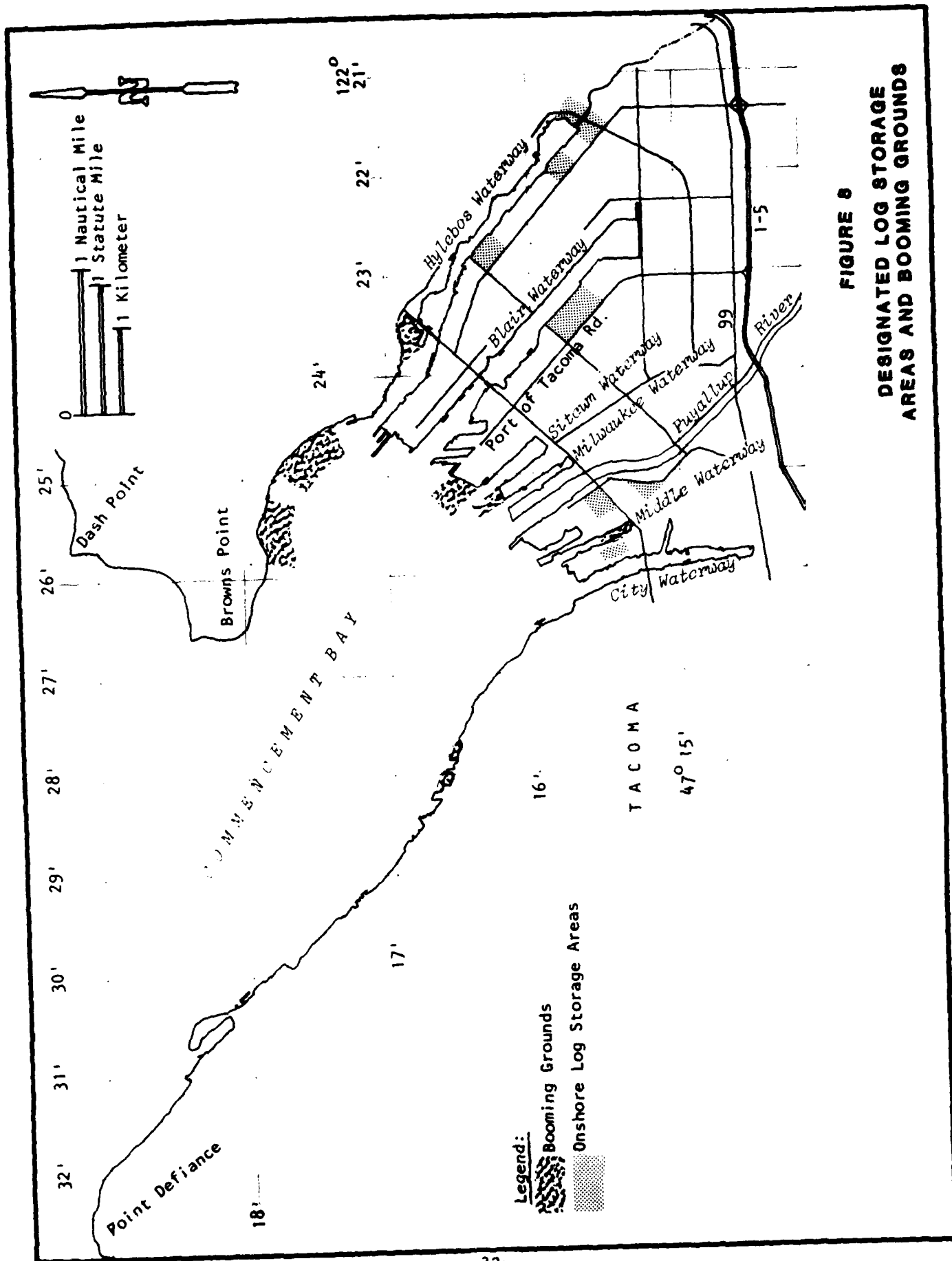


FIGURE 8
DESIGNATED LOG STORAGE
AREAS AND BOOMING GROUNDS

wood quality continue to be refined, the practice of dry land storage can be expected to increase.

The intake of the marine waters of the study area for industrial purposes is limited. The ASARCO Tacoma smelter, the largest such user, has an intake capacity of up to 5.6 million gallons per day (gpd) (Lindquist 1981); however, actual intake varies with production requirements. Marine water is primarily used by ASARCO to cool slag and as noncontact cooling water in plant processes. While ASARCO uses more marine water than potable water, most other local industries use far more potable water than marine water in their processes (Hanson 1980).

The Puyallup Nation operates a commercial drift gill net fishery for pink (odd year), coho, and chum salmon in Commencement Bay. Commercial fishing in Commencement Bay is prohibited for non-Indians. The commercial fishery in Commencement Bay usually occurs from late August to late November. Spring and fall runs of chinook are not sufficient to support commercial fisheries for those species. During the fall and winter, the Puyallup Nation uses stationary gill nets to fish commercially for steelhead in the Puyallup River. Additional data on study area fisheries are presented under separate cover in the Fish Studies Technical Report.

1.4.3 RECREATIONAL USE

Recreational use of study area waters includes sportfishing, pleasure boating, and bird watching.

Sportfishing occurs throughout the waters of the study area. Fishing piers along Ruston Way and City Waterway are used extensively for bottom fishing and crabbing. Sportfishing for anadromous fish occurs during late summer, fall, and winter months throughout Commencement Bay, with significant sportfishing for coho and other species of salmon occurring from Browns Point to the entrance of the Puyallup River and from Point Defiance southeast to the ASARCO smelter. Much sportfishing for steelhead occurs along the length of the Puyallup River, including the mouth and that portion of the river that flows through the study area.

Pleasure boaters use the marine waters of the study area extensively throughout the year, with peak use occurring in spring and summer. Other peak usage periods occur on the opening days of the various fishing seasons as well as during the annual and bi-annual salmonid runs. It is not possible to accurately estimate the number of pleasure boats using Commencement Bay and the industrial waterways during a given year; however, interviews conducted with study area marina operators in 1980 indicate that, seasonal variances aside, the average boat owner with marina moorage takes his boat out (either into study area waters or through study area waters to other destinations in the region) approximately once per month.

There are currently about 2,500 wet and dry moorages available at the 12 major marinas in the study area. The locations of these marinas are depicted in Figure 9. Data on marina capacities are presented in Table 5.

Operators estimate that marina occupancy rates, while somewhat variable, usually remain at between 90 and 100 percent (see Table 5). Interviews with marina operators also indicate that a need for additional small boat moorage exists, with covered wet moorage in particular demand. This constitutes a continuation of a shortage reported in previous studies (U.S. Army Corps of Engineers, Seattle District 1968, 1980). Several operators have either implemented or soon will implement expansion or reconfiguration of existing facilities to accommodate part of this demand. As a result, total small boat capacity at study area marinas is expected to increase by about 150 moorages by mid-1981.

Applying the operators' consensus estimate for annual trips per boat owner (12, or 1 per month) and occupancy estimates to the number of moorages presently available, approximately 27,000 to 30,000 pleasure boat trips are generated annually within Commencement Bay (up to 32,000 annually after mid-1981). These estimates do not include transiting vessels originating from destinations outside of Commencement Bay proper (such as Day's Island, Gig Harbor, Quartermaster Harbor, and other parts of the region), nor does it include trailered vessels launched from

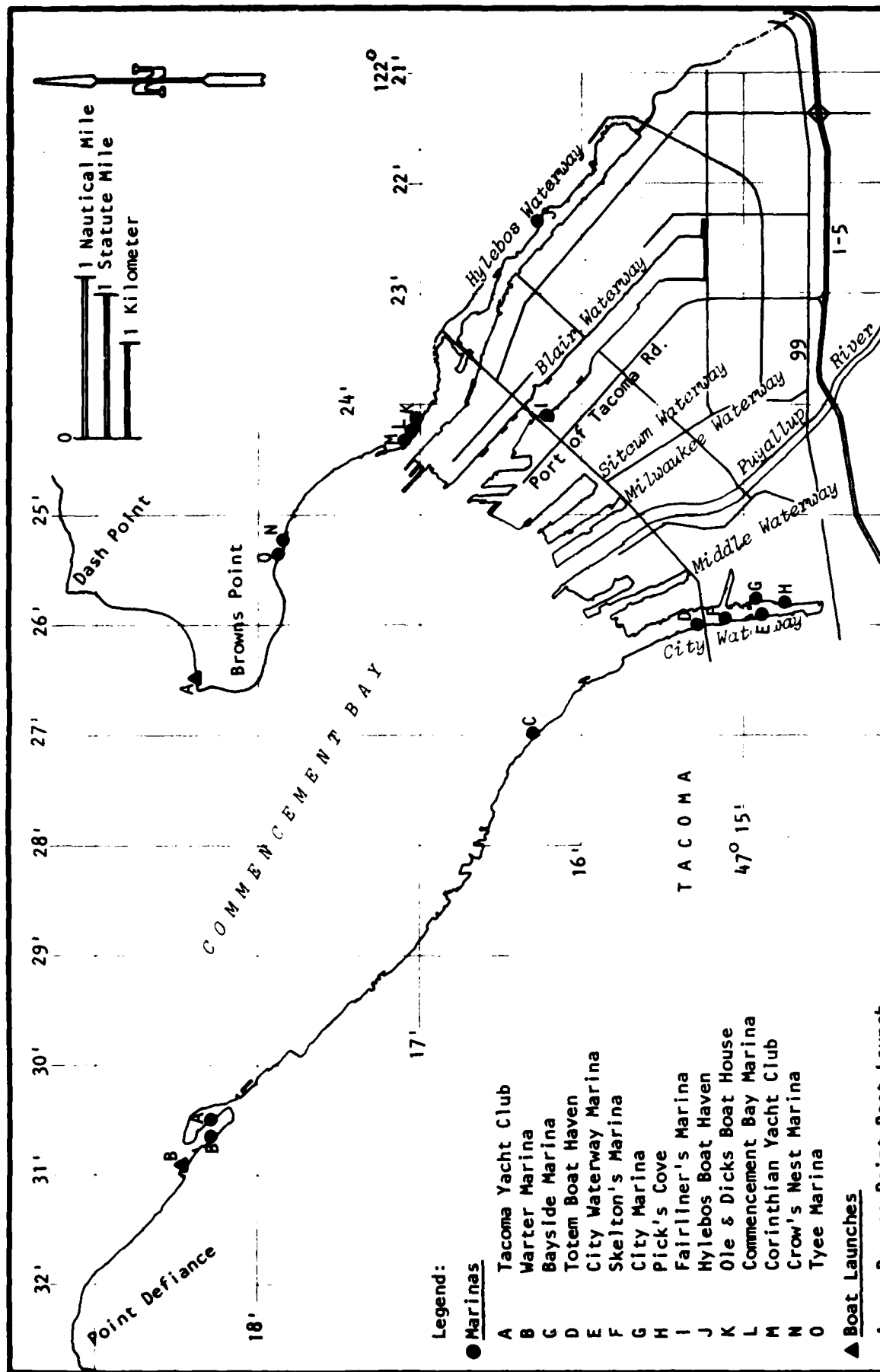


FIGURE 9
STUDY AREA MARINAS
AND BOAT LAUNCHING RAMPS

TABLE 5

MARINA CAPACITIES AND ESTIMATED OCCUPANCY RATES

	Wet	Dry	Total	Estimated Occupancy Rate (%) (a)
<u>South Shore Subarea</u>				
Ruston Way/Schuster Parkway:				
• Tacoma Yacht Club	320	20	340	90
• Warter Marina	175	0	175	100
• Bayside Marina	0	160	160	90
City Waterway:				
• Totem Boat Haven	430	96	526	90
• City Marina	40	0	40	--
• Pick's Cove Marina	100	0	100	90-100
• Skelton's Marina	10	0	10	--
• City Waterway Marina	18	0	18	--
<u>Port Industrial Subarea</u>				
Blair Waterway:				
• Fairliners Marina	116	40	156	90-100
Hylebos Waterway:				
• Hylebos Boat Haven	107	0	107	100
• Ole and Dick's Boat House	146	0	146	90-100
• Commencement Bay Marina	60	50	110	90-100
• Corinthian Yacht Club	0	0	0	--
<u>North Shore Subarea</u>				
Marine View Drive:				
• Tyee Marina	505	0	505	90-100
• Crow's Nest Marina	144	0	144	90
Total	2,171	366	2,537	

(a) Rates derived from telephone poll of local marina operators.

various marina hoists and boat ramps within the study area. Data derived from the Regional Small Boat Moorage Study (U.S. Army Corps of Engineers, Seattle District 1980) indicated that approximately 230,000 boat trips were generated from launching trailered boats from ramps and hoists located throughout Pierce County in 1978. How many of these were generated from the two boat launch ramps and approximately 10 to 12 marina hoists located on Commencement Bay cannot be accurately determined.

Existing boat launch ramps in the study area are depicted in Figure 9. Even though hoists are located at most of the marinas in the study area, a need for public boat launch facilities, like marinas, appears to exist. A draft Boat Launch Study prepared by the Tacoma Planning Department (1979) identifies three potential boat launch sites in the study area. These include locations in Hylebos and Blair Waterways as well as at the existing Point Defiance ferry terminal ramp.

1.4.4 SCIENTIFIC/EDUCATIONAL USE

The study area is also used for scientific and educational purposes. Local colleges and universities conduct field surveys of biological and water quality conditions in portions of Commencement Bay as part of the coursework leading to degrees in the biological sciences. For example, in recent years, the University of Puget Sound Biology Department has conducted limited studies of biological conditions along Ruston Way and waterfowl studies along Hylebos Waterway (Karlstrom 1980). The Pacific Luthern University Biology Department has also collected data on plankton in Commencement Bay and has taken polychaete samples in the bay near the St. Regis Paper Company site (McGinris 1980).

The Puyallup Nation also conducts extensive active fieldwork consisting of fish surveys in Commencement Bay, the industrial waterways, and Puyallup River. These studies are undertaken as part of their salmon enhancement programs. Data obtained from these surveys have been used as input in the Fish Studies Technical Report under separate cover.

The Tahoma Audubon Society, based in Tacoma, also conducts active fieldwork consisting of bird surveys within the study area. These surveys are focused along the south shore of Commencement Bay from the south of City Waterway to Point Defiance, at the ends of the industrial peninsulas of the southeast terminus of the bay, and along the north shore of the bay from the mouth of Hylebos Waterway to Browns Point (see the Bird Studies Technical Report). Members of the society also use the shorelines of Commencement Bay for recreational bird watching.

Several other major scientific studies are currently being conducted or have recently been concluded in Commencement Bay by NOAA/OMPA, EPA (Region X), Port of Tacoma, ASARCO, St. Regis, and the City of Tacoma. These studies are generally directed at characterizing the water and sediment quality of the bay and are discussed under separate cover in the synthesis report. Other private companies, including the Hooker Chemical Company, are also initiating studies to determine the extent of historic pollution at plant sites in the port industrial area. These studies are responsive to requirements and guidelines promulgated in the Resource Conservation and Recovery Act of 1971 (RCRA) (see Section 2.2.1.5 below).

1.5 HISTORICAL USE OF LAND AND WATER*

1.5.1 HISTORICAL PERSPECTIVE

The type and intensity of study area land and water use has evolved dramatically over the past century and a quarter, the period during which Tacoma expanded from a settlers' mill in what is now City Waterway to the major city and port complex that it is today. Man's use of Commencement Bay, however, began well before European exploration and settlement of the region. Archaeological evidence places Native American tribes in the

*Historic data contained in this section were derived specifically from referenced source materials in the text as well as from Puget's Sound: A Narrative of Early Tacoma and the Southern Sound (Morgan 1979), the Puyallup Tribal Nation (Waller 1981), and Tacoma Planning Department (1981a).

study area during "prehistoric and early historic periods." In any case, the records of early explorers dating back as far as 1775 document the existence of significant tribal activity along the shorelines of Puget Sound from Point Pully north of Commencement Bay to the Nisqually Delta to the south (Morgan 1979).

A census reported in the private papers of Sir James Douglas, onetime factor of the Hudson's Bay Company before becoming the colonial governor of British Columbia, indicated that 15 Native American tribes (representing a total of 5,563 members) resided in the Puget Sound area in 1938-39 (Douglas 1853). Douglas' census also indicated that 484 members of the Pool-yal-lap-paw-nish (Puyallup) tribe resided on the Pool-lap-tap (Puyallup River).

It is estimated that the Indian population of Puget Sound was depleted from an estimated 22,000 in 1775 to the 5,563 total reflected in the 1838-39 census as a result of the introduction of disease, smallpox, rum, and gunpowder by early European explorers. It is likely, therefore, that the Puyallup tribe was depleted proportionally during the same period.

Both archaeological and historical records place several Puyallup villages on Commencement Bay and the Puyallup River (Costello 1895, Curtis 1913). Haeberlin and Gunther (1930) reported that in the mid-1850s a Puyallup village was located at Browns Point, and a "continuous line of small settlements" stretched from the former site of the Tacoma Hotel (located between 9th and 10th Streets at A Street) to Stadium High School, a distance of approximately 1 mile (1.6 kilometers). Larger villages were located on the Puyallup River plain between the present sites of the Cities of Tacoma and Puyallup, as well as on the White River (Haeberlin and Gunther 1930). Records have placed significant villages at the study area locations in Figure 10. The location of the villages, archaeological evidences, and historical information passed down by Puyallup tribal members suggest that the Puyallups used the study area waters and shorelines for fishing and shellfishing and the uplands for hunting small game. The Puyallup River and Commencement Bay also provided a means of water transport between villages.

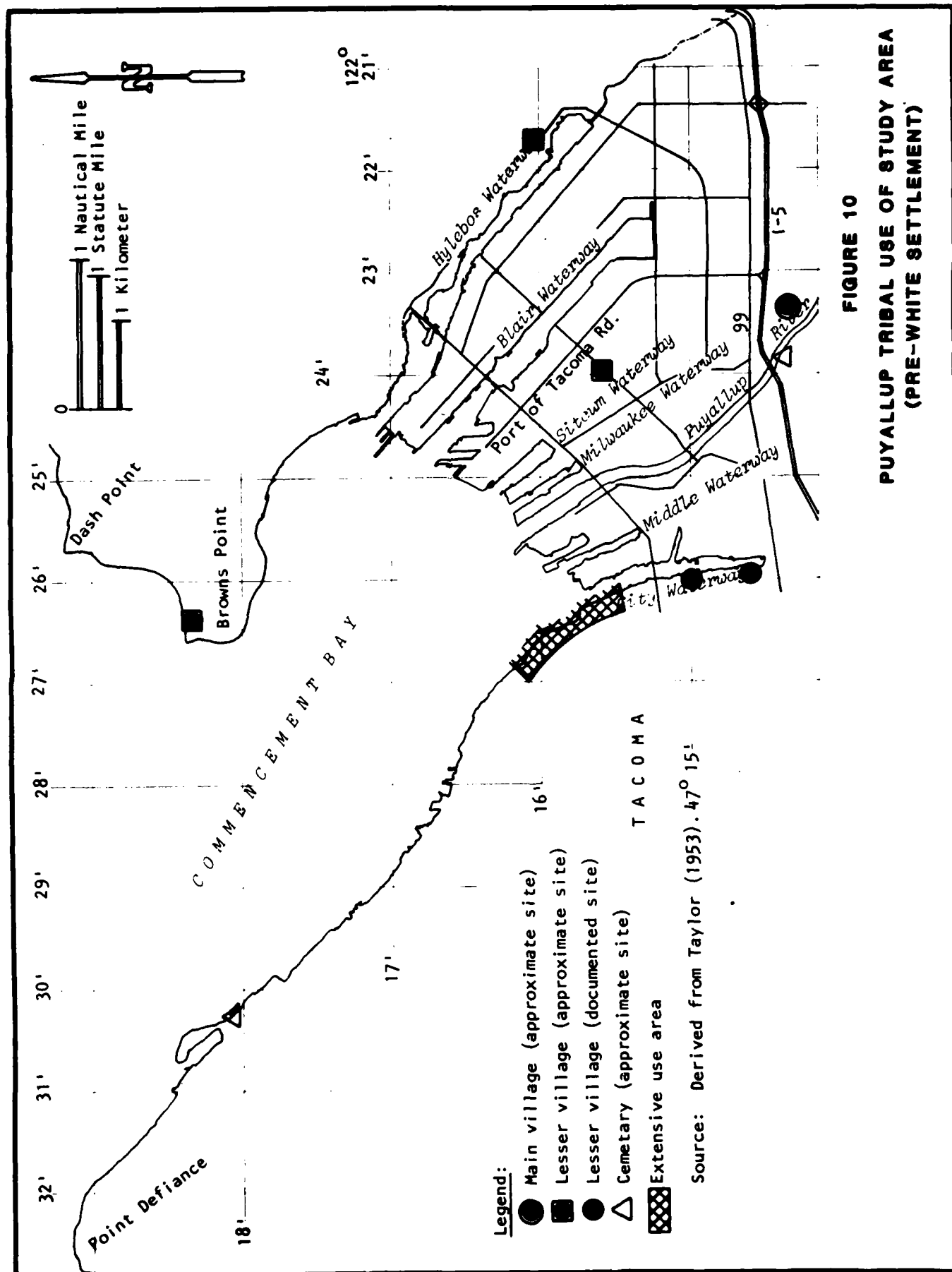


FIGURE 10
PUYALLUP TRIBAL USE OF STUDY AREA
(PRE-WHITE SETTLEMENT)

Early activity in the Puget Sound region centered around the Nisqually Delta approximately 20 miles (32 kilometers) south of the Puyallup River. In the 1830s, the British-controlled Hudson's Bay Company established the Puget's Sound Agricultural Company at Fort Nisqually, and developed a farm on the plains south of the future Tacoma townsite. American settlement did not occur until the Oregon Boundary Settlement established the 49th parallel as the boundary between the United States and Canada in 1846.

In 1852, Nicholas Delin, an immigrant from Sweden, completed and began operating a sawmill on a small creek at what is now 25th and Dock Streets, near the landward terminus of City Waterway. With the influx of 171 settlers from the east to the Pierce County region in 1853, a small community began to grow around Delin's sawmill.

Even with the advent of European exploration and white settlement, the traditional use of study area lands and waters by members of the Puyallup Tribe continued. However, the Medicine Creek treaty of 1854, concluded between the United States and the combined "Medicine Creek" tribes (comprised of the Nisqually, Puyallup, Steilacoom, Squawksin, S'Homanish, Stetchass, T'Pecksin, Squisiti, and Sa-ha-wamish tribes and bands of Native Americans), ceded the land that now comprises Thurston, Pierce, and parts of Mason and King Counties to the United States. The treaty also established tribal reservations. While the provisions of the treaty specifically gave the tribes the right to fish at their accustomed grounds, it denied them the right to take shellfish from beds "staked out or cultivated by citizens." The treaty also permitted tribal members to hunt, gather berries and roots, and pasture herds--but only on lands unclaimed by white settlers (Stevens 1900).

The Puyallup Reservation created under the Medicine Creek Treaty, and amended at the Fox Island Council of 1856, encompassed northeast Tacoma, Browns Point and Dash Point, and the river bottom lands including most of Fife and Milton. According to maps made in 1873, the time that Tacoma was selected as the terminus for the Northern Pacific Railroad, these boundaries also included all of the natural tideflats to the high water mark as identified at that time. This land was located generally east of the inlet that was developed as the City Waterway.

To the west of the Puyallup Reservation, white settlers began to lay claim to lands along the south shore of Commencement Bay. In 1864, Job Carr built his cabin in the Old Tacoma area. By 1869, General Morton Matthew McCarver had acquired most of Job Carr's claim and platted what he hoped would be the terminus of the Northern Pacific Railroad. Commencement City, the name originally assigned to this town, was located at the foot of what is now McCarver Street in the Old Town portion of the city. When the town plat was filed, the name of the community was changed to Tacoma, the Siwash Tribe name for Mount Rainier--or more accurately, any snow peak.

In 1868, General McCarver encouraged the construction of the Hanson Ackerson Mill (later the Tacoma Mill Company). A tidal lagoon extending into Garfield Gulch to the east of Old Town, once used by Indians for a canoe anchorage, became the log pond for the mill.

Although the Northern Pacific Railroad did select Commencement Bay as the western terminus of its line in 1873, the actual site selected was approximately 2 miles (3.2 kilometers) southeast of Old Town. The present-day location of the Tacoma CBD was the site of the terminus.

Commencement Bay afforded a deep natural harbor that supported a rapid expansion of industrial development along the south shore of Commencement Bay between Old Town and the railroad terminus during the period from 1870 to 1890. While the Hanson Ackerson Mill and McCarver's wharf continued to prosper, extensive coal bunkers, warehouses, and wharves were constructed in the 1880s and 1890s by the Northern Pacific Railroad on the shoreline below the present-day site of Stadium High School. In rapid succession, other industrial complexes were constructed. By the early 1900s, the south shore of Commencement Bay from the present location of the ASARCO Tacoma Smelter to the west to the present City Waterway was an "unbroken linear complex representing lumber, boatbuilding, grain, and shipping firms" (Tacoma Planning Department 1981a). Grain operations were concentrated south and east of the Old Town Dock with lumber and shingle mills to the west. At various times, four major boatbuilders, three grain operations, five major lumber mills, a brick

yard, boat houses, mercantile stores, and an automobile ferry were located along this shoreline. A lead smelter, later to become the present ASARCO Tacoma Smelter, was constructed in 1888 between Old Tacoma and Point Defiance (Tacoma Planning Department 1981a).

At the beginning of this rapid industrial development, the steep slopes of Commencement Bay's south shore rose abruptly from the water's edge. As industry expanded, a narrow band of flat land was created by undercutting the steep slopes and filling the shallows. Additional fill was added during construction of the railroad along the south shore. The railroad (and accompanying spur lines) and pedestrian walkways provided access to the south shore industrial area until 1913 when an elevated road was constructed. In the 1920s, this road (which entered Old Town from Carr Street) was replaced by a city street, now Ruston Way. Additional filling along the south shore was required to construct this street. (Irregular filling and erosion in subsequent years produced the existing shoreline along Ruston Way.)

The industrial focus of Tacoma began to change about this time. Industrial development of the tideflats at the landward end of Commencement Bay began in 1888, when the St. Paul Company constructed a sawmill supported by pilings in what is now the port industrial area. Industrial development of the tideflats and the alienation of nearby Indian lands expanded in the early 1900s due to economic conditions, the lack of land suitable for support operations and future industrial development along the south shore, and the distance from transportation. Dredging of City Waterway began in 1889 and the channeling and dredging of the Puyallup River began in the early 1900s. Dredged materials were initially used to build up the mudflats between these waterways for future industrial use.

The Commercial Waterway District, later to become the Port of Tacoma, was created in 1918. In 1919, the newly-created district purchased 240 acres between the Todd Shipyard and Milwaukee Docks. This area later became the core of the present main Port of Tacoma terminal between Blair and Sitcum Waterways. By the early 1920s, the tideflats between Hylebos Creek and what is now Blair Waterway (U.S. Navy property) in addition to

the southwest portion of the tideflats from City Waterway to Milwaukee Waterway (Milwaukee Road railyards and scattered industries) had been developed. Subsequent dredging and filling over the next 60 years created and improved the major waterways of what is now the port industrial area. Land use trends within the City of Tacoma from 1925 to 1975 are depicted in Figure 11. Historical dredging and filling operations within the industrial tideflats are detailed below in Section 1.5.2.

1.5.2 DREDGING/FILLING HISTORY

1.5.2.1 General

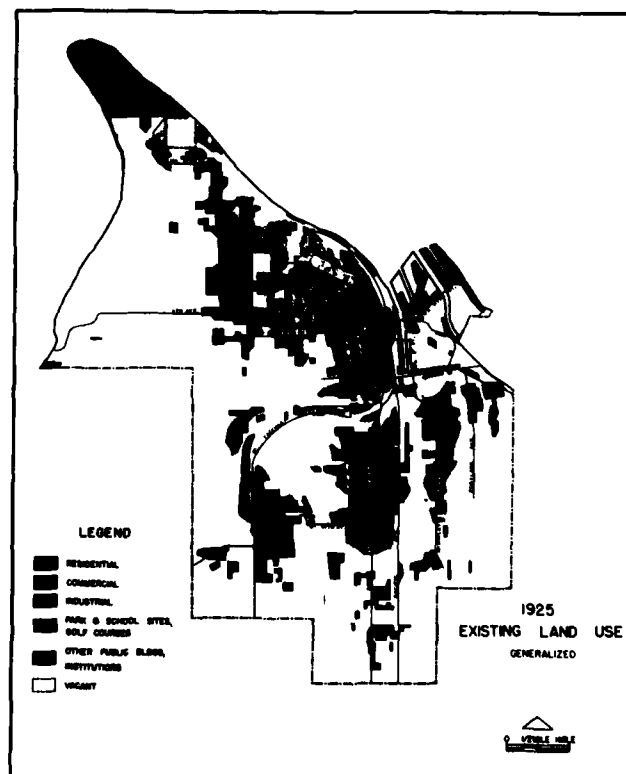
As discussed above, the port industrial area of Commencement Bay began taking shape in the early 1900s when the U.S. Army Corps of Engineers initiated the dredging of waterways within the study area (Latta 1980). In addition, the Port of Tacoma has conducted dredging within its jurisdictional waterways since the mid-1940s (Port of Tacoma 1965). For the most part, dredging undertaken by the Corps of Engineers was conducted to improve navigation (i.e., widen and deepen existing channels or enlarge existing waterways). Dredging undertaken by the Port of Tacoma was generally conducted to obtain fill for improvement of port lands with potential for industrial development.

The extent and frequency of the dredging within each waterway has historically depended upon: (1) the degree and type of waterway usage, (2) the rate of industrial development along the waterway, (3) the extent and rate of bulkheading within the waterway, and (4) the degree of siltation attributable to natural and industrial inflows. Materials dredged from waterways, as well as supplemental materials from nearby borrow pits and other sources, were used in early stages of port development to create peninsulas between waterways for development. Later dredge-and-fill operations were used as well to build up low-lying areas of the mudflats to the east.

Table 6 provides a summary of dredged materials quantities historically taken from the waterways of the port industrial subarea. Sections 1.5.2.2 through 1.5.2.7 below provide a brief history of dredging and filling in the subarea. This development is depicted graphically in Figure 12.

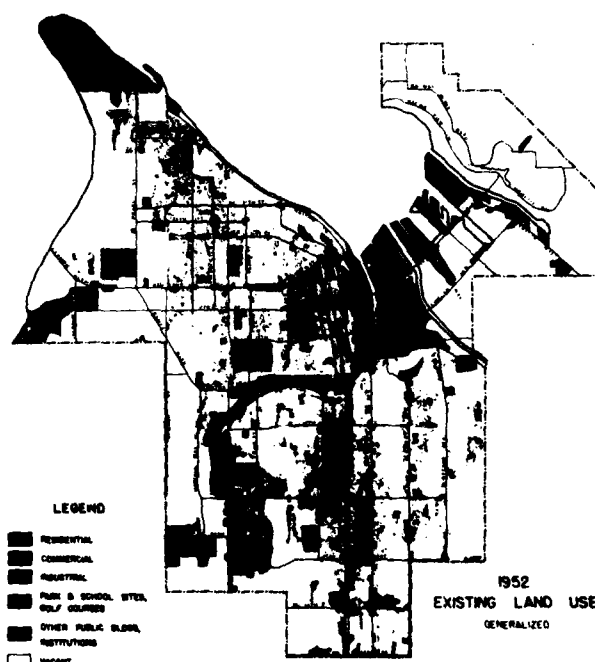
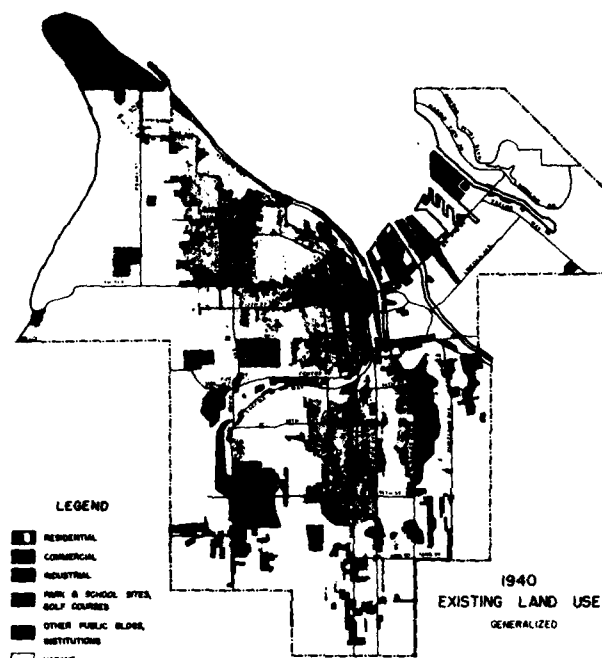
This series of five maps illustrate the development pattern that has emerged from 1925 to 1975. Tacoma's urbanization pattern can be summarized as follows:

1. Development began at a point that possessed easy access to needed resources and transportation.
2. Urbanization first proceeded outward along major transportation arteries.
3. Gradually, development filled in the gaps between major transportation routes.
4. As growth proceeded outward, activity centers rose in outlying areas to better serve the needs of residents and thereby diminished the influence of the city's center.



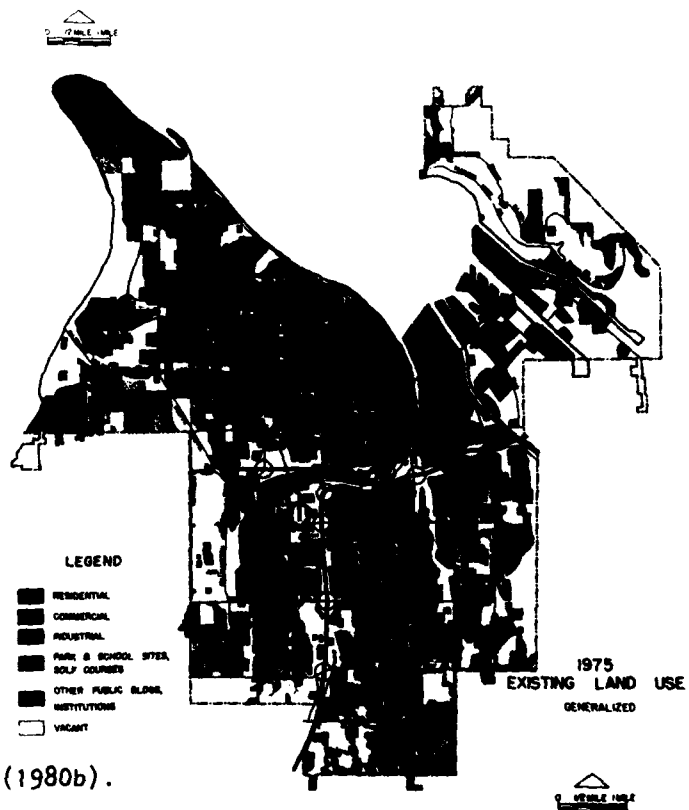
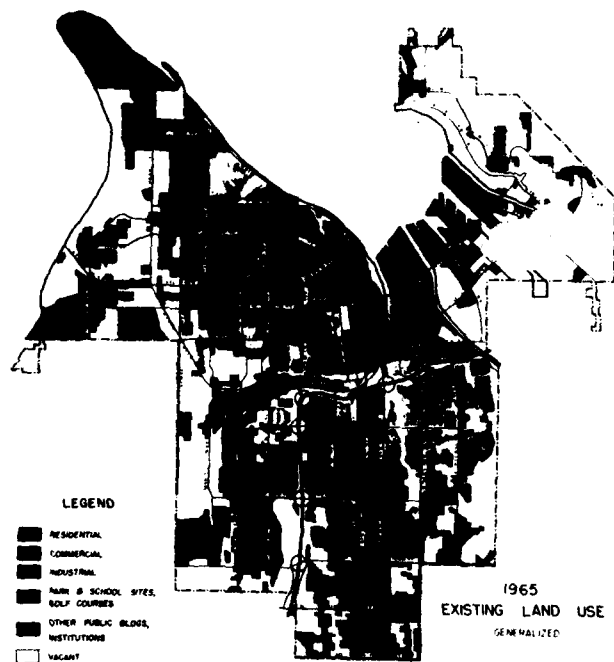
Source: Tacoma Planning Department (1980b).

FIGURE 11
CITY OF TACOMA DEVELOPMENT PATTERN 1925-1975



Source: Tacoma Planning Department (1980b).

FIGURE 11 (continued)
CITY OF TACOMA DEVELOPMENT PATTERN 1925-1975



Source: Tacoma Planning Department (1980b).

FIGURE 11 (continued)
CITY OF TACOMA DEVELOPMENT PATTERN 1925-1975

TABLE 6

HISTORY OF DREDGING IN INDUSTRIAL WATERWAYS OF COMMENCEMENT BAY(a)

Waterway	Year Dredged	Quantity (in cubic yards)
City Waterway	1905	1,156,000
	1917	36,000
	1924	87,000
	1928	12,000
	1931	84,000
	1937	72,000
	1941	119,000
	1945	36,000
	1948	119,000
Hylebos Waterway	1931	645,000
	1934	102,000
	1939 (deepened and lengthened)	761,000
	1945	46,000
	1951	167,000
	1958	17,000
	1959-1960 (Port of Tacoma)	1,235,812
	1962 (widened)	376,000
	1964-1966 (lengthened)	1,778,000
	1965 (Port of Tacoma)	1,185,200
	1972	109,000
Port Industrial (Blair) Waterway	1951-1952 (Port of Tacoma)	1,480,000
	1954 (Port of Tacoma)	1,832,859
	1956	662,000
	1956-1957 (Port of Tacoma)	1,080,530
	1964-1966 (enlarged)	6,207,000
	1965 (Port of Tacoma)	3,689,500
	1974 (included 3 feet of advance maintenance)	453,000
Puyallup Waterway (River)	1908-1910	1,811,600(b)
	1963 (Port of Tacoma) (used for fill of adjacent land)	450,000

(a) Data from: Latta (1980), Port of Tacoma (1965). All dredging performed by Corps except as indicated.

(b) Dredging attempt abandoned; please refer to text.

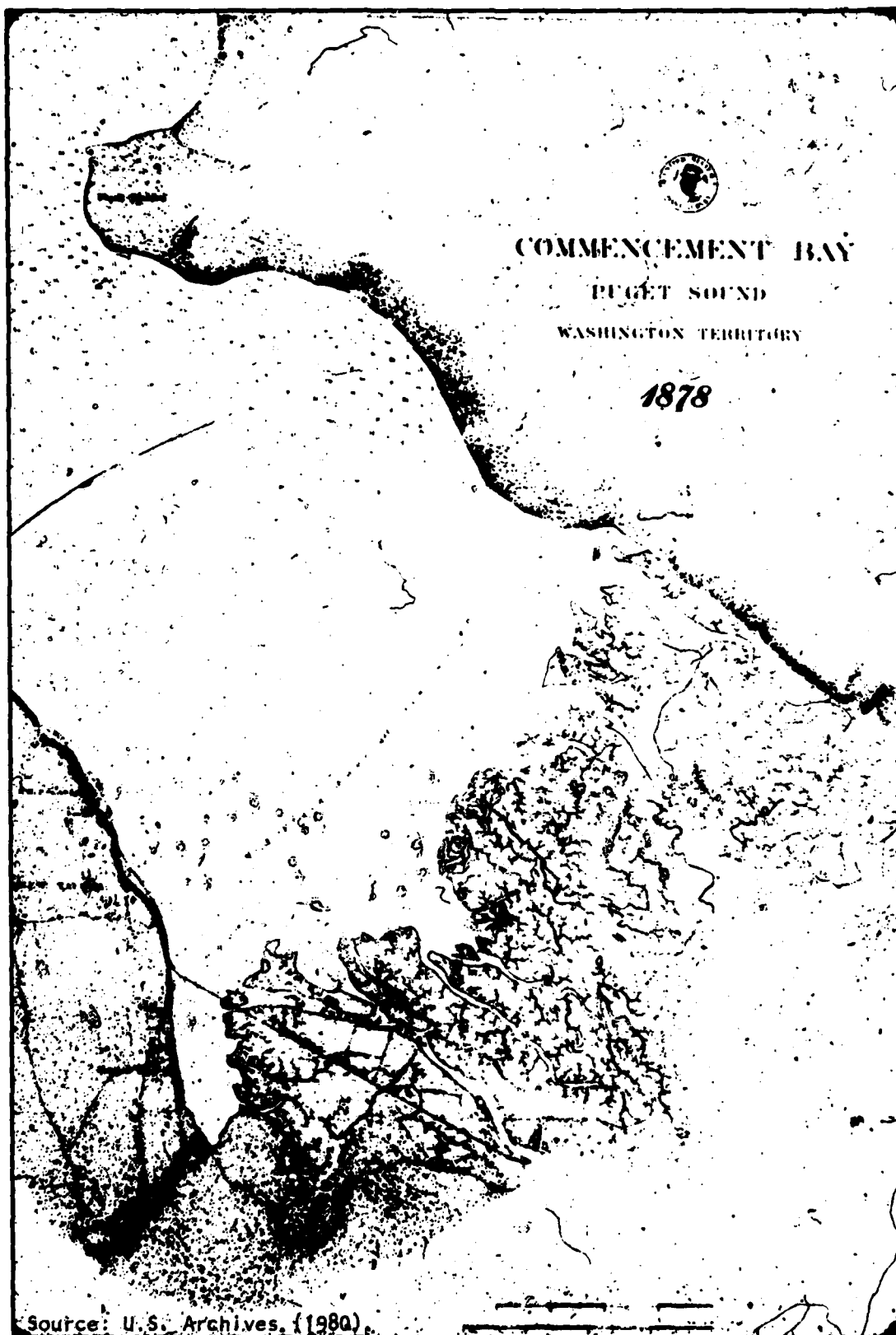


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

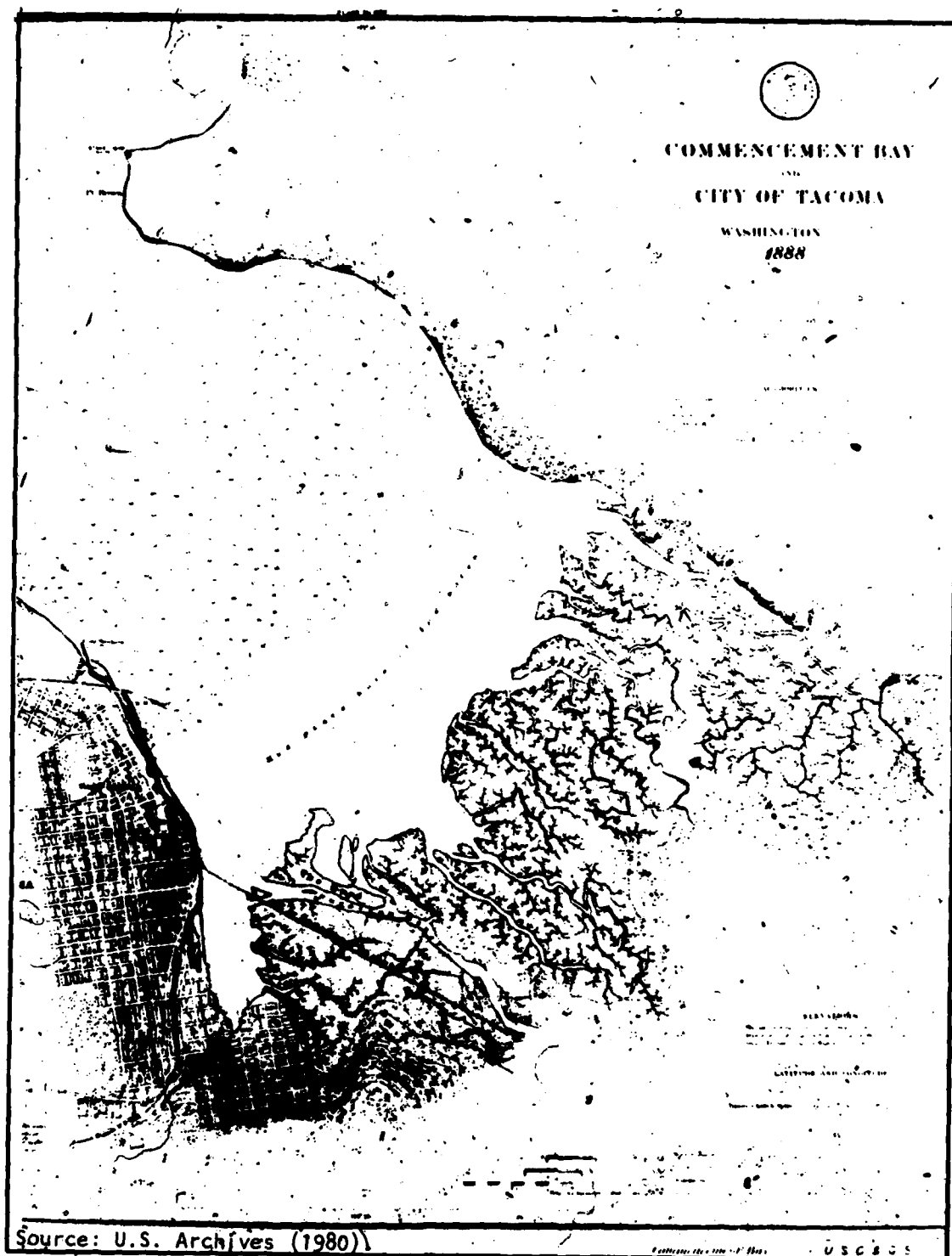


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

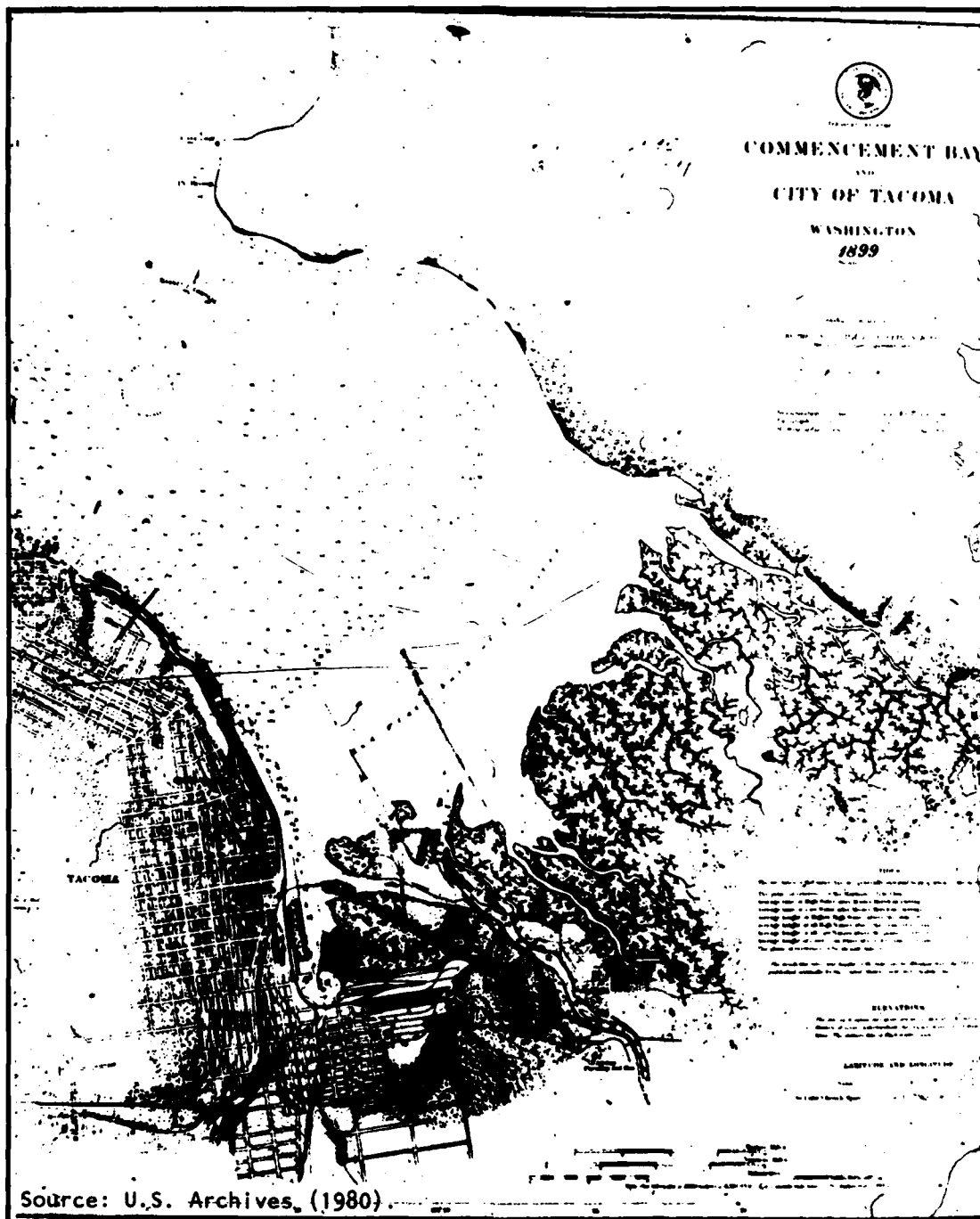


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

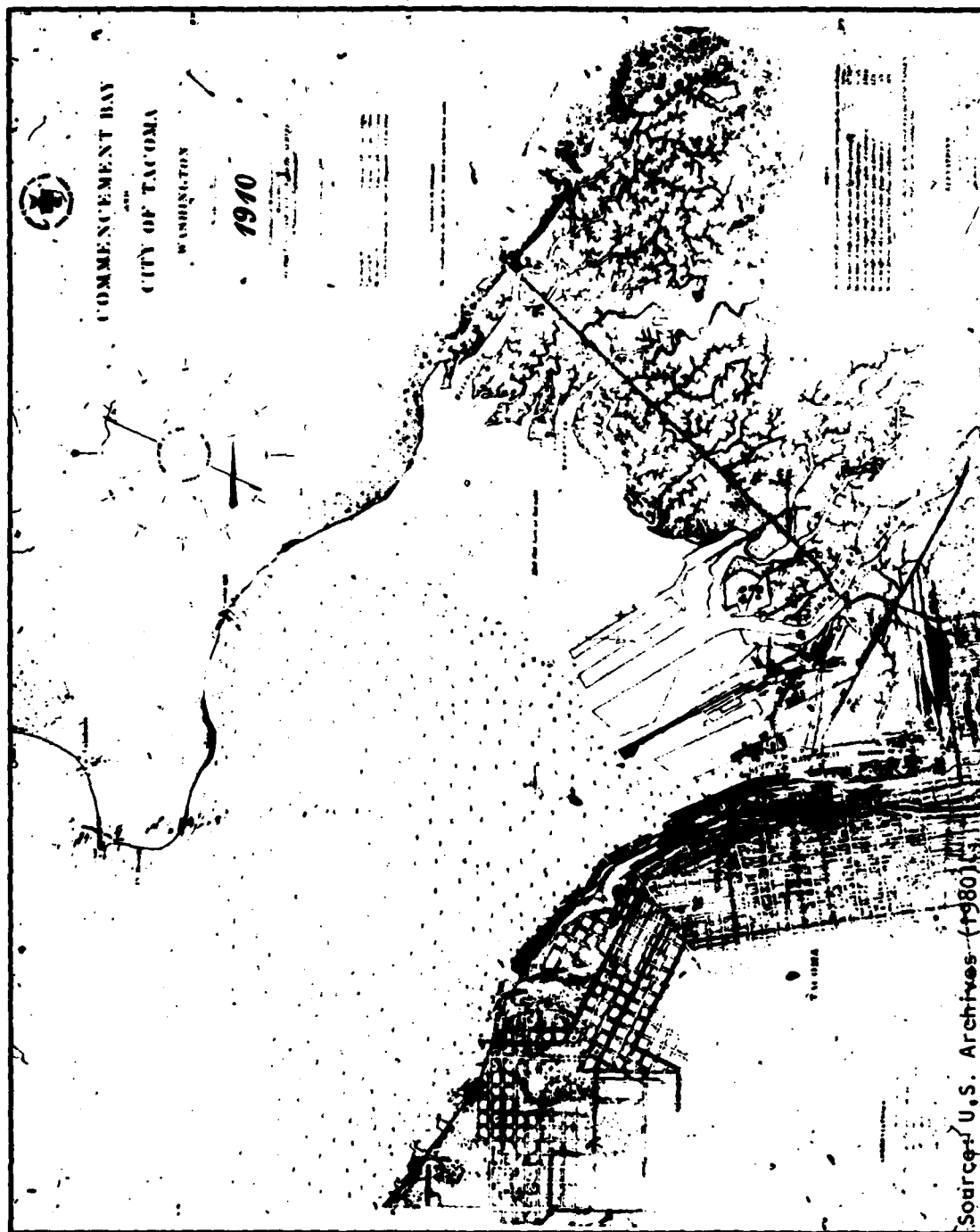


FIGURE 12

HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

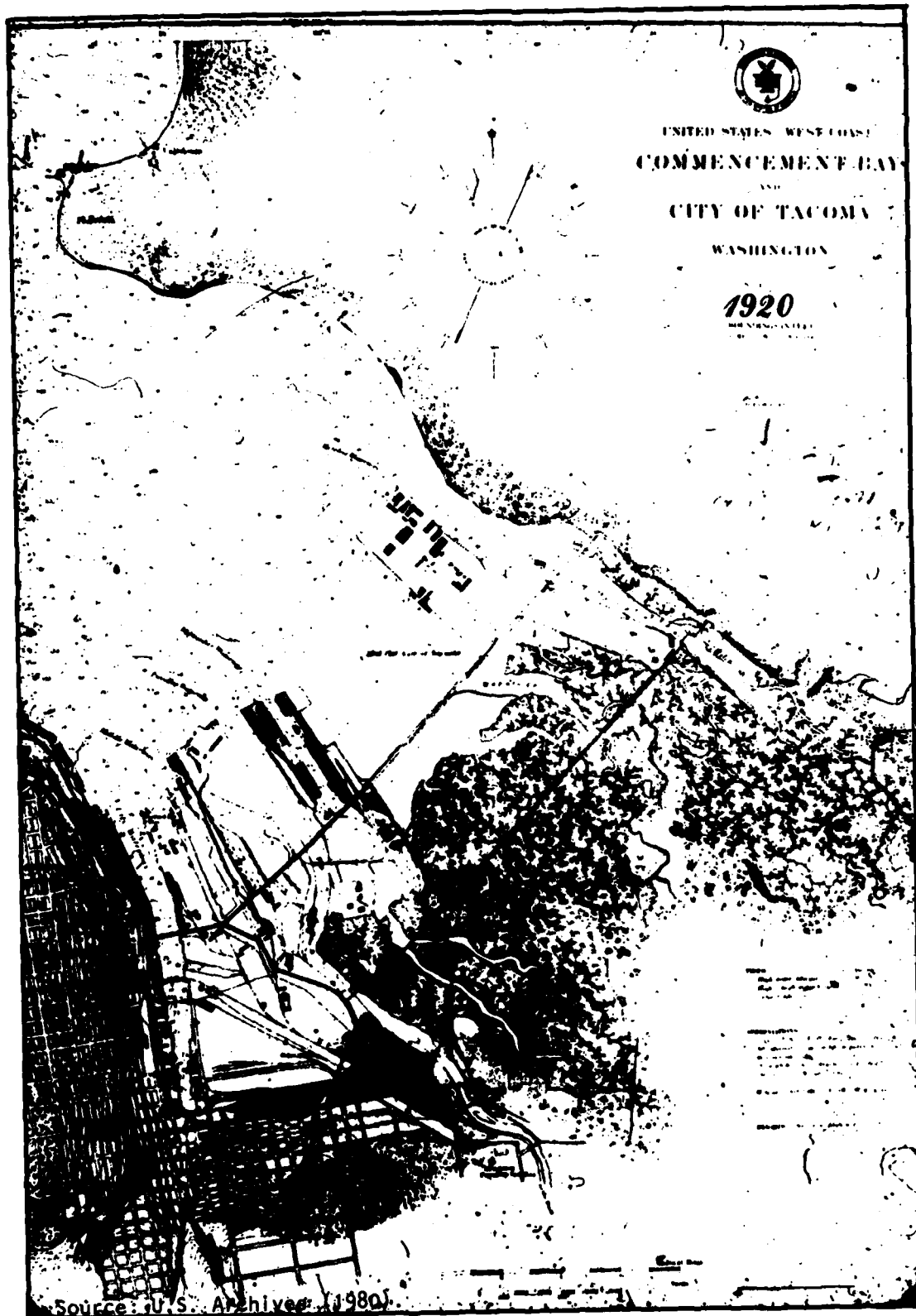


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

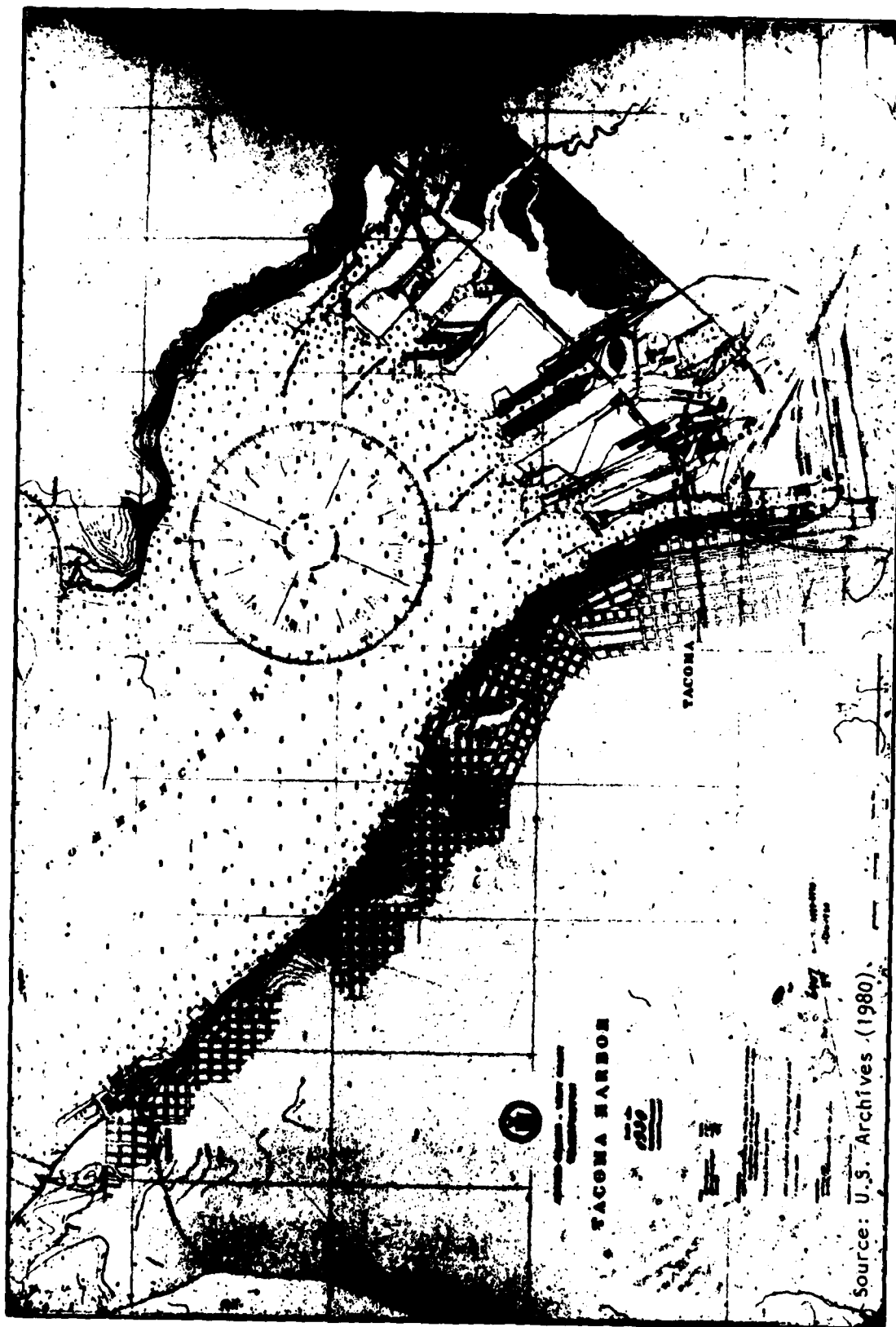


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

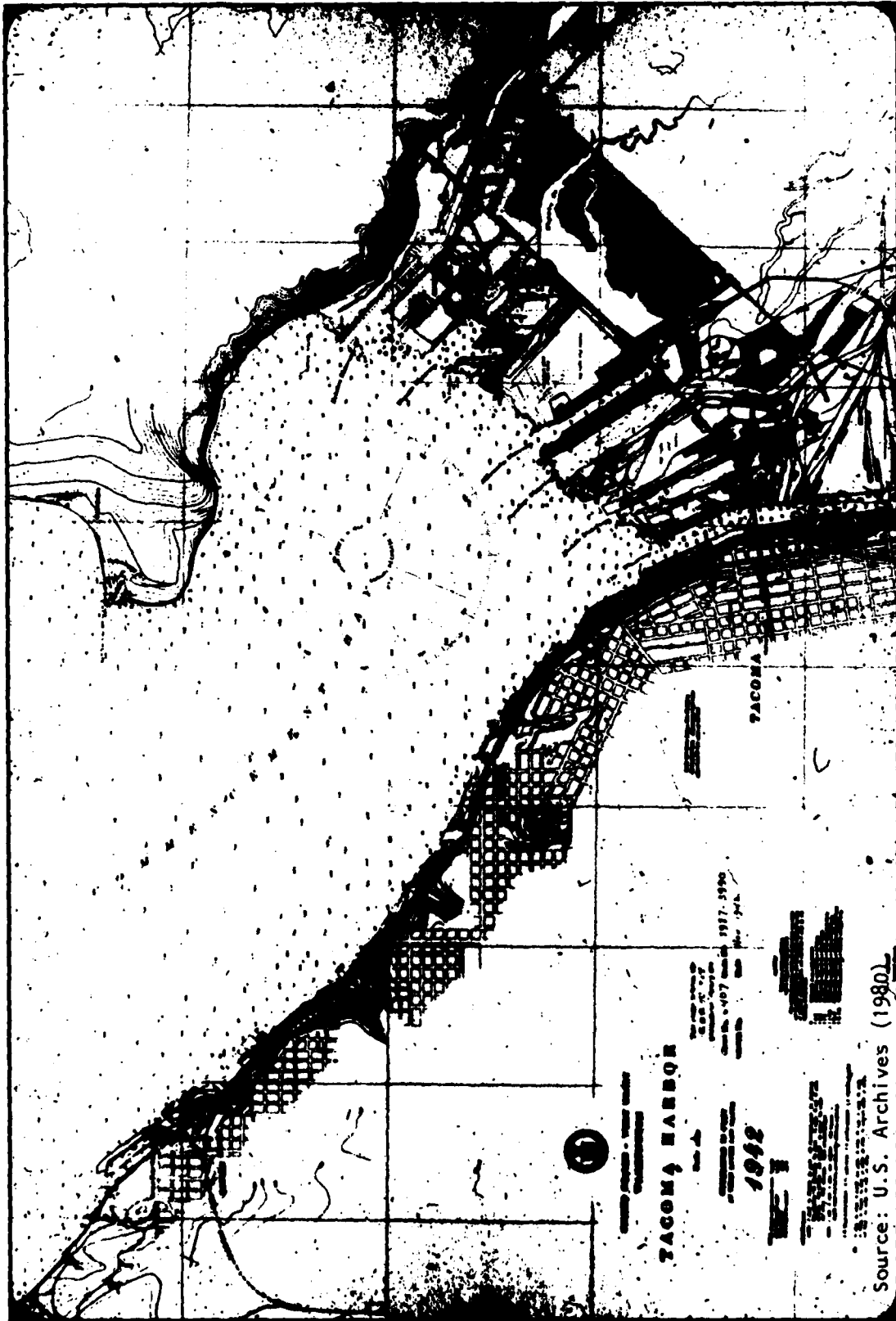


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

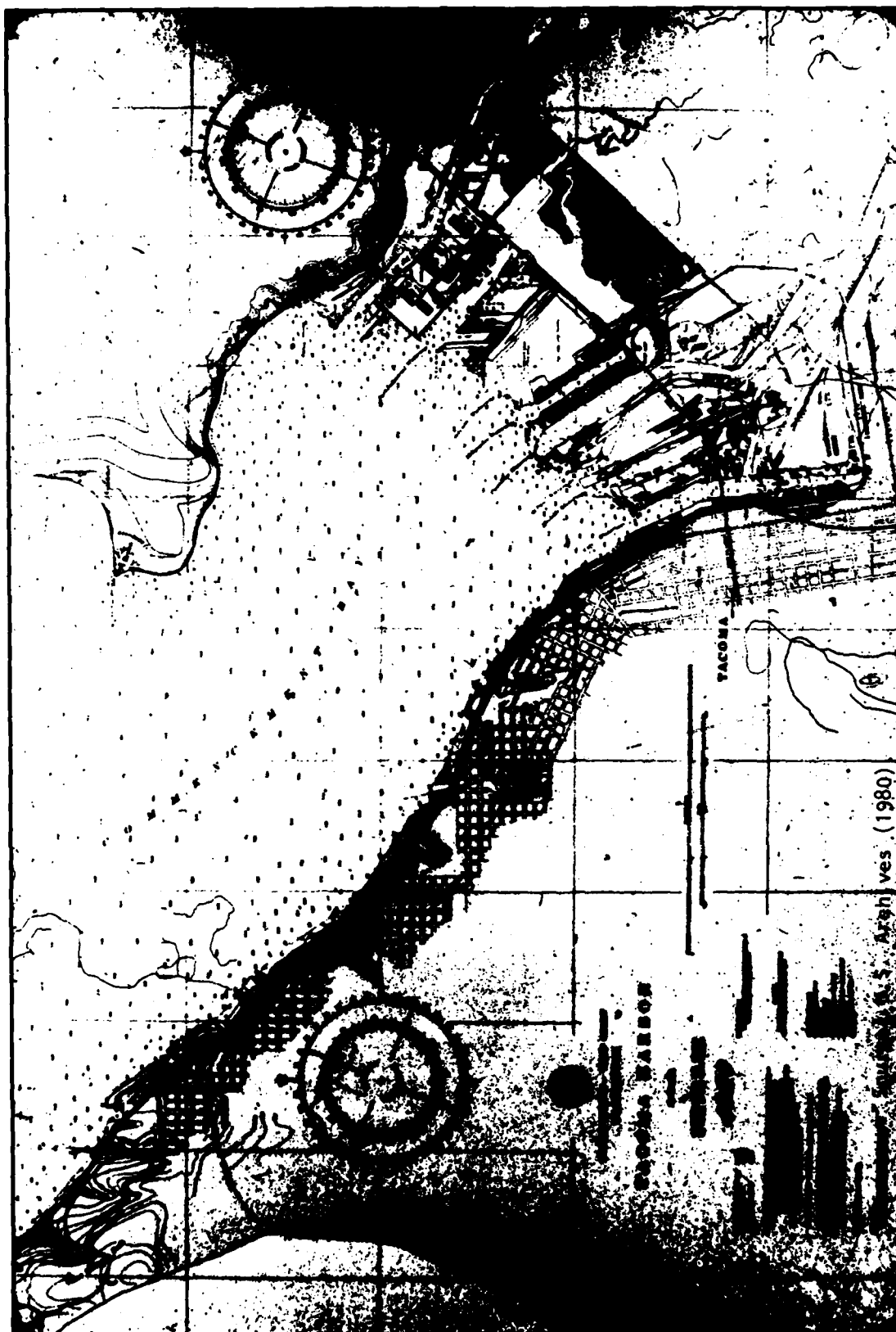


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

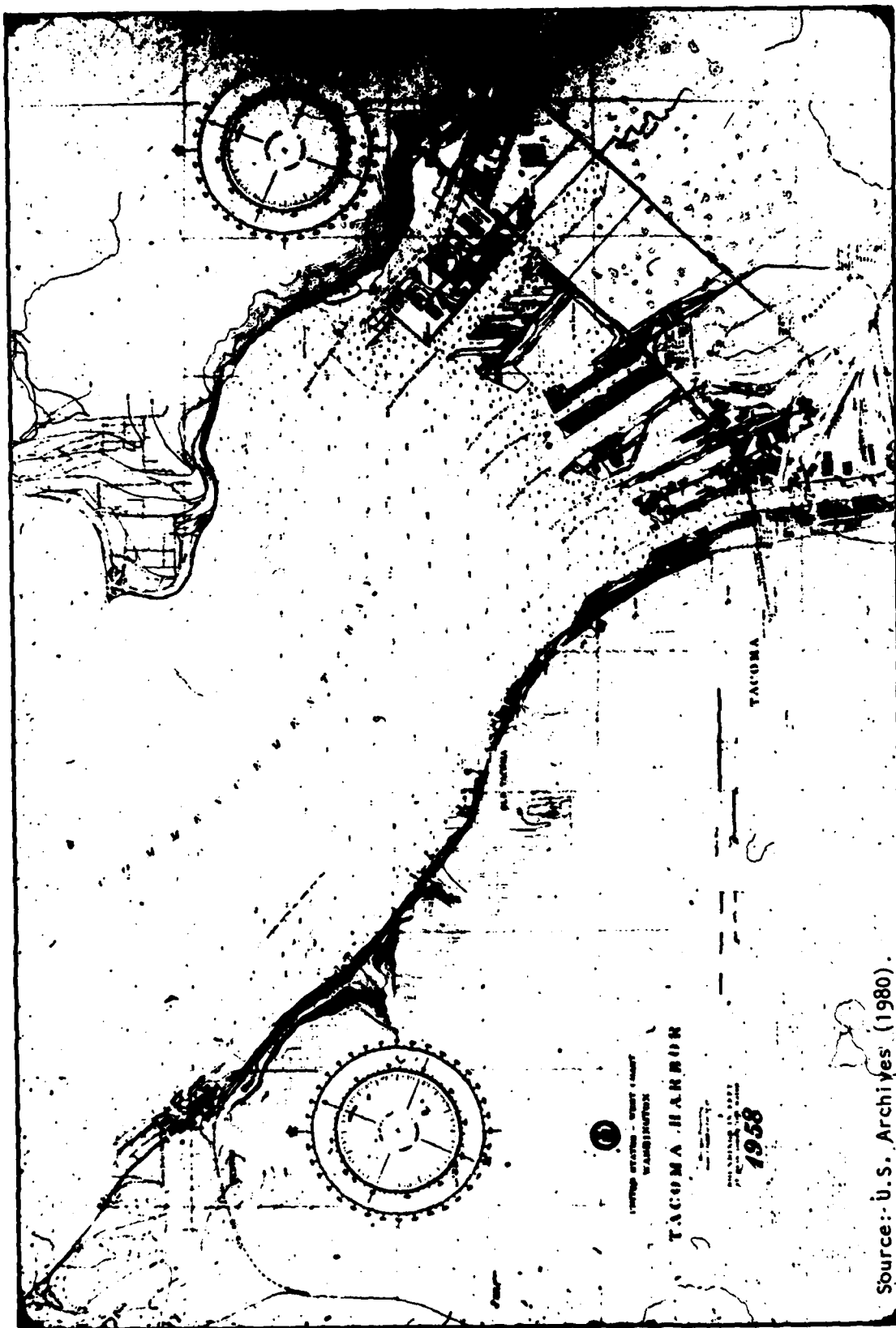


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

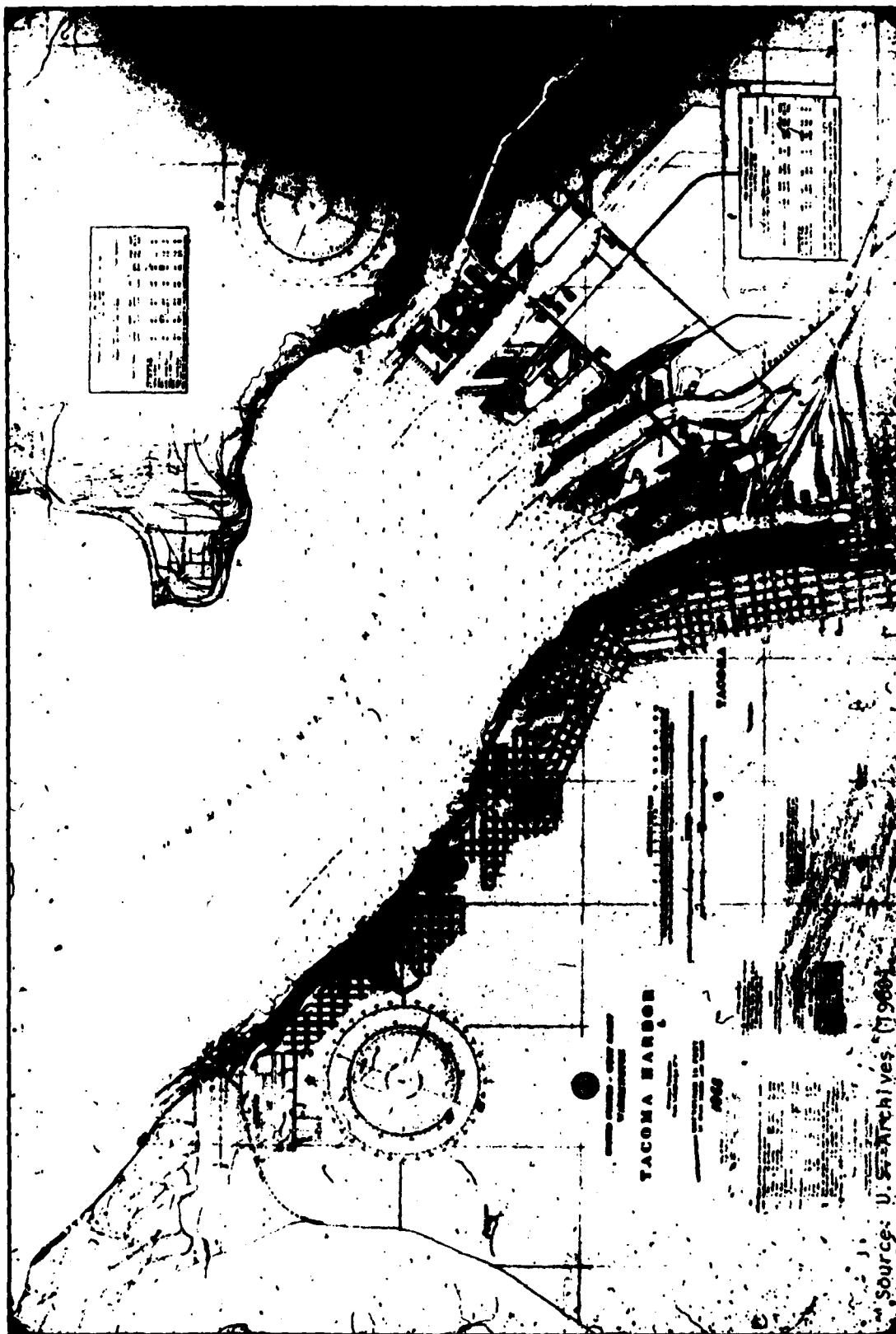
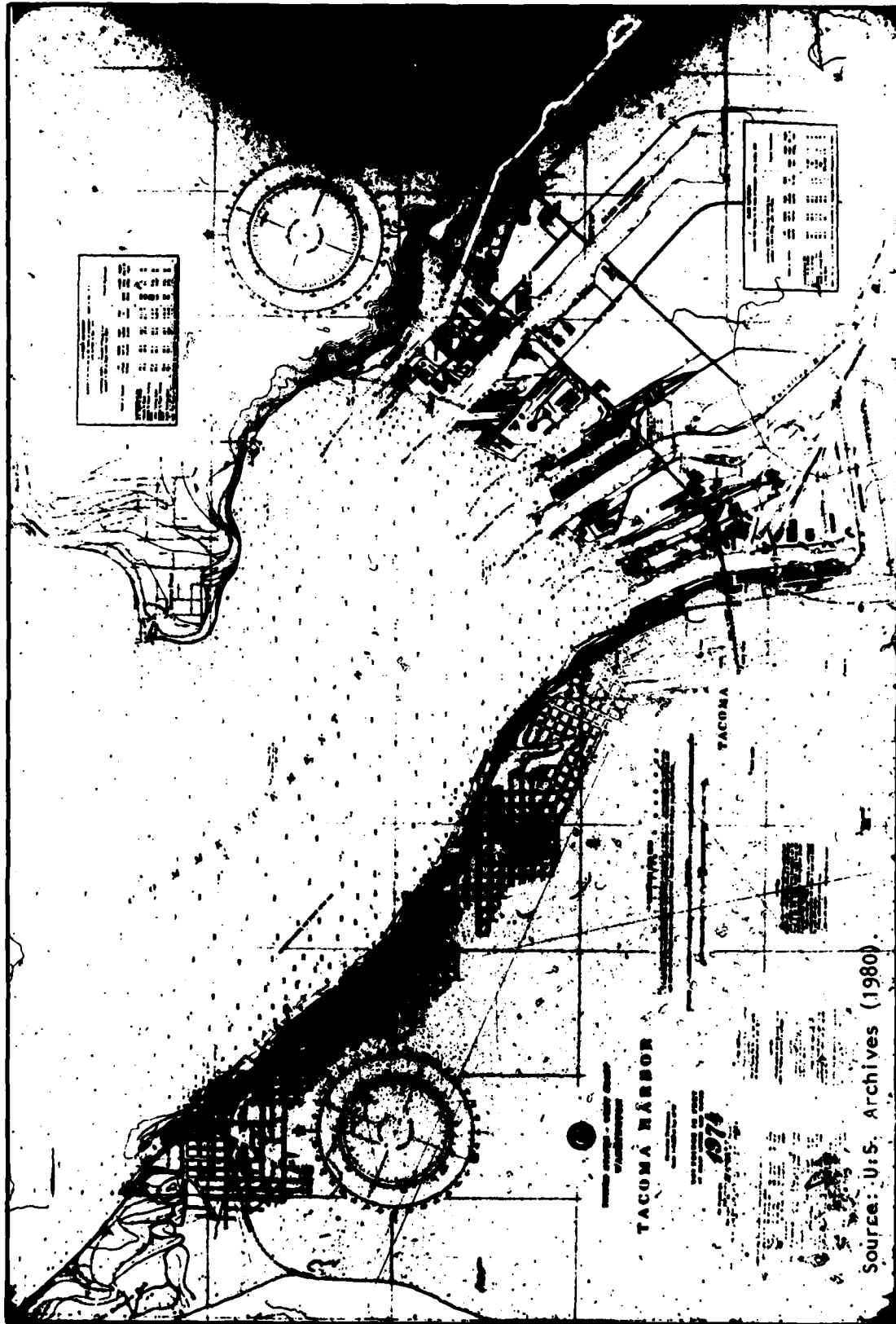


FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974



Source: U.S. Archives (1980)

FIGURE 12
HISTORIC DEVELOPMENT OF THE PORT OF TACOMA 1878 TO 1974

1.5.2.2 City Waterway

Dredging of the industrial waterways of Commencement Bay was first conducted by the Corps in City Waterway in 1905; the waterway was last dredged in 1948. Between 1905 and 1948, the waterway was dredged every 3 to 12 years. Dredging operations were terminated in City Waterway due to declining use of the waterway by deeper draft vessels and a decrease in shoaling (most likely due to increasing development). The last attempt to dredge City Waterway occurred in 1968. However, no actual dredging was ever begun due to the refusal of state agencies to permit open-water disposal. There are currently no plans to dredge City Waterway, since larger vessels requiring deeper water operate only in the outer half of the waterway, where shoaling is minimal.

1.5.2.3 Puyallup River

Historic flooding has occurred along the Puyallup River since the late 1800s. In 1906, debris dammed one channel of the White River near Auburn in King County, causing this river, which originally emptied into the Duwamish River near Seattle, to become permanently channeled into the Stuck River. The Stuck River in turn empties into the Puyallup River west of Sumner. The rechanneling of the White River into the Puyallup River added further to the flooding experienced along the lower Puyallup (Inter-County River Improvement, King and Pierce County, Washington 1920).

The Corps expanded dredging operations to the Puyallup River in 1908. Dredging of the river by the Corps was terminated in 1910 due to rapid shoaling attributable to the high volume of sediments carried by the river.

In order to control future floods, the State of Washington authorized local jurisdictions to establish the means to develop levees along the Puyallup and Stuck Rivers. This was accomplished in 1913 through an agreement between King and Pierce Counties to jointly fund the project.

In 1914, the river mouth was dredged and permanently channeled in the middle of the tideflats, and a concrete levee was constructed from the harbor to the City of Puyallup.

The Puyallup River Flood Control Project was authorized by the Flood Control Act of June 22, 1936, and completed in 1950 by the Seattle District Corps of Engineers. Channel improvements were authorized in 1936 for the 2-mile portion of the river between the 11th Street Bridge and the Tacoma city limits, in order to give flood protection to the industrial section of Tacoma through the channelization of the river, and the construction of levees and revetments (U.S. Army Corps of Engineers, Seattle District 1981).

The transport and deposition of waterborne sediments near the mouth of the Puyallup has created a rapidly expanding delta. The delta and its associated shoal waters could potentially preclude the movement of deep-draft vessels in portions of Commencement Bay located near the river mouth and adjacent Port of Tacoma terminal areas if maintenance dredging is not performed. Due to the rate of shoaling occurring at the mouth of the Puyallup, such dredging would have to be either extensive or relatively frequent.

1.5.2.4 Hylebos Waterway

Hylebos Waterway was created by the Port of Tacoma in the early 1920s. The Corps of Engineers began dredging Hylebos in 1931 and continued to perform maintenance dredging every 3 to 7 years from 1931 to 1972. The Port of Tacoma extended the waterway by 3,800 feet in 1954-55. Dredging in Hylebos by the Corps was terminated as bulkheading and decreased sedimentation attributable to Hylebos Creek (probably as a result of increasing development along the creek) tended to stabilize the waterway. Shoaling of the entrance to Hylebos Waterway may require infrequent dredging in the future.

1.5.2.5 Blair Waterway

Dredging was initially conducted in Blair Waterway (formerly Port Industrial Waterway) by the Port of Tacoma in 1951-52 (Port of Tacoma 1980). Material taken from Blair was used to build up and fill adjacent lands for future industrial development. Beginning in 1954, the port conducted dredging to extend Blair Waterway to 6,000 feet in length. In 1964-1966, the Corps and the port conducted extensive dredging to extend and improve the Blair Waterway to its present approximate configuration. The Corps conducted maintenance dredging in Blair Waterway every 8 to 10 years from 1956 to 1974. In the future, it is anticipated that dredging will be required at the same approximate interval. However, it should be noted that the waterway would be deepened under a proposed Port of Tacoma project (U.S. Army Corps of Engineers, Seattle District 1976). Such a project could require less frequent dredging, particularly if advance maintenance dredging is conducted during deepening.

1.5.2.6 Other Waterways

The lesser waterways were created at various times during the development of the port industrial area. Milwaukee Waterway was created between 1910 and 1913 as a terminal facility for the Milwaukee Road railroad system. St. Paul Waterway was created in stages between 1920 and the early 1930s. Sitcum Waterway was created in the 1930s (U.S. Archives 1980).

1.5.2.7 Dredge Materials Disposal/Fill Sites

As discussed above, dredged materials have been historically used and continue to be used as fill material to build up the peninsulas between the waterways of the port. In addition, dredged materials are used as fill for low-lying lands planned for industrial expansion to the southeast. It is important to note that both maintenance dredging to deepen channels and nonmaintenance dredging for fill purposes is permitted in the port industrial subarea under the City of Tacoma's Master Program for Shoreline Development (see Section 2.4.2.3 below); however, the

master program states that dredging for the primary purpose of obtaining fill material should be generally discouraged.

Areas where dredged materials have been used in filling operations by the Corps of Engineers are depicted in Figure 13. Fill operations undertaken by the Port of Tacoma until 1965 are depicted in Figure 14. Figure 15 depicts potential spoils disposal and fill stockpile sites designated by the Port of Tacoma as of 1973. Currently, only one spoils disposal site and one stockpile site are used (Sites 7 and 4 on Figure 15, respectively).

In addition to use as fill, dredged materials are disposed in designated open-water dredged material disposal sites. There is currently one such open-water site in Commencement Bay, although other areas have been designated for disposal in the past (see Figure 13).

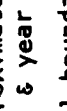
Port of Tacoma dredge and fill data for the period 1965 to 1973 is incomplete; however, port records indicate that approximately 300,000 cubic yards of fill were used in Terminal Four improvements during this period. The port also assisted in the expansion of the Blair Waterway from 1964-1968 (Port of Tacoma 1981).

1.5.3 LOSS OF INTERTIDAL AREA AND WETLANDS

The development of the port industrial area has resulted in the loss of considerable intertidal and wetland areas in the Puyallup Delta. A study prepared by the U.S. Fish and Wildlife Service, Portland, Oregon (1979), reports that all of the estimated 2,470 acres of wetlands (marshes) existing in Commencement Bay (Puyallup River Delta) in 1877 have been lost. The same study reports that only 25 of 1,830 acres of intertidal area existing in 1877 presently exists in the port industrial area of Commencement Bay. Intertidal areas along the south shore of Commencement Bay were destroyed or altered in the late 19th century during the creation of the narrow strip of land that now supports part of Schuster Parkway, Ruston way, and the railroad right-of-way at the base of the bluff line. However, the creation of this narrow strip created new intertidal areas whose total average likely approximates that which was lost. The intertidal area near the ASARCO smelter has also been altered through the historic dumping of slag along the privately owned shorelines at that site.

SCALE IN FEET

Legend:



-  1974
-  Indicates approximate fill boundary & year
-  Estimated fill boundary
-  Existing Commencement Bay disposal site
-  Site 'B'
- Longitude: 122°27'30"
- Latitude: 47°17'30"

1962

WATERWAY 630 FT. LONG,
35 FT. DEEP OVER

TRIAL AREA 300 FT.
30 FT. DEEP OVER

SOUTHERN 150 FT.
30 FT. DEEP OVER

WIDTH AT BEND 290 FT.
30 FT. DEEP

MAX. CHANNEL WIDTH 300 FT.
DEPTH 30 FT.

1931

BLAIR WATER TRIAL

CHANNEL 200 FT. WIDE, 30 FT. DEEP

CHANNEL WIDTH 510 FT. DEPTH 30 FT.

CHANNEL 200 FT.
WIDE 30 FT. DEEP

LONG 150 FT. LONG, 100 FT. WIDE, 30 FT. DEEP.

1964-1966!

1

X

all

5

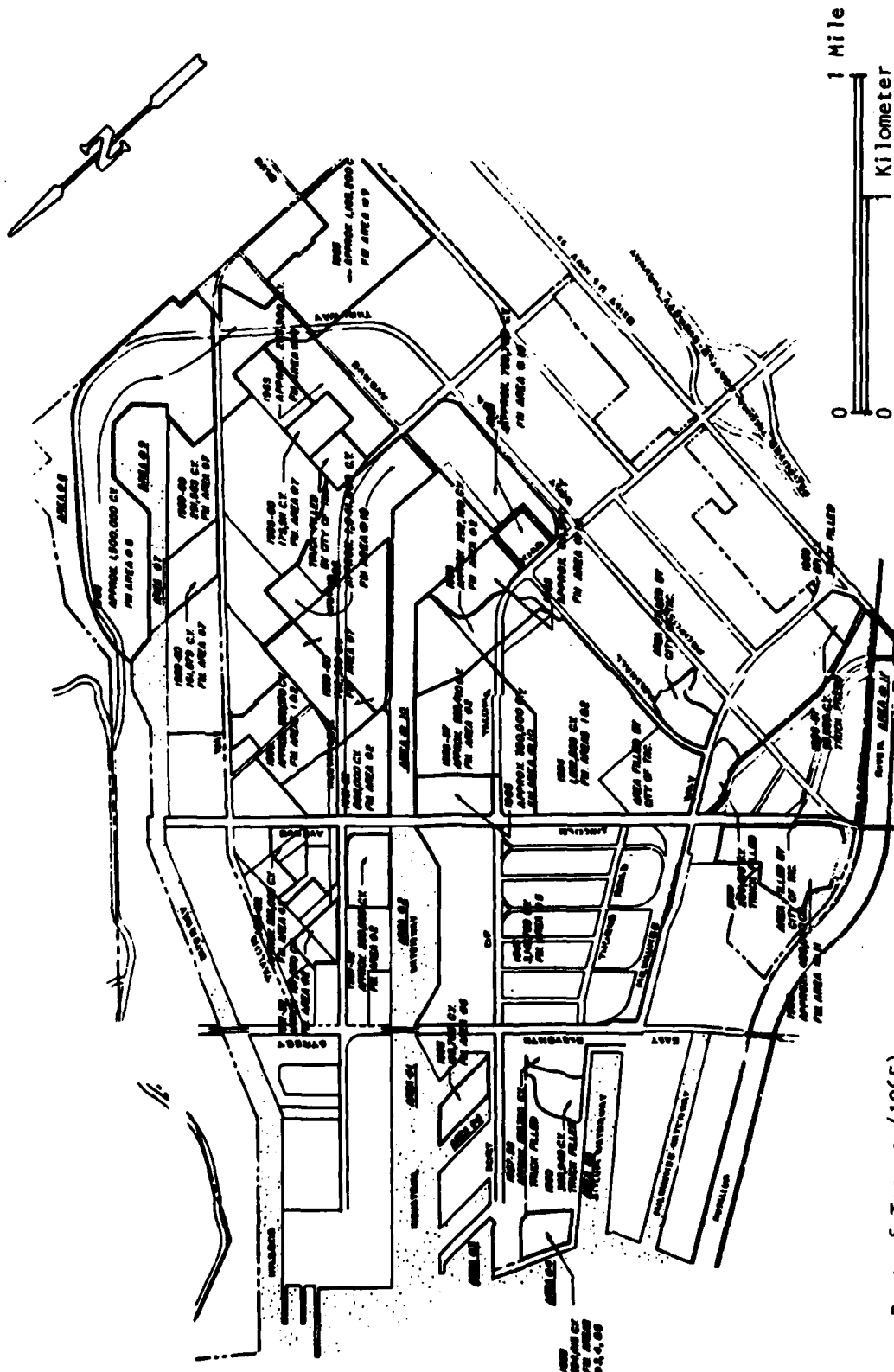
9 11 PM '87

CHANNEL

9

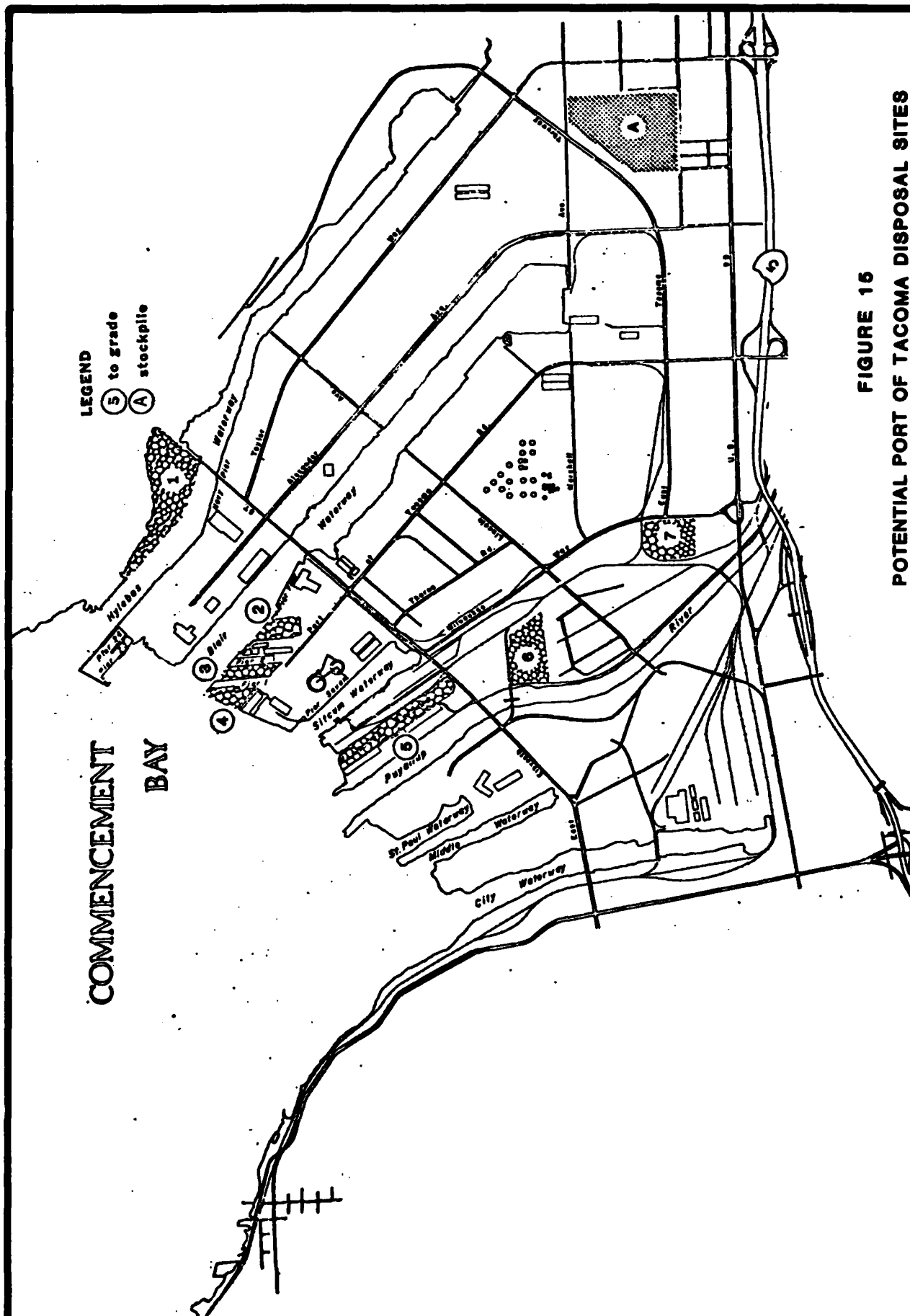
FIGURE 13

**CORPS OF ENGINEERS DREDGING
AND FILL ACTIVITIES 1908-1974**



Source: Port of Tacoma (1965).

FIGURE 14
PORT OF TACOMA DREDGE AND FILL SITES



SPOIL DISPOSAL SITES AVAILABLE **Summary**

SITE	(CAP. CY) VOLUME	(S.F.) FILL AREA	(ACRES) PARCEL AREA	(LENGTH) DIKE	(VOL.-CY) DIKE	USE PRESENT	OWNER PRESENT	LEASE AVAILABILITY	AVG. DEPTH OF FILL
1(a)	1,267,000	2,269,000	74			Tide Lands	Dillingham	1973	15'
2	600,000	507,500	11.6	650	50,000	Marina	Port	Varies	32'
3	945,000	500,000	11.5	460	83,000	Terminal	Port	-	48'
4	892,000	449,600	10.3	1,150	214,000	Terminal	Port	-	65'
5	2,160,000	1,430,000	33	600	124,000	Terminal	Milwaukee	Varies	50'
6	150,000	695,000	16	3,300	2,000	Vacant	Milwaukee	Varies	6'
7(b)	290,000	1,957,000	45	7,300	5,000	Vacant	Port	-	4'

STOCKPILE SITES NOW IN USE **(1973 - Lands of The Port of Tacoma)**

SITE	VOLUME C.Y./FT. OF HT.	S.F. FILL AREA	PARCEL AREA ACRES	DIKE LENGTH	DIKE VOLUME C.Y./FT. OF HT.	PRESENT USE	VOL. FILL C.Y.-6'HT.	VOL. DIKE C.Y.-6'HT.
A	91,400	2,465,000	71	7,700	567 h 2	Vacant	548,000	20,400

- (a) Temporarily Unavailable
(b) Only Spoil Disposal Site Now In Use

FIGURE 16 (CONTINUED)
PORT OF TACOMA DISPOSAL SITES & SUMMARY
OF DISPOSAL ACTIVITIES SINCE 1973

1.6 LAND OWNERSHIP

1.6.1 GENERAL

Land in the study area, as in most highly developed urban areas, is under both public and private ownership, with the majority of the land consisting of relatively small, privately owned parcels. This section presents general information on land ownership in the study area. Specific information can be obtained from records held in the Pierce County Tax Assessor's office.

1.6.2 PUBLIC OWNERSHIP

The largest public ownership of land within the study area is Point Defiance Park, a 698-acre park owned and maintained by the city's Metropolitan Park District. Other parks in the study area (Commencement, Old Town, Firemans, Garfield) are publicly owned as well. The Washington State Department of Transportation owns and operates the ferry terminal facility at Point Defiance just west of the ASARCO smelter and Tacoma Yacht Club.

Other significant publicly owned lands include a City of Tacoma property along the waterfront near the intersection of Division and Stadium Streets, portions of Puget and Buckley Gulches, and the site of Sewage Treatment Plant No. 3 in Mason Gulch. In addition, the city owns three large parcels of land along the Ruston Way waterfront that are scheduled for development under the Ruston Way Plan: Design and Development Guidelines for Waterfront Revitalization (Tacoma Planning Department 1980a). These combined parcels comprise nearly 1 mile (1.6 kilometers) of waterfront property along the 2-mile shoreline extending from the east boundary of Commencement Park at Old Town to the east boundary of the Tacoma smelter property. With the exception of Commencement Park and Old Town Dock, these parcels are largely undeveloped.

The city also owns six smaller properties along Ruston Way waterfront; most of these are undeveloped street rights-of-way (Tacoma

Planning Department 1980a). In all, the city owns about 42 percent of all shorelines along Ruston Way. The public is permitted to use all city property for access to the shoreline areas. While public beaches have been established at Point Defiance and Commencement Parks, the public has access to the waterfront at all public (state- and city-owned) properties.

Other city-owned lands in the study area include scattered maintenance yards in the port industrial area; Firemans Park, a municipal dock facility and fireboat facilities in City Waterway; and a sewage treatment plant on the south shore of the Puyallup River east of the 21st Street Bridge.

1.6.3 PRIVATE OWNERSHIP

Most large ownerships in the study area are private. The largest private ownership along the south shore of Commencement Bay is the ASARCO smelter property, located half in Ruston and half in the City of Tacoma. This large parcel is owned by the American Smelting and Refining Company (ASARCO). The Port of Tacoma owns the site of the grain elevator near the entrance to City Waterway. The Burlington Northern Railroad owns several hundred acres of rights-of-way and railyards along Ruston Way and in the vicinity of City Waterway. Other large private ownerships between City Waterway and the Puyallup River include lands owned by the St. Regis Paper Company, West Coast Grocery, Coast Sash and Door, and Foss Marine. The CBD, located just outside the study area consists of numerous privately owned parcels; however, the City of Tacoma, as in most other areas of the south shore subarea, owns and maintains street rights-of-way.

The Port of Tacoma industrial area generally extends from the north bank of the Puyallup River to Marine View Drive and east to Highway 99 (see Figure 4 above). While all of this area once was under port ownership, much of the land has been sold to former port tenants. Port-owned lands now consist of approximately one-half of the total 2,700 acres comprising the port industrial area. The port operates a marine terminal facility with 30 deepwater berths, a 160-acre industrial yard, and a

1,200-acre industrial development district. The port also operates and services all non-state access roads within the port area as well as a dockside-to-mainline switching railroad connecting port facilities with transcontinental railroad systems that serve the area. Other major private land owners in the port industrial area include Kaiser Aluminum, Reichhold Chemical, Pennwalt Chemical, U.S. Oil & Refining, Cascade Pole Company, General Metals, Concrete Technology, Hooker Chemical, Weyerhaeuser, and Louisiana Pacific. The port also leases property to commercial and industrial tenants, including but not limited to Puget Sound National Bank, West Coast Orient (lumber), Realco Services, Manke and Sons (lumber), and Weyerhaeuser (lumber). Land ownerships and leases within the area under Port of Tacoma jurisdiction is depicted in Figure 16.

The lands comprising the north shore of the study area are almost exclusively owned by the private sector. Several large (20-plus acres) are located along Marine View Drive; for the most part, these are owned by either private citizens or financial institutions. The U.S. Department of Transportation (U.S. Coast Guard) owns a 2-acre parcel where the Browns Point light and associated facilities are located. Part of this property has been leased to a local recreational club, which maintains a private boat launch and park at the site.

1.7 TIDELAND OWNERSHIP/LEASES

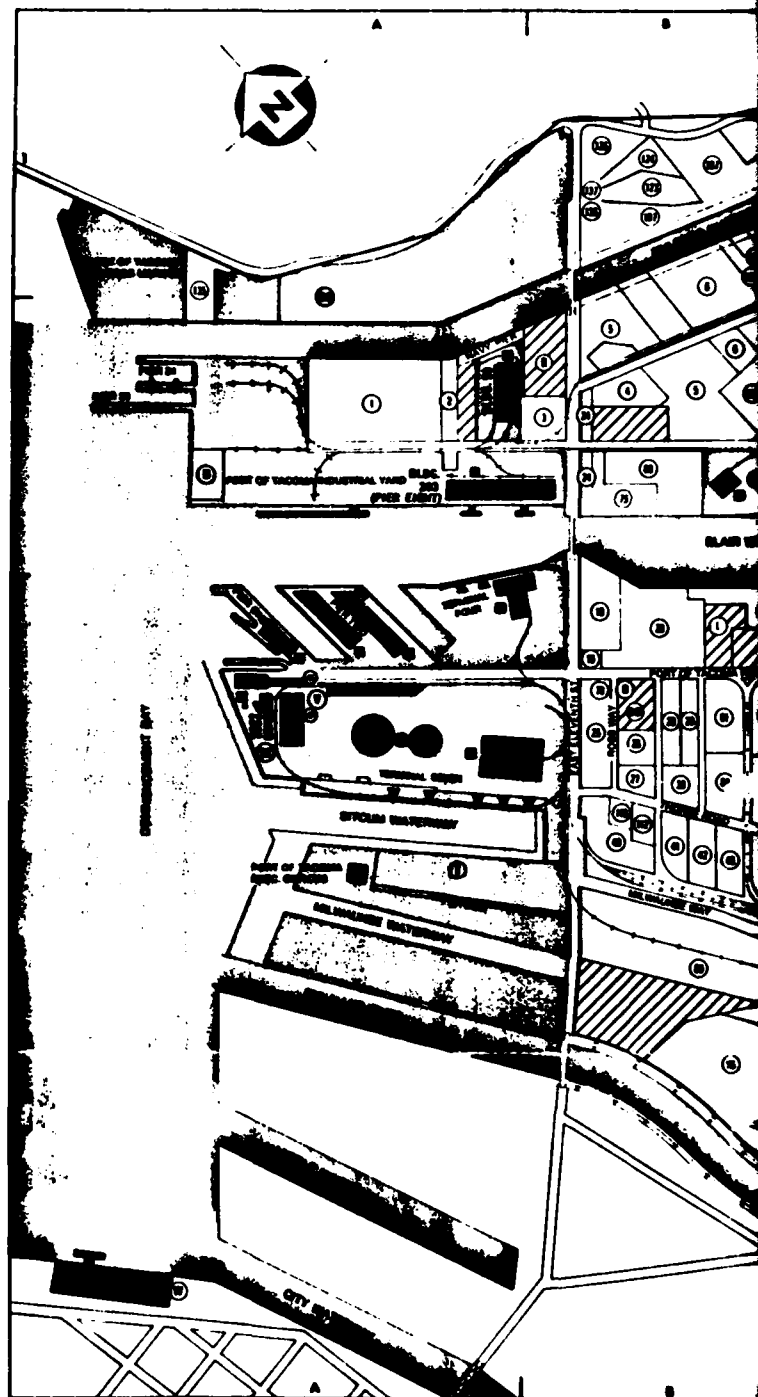
Nearly all of the tidelands in the study area are privately owned. Ownership of tidelands generally corresponds with ownership of the adjacent shoreline properties. For example, large ownerships in the study area include, but are not limited to ASARCO's ownership of tidelands just off the smelter property, St. Regis' ownership of tidelands between City and Milwaukee Waterways, Tacoma Boat Builders ownership of tidelands just west of the Port of Tacoma grain elevator, extensive tideland holdings by Burlington Northern along the Schuster Parkway shoreline, and extensive Port of Tacoma ownerships of tidelands at the grain elevator and throughout the port industrial area. While tidelands in the study area are, for the most part, privately owned, Washington State owns the tidelands at three locations within Commencement Bay. These locations are depicted in Figure 17. In addition, the City of Tacoma owns tidelands

PROPERTY OWNERS

- 1 A-2 Hooker Chemical
- 2 A-2 Fletcher Oil Co.
- 3 B-2 U. S. Government
- 4 B-2 P. S. Corporation
- 5 B-2 City of Tacoma
- 5 C-4 City of Tacoma
- 5 D-4 City of Tacoma
- 5 E-2 City of Tacoma
- 6 B-2 Brazier Lumber Company
- 7 B-2 Lindal Cedar Homes
- 8 C-2 Buffelen Woodworking Company
- 9 B-1 Western Farmers
- 10 B-2 Educators Mfg. Co.
- 11 C-2 Pacific Paper Products Inc.
- 12 C-2 Western Turnings
- 13 C-2
- 14 C-2 Reichhold Chemical
- 15 D-1 Penwalt Chemical Corp.
- 16 C-2 Standard Mechanical, Inc.
- 17 D-2 Kaiser Aluminum & Chemical
- 18 B-3 American Marine - Harbor Services
- 19 B-3 Pacific Nat'l Bank of Wash.
- 20 B-3 Concrete Technology
- 21 C-3 Abom Engineers
- 22 B-3 U. S. Oil & Refining
- 22 C-2 U. S. Oil & Refining
- 23 C-3 Stauffer Chemical Co.
- 24 B-2 Vance Lift Truck
- 24 B-2 Beachcomber Tavern
- 24 B-2 Reagan's Cove
- 24 B-2 Flagship Restaurant
- 24 B-2 Arco Service
- 24 B-2 Shell Service
- 24 B-2 Bob's Pier Tavern
- 25 B-3 Tacoma-Port Angeles Auto Freight, Inc.
- 25 B-3 A-1 Steel Foundry, Inc.
- 25 B-3 Shortt Saw & Knife
- 25 B-3 Kaman Bearing & Supply
- 25 B-3 Hertz Equipment Rental
- 25 B-3 Cascade Timber Co.
- 25 B-3 Amfac Drug Supply
- 25 B-3 Westrade Industries, Inc.
- 25 B-3 Barnacle Bill's Restaurant
- 25 B-3 Barthel Chemical Const. Company
- 25 B-3 Cole & Redmayne
- 25 B-3 Transcon Lines
- 25 B-3 Seaman's Center
- 25 B-3 McKenzie Fuel Co.
- 25 B-3 T.F.D. Engine Co. 12
- 25 B-3 Fastco Inc.
- 25 B-3 Drury Co.
- 25 B-3 Pargas of Tacoma
- 25 B-3 Puget Sound Instrument Company
- 25 B-3 Sound Battery
- 25 B-3 A-1 Steel and Iron Foundry
- 25 B-3 Saturn Const.
- 25 B-3 Trade Industries
- 26 B-3 Georgia Pacific Corp.
- 27 B-3 Lundgren Dealer Supplies
- 28 D-1 Weyerhaeuser Company
- 29 B-3 General Hardware
- 30 B-3 Mann-Russell Electronics
- 31 C-3 Girard Custom Centers, Inc.
- 31 C-3 J. F. International, Inc.
- 31 C-3 James C. Wolf Co.
- 32 B-3 Rheem Mfg. Co.
- 33 B-3 N. W. Containers Inc.
- 34 C-3 Landscape Bart
- 35 C-3 John W. Stang Corp.
- 36 C-3 Foss-Dillingham Corp.
- 37 D-1 Petroleum Reclaiming Service, Inc.
- 38 C-3 Bonnet Stamping & Tool Co.
- 39 C-3 Porex Corporation
- 40 B-3 Brown & Haley
- 40 B-3 Weyerhaeuser Print Shop
- 40 B-3 Krystal Shis, Inc.
- 41 B-3 Allied Chemical Corp.
- 42 B-4 Nutrilite Fertilizers
- 43 B-4 Woodlam Inc.
- 44 B-4 Certain-teed Products Corp.
- 45 C-4 Pacific Resins & Chemicals
- 46 C-4 DMC Freight Terminal
- 47 C-3 Lianga-Pacific, Inc.
- 48 B-3 Norcore Plastics, Inc.
- 49 E-2 Bonneville Power Adm.
- 50 C-4 S. V. Chemical Co.
- 51 C-4 Electric Motor Service Co. Inc.
- 52 C-4 Miraldi Welding Supplies
- 53 C-4 Tacoma Fixture Co
- 54 C-4 Les Davis, Inc.
- 55 D-1 Dunlop Towing
- 56 C-4 Cummins N.W.
- 57 C-4 Pacific Auto Wrecking
- 58 C-4 Palco Steel & Salvage
- 59 C-4 Seco Equipment Dealer
- 60 C-1 U. S. Gypsum
- 61 C-4 Custom Molding Co.
- 62 C-3 Architectural Woods
- 63 C-4 Transport Intern'l Pool
- 64 C-3 Tacoma Fiberglass Prod
- 65 C-3 Olympic Machine & Welding
- 66 D-1 General Metals Inc.
- 67 C-4 Hardware Dist. Co.
- 68 B-2 Domtar Chemical Inc.
- 69 C-4 Puget Sound Truck Lines
- 70 D-5 International Harvester Company
- 71 C-3 Western Plastics Corp.
- 72 D-1 Jones Chemical
- 73 C-4 Veneer Wood Chip Trans.
- 74 C-3 Port Business Park
- 75 B-2 Sea-Tac-Alaska Shipbuilding Corp.
- 76 C-3 J. L. Darling
- 76 C-3 Tacoma Screw Products
- 76 C-3 Production Machine Works
- 76 C-3 W. B. Willis Food Broker
- 76 C-3 Greg's Food Products
- 77 D-1 Manke & Sons, Inc.
- 78 B-3 Puget Sound National Bank
- 79 D-4 Totem Foods/Bar Ind.
- 80 E-1 Milwaukee R.R.
- 81 B-3 Pacific Storage, Inc.
- 82 B-3 Liquid Air Products
- 83 C-4 Adams Foods, Inc.
- 84 D-5 Post & Sons Transfer
- 85 E-1 Streich Brothers Inc.
- 86 C-5 Allied Paper Co.
- 87 B-5 Rucker Brothers
- 88 E-1 Western Maritime
- 89 D-3 Buckeye Service Corp.
- 90 E-1 Hart Construction Co.
- 91 E-3 Jet Auto Wrecking
- 92 C-4 Frva Tebb & Sons
- 93 B-5 Fischer Chair Mfg.
- 94 C-4 Pacific Water Works
- 95 D-5 Sexton Foods
- 96 B-4 Cascade Pole Co.
- 97 C-4 Don L. Cochran
- 98 E-1 Jones-Podell Shipbuilding
- 99 E-1 Louisiana-Pacific
- 100 E-1 Glacier Sand & Gravel
- 101 F-2 Perry Farm Inc. - Coors
- 102 D-1 Tacoma Boatbuilding
- 103 B-4 Chicago Bridge & Iron
- 104 C-4 ITT Hinz Service
- 105 D-4 NC Machinery
- 106 C-4 Six Robblers, Inc.
- 107 B-1 Sound Refining
- 108 F-2 Sentry Automatic Sprinklers
- 109 C-5 Charles Bevis & Assoc.
- 111 D-4 Specialized Truck Services
- 112 B-3 Sani-Drape Warehouse
- 112 B-3 Kaiser Aluminum & Chemical Warehouse Division
- 113 C-1 Pan Pacific Trading
- 114 B-2 Unico Industrial Services and Engineering
- 114 B-2 Burns Security Service
- 115 C-4 ASC Pacific Inc.
- 116 F-2 Rufus Parker Trucking
- 117 C-2 Superlon Pipe
- 118 B-1 Don Oline
- 119 B-3 Shubb-Ellison Co.
- 120 B-1 Sound Refining
- 121 E-4 Husby Oil
- 122 E-4 Custom Bi-Folds
- 123 B-1 Swan Harbor Boats
- 124 B-1 Christel Const.
- 125 C-4 Tacoma Steve.
- 126 A-1 Tacoma Sailcraft
- 127 C-1 Cascade Timber
- 128 C-1 Marine Tech. Serv.
- 129 C-1 Indian Fish Co.
- 130 F-2 Milgard Mfg., Inc.
- 131 C-1 Pacific Johnson Const.
- 132 F-2 Commencement Bay Fisheries
- 133 B-1 Custom Iron
- 134 B-1 Nordlund Boat Co.
- 135 A-2 Harbor Marina
- 136 B-1 Allen Construction
- 137 B-1 Crown-Zellerbach Arrow Service

LEASED AREAS

- A E-1 Wassor & Winters
- B B-3 Puget Sound National Bank
- BB B-3 Chartwell
- C C-3 Pan Pacific Trading Corp.
- CC A-1 Olsen & Curran
- D D-4 Puget Sound Log Scales
- DO E-3 Auto Warehousing
- E E-1 Gitt Brothers
- F D-1 Manke and Sons
- G C-2 Weyerhaeuser
- H D-2 L. B. Foster
- I D-3 General Electric
- J C-4 Darling Delaware
- K E-2 West Coast Orient Co.
- L B-3 Concrete Technology
- M A-3 Pacific Northwest Terminal, Inc.
- N E-3 Port Services Co.
- O C-3 Architectural Woods
- P D-3 Ralph M. Parsons Co.
- Q B-2 Brady International Hardwoods Co.
- R B-2 Realco Services, Inc.
- S C-3 Bearings, Inc.
- T A-4 Totem Ocean Trailer Express, Inc.
- U D-1 Tacoma Boatbuilding
- V A-3 United Grain Corp.
- W A-5 Continental Grain Co.
- X D-3 Galco Wood Prod.
- Y D-5 Bunge
- Z E-1 Streich Brothers, Inc.



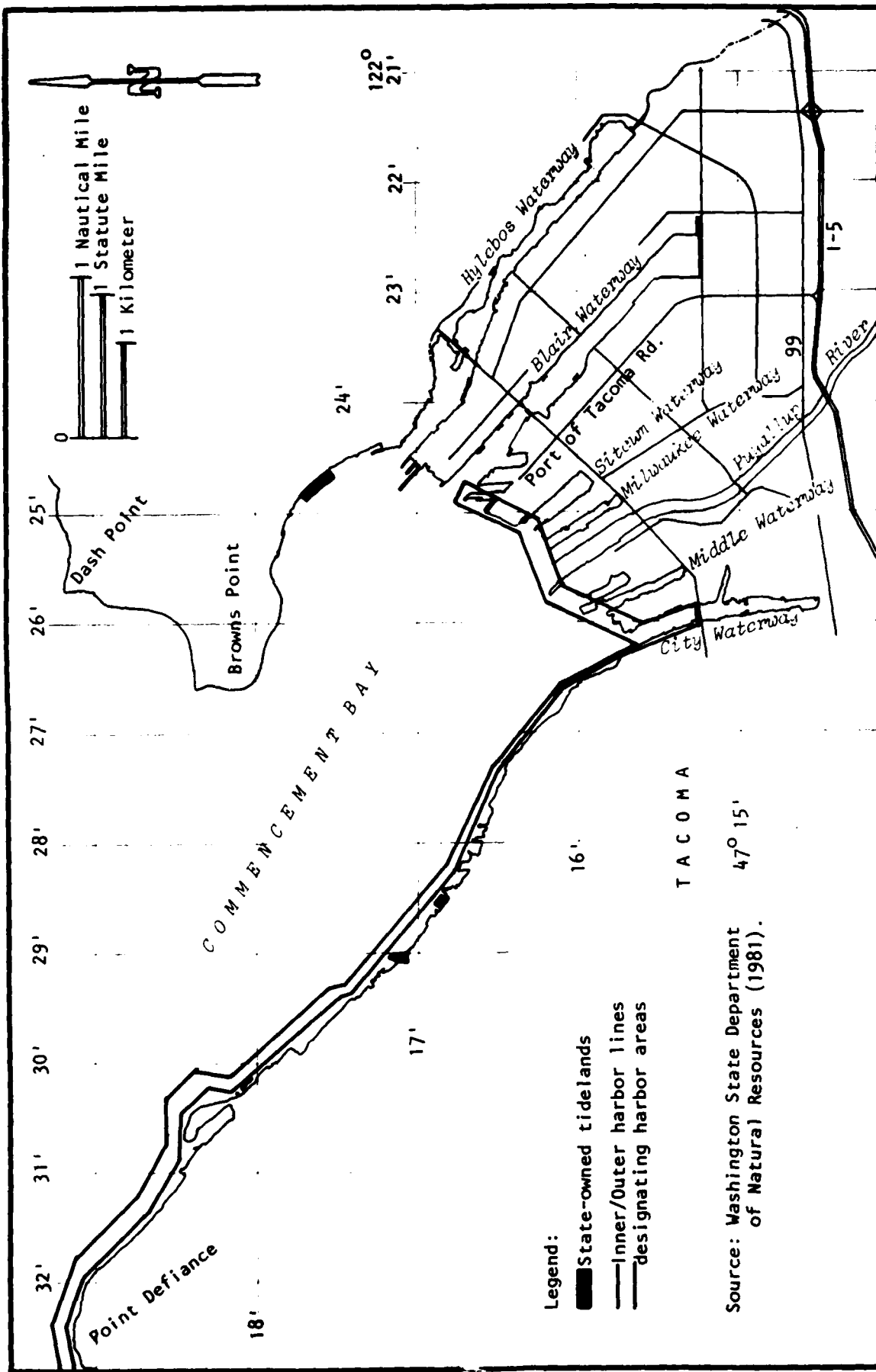


FIGURE 17
STATE-OWNED TIDELANDS AND HARBOR AREAS

off Point Defiance Park and scattered city-owned properties along the south shore of Commencement Bay (see Section 1.6.2).

Specific data on tidelands ownership and leases in the study area can be obtained through the Washington State Department of Natural Resources, Division of Marine Land Management, Olympia, Washington.

1.8 HARBOR AREAS

The Washington State Constitution provides for the establishment of harbor lines near state cities and towns (see Section 2.3.1.1 below). The Tacoma harbor area was established on September 5, 1894 (Christy 1979). According to Christy (1979):

"The outer harbor line was located in water having a depth of 45 feet at low tide. The inner harbor line was then drawn parallel to and 300 feet landward to the outer harbor line except for a length 1-1/4 miles on the southwest side of Commencement Bay. There the width of the harbor area was reduced to 100 feet and then increased to 600 feet for the remaining area."

Subsequent adjustments of the inner and outer harbor lines and associated harbor area have resulted in the present configuration which is depicted in Figure 17.

2.0 LAND USE PLANS AND POLICIES

2.1 INTRODUCTION

This section addresses federal, state, and local land and water use policies embodied in various legislation, plans, and directives that currently could affect development in the study area. The information in this section was derived from: (1) a summary of the goals and policies that state and federal agencies apply in reviewing applications for projects in coastal, open water, intertidal, and wetland areas as contained in the Federal and State Coastal Aquatic Management Policy Overview (Washington State Department of Ecology 1980) and (2) local plans and policies currently in effect within the study area.

The intent of many federal, state, and local laws and policies is directed at protecting the public right to both use and enjoy aquatic areas. These laws and policies seek to ensure the balance of resource development (commercial, industrial, and residential use) with resource enjoyment (recreational use) of lands, water, and shorelines.

2.2 FEDERAL POLICIES

Federal policies directed at human use and preservation of the environment and specifically aquatic systems are reflected throughout a large body of federal law and executive orders. These policies provide the basis for legislation and action at the state and local levels and, as such, provide an overview of the general concepts entailed in providing for a balance of human uses of the environment (including aquatic areas). The most significant of these federal laws and the policies therein are described below.

2.2.1 FEDERAL LAW

2.2.1.1 Estuary Protection Act (P.L. 90-454)

This act declares "that many estuaries in the United States are rich in a variety of natural, commercial, and other resources, including environmental natural beauty, and are of immediate and potential value to the present and future generations of Americans." The act provides a means for "considering the need to protect, conserve, and restore these estuaries in a manner that adequately and reasonably maintains a balance between the national need for such protection in the interest of conserving the natural resources and natural beauty of the Nation and the need to develop these estuaries to further the growth and development of the Nation."

2.2.1.2 National Environmental Policy Act of 1969 (NEPA) (P.L. 91-190)

NEPA recognizes the profound impact of man's activities on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances. NEPA further recognizes the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declaring that it is the continuing policy of the federal government, in cooperation with state and local governments and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to: (1) foster and promote the general welfare, (2) create and maintain conditions under which man and nature can exist in productive harmony, and (3) fulfill the social, economic, and other requirements of present and future generations of Americans.

2.2.1.3 Coastal Zone Management Act of 1972 (P.L. 92-583)

This act, in response to losses of living marine resources, wildlife, nutrient-rich areas, permanent and adverse changes to ecological systems,

aesthetic environments, decreasing open space for public use, and shoreline erosion attributable to human activity and insufficient coastal zone planning, declares a national policy "to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone."

The 1976 amendments (P.L. 94-370) to this act added a requirement for, "a planning process for the protection of, and access to, public beaches and other public coastal areas of environmental, recreational, historical, esthetic, ecological, or cultural value." This is to be accomplished through cooperation with state, local, and regional governments.

2.2.1.4 Clean Air Act - 1967 (as amended)

This act commits federal assistance and resources to the state, regional, and local governments "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population."

2.2.1.5 Federal Water Pollution Control Act as Amended by the Clean Water Act of 1977 (The Clean Water Act)

The stated objective of this act is to: "restore and maintain the chemical, physical, and biological integrity of the Nation's water." To this end, this act provides that:

- "(1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;
- (2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife provides for recreation in and on the water be achieved by July 1, 1983;
- (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;
- (4) it is the national policy that Federal financial assistance be provided to construct publicly owned waste treatment works;

- (5) it is the national policy that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State; and
- (6) it is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans."

Sections of the Clean Water Act establish specific policies, programs, and permit requirements directed at the restoration of high levels of water quality through the elimination of polluting discharges into both marine and fresh water systems. These include (but are not limited to) Section 102, which requires EPA to establish comprehensive programs for water pollution control; Sections 301, 302, and 307 require EPA to establish effluent standards for point sources of pollution; Section 402, which empowers EPA to establish and oversee a National Pollutant Discharge Elimination System (NPDES), a program requiring the issuing of permits for the discharge of any pollutant or pollutants, upon the condition that such pollutants meet all applicable requirements under this act leading to the restoration of the nation's water quality described under the policies above; Section 403, which establishes ocean discharge criteria; and Section 404, which empowers the Secretary of the Army through the Chief of Engineers (U.S. Army Corps of Engineers), to issue permits and review permit applications pursuant to the discharge of dredged or fill materials into navigable waters at specified disposal sites.

Section 404 specifically gives the U.S. Army Corps of Engineers responsibility for the issue of permits (known as Section 404 permits) "on a State, regional, or nationwide basis for any category of activities involving discharges of dredge or fill materials if the Secretary (through the Chief of Engineers) determines that the activities in such category are similar in nature, will cause only minimal adverse effects when performed separately, and will have only minimum cumulative adverse effect on the environment." The section also gives the U.S. Army Corps of Engineers permit authority over: (1) the discharge of dredge or fill material used for a variety of purposes, including maintenance of "currently

serviceable structures such as dikes, . . . levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures," all structures that are common to the COBS study area; and "(2) any discharge of dredged fill or fill material into the navigable waters incidental to any activity having as its purpose bringing an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced."

2.2.1.6 The Rivers and Harbor Act of 1899 (33 U.S.C. 401-413)

This act governs the construction of bridges, causeways, dams, dikes, wharves, piers, and other structures with the potential of obstructing or otherwise affecting navigable waters of the United States. Provisions in the act require that construction or removal of any such structure only may be undertaken after the plans for such a change have been submitted to, and approved by, the Chief of Engineers and the Secretary of the Army.

This act also gives the Chief of Engineers (U.S. Army Corps of Engineers) authority over the designation and establishment of harbor lines. The Chief of Engineers has the further responsibility for presenting regulations whereby piers, wharves, bulkheads, and other structures shall be extended beyond these lines, or whereby deposits may be made beyond such lines. This act constitutes the regulatory framework by which the U.S. Army Corps of Engineers is empowered to issue Section 10 permits to undertake activity in navigable waters with the potential to create an obstruction to navigation and for activities that may alter or modify navigable waters.

2.2.1.7 Resource Conservation and Recovery Act - 1976 (as amended)

This act is directed at "providing technical and financial assistance to State and local governments and interstate agencies for the development of solid waste management plans" designed to eliminate the degrading effects of disposed solid wastes on the air and water and other elements of the environment affecting public health.

2.2.2 FEDERAL EXECUTIVE ORDERS

2.2.2.1 Protection and Enhancement of Environmental Quality (11514)

This order directs federal agencies to provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life.

2.2.2.2 Floodplain Management (11988)

This order directs federal agencies to restore and preserve the natural and beneficial values served by riverine, coastal, and other floodplains. Executive Order 11988 includes activities subject to federal licenses, permits, loans, or grants.

2.2.2.3 Protection of Wetlands (11990)

This order directs federal agencies to take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Section 5 of Executive Order 11990 states that factors relevant to a proposal's effect on the survival and quality of a wetland include: (1) public health, safety, and welfare; (2) "maintenance of natural systems, including conservation and long-term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, wildlife, timber, and food and fiber resources;" and (3) "other uses of the wetlands in the public interest including recreational, scientific, and cultural uses." The order does not apply to federal permit actions involving a private project on nonfederal lands.

2.3 STATE POLICIES

2.3.1 GENERAL

State policies for the most part reflect the policies contained in implementing federal law. A summary of policies contained in selected state laws as they affect aquatic and other environments is presented below.

2.3.1.1 Washington State Constitution, Article XV. Harbors and Tide Waters

This article requires the legislature to provide for a commission which shall be responsible for locating and establishing harbor lines near cities and towns. "The state shall never give, sell, or lease to any private person, corporation, or association any rights whatsoever in the waters beyond such harbor lines. . ." Harbor areas shall be "forever reserved for landings, wharves, streets, and other conveniences of navigation and commerce."

2.3.1.2 Washington State Constitution, Article XVII. Tide Lands

This article asserts the state's ownership to the beds and shores of all navigable waters in the state up to and including the line of ordinary high tide. This article should not be construed so as to debar any person from asserting his claim to vested rights in state courts.

2.3.1.3 Multiple Use Concept in Management and Administration of State-Owned Lands (RCW 79.68.060)

This section of the Revised Code of Washington (RCW) directs the Department of Natural Resources (DNR) to "foster the commercial and recreational use of the aquatic environment for the production of food, fiber, income, and public enjoyment . . . and develop and improve production and harvesting of seaweeds and sealife attached to or growing on aquatic land or contained in aquaculture containers."

2.3.1.4 State Environmental Policy Act of 1971 (SEPA) (RCW 43.21)

SEPA declares "a state policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere; stimulate the health and welfare of man; and to enrich the understanding of the ecological systems and natural resources important to the state and nation."

2.3.1.5 Water Resources Act of 1971 (RCW 90.54)

The act sets forth policies "to insure that waters of the state are protected and fully utilized for the greatest benefit to the people of the state of Washington," and states that water should be allocated to secure "the maximum net benefits for the people of the state."

2.3.1.6 Shoreline Management Act of 1971 (RCW 90.58)

The act declares a "policy of providing for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses . . . in a manner which, . . . will promote and enhance the public interest." Policies contained in the act are directed at preserving "the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state . . . to the greatest extent feasible consistent with the overall best interest of the state and the people generally . . ."

2.3.2 RELATIONSHIP OF FEDERAL/STATE LAW TO STUDY AREA

These policies contained in federal and state laws are routinely applied in the state and federal review of jurisdictional permit applications to develop specific projects in the coastal zone and, as such, are applicable within the study area. These policies are also translated into the policies established in regional and local land use plans. As a result, developers planning to implement projects in the coastal zone are restricted by federal, state, and local interpretations of their policies.

For example, coastal zone and other environmental policies have translated into several general policies routinely applied by jurisdictional agencies in their review of such projects. Most jurisdictional agencies have interpreted the general intent of all policies related to shorelines to require consideration of given projects proposed for development in the coastal zone or in aquatic environments in terms of: (1) its suitability for such placement; that is, whether or not the development is water-oriented and, as such, cannot reasonably be located elsewhere; (2) the cumulative impacts of the proposed development on all affected environments, including those outside the coastal zone; and (3) the impacts of construction and operation over the life of the project on critical elements of the aquatic environment.

Specific policies relative to specific types of development within the coastal zone have resulted from interpretation of general policies by jurisdictional agencies. Discussion of these specific policies as they relate to the development of general project types within the study area will be presented in our Phase II studies.

2.4 REGIONAL AND LOCAL PLANS

2.4.1 REGIONAL PLANS AND POLICIES

2.4.1.1 General

The study area is located in Pierce County, Washington and therefore falls under the regional planning jurisdiction of the Puget Sound Council of Governments (PSCOG).

2.4.1.2 Regional Plan

PSCOG's Goals and Policies for Regional Development (PSCOG 1977) is a regional plan whose intent is to "provide a framework within which elected officials can deal with the opportunities and problems of growth management that involve more than a single jurisdictional response." The plan also presents goals and policies dealing with the public health,

safety, and welfare. Generally, the plan calls for designation of activity centers, or "concentrations of regional services, shopping, employment, governmental, recreational, and cultural activities in existing centers where necessary investments in transportation and public service have been made.

Other goals and policies are directed at ensuring the economic viability of the region and promoting the concept of increased housing, public services, and transportation opportunities for all regional residents. The plan provides for protection and conservation of the natural beauty and livability of the region by calling for: (1) sensitive treatment of nature in development; (2) the maintenance of sufficient quantities of recreation and open space land; (3) minimization of the potential for natural disaster by responsible guidance of urban growth; and (4) the elimination of air, water, and noise pollution (PSCOG 1977).

2.4.1.3 Subregional Plans

PSCOG has also established several subregional councils corresponding to county planning jurisdictions. These subcouncils ensure that countywide growth concepts are considered in local decisions affecting countywide public services and the consistency of such decisions. The subcouncils also ensure that regional and countywide growth concepts are consistent with local plans.

Subregional growth concepts for Pierce County are established in the Pierce Subregional Development Plan (PSCOG, Pierce Subregional Council 1978). The plan, like the Goals and Policies for Regional Development, calls for the focusing of human activity in designated activity centers to maximize public investments in roads, transit, utilities, and services. Future growth is targeted for these activity centers as well as other "future growth areas." Future growth areas are those areas in the "logical and desirable" path of growth where delivery of these services is most economical due to the extent of infrastructure in place or the ease of extending services into the area.

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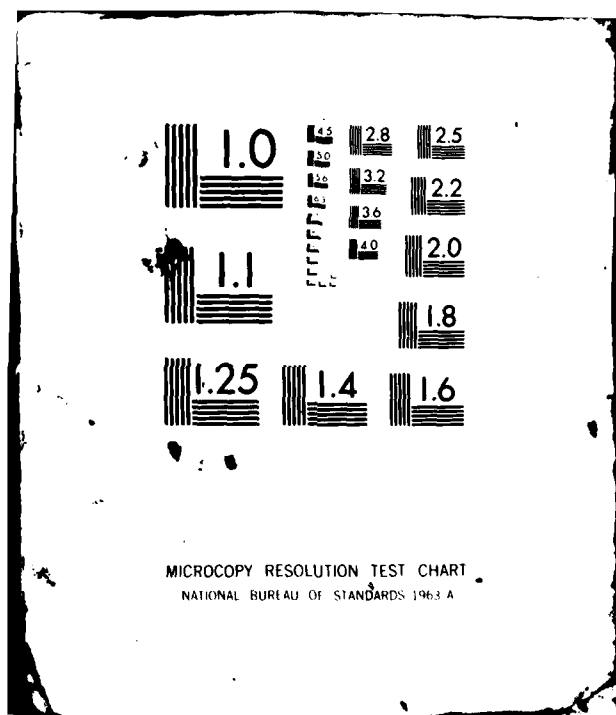
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The Pierce Subregional Development Plan establishes policies that provide for conservation and protection of areas that are "either unsuitable for urbanization or are needed now and in the future for their economic and social value." These lands include: (1) prime agricultural soils, (2) minable land resources, (3) public parks and open space, and (4) forest resources. The plan also establishes: (1) housing policies directed at ensuring availability of adequate housing in a healthful environment and (2) transportation policies directed at maximizing use of existing road systems, maximizing the use of public transit, designation and development of adequate bicycle and pedestrian facilities, and creating a street system adequate to provide for and compatible with surrounding development. To the extent that these governing policies are incorporated in intent into local plans and policies (see below), they promote the preservation of the human and natural environments in the study area.

2.4.2 LOCAL PLANS AND POLICIES

2.4.2.1 General

There are several local plans in effect within the study area.

These include:

Pierce County

Generalized Comprehensive Plan, Pierce County, Washington
Shoreline Master Program for Pierce County, Washington

City of Tacoma

Land Use Management Plan
Generalized Land Use Plan
City Waterway Policy Plan
North Slope Plan (Draft)
Northeast Tacoma Plan
Ruston Way Plan, Design and Development Guidelines for Waterfront Development (Draft)
Master Program for Shoreline Development, City of Tacoma
Interim Generalized Outdoor Recreation and Open Space Plan

City of Fife

Comprehensive Plan

Town of Ruston

Comprehensive Plan

Each of these plans contains policies that affect potential development of the planning areas to which they correspond. The policies therein are usually expressed in terms of implementing policies for general development goals pertaining to growth, land uses and intensities, transportation, utilities, and preservation and conservation of natural and cultural resources. The assumptions and intent leading to the identification of policies and recommendations to implement development goals established in the plans are addressed below for each plan, where practical.

Special policies pertaining to steep slope, wetlands, or open space preservation and protection, and forecasts of land and water use are discussed below in the context of those plans that address these elements. The locations of such areas are addressed above in Section 1.0.

2.4.2.2 Pierce County

Generalized Comprehensive Plan: The Generalized Comprehensive Plan, Pierce County, Washington (Pierce County Planning Department 1962) was developed to establish the "goals, policies, and standards as to the manner in which the County can best develop." The plan presents location and design criteria for general types of land use (Major Office and Retail Centers; General Commercial; Intensive Industrial; Extensive and Extractive Industrial; Air Terminal Facilities; Freeway Service Areas; Agriculture; Major Park and Recreation Areas; and High-Density, Suburban, and Rural Residential).

The plan also contains a comprehensive plan map depicting areas designated for certain generalized land use and circulation elements for all of Pierce County, including Tacoma and the study area. While Pierce County does not have direct planning jurisdiction in most of the study area, the plan states that the impacts of the plans of Tacoma and Puyallup as well as state and federal jurisdictions are so great as to require the metropolitan area to be studied as a planning unit. Therefore, the map depicts designated land uses in the City of Tacoma and the study area as well. For example, Point Defiance and the gulches on the south shore subarea and the steep wooded slopes on the north shore subarea are

designated as major park and recreational areas. The site of the ASARCO smelter and the port industrial area are depicted as intensive industrial uses. The CBD is depicted as a major office and retail center surrounded by general commercial uses. General commercial uses are also shown along Pacific Highway approaching and within the City of Fife. The residential lands in the study area are designated as suburban residential.

The objectives associated with each general land use designation contained in the plan are not directly relevant to the study area (even though land use designations are applied for reasons stated above) since the study area falls, for the most part, under administrative jurisdiction other than Pierce County. However, one relatively small portion of the study area (Browns Point) is located in unincorporated Pierce County. This area is designated as Suburban Residential in the plan. The plan sets forth the following policies for Suburban Residential areas:

- To protect homes against conflicting and damaging uses
- To provide shopping and service facilities at suitable scale to serve the immediate needs of a neighborhood
- To make uses necessary to a complete residential environment amenable to the total community through buffering and improved site planning

The plan makes one additional reference to the study area. The plan specifically places the Port of Tacoma under the Intensive Industrial land use category, stating that "(I)t is the intent of the Plan to indicate by these (Intensive Industrial) areas industrial lands which are intensely used in terms of investments in structures and facilities and number of employees per acre." The plan continues by stating that: "(I)t will be the policy of the County to encourage the continuous growth of these areas."

Shoreline Master Program for Pierce Cou. v: The Shoreline Master Program (Pierce County Planning Department 1974) was developed in accordance with requirements of the Shoreline Management Act of 1971 (see Section 2.2.1.3 above) and guidelines established by the Washington State Department of Ecology. The Pierce County Master Program classifies shorelines in Pierce County as to their characteristics and use and establishes general regulations and policies directed at governing future

human use of shoreline areas (defined as areas located within 200 feet of designated water bodies).*

The COBS study area contains three shoreline areas under the shoreline management jurisdiction of Pierce County. All Pierce County shoreline areas in the study area are designated as Urban Environment. These areas are depicted in Figure 18.

According to the Pierce County Master Program (Pierce County Planning Department 1974):

"(T)he Urban Environment designation is given to an area of high intensity land use including residential, commercial and industrial development. It is an environment designation that is particularly suitable for those areas which are presently subjected to intensive use pressure as well as those areas planned to accommodate urban expansion. The objective of assigning an area to an Urban Environment is to ensure optimum utilization of shorelines occurring within areas which are either presently urbanized or projected to be urbanized. This should be done by identifying areas physically suited to intensive use providing for intensive public use and by managing development so that it enhances and maintains the shorelines for a variety of urban uses."

The Pierce County Master Program applies the following general regulations and policies to all jurisdictional shoreline areas classified as belonging in an Urban Environment:

- Shorelines planned for future urban expansion should present few biophysical limitations for urban activities.
- Because shorelines suitable for urban uses are a limited resource, emphasis should be given to development within already developed areas and particularly to water-dependent industrial and commercial uses requiring frontage on navigable waters.
- Priority should be given to urban developments for public visual and physical access to water in the urban environment.
- Planning for the acquisition of urban land for permanent public access to the water in the urban environment should be encouraged.
- To enhance waterfront and ensure maximum public use, industrial and commercial facilities should be designed to permit pedestrian waterfront activities. When practical, access points should be linked to non-motorized transportation routes.

*This concept was applied in designating the COBS study area boundaries (see Section 1.2.1 above).

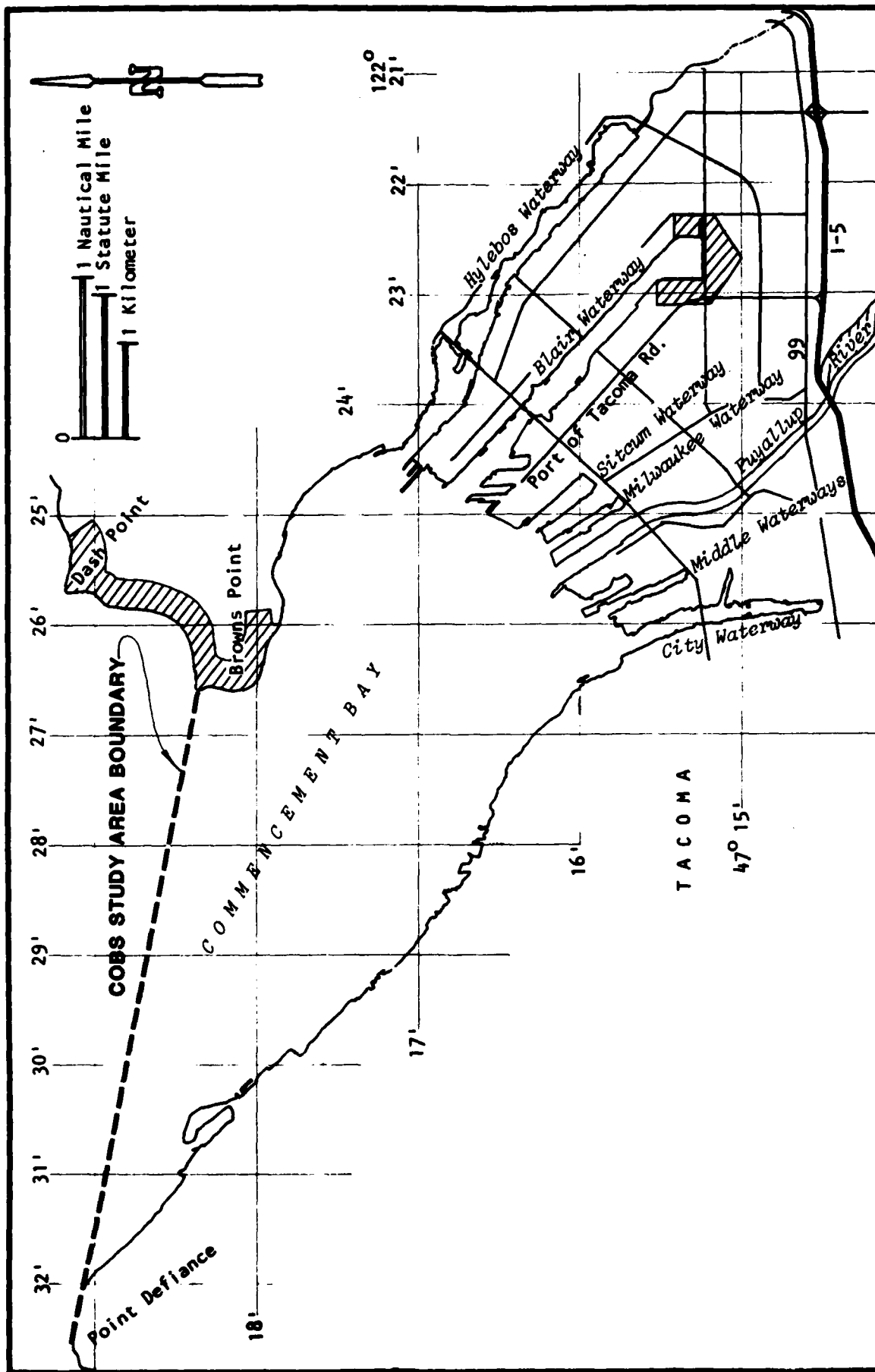


FIGURE 18
DESIGNATED SHORELINE AREAS
IN PIERCE COUNTY

- Designation for future urban expansion should include provisions for maintaining those features unique to urban shoreline areas.

Application of these guidelines is intended to maximize protection of urban shoreline environments while permitting reasonable and appropriate human use of such environments.

2.4.2.3 City of Tacoma

General: Over 80 percent of the land area in the study area is located within the City of Tacoma (see Figure 2). However, only part of these lands fall under the direct planning jurisdiction of the city; the Port of Tacoma is accorded harbor planning responsibility within the jurisdictional boundaries under state law (RCW 53.20) (see Section 2.4.2.4 below).

The Land Use Management Plan: Goals and Policies: The Land Use Management Plan, adopted in 1975, presents the City of Tacoma's "goals and policies for physical growth and development" and addresses such concerns as: natural resources, residential, commercial, industrial, transportation, recreation, and open space, utilities and services, and community facilities." The intent of the Land Use Management Plan is to serve as a guide for future physical development that provides for the "health, welfare, safety, and quality of life of the City residents" (Tacoma Citizens' Land Use Policy Advisory Committee 1975). The broad goals established in the plan are presented in Table 7 below.

Specific policies designed to achieve the broad goals outlined in Table 8 are set forth in the Land Use Management Plan. Table 8 presents a brief overview of the intent of those supporting policies that relate to the City of Tacoma and those areas located under the city's jurisdiction.

The Land Use Management Plan: Goals and Policies has provided the means for guiding the growth and development of the city since its adoption in 1975. A number of additional plans that constitute elements of the Land Use Management Plan either serve to: (1) clarify the policies therein (the Generalized Land Use Plan); (2) translate the policies of the Land Use Management Plan and Generalized Land Use Plan to specific

TABLE 7

GOALS ESTABLISHED IN THE CITY OF TACOMA LAND USE MANAGEMENT PLAN(a)

Criteria	Goal
Physical Development	To achieve and maintain a safe and healthy environment which will have order, form, and beauty.
Natural Resources and Shorelines	To ensure conservation, protection, enhancement, and proper management of natural resources and shoreline, while providing for a balanced pattern of development and the needs of the citizens of the City of Tacoma.
Residential	All citizens of the City of Tacoma regardless of their age, sex, national origin, race, income, or religious belief should be given the opportunity to live in sound, healthful housing and a suitable living environment, in their choice of location and living modes.
Commercial	To achieve an attractive, convenient, and well-balanced system of commercial facilities which serve the needs of the citizens, are appropriate to their relative service area, and are compatible with adjacent land uses.
Industrial	To maintain, rehabilitate, develop, and expand industrial areas within the City of Tacoma that reflect balanced diversification, maximum employment opportunities, high quality standards, minimum degradation of the environment, efficient land utilization, and proper location.
Transportation	To achieve a multimodal transportation system for the city that is capable of moving people and goods efficiently, with maximum safety and speed and with minimum disruption to desirable features of the environment.
Recreation and Open Space	To broaden the range of recreational facilities offered to the city residents consistent with the needs of the community, and establish a continuous program of adding new open spaces to our city's existing resources.
Utilities and Services	To achieve an adequate distribution of utilities as well as provide an equal distribution of city services-- police and fire protection, refuse collection, street cleaning service--for all residents of the city.
Community Facilities	To achieve a broad range of community facilities and services to meet the needs of the entire community, taking care that all areas of the city are served fairly and equitably with a minimum of disruption.

(a) Data from: Tacoma Citizens' Land Use Policy Advisory Committee (1975).

**SUMMARY OF POLICIES FOR ACHIEVEMENT OF BROAD GOALS
IN THE TACOMA LAND USE MANAGEMENT PLAN(a)**

Elements	Policies
Natural Resources	● Maximize efforts to eliminate pollution. ● Assure conservation, preservation, and protection of natural resources. ● Recognize value of open space from ecological, educational, and recreational standpoint. ● Encourage public and private coordination and cooperation in the management/development of shorelines.
Residential	● Promote compatibility of densities and housing types within neighborhoods; protect neighborhood character and prevent encroachment of nuisance or noncompatible uses. ● Stress natural physical qualities of the city. ● Preserve neighborhood amenities. ● Locate new residential development where necessary infrastructure exists. ● Ensure accessibility of residential uses to commercial/service uses. ● Encourage rehabilitation of deteriorating neighborhoods.
Commercial	● Encourage maximum development of the CBD. ● Preserve historical, cultural, and scenic resources in the CBD. ● Promote attractiveness of commercial areas. ● Limit adverse impacts on surrounding sensitive land uses. ● Encourage pedestrian-oriented commercial uses within retail core areas.
Industrial	● Use residential areas to their fullest potential through promotion of high quality industrial development. ● Locate industrial development in consideration of its dependence on supportive industry, commerce, and transportation--water, rail, air, or highway access. ● Buffer intensive industrial land use from incompatible adjoining uses. ● Locate industrial development where adequate infrastructure exists.

(a) Data from: Tacoma Citizens' Land Use Policy Advisory Committee (1975).

TABLE 8

Sheet 2 of 2

Elements	Policies
Transportation	● Promote development of multimodal transportation system (vehicle, rail, waterborne, aircraft, bicycle, pedestrian). ● Evaluate future land uses in terms of effects in existing and future transportation systems. ● Coordinate transportation systems with land uses, social needs. ● Promote safety and aesthetics of transportation systems.
Recreation and Open Space	● Maximize use of existing recreational facilities and open spaces. ● Promote versatility while maintaining compatibility of recreational uses. ● Preserve distinct character of areas of scenic beauty or historical significance.
Utilities and Services	● Provide and maintain adequate storm, sanitary water, power systems for all areas. ● Avoid alteration of desirable natural features, where feasible, in the development of utilities and service facilities. ● Consider compatibility of new utility structures/uses with surrounding land uses; locate major facilities in commercial/industrial areas where feasible.
Community Facilities	● Maximize flexibility, utility, safety, and accessibility of community facilities. ● Locate community facilities close to the areas they serve and group facilities serving large segments of population. ● Disperse facilities serving persons or groups with special problems to maximize benefits to those being served as well as the educational benefits to the general public. ● Encourage aesthetic considerations in incorporating community facilities into surrounding land uses.

subareas of the City of Tacoma (City Waterway Policy Plan, Northeast Tacoma Plan, North Slope Plan, and Ruston Way Plan: Design and Development Guidelines for Waterfront Revitalization); or (3) translate the policies in the Land Use Management Plan and Generalized Land Use Plan to a specific area of interest (Master Program for Shoreline Development for Tacoma and the Interim Generalized Outdoor Recreation and Open Space Plan).

Generalized Land Use Plan: The Generalized Land Use Plan for the City of Tacoma is an element of and supports the city's Land Use Management Plan. Adopted in April 1980, the Generalized Land Use Plan is "basically a policy plan supplemented by supportive materials (that include) a Generalized Land Use Plan Map and other maps which, when used in conjunction with adopted policies, will aid the land-use decision making process" (Tacoma Planning Department 1980a).

The plan is general and flexible to increase its effectiveness as a long-range land use planning tool. It is intended to be used in harmony with and augment other city plans.

The plan emphasizes policies designed to guide the "physical form of the urban environment," thereby providing a "rational basis for the Generalized Land Use Plan . . . and . . . the pattern of land use development in the city" (Tacoma Planning Department 1980a).

The specific intent of the plan is to:

- Serve as a guide for making land use decisions by providing a consistent basis for the arrangement of land uses that reflects planned, rational, and compatible patterns of growth and development.
- Aid developers and the general citizenry in understanding the intended growth and development policies of the city.
- Discuss intensities, functions, patterns, and relationships of differing land uses.
- Graphically reflect emerging and projected growth and development intensities and intensity relationships.
- Maintain a concern for energy conservation in the land use policy planning and implementation processes.
- Reflect desirable growth and development plans and policies of Pierce County, the Puget Sound region, and the State of Washington as they affect the City of Tacoma.

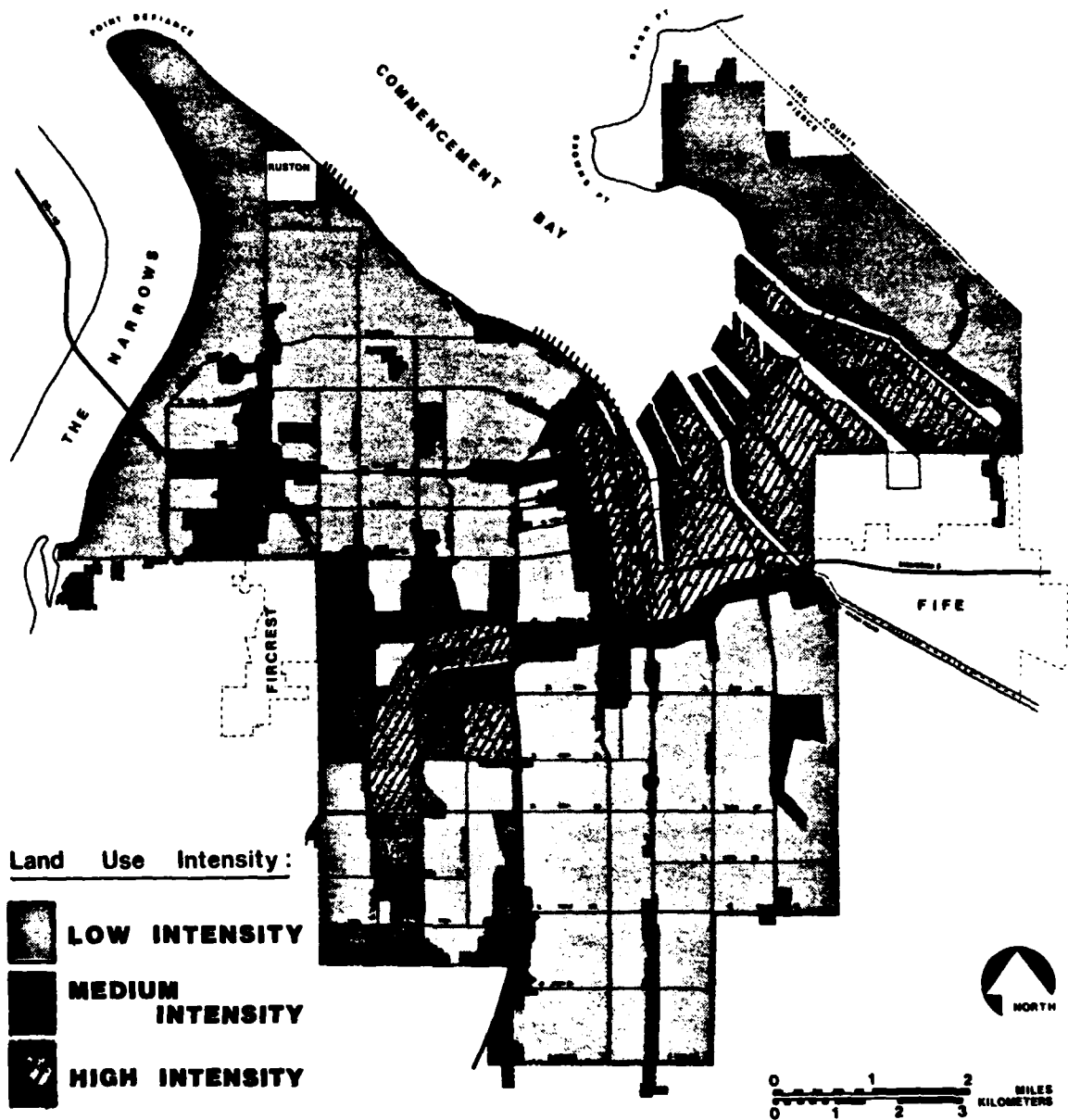
The plan contains a discussion of factors affecting land use, including land use trends, activity centers, transportation, population, economy, utilities and services, environmental concerns, energy, social factors, urban aesthetics, and governmental coordination and regulation (Tacoma Planning Department 1980a).

The plan presents a set of assumptions which provide the basis for the city's growth and development concept, which is graphically depicted on the Generalized Land Use Plan Map (see Figure 19). The growth and development concept and associated map are based on the concept of establishing development intensities (high, medium, low) as opposed to the more traditional method of establishing general land use categories (residential, commercial, industrial). This concept is incorporated into several other elements of the Land Use Management Plan, including the recent Northeast Tacoma Plan and North Slope Plan described below.

The plan translates the land intensity concept into goals and implementing policies to guide physical community development. These goals and policies are generally reflective of those goals and policies contained in the Land Use Management Plan to the extent that they seek to promote compatibility of land intensities and uses, increase the effectiveness and efficiency of services, and promote the general quality of life. Of specific relevance to the COBS study area and its shorelines is the plan's Natural Resources and Shoreline Goal, which is:

"To ensure conservation, protection, enhancement, and proper management of natural resources and shoreline, while providing for a balanced pattern of development and the needs of the citizens of the City of Tacoma."

Other goals and policies governing residential, commercial, and industrial development relate to the COBS study area to the extent that they provide guidance for the general location of high-, medium-, and low-intensity uses within each of these use categories. This guidance is consistent with the growth and development concept depicted in the General Land Use Map, and generally calls for continuation of existing land use intensities and placement now of high- and medium-density residential commercial, and industrial uses in areas already committed to compatible uses.



Source: Tacoma Planning Department (1980b).

FIGURE 19
GENERALIZED LAND USE PLAN MAP

City Waterway Policy Plan: The City Waterway Policy Plan (Tacoma Planning Department 1974), although preceeding the Land Use Management Plan, is an element of the latter plan. As such, the City Waterway Policy Plan establishes policies to guide the development of the City Waterway subarea, which extends from South 4th Street on the west, around City Waterway to 11th Street on the east. The plan, adopted in 1974, is consistent with both the city's Land use Management Plan and Master Program for Shoreline Development. The City Waterway Policy Plan establishes a general policy for the City of Tacoma to eliminate the generally substandard conditions existing in City Waterway. To this end, the plan sets forth land use and development policies that: (1) permit development of new and continuation of existing water-dependent and water-related uses (such as marinas, public parks, public wharves, public facilities and open spaces, restaurants, specialty food markets, imports, etc.) and on-land residential uses in the City Waterway planning area; and (2) sets forth appropriate design and performance standards for such uses (related to bulk, height, setback, open space, view corridors, landscaping, and parking).

Other City of Tacoma land use and development policies in the plan are directed at establishing the City Waterway as a major Tacoma harbor area marina complex with public boat launching facilities, public open space areas, and other "people/park/commercial water-related uses," and to promote private redevelopment of City Waterway in general. The plan also reflects the city's commitment to upgrade the quality of city-owned property as well as to acquire additional properties for public use along the waterway. The plan establishes policies for improved pedestrian access and sanitary sewer service as well as elimination of pollutant discharge into the waterway.

Policies directed at design and use of the surface waters of City Waterway include: (1) elimination of existing log rafting and log transport operations that are "detrimental to water quality and which preclude general public use of the waters for navigation and access;" (2) installation of facilities for moorage of small boats within the existing harbor area; (3) dredging of the harbor area only to a depth necessary to support small boat operations rather than the deeper Corps

of Engineers project depth (with consent of the Corps of Engineers, Seattle District); (4) dedication of Wheeler-Osgood Waterway from private to public ownership for public navigation and access; and (5) exploration of bulkheading potential in City Waterway to improve its suitability for public and water-oriented use.

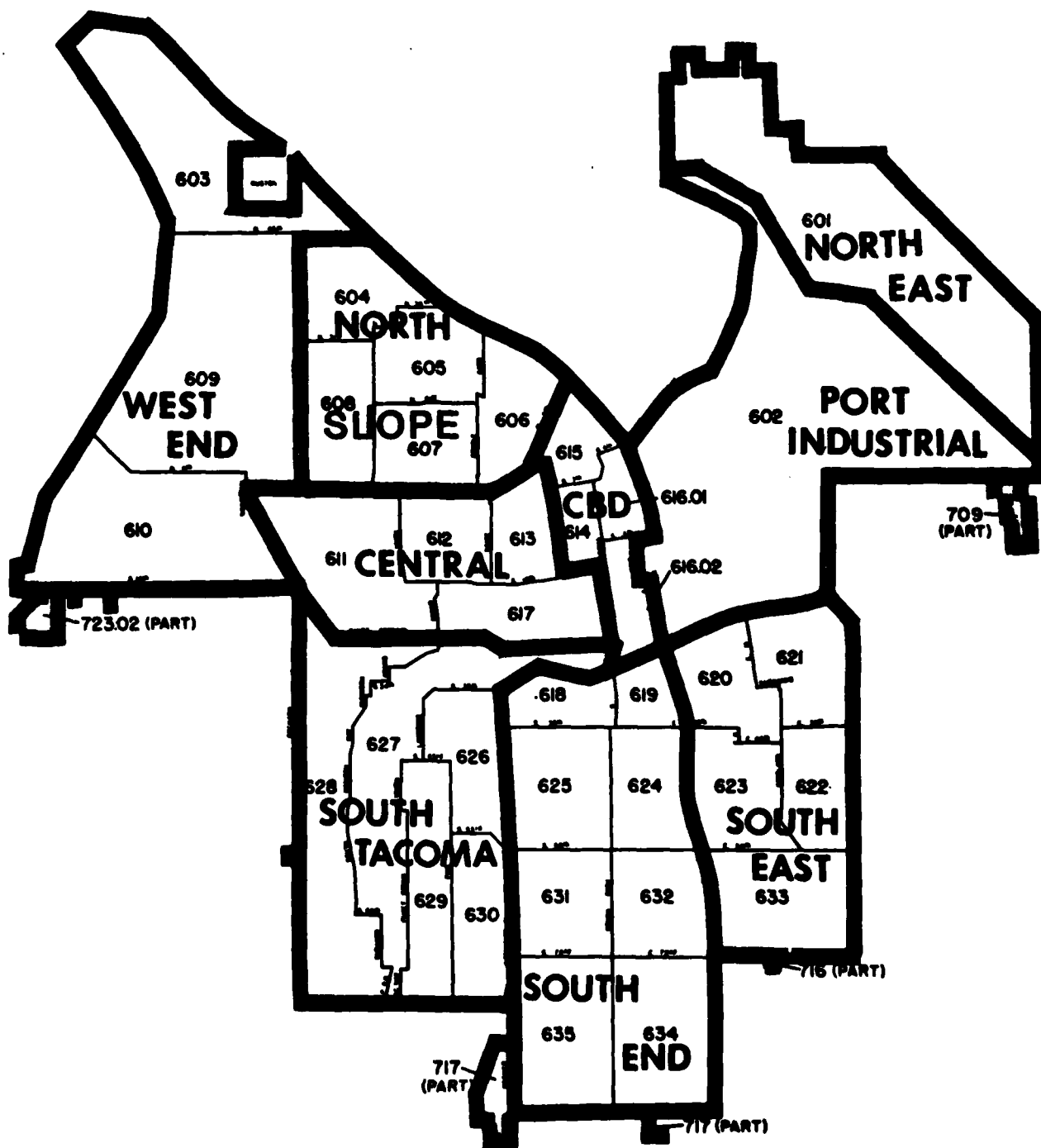
Northeast Tacoma Plan: The Northeast Tacoma Plan, adopted in 1979, sets forth policies for directing the growth and development of Northeast Tacoma, a 2,845-acre section of the city located north of Commencement Bay (see Figure 20).^{*} Northeast Tacoma includes most of the north shore subarea of the study area as well as the north shore of the Hylebos Waterway in the port industrial subarea of the study area.

The goals and policies in the Northeast Tacoma Plan reflect the goals and policies in the Land Use Management Plan and Generalized Land Use Plan. As such, they address general development, residential, commercial, industrial, recreation and open space, transportation, community facilities, utilities and services, and special policy areas.

Generally, the Northeast Tacoma Plan seeks to: (1) preserve, protect, and promote homogeneous residential areas, (2) provide for recreational activities and open space, (3) centralize a majority of the commercial and commercially-related activities, (4) provide a circulation system which serves the entire area, and (5) preserve the natural beauty of the area. Further, it seeks to attain an area which is attractive, safe, and orderly (Tacoma Planning Commission 1979).

Thus, according to the plan, the development concept the plan portrays for the future of Northeast Tacoma is that of a low-density area with necessary public services and with many of the desirable naturally occurring features preserved" (Tacoma Planning Commission 1979).

^{*}The city has established nine planning areas; shorelines in the COBS study area are located in five of these areas: (1) West End, (2) North Slope, (3) CBD, (4) Port Industrial, and (5) Northeast Tacoma. The city's intent is to develop individual plans to guide the growth and development of each of these areas. The Northeast Tacoma Plan has already been adopted; The North Slope Plan is in draft stage (see below); and one other such plan, associated with the CBD planning area, is being prepared.



Source: Tacoma Planning Department (1980b).

FIGURE 20
TACOMA PLANNING AREAS AND CORRESPONDING CENSUS TRACTS

The plan calls for Northeast Tacoma to remain essentially residential in nature. The majority of future housing in the area, as in most existing housing, will be single-family detached residences (Tacoma Planning Commission 1979). Specific policies in the plan are directed at encouraging single-family residential development and associated amenities. Residential policies provide for maintenance of compatible uses in residential areas; limitations of building heights to protect and enhance views; maintenance of natural vegetation and provision for landscaping to enhance visual attractiveness; and provision for limited multi-family development that is compatible with single-family residential areas, commercial services, and transportation.

Commercial policies are directed at providing "a well-balanced system of commercially-related activities." Specifically, these policies call for focusing commercial opportunities in a single, centrally located planned shopping center, permitting the development of small commercial areas serving specified residential areas, and discouraging of strip commercial developments. One commercial policy that is directly related to the study area:

"Encourage(s) any development that may take place in the present commercially zoned properties along Marine View Drive southeasterly of East 11th Street to be a buffer use between the industrial area and steep slope and be developed essentially within the existing zoning district boundaries."

In regard to industrial development, the Northeast Tacoma Plan seeks to focus future industrial growth on the port industrial and other industrial areas by stating that:

"Industrial uses within a majority of the [Northeast Tacoma] area are not appropriate . . . It is intended that any future industrial developments in the Northeast area take place essentially within the existing industrial zoning district boundaries and be designed to minimize adverse effects on the remainder of Northeast Tacoma. Industrial developments that may take place should be oriented to Marine View Drive and not infringe upon the uplands area" (Tacoma Planning Commission 1979).

The plan states an intent to ensure provision of adequate recreation and open space areas to serve the changing needs of the area through both private and public endeavor. Both active and passive recreation are to be considered.

The plan's stated transportation goal is "to achieve a safe and efficient (multi-modal) transportation system which provides for the present and future land use needs of Northeast Tacoma" (Tacoma Planning Commission 1979). This system must coordinate with the transportation systems of Pierce County, King County, and the State of Washington. Marine View Drive is designated as a major element of the area's "future arterial system."

The Northeast Tacoma Plan also establishes intent with respect to the establishment of community facilities and utilities and services. Generally, the plan seeks to ensure that adequate systems of community and utility services are established and maintained. Specific policies contained in the plan are directed at providing suitable services to meet existing and future community demand.

The plan also establishes special policy areas, or geographical areas within the planning area possessing special or unique characteristics warranting additional policy considerations. These areas and the intent of the plan relative to these areas are presented in Table 9.

TABLE 9
NORTHEAST TACOMA PLAN, SPECIAL POLICY AREAS AND INTENT(a)

Special Policy Area	Intent
• Single-family detached housing area	To set aside and preserve areas where the predominant housing type consists of single-family detached structures from intrusion by noncompatible land uses.
• Steep slope areas (40% slope or greater)	To retain the natural steep slope area along Marine View Drive as a buffer between the port industrial area and residential uses in Northeast Tacoma and as a passive recreational area for enjoyment of residents.
• Major tree areas	To preserve, protect, or provide for replacement of trees.
• View consideration areas	To maximize, protect, and preserve views through orientation of and application of design standards on new development.
• Indian cultural sites	To protect Indian cultural sites from excavation, damage, defacing, or destruction.

(a) Data from: Tacoma Planning Commission (1979).

The Northeast Tacoma Plan, like the Land Use Management Plan, proposes a subarea land use concept based on land use intensity. The area is generally designated for low-intensity uses comprised of low-activity land use patterns and traffic generation (predominantly single-family residences and supporting uses, open space, steep slope, and recreation areas). All of the north slope subarea of the study area is designated for medium-intensity activity.

The plan also calls for certain medium-intensity uses in the area corresponding to community-oriented commercial activities, moderate residential densities, and industrial activity. The industrial belt on the north side of the intersection of Marine View Drive and Highline Road in the port industrial subarea of the study area is designated for medium-intensity activity.

The industrial uses located just southeast of the landward terminus of Hylebos Waterway where Hylebos Creek crosses Marine View Drive in the port industrial subarea are designated as high-intensity uses in the plan. This constitutes the only portion of the Northeast Tacoma planning area that is accorded this intensity designation (Tacoma Planning Commission 1979).

The North Slope Plan: The North Slope Plan will guide the future growth and development of the North Slope planning area of Tacoma (see Figure 19), which comprises approximately 25 percent of the south shore subarea of the study area. The plan, like the Northeast Tacoma Plan, is an element of the Land Use Management Plan. Like the Northeast Tacoma Plan, the North Slope Plan addresses the "physical use of and, the distribution of different types of land uses . . . , and other issues related to land use" in the North Slope planning area (Tacoma Planning Department 1981a).

This plan also focuses on the concept of land use intensities rather than land use types to provide the basis for future development. Development intensities are again classified as high intensity, medium intensity, and low intensity. These classifications relate to the amount of activity corresponding to each or expressed in the amount of traffic

generated, the density of development, and the relative importance of such development to the region. Land use densities corresponding to specific areas within the North Slope planning area are presented in Table 10.

TABLE 10
LAND USE DENSITIES CORRESPONDING TO SPECIFIC AREAS
IN THE NORTH SLOPE PLANNING AREA^(a)

Land Use Intensity	Corresponding Areas
High	Schuster Parkway waterfront, Stadium Commercial District, and portions of adjacent apartment areas.
Medium	Old Town Commercial District and adjacent area, the Ruston Way waterfront, the apartment and mixed-use area west of North 15th Street, and the I Street and 6th Avenue corridors.
Low	Existing single-family detached neighborhoods and the mixed-use area generally south of North I Street.

(a) Data from: Tacoma Planning Department (1981a).

The plan sets forth general development goals applicable to the entire North Slope planning area. These goals are to:

- Preserve and improve the existing amenities of the North Slope Area which includes views, open space, green space, and parks.
- Maintain the existing character of residential neighborhoods.
- Accommodate the growth of the area by identifying areas for medium- and high-density residential structures.
- Foster historic preservation and architectural integrity and conservation.
- Prevent encroachment of existing commercial areas on adjacent residential neighborhoods.
- Reduce traffic and parking problems.
- Provide a good internal circulation system for area residents.
- Provide for a good general appearance of the area.
- Provide adequate and suitably maintained streets and pedestrian facilities within the area.
- Consider the desire of neighborhood residents in the development of public improvements.

The plan establishes a policy limiting development of steep slope areas which states that: "all of the City-owned steep slope property located along the westerly side of Schuster Parkway shall be perpetually maintained as public open space except for possible use of the property for utilities, communications or other emergency types of uses not involving human habitation" (Tacoma Planning Department 1981a).

The plan also establishes development interests and policies for several subareas within the North Slope planning area, which include the Old Town-Prospect Hill, Stadium-Seminary, Upper Slope, and Waterfront neighborhoods. The policies address development considerations and other issues as they relate to land use. The plan presents a set of assumptions, intents, policies, and recommendations associated with each neighborhood.

The shoreline areas of the Old Town-Prospect Hill and Stadium-Seminary neighborhoods comprise part of the COBS study area. Specific intents and policies relating to those areas of these neighborhoods that lie within the study area are outlined below in Table 11.

TABLE 11

POLICIES IN NORTH SLOPE PLAN RELATING TO THE STUDY AREA^(a)

Neighborhood	Land Use	Plan Intent/Policy
Old Town-Prospect Hill	Residential	The plan emphasizes continued predominance of single-family detached housing; recognizes that limited low-density multiple-family residential development might be possible in the Old Town area.
	Commercial	The Old Town Commercial District will continue to function as a specialized commercial center providing unique goods and services. Future commercial development will be focused on Old Town and along the Ruston Way waterfront. The Old Town Commercial District should not be expanded. Waterfront activities will be water-dependent or water-related to maintain the established marine/waterfront character and commercial focus.

(a) Data from: Tacoma Planning Department (1981a).

TABLE 11 (Continued)

Neighborhood	Land Use	Plan Intent/Policy
	Recreation	Pedestrian use of the Old Town Commercial District is encouraged. Strong pedestrian-oriented linkages within the focal point provided by Old Town and nearby Garfield Gulch, Buckley Gulch, the Ruston Way waterfront, and residential neighborhoods should be created.
	Steep Slope	Steep slope areas should be preserved from development to eliminate potential for erosion and maximize soil stability. Any development on steep slope should be limited to relatively small areas and should be of low intensity.
Stadium-Seminary	Residential	The existing residential character of the neighborhood should be maintained, with single-family residential uses dominant. Medium- and high-intensity multi-family residential development should be located in the areas adjacent to the Stadium Commercial District and should serve as buffers between incompatible land uses.
	Commercial	The Stadium Commercial District will be a high-intensity district composed of a mixture of residential and commercial uses.
Stadium-Seminary (continued)	Recreation/ Steep Slope	Formal pedestrian linkages should be established connecting Wright park, focal points within the commercial district, viewpoints, Stadium High School, Stadium Bowl, the Museum, and Bayside Trails. Garfield Gulch should be considered as a natural area with potential historic or archaeological importance.

Ruston Way Plan: Design and Development Guidelines for Waterfront Revitalization (Draft): The Ruston Way Plan is intended to address opportunities for private and public development in the Ruston Way planning area which is located along Ruston Way between the North Slope planning area and the Town of Ruston municipal boundaries. The Ruston Way planning area comprises approximately one-third of the south shore subarea of the COBS study area.

The overall goal of the Ruston Way Plan is to: "develop an active and attractive urban waterfront of mixed public and private development that meets community recreation needs and emphasizes the shoreline for public use" (Tacoma Planning Department 1981b).

To this end, the stated intent of the plan is to:

- Encourage a sense of continuity and consistency along the shoreline through the use of design policies.
- Establish guidelines and criteria to achieve the desired character of the Ruston Way waterfront.
- Aid the development of recreational facilities that encourage interaction with the water and the nearby steep slope and gulch areas.
- Recommend methods of implementing the intents, policies, and development proposals.
- Assist the realization of the full economic, aesthetic, and recreational potential of the Ruston Way shoreline.
- Create a fitting urban waterfront setting that reflects the history and marine character of the Ruston Way area.
- Encourage public and private development that will satisfy the water-related recreational needs of city residents.
- Encourage optimum public access to the waterfront.

The Ruston Way Plan establishes guidelines and policies to assist public and private development of Ruston Way in a manner consistent with the developmental guidelines for the area as set forth in the Master Program for Shoreline Development and the Generalized Land Use Plan (see above). The Master Program designates the Ruston Way shoreline for "mixed public and private water-dependent or water-related uses." The emphasis of the plan is on policies that address: (1) design elements for proposed development, (2) acquisition of property, (3) adequate beach

access, (4) pedestrian access to Ruston Way from nearby residential areas, and (5) preservation and enhancement of historic/cultural areas.

Three major shoreline segments of the Ruston Way planning area are owned by the City of Tacoma. These three segments provide the basis for the plan's development concept, which calls for development of public recreational uses in city-owned segments and private development of compatible uses on properties located between public segments. For the most part, public areas will be less intensely developed than private areas.

Recreational uses planned for publicly owned areas of Ruston Way include a redeveloped Commencement Park and Old Town Dock complex in Area 1, which is generally oriented around the foot of McCarver Street at Old Town. This area is visually and physically linked to Old Town and, as such, will provide a focal point for the planned Ruston Way redevelopment. The overall activity pattern for Area 1 will be moderate.

Development planned for Area 2, a publicly owned segment located near the intersection of Alder Way and Ruston Way, includes a large public fishing pier and marine park. While fishing activities will provide the major emphasis for this area, public beach areas will be established. The intensity of activities of Area 2 will vary; however, the level of activity in this area will be low.

Development planned for Area 3, located at the western end of Ruston Way just east of ASARCO's Tacoma smelter, emphasizes beach and boating activities. A boat launch ramp, moorage facilities, and dry boat storage are envisioned; however, further site analysis is necessary to determine the most appropriate public development for this area. The activity pattern for this area will be generally low to moderate.

The plan emphasizes the importance of using additional publicly owned properties along Ruston Way, which include several isolated properties along the shoreline, as a means of ensuring public access to the water in areas where private development will dominate. The majority of these small properties are undeveloped street rights-of-way.

Policies for preservation of steep slope and gulch areas along Ruston Way are addressed in the plan. Wooded slopes and gulches are considered a complement to expansive views of the water from locations within the planning area. The Waterview residential area located along Waterview Street at the western end of Ruston Way is located within the Ruston Way planning area, and therefore within the COBS study area (see Section 1.2.2.4). This area is designated as a low-intensity area in the Generalized Land Use Plan. The Ruston Way Plan permits a continuation of low-intensity residential uses along Waterview Street consistent with the present character of the area. As such, the Ruston Way Plan reaffirms the policies and intent of the Generalized Land Use Plan as they relate to the Waterview area (Tacoma Planning Department 1981b).

Interim Generalized Outdoor Recreation and Open Space Plan: The Recreation and Open Space Plan is another element of the City of Tacoma's Land Use Management Plan. The Interim Plan (Tacoma Planning Commission 1978) updates the Recreation and Open Space Plan (which expired in 1978) and extends the time over which the plan is effective to 1990. The plan presents goals, policies, recreational recommendations, and a capital needs listing designed to meet forecast recreational and open space needs through 1990. The plan is consistent with the citywide policies for growth and development contained in the Land Use Management Plan.

The plan establishes one broad recreational goal and a set of policies to implement the goal, which is to:

"Develop and maintain the appropriate range of outdoor recreational programs and facilities for the residents of Tacoma consistent with the changing needs of the community" (Tacoma Planning Department 1978).

Policies to implement this goal are general and are directed at:

- (1) supporting a joint planning approach to meeting open space and recreational needs involving both the public and private sector;
- (2) facilitating the acquisition and presentation of lands for public recreational use;
- (3) promoting the preservation and maintenance of natural steep slope shoreline, wooded areas, and other unique natural features and habitats as public open spaces and areas of ecological concern;
- (4) facilitating funding for enhancement of the city's recreation and open space facilities; and
- (5) encouraging citizen involvement in recreational and open space planning (Tacoma Planning Department 1978).

The plan also presents an inventory of city parks and recreation facilities, including: (1) neighborhood parks, (2) neighborhood playgrounds, (3) major parks, (4) golf courses, (5) waterfront development, (6) scenic routes, (7) bicycle and hiking trail, and (8) other recreational facilities. The adequacy of existing recreational resources is analyzed and expanded recreational services and acquisition of additional recreational lands is recommended for specific areas where the public is not sufficiently served.

Recreational assets identified in the plan include several parks, playgrounds, and open spaces in or near the COBS study area. These are generally discussed in Sections 1.2.2.5, 1.2.3.5, and 1.2.4.5 of this report.

The plan specifically addresses waterfront development, salt-water boat launching facilities, scenic driving routes, and bicycle and hiking trails. The plan states that:

"(T)here are definite indications of the existence of demand for development of waterfront areas of Tacoma. Recognition of past and present demand for waterfront development in Tacoma is included in various formal planning reports, and in other informal reports, papers, statements, and opinions*. . . With the forecasted increases in population, increasing land values, and additional available leisure time, the public demand will continue to remain high for waterfront-oriented recreational facilities. It therefore becomes more and more critical that Tacoma's public waterfront acquisition and development program be accelerated" (Tacoma Planning Department 1978).

The plan designates these areas for waterfront development; these areas are located at Point Defiance Park, along Ruston Way, and on City Waterway (see Figure 11 above). Waterfront development projected for Point Defiance Park includes remodeling of the pavilion and boathouse, redesigning the boat launch, and development of a marine museum. Planned waterfront development for Ruston Way generally consists of a mixture of water-oriented and water-related private and public development as addressed above in the discussion of the Ruston Way Plan (Tacoma Planning Commission 1980a).

*This need has been specifically recognized in a 1952 Parks and Recreation Plan (Tacoma Planning Commission 1952), a 1944 planning report, and a 1964 waterfront study (Tacoma Planning Commission 1964).

Planned City Waterway waterfront development which is governed by the City Waterway Policy Plan (Tacoma Planning Department 1974) also consists of an urban mix of water-oriented public and private development (see the discussion of the policy plan above).

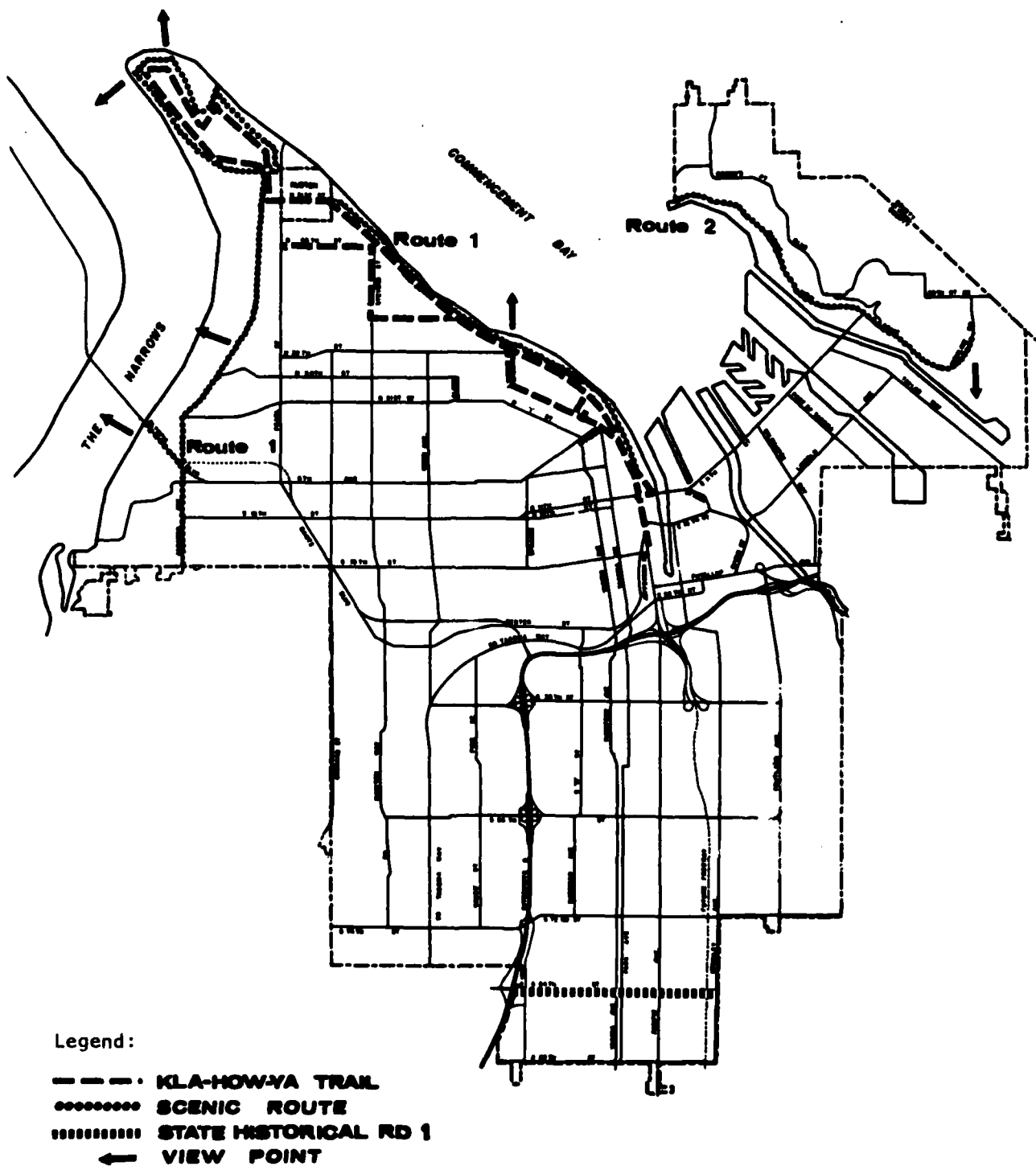
The Interim Generalized Outdoor Recreation and Open Space Plan also inventories existing scenic routes (for recreational automobile travel) and bicycle/hiking trails along Commencement Bay. Scenic routes are depicted in Figure 21; bicycle routes are depicted in Figure 22.

Finally, the plan identifies a critical need for neighborhood playgrounds in residential areas adjacent to certain segments of Ruston Way and a potential need for neighborhood playgrounds in most of the Northeast Tacoma planning area north of Marine View Drive and the COBS north shore subarea. However, the plan indicates that these needs would likely be accommodated by creating recreational opportunities in nearby residential areas rather than in the coastal zone.

Master Program for Shoreline Development for the City of Tacoma:
The Master Program for Shoreline Development for the City of Tacoma (Tacoma Planning Commission 1976), like the Shorelines Master Program for Pierce County (see Section 2.4.2.2 above), was developed in accordance with requirements of the Shoreline Management Act of 1971 (see Section 2.2.1.3 above) and guidelines established by the Washington State Department of Ecology. Adopted in 1976, the Master Program provides the mechanisms for regulating the use of shorelines within the City of Tacoma. Shorelines are generally considered to be those areas within 200 feet of designated water bodies.*

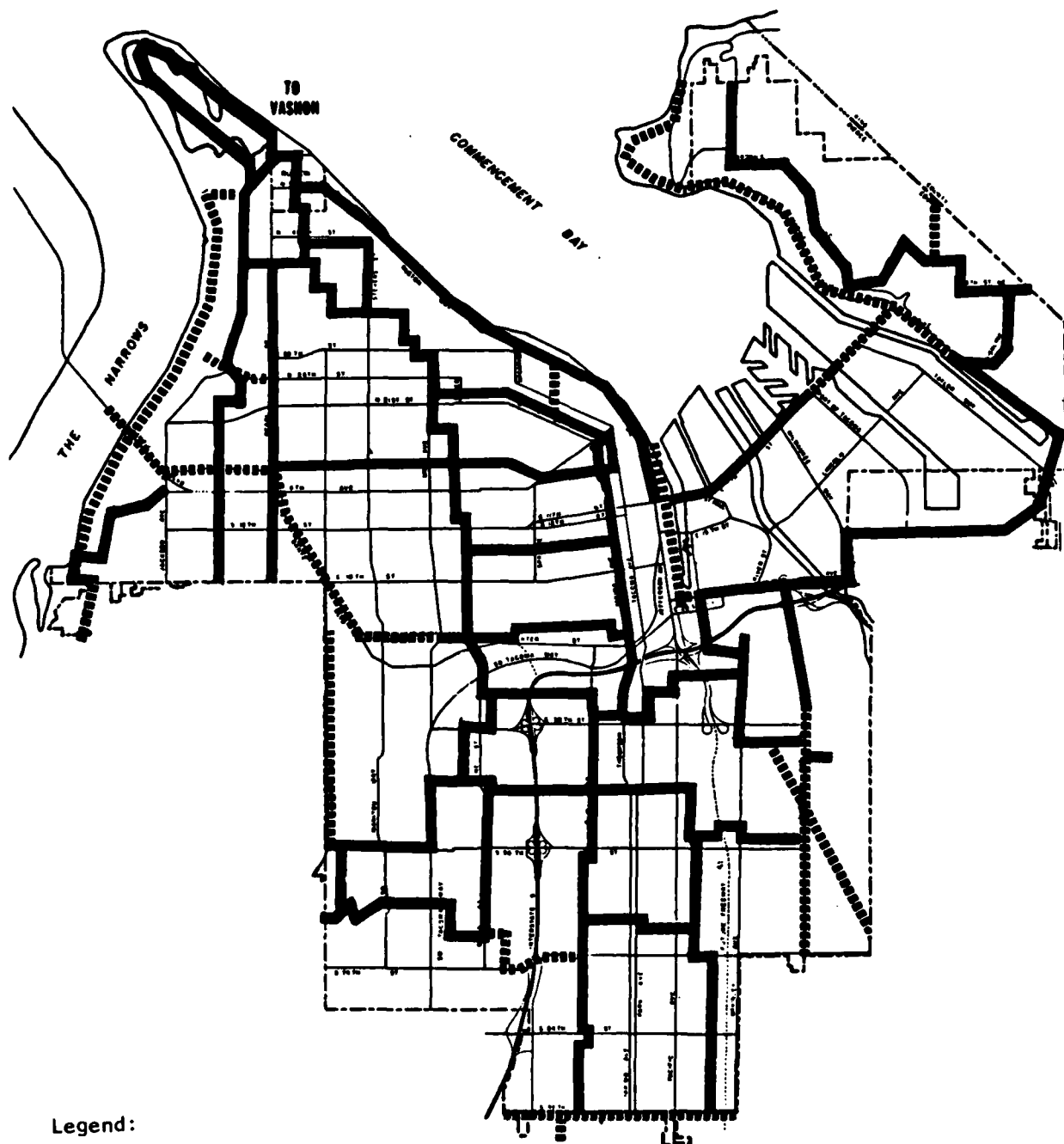
The intent of the Master Program is to "clearly outline local policies concerning the development of shorelines and indicates how these policies relate to the goals of the local citizens and to specific regulations of uses affecting physical development" (Tacoma Planning Commission 1976). The Master Program is also intended to "reflect the

*This concept has also been applied in the delineation of the COBS study area boundaries (see the Section 1.2.1).



Source: Tacoma Planning Commission (1978).

FIGURE 21
DESIGNATED CITY OF TACOMA SCENIC ROUTES



Legend:

———— Usable now routes

----- Future routes

Source: Tacoma Planning Commission (1978).

FIGURE 22
DESIGNATED CITY OF TACOMA BICYCLE ROUTES

unique shoreline and development requirements (that) exist and are projected in the area."

The Master Program is long-range (20 to 30 years); its goals and implementing policies are directed toward land and water use, but are not site-specific. The program is an element of the city's Land Use Management Plan.

The Master Plan also establishes local "shorelines of statewide significance" in compliance with the Shoreline Management Act of 1971. Such shorelines are to be used and developed in a manner designed to maximize their long-range benefit to the State. Shorelines within the city and the COBS study area that have been designated as "shorelines of statewide significance" are depicted in Figure 23 and include:

- (1) The Puyallup River - Since the Puyallup River has been channelized and diked and, as a result, the Puyallup Delta has been significantly altered, the shoreline on both sides of the river landward 200 feet from the ordinary high water mark is designated as the "shoreline of statewide significance." Where the dike has been constructed beyond 200 feet from the ordinary high water mark (this does not occur within the COBS study area), the significant shorelines constitute that area between the dikes and the ordinary high water.
- (2) Those areas of Puget Sound . . . and adjacent salt waters (Commencement Bay) lying seaward from the line of extreme low tide.

The city, in accordance with the Shorelines Management Act of 1971 and within the regulations of the U.S. Army Corps of Engineers and the Washington State Department of Natural Resources, establishes goals for Shorelines of Statewide Significance within its boundaries. These goals are to:

- Recognize and protect the statewide interest over local interest through response to the desires of: (1) the general public,

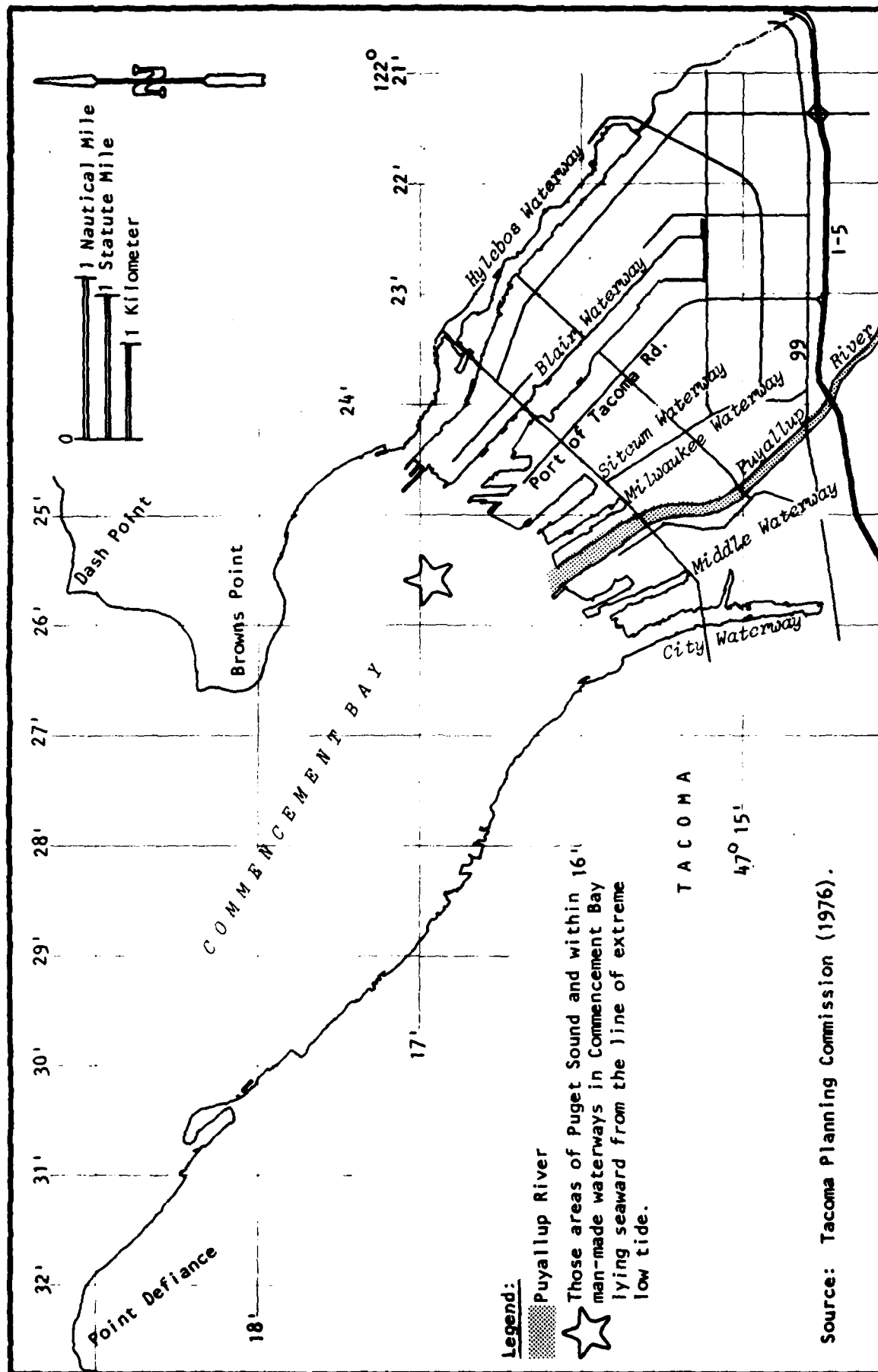


FIGURE 23
SHORELINES
OF STATEWISE SIGNIFICANCE

(2) statewide interest groups, (3) appropriate state agencies, and (4) through utilization of expertise from scientific fields pertinent to shoreline management.

- Preserve the natural character of the shoreline to the maximum possible extent, by designating environments and use regulations to minimize man-made intrusions on shorelines, and by upgrading and redeveloping intensively developed areas to reduce their adverse impact on the environment and to accommodate future growth rather than allowing high-intensity uses to extend into low-intensity use or underdeveloped areas.
- Plan for long-term over short-term benefit by preparing a master program designed to preserve the shorelines for future generations, by limiting actions that would convert resources into irreversible uses or detrimentally alter natural conditions characteristic of shorelines of statewide significance, by evaluating the short-term economic gains or convenience of developments in relationship to long-term and potentially costly impairments of the natural environment, and by actively promoting aesthetic considerations when contemplating new development, redevelopment of existing facilities, or for the general enhancement of shoreline areas.
- Protect the resources and ecology of shorelines by leaving undeveloped or underdeveloped those areas which contain unique or fragile natural resources, by preventing erosion and sedimentation that would alter the natural function of the water system, and by limiting excavations or other actions which would increase the likelihood of erosion.
- Increase public access to publicly owned areas of the shorelines by giving priority to developing paths and trails to shoreline areas, developing linear access along the shorelines for pedestrians and nonmotorized vehicles, developing upland parking, and by locating new major development inland from the ordinary high-water mark so that public access is enhanced.

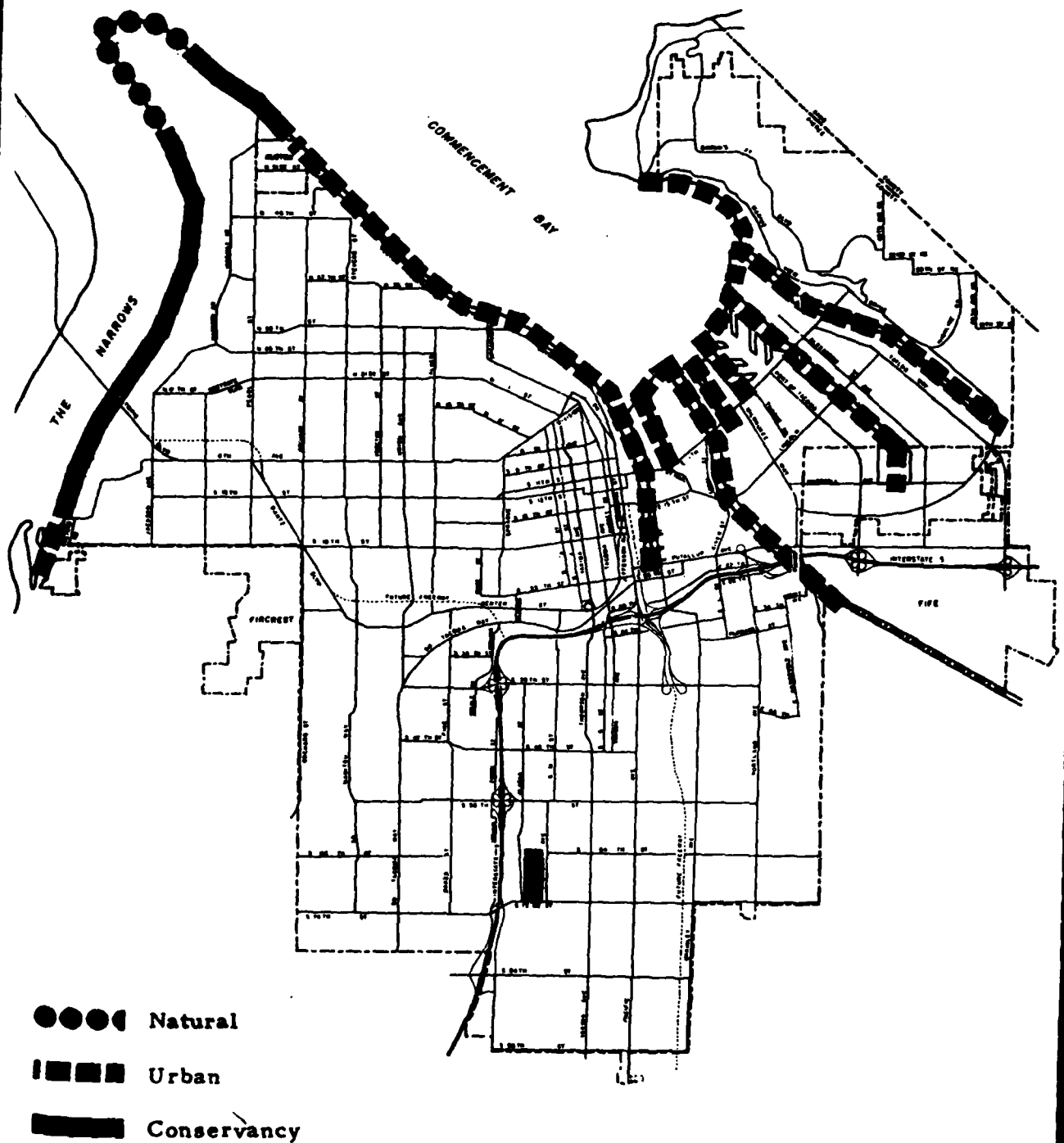
- Increase recreational opportunities for the public on the shorelines by planning for and encouraging and implementing development of facilities for water-related recreational use (Tacoma Planning Commission 1976).

The Master Program for Shoreline Development establishes a general goal for shoreline development, which is to:

"develop the full potential of Tacoma's shoreline in accord with the unusual opportunities presented by its relation to the city and surrounding area, its natural resource values, and its unique aesthetic qualities offered by water, topography, views, and its maritime character; and to develop a physical environment which is both ordered and diversified and which integrates water, shipping activities, and other shoreline uses with the structure of the city."

Policies designed to achieve this goal are directed at public acquisition of shorelines pursuant to establishing a "logical pattern" of public ownership, encouraging development of water-oriented uses on public and private shorelines, eliminating shoreline pollution, accommodating the growing need for aquatic recreational facilities, and encouraging joint public and private planning of city shorelines.

The Master Program inventories and categories "shoreline environments" within the City of Tacoma. Four general district shoreline environments are defined: (1) natural, (2) conservancy, (3) rural, and (4) urban. Three of these categories (natural, conservancy, urban) are present in the study area (see Figure 24). Portions of the south shore of Commencement Bay located in Point Defiance Park are designated both natural and conservancy. The "natural" designation is given to environments where substantial natural resource systems exist and are relatively free of human influence. Policies for this environment are directed at preserving and protecting the characteristics that make such environments unique and valuable. The "conservancy" designation is given to environments where natural resources or valuable historic or cultural areas exist. The objective of this designation is to ensure a continuous flow of recreational benefits to the public and to achieve sustained resource utilization. The remainder of the shoreline within the COBS study area is designated as an "urban" environment in the Master Program. According to the Master Plan:



Source: Tacoma Planning Commission (1976).

FIGURE 24
STUDY AREA SHORELINES ENVIRONMENTS AS DEPICTED IN
TACOMA'S MASTER PROGRAM FOR SHORELINE DEVELOPMENT

"(T)he objective of the urban environment is to ensure optimum utilization of shorelines within urbanized areas by providing for intensive public use and by managing development so that it enhances and maintains shorelines for a multiplicity of urban uses."

The Master Program establishes general elements to be considered in shoreline development. These elements include: (1) economic development; (2) public access and circulation; (3) recreation; (4) urban design; (5) conservation, restoration, and natural environment; and (6) historical, cultural, scientific, and educational. The master program then establishes major objectives for each of these elements, as presented in Table 12.

The Master Program for Shoreline Development also presents policy guidelines for specific uses that could be developed in shoreline areas. These include: (1) aquaculture; (2) commercial development; (3) marinas and boat launch facilities; (4) mineral extraction (excluding dredging); (5) outdoor advertising, signs, and billboards; (6) residential development; (7) utilities; (8) port and water-related industry; (9) marine facilities; (10) educational, archaeological, and historic sites; and (11) recreational uses, among others. Policy guidelines for such uses include:

Commercial Development: Priority should be given to those commercial developments that are particularly dependent upon their location or on use of the shorelines. Only by exception should nonwater-related developments be located on the waterfront. New commercial development on shorelines should be located in areas where other commercial uses exist.

Marinas/Boat Launch Facilities: Marinas and boat launch facilities should be designed and located in a manner consistent with the protection and enhancement of natural resources and biological productivity.

Residential Development: Planned unit (cluster) development should be encouraged in the shoreline area to the extent possible to ensure adequate open space/recreational areas for residents. Any recreational development should be designed to protect the aesthetic

**ELEMENTAL OBJECTIVES OF MASTER PROGRAM FOR SHORELINE DEVELOPMENT,
CITY OF TACOMA^(a)**

Element	Purpose	Objective
Economic Development	To guide location and design of industries, transportation facilities, recreational facilities, commercial, and other developments in shoreline areas.	To develop and maintain a dynamic and diversified economy capable of providing an increasing number of employment and business opportunities.
Public Access and Circulation	To assert the location and extent of existing and proposed thoroughfares, transportation routes, terminals, and other public transportation-related facilities with relation to shoreline use elements.	To develop a system for the efficient movement of goods and people that is based on the needs of the public, city, and region, emphasizing pedestrian and transit components of the system.
	To assert need for public access to shoreline areas.	To improve shoreline access from other parts of the city, to develop a coherent network of streets, to relate the circulation system more closely to the area it serves, and to keep intrusive traffic out of shoreline areas.
Recreation	To preserve and expand recreational opportunities through acquisition and development.	To make the shoreline an asset to adjoining areas and to the city.
		To acquire, administer, and/or develop designated segments of shoreline as major water-related recreational and open space assets of the city.
		To promote enhancement of the unique view potential of the physical location of Tacoma.

(a) Data from: Tacoma Planning Commission (1976).

TABLE 12

Sheet 2 of 2

Element	Purpose	Objective
Urban Design	To consider order and form of shoreline areas and the forces which influence the physical development of these areas.	To enhance the shoreline's positive and distinctive features, to unify shoreline areas visually, and to give definition to subareas. To improve the appearance of the city's shoreline areas and make these areas attractive places to visit. To encourage planning and design standards that will conserve valuable shoreline and aquatic resources.
Conservation, Restoration, and Natural Elements	To promote the preservation, restoration, and enhancement of the natural shoreline resources.	To identify, protect, and restore: (1) shoreline areas that possess exceptional geological, biological, or ecological significance; (2) shoreline areas required to support publicly-owned natural resources; and (3) shoreline open space for resource conservation and the enhancement of urban life. To encourage a program for continuing scientific study of the city's shoreline.
Historical, Cultural, Scientific, and Educational	To promote the protection and restoration of buildings, sites, and areas with historic, cultural, educational, or scientific value.	To preserve buildings, groups of buildings, neighborhoods, street facades, etc. of historic, unique, or characteristic architecture. To preserve and enhance the maritime character of significant areas, sites, and structures, including "Old Tacoma" and City Waterway, and to preserve natural shorelines of educational and scientific value, including Point Defiance.

characteristics, water quality, and pedestrian amenities of the shoreline areas.

Port and Water-Related Industry: Water-dependent terminal, commercial, and industrial uses shall be given priority for location in designated shoreline industrial areas. Careful planning must be undertaken to reduce adverse impacts of industrial docks and piers on other water-dependent uses and shoreline resources.

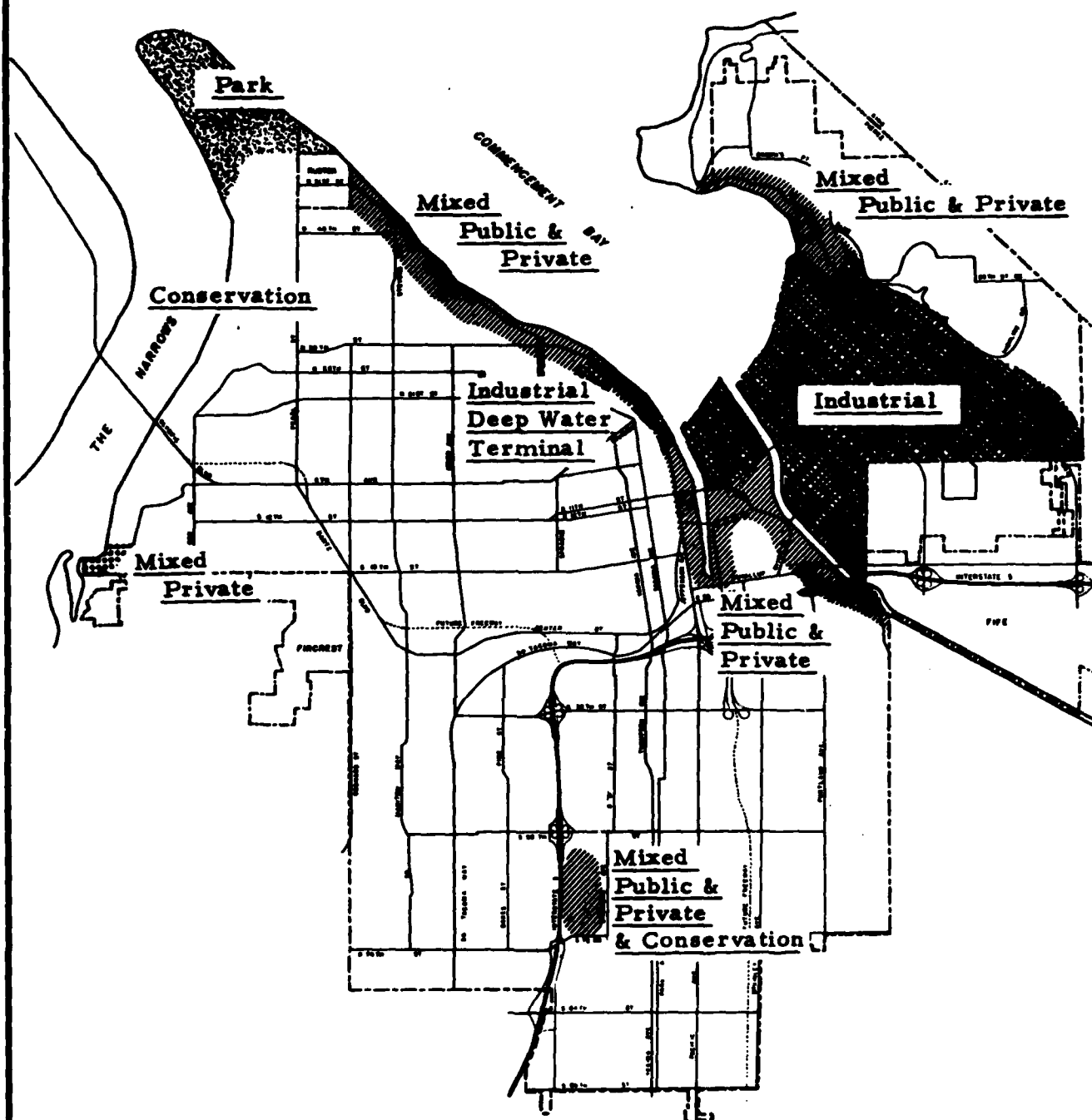
Finally, the Master Program establishes shoreline use regulations designed to:

- (1) Provide a general plan concept for shoreline use.
- (2) Define use regulations for designated shoreline segments.
- (3) Provide for variances, conditional uses, and emergencies.

The General Plan Concept for Shoreline Use contained in the Master Program is depicted in Figure 25; shoreline segments are depicted in Figure 26. General use designations for shoreline segments located within the COBS study area include:

Point Defiance (S-4) (Natural Environment)	Park
Point Defiance (S-5) (Conservancy Environment)	Park
Ruston Way (S-6)	Mixed Public and Private*
Schuster Parkway (S-7)	Industrial Deep Water Terminal
City Waterway (S-8)	Mixed Public and Private*
Puyallup River (S-9)	Mixed Public and Private*
Port Industrial (S-10)	Industrial and Terminal
Marine View Drive (South) (S-11)	Industrial
Marine View Drive (North) (S-12)	Mixed Public and Private*
Commencement Bay (Shoreline of (Statewide Significance)	Marine Navigation

*Mixed Public and Private - Emphasis on public shoreline acquisition, for development of water-related parks, open space and recreation facilities, within limits of community desire and financial capacity. Private water-related uses subject to compliance with shoreline development policies, and design and performance standards (Tacoma Planning Commission 1976).



Note: Shaded areas are for clarity and do not represent exact areas of designation.

Source: Tacoma Planning Commission (1976).

FIGURE 26
GENERAL PLAN CONCEPT FOR SHORELINE USE

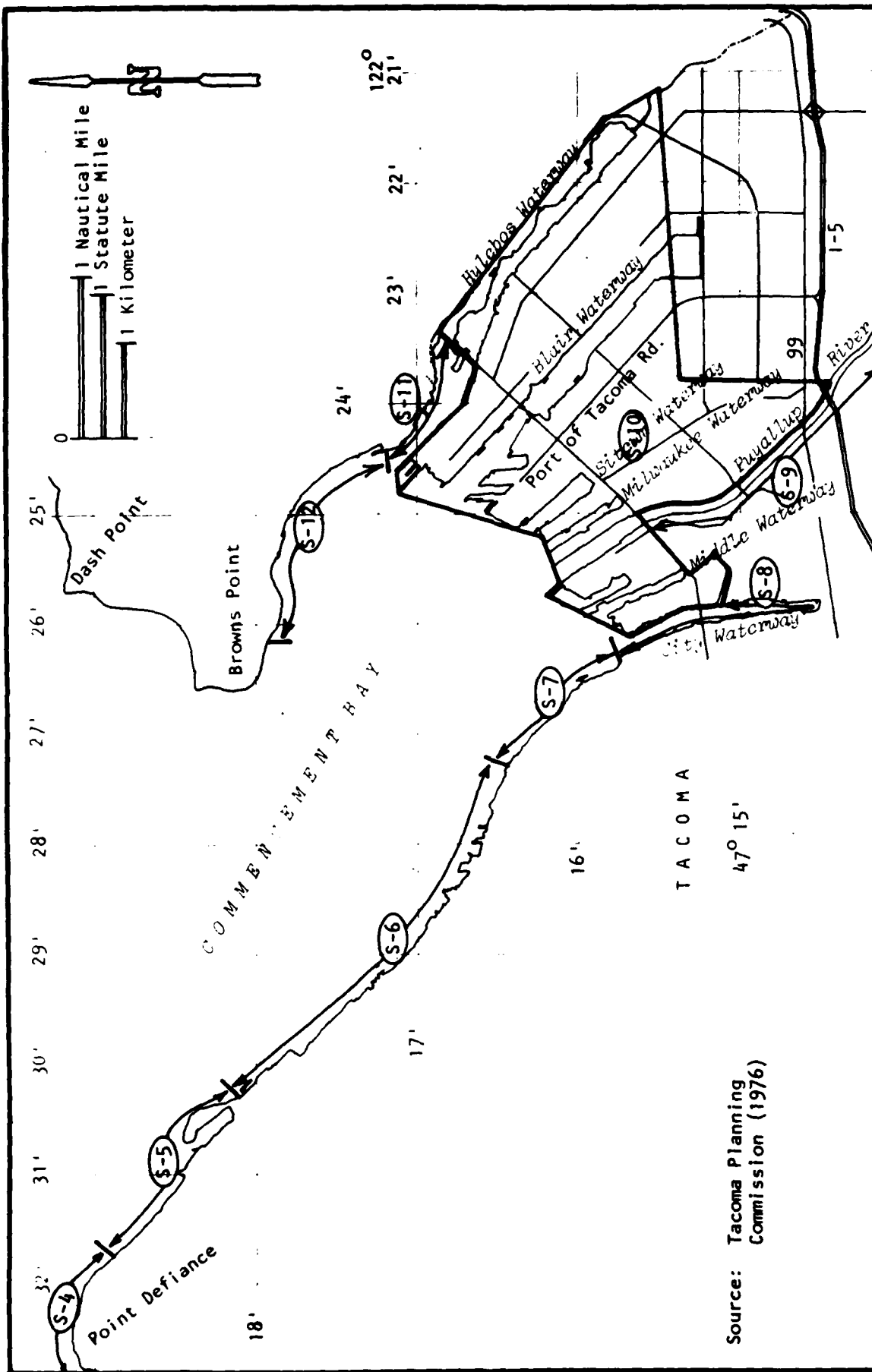


FIGURE 26
DESIGNATED SHORELINE SEGMENTS
IN CITY OF TACOMA'S MASTER PROGRAM
FOR SHORELINE DEVELOPMENT

Source: Tacoma Planning
 Commission (1976)

Specific use activities permitted either outright or conditionally for each of the shoreline districts in the COBS study area are summarized in Table 13. Description of the beach characteristics, upland topography, present use, environmental designations, and detailed information on permitted/conditional shoreline use activities associated with each of these districts are presented in the Master Program.

2.4.2.4 City of Fife

The City of Fife Comprehensive Plan (Fife Planning Commission 1980) establishes growth and development policies for Fife proper as well as adjoining lands that comprise the city's "sphere of influence."* Fife's sphere of influence provides the basis for the city's comprehensive plan, which is graphically depicted in Figure 27. As can be seen by the comprehensive plan map, Fife's sphere of influence extends northward into that portion of unincorporated Pierce County that lies between Fife proper to the south and the Port Industrial District to the north.

The comprehensive plan calls for the enhancement of general quality of life through responsible local and interjurisdictional planning and continuous citizen input to the planning process. General plan concepts include provisions for continuation of existing types of development within portions of the Fife planning area that coincide with the COBS study area. New compatible uses are to be located in these areas as well. Several goals and objectives within the Fife Comprehensive Plan have specific relevance to the concerns addressed in the COBS studies.

These goals and objectives are summarized in Table 14.

2.4.2.5 Town of Ruston

The Town of Ruston's Master Program for Shoreline Development (Ruston 1974) was developed in compliance with the Shoreline Management

*The "sphere of influence" approach to planning is promulgated by the Puget Sound Council of Governments as a means to promote compatible planning among adjoining jurisdictions.

TABLE 13

USES PERMITTED IN SHORELINE DISTRICTS, CITY OF TACOMA (a)

		Substantial Development: Permitted Use (A), Special Consideration (B), Conditional Use (C) Activities																									
Shoreline Districts Located in CDS Study Area	Environmental Designation	Educational/Archaeological	Navigational	Alas	Passive Recreation	Aquaculture	Bulkheads	Commercial (Water-Dependent)	Dredging (Maintenance)	Marina and Boat Launch	Piers	Recreation (Water-Dependent)	Road Design, Construction	Utilities	Landfill	Port and Water-Related Industry	Residential, Upland Location	Railroad	Groins	Jetties	Non-Water-Related Industry	Water-Related Hotels/Hotels	Shoreline Protection	Log Piling, Storage	Breakwater	Dredging (Non-Maintenance)	Commercial (Non-Water-Dependent)
S-4 Point Defiance (Natural Environment)	Natural	A	A	A																							
S-5 Point Defiance (Conservancy Environment)	Conservancy	A				A	A	A	A	A	A	A	A	A	A	B	A	A	A(b) C(c)	B	C						
S-6 Ruston Way	Urban	A				A	A	A	B	A	A	A	A	A	A	B	A	A	A	B	C	C					
S-7 Schuster Parkway	Urban	A				A	A	A	A	C	A	A	A	A	A	A	A	A	A	B	C	C					
S-8 City Waterway	Urban	A				A	A	A	A	A	A	A	A	A	A	A							A				
S-9 Puyallup River	Urban	A				A	C	A	B	C	C	A	A	A	A	A	A	A	A	B	B						
S-10 Port Industrial	Urban	A				A	A	A	A(a) B(c)	A	A	A	A	A	A	A(d)	A				A(d) B(e) C(f)	C					
S-11 Marine View Drive South	Urban	A				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B					
S-12 Marine View Drive North	Urban	A				A	A	B	A	A	A	A	A	A	A	B	A				C	C					

(a) Data from: Tacoma Planning Commission (1976).

(b) Extension of spur lines only.

(c) New railroad construction only.

(d) Except in Puyallup River.

(e) For cargo handling purposes.

(f) In Puyallup River.

TABLE 14

SELECTED GOALS AND OBJECTIVES CONTAINED IN FIFE COMPREHENSIVE PLAN^(a)

Element	Goal
Business/Commercial ^(b)	To guide commercial development toward a CBD along State Highway 99 (Pacific Highway) and the intersection of Sixth Avenue and 20th Street East. To enhance convenience of obtaining essential services. To facilitate a scaling down of development intensity between potentially incompatible land uses.
Manufacturing/ Industrial ^(b)	To ensure local self sufficiency and job opportunities within the City of Fife. To strike a balance between economic necessity and environmental considerations.
Residential ^(b)	To preserve and improve the quality of existing residential areas. To expand the city's housing stock by providing areas for construction of dwelling units. To use multi-family residential uses as buffers between commercial and residentially oriented land uses. To provide low-income residential development in proximity to the CBD.
Community Facilities/ Parks	To enhance community life by providing multi-use facilities for active and passive recreation, cultural, and social interaction opportunities.
Conservancy	To protect significant features of the natural environment^(c). To provide for the health, safety, and general welfare of the citizens of Fife.
Open Space	To preserve within the evolving urban environment a sense of balance in the physical environment and, by doing so, enhance the quality of life for all citizens.
Pollution	To maintain and improve Fife's environmental quality.
Traffic/Circulation	To provide a traffic circulation system that routes traffic that is externally oriented away from the internal circulation of Fife. To improve internal circulation. To provide for safe and efficient pedestrian, bicycle, and transit service within Fife.

(a) Data from: Fife Planning Commission (1980).

(b) Goals contain implementing policies that call for the allocation of the majority of Business/Commercial, Manufacturing/Industrial, and Residential uses to those lands designated for such use in the city's zoning ordinance (see Section of Zoning above) and on the comprehensive plan map.

(c) This goal contains an objective to "protect the floodways of Wapato and Hylebos Creeks from urbanization and/or detrimental alteration."

Act of 1971. As such, Ruston's Master Program regulates shoreline areas within the municipal boundaries of Ruston. Ruston's shoreline consists of 440 feet of the south shore of Commencement Bay (see Figure 2 above). The entire Ruston shoreline is located on property owned by ASARCO and which is the site of the ASARCO Tacoma plant.

The general goal of Ruston's Master Program is to: "cooperate with (ASARCO) in the overall management and/or development of the shoreline." The stated long-range goal of the Town of Ruston with respect to shoreline management is to "keep surveillance on all activities in the area, (t)o preserve the natural character of the shoreline wherever possible, and to protect the resources and ecology of the shoreline" (Ruston 1974).

Guidelines for regulation of proposed land uses along Ruston shorelines established in the Master Program are summarized in Table 15 below. These guidelines are strongly influenced by the dominant presence of the ASARCO plant within the Ruston shoreline area.

TABLE 15
SELECTED GUIDELINES FOR USE ACTIVITIES
RUSTON MASTER PROGRAM FOR SHORELINE DEVELOPMENT(a)

Activity	Guideline
Commercial	Special attention shall be given to protect all phases of the environment when considering future development of commercial facilities. Commercial uses that are not dependent upon a shoreline location shall be prohibited.
Port- and Water- Related Industry	Sewage development, water reclamation, desalination, and power plants should be located where they do not interfere with and are compatible with other uses of water and shoreline. All fuel, chemicals, and toxic substances shall be kept, stored, handled, and used in a fashion that assumes that there will be no opportunity for entry into the water.

(a) Data from: Ruston (1974).

Other guidelines contained in the Ruston Master Program are directed at the regulation of specific types of structures and activities (such as piers, bulkheads, breakwaters, roads and railroads, dredging, landfill, and solid waste disposal) so as to minimize associated adverse impacts on elements of the environment (fish, shellfish, water quality, aesthetics, and adjacent land uses).

2.4.2.6 Port of Tacoma

The Revised Code of Washington (RCW) gives the Port of Tacoma authority to implement harbor improvement plans (Chapter 53.20) and make improvements to harbor-related facilities and infrastructures (Chapter 53.08). The Port of Tacoma, as a designated port district organized and operated under state law, is currently developing a Comprehensive Development Plan and associated capital improvements program. This plan, to be finalized by late 1981, will primarily be directed at establishing guidelines and policies to govern the port's economic and physical growth until the year 2000.

2.4.2.7 Puyallup Nation

The Puyallup Nation's Natural Determinance Plan governs the growth and development of the Puyallup Nation. This plan was unavailable for review at the time of this writing.

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APPENDIX

ZONING CLASSIFICATIONS AND PERMITTED USES
UNDER EXISTING ZONING ORDINANCES

- Pierce County
- City of Tacoma

BRIEF OUTLINE OF THE PIERCE COUNTY ZONING CLASSIFICATIONS

I. REGULAR ZONE CLASSIFICATIONS

NOTE: This does not apply to areas within the jurisdiction of the Gig Harbor Peninsula Comprehensive Plan or Shorelines Master Program of Pierce County. This is not intended as a legal instrument. For complete and up-to-date information refer to the Code in its entirety or contact the Pierce County Planning Department.

* 35' on arterials

Bulk Requirements

Zone Classification	Intent and Basic Characteristics	General Description of Zone	Lot Area (sq. ft.)	Lot Width	Front Yard	Rear Yard	Side Yard
RE - Residential Estate	Most restrictive residential zone;	Single-family dwellings, schools, churches (large churches by conditional permit).	RE8.4	8,400	70'	25/35*	30'
			RE9	9,000	75'		8'
			RE9.6	9,500	80'		
			RE10.2	10,200	85'		
			RE10.8	10,800	90'		
			RE12	12,000	100'		
			RE15	15,000	100'		
			RE20	20,000	100'		
			RE30	30,000	100'		
SR - Suburban Residential	A standard residential zoning for a complete neighborhood structure.	RE uses, plus two-family dwellings on larger lots. Day nurseries, libraries, clinics and hospitals by conditional permit.	SR7.2	7,200	60'	25/35*	30'
			SR8.4	8,400	70'		8'
			SR9	9,000	75'		
			SR9.6	9,600	80'		
			SR10.2	10,200	85'		
			SR10.8	10,800	90'		
			SR12	12,000	100'		
			SR20	20,000	100'		

Zone Classification	Intent and Basic Characteristics	General Description of Zone	Lot Area (sq. ft.)	Bulk Requirements			
				Lot Width	Front Yard	Rear Yard	Side Yard
SA - Suburban Agriculture	Areas in transition from rural farming to suburban.	Outright and Conditional uses of SR zone - with liberal agricultural provisions	SA10A - 10 acres SA5A - 5 acres SA2.5A - 2.5 acres SA - 1 acre SA20 - 20,000 SA15 - 15,000 SA12 - 12,000 SA10.2 - 10,200 SA9.6 - 9,600 SA9 - 9,000	330' 330' 165' 100' 100' 100' 100' 85' 80' 75'	25/35'	30'	8'
RR - Residential Reserve	To reserve areas for future plat development consistent in density with sewage disposal facilities available.	Same as SA	2½ acres minimum with 330' width, unless platted.		25/35'	30'	8'
RL - Multiple Residence Low-Density	Most Restrictive and lowest density multi-residence zone.	SR uses, plus multi-family dwellings.	7,200 - 1st unit plus 3,600 for each additional unit.	60'	25/35'	30'	8'

Bulk Requirements

Zone Classification	Intent and Basic Characteristics	General Description of Zone	Lot Area (sq. ft.)	Lot Width	Front Yard	Rear Yard	Side Yard
RMP - Planned Multi-Residence	Intended to permit greater flexibility in the location of multi-family and other transition zone structures in areas where protection of single family home values is most important. Requires approval of specific site plan.	Uses and Minimum Bulk Requirements same as RMH					
RM - Multi-family Residence	Used as light buffer between SR and C-1 areas. Medium density multi-family. Not a business office zone.	SR uses, plus multi-dwelling units.	7,200 - 1st unit 1,600 for each add. 1 Bdrm unit; 2,000 for 2 Bdrm; 2,400 for 3 Bdrm.	60'	25/35'	30'	8'
RMH - Multi-family Residence	Max. population density, also allows offices & personal service establishments. Used as buffer between SR, C-2 or C-3 areas.	RM uses, plus hotels, motels, business and professional offices.	7,200 for 1st unit, plus 1,200 for each add. 1 Bdrm. unit; 1,600 for 2 Bdrm; 2,000 for 3 Bdrm;	60'	25/35'	30'	8'

Bulk Requirements

Zone Classification	Intent and Basic Characteristics	General Description of Zone					Bulk Requirements		
		Lot Area (sq. ft.)	Lot Width	Front Yard	Rear Yard	Side Yard			
C-1 Neighborhood Commercial	Small business centers, serving needs of a neighborhood for convenience goods and services	RM uses, plus light retail	7,200	50'	25/35'	30' from RE, SR, & SA prop.	8'		
C-2 Community Commercial	Commercial centers serving community, wide-range business, but lesser in scope than downtown area.	RMH & C-1 uses, plus heavy retail & community recreation uses.	7,200 - same as RMH	50'	25/35'	30' from RE, SR, & SA prop.	8'		
C-3 Heavy Commercial	Non-retail commercial & semi-industrial, primarily oriented to automotive rather than pedestrian buyings.	C-2 uses, plus ambulance service, fix-it shops, lumber yards, used car lots & similar heavy commercial & semi-industrial uses.	7,200 - same as RMH	50'	25/35'	30' from RE, SR & SA prop.	8'		
M-1 Light Mfg.	Industrial & Mfg. uses with the least impact on surrounding property values.	C-3 uses, plus warehousing & Mfg. with limitations on the nature, size and scope of activity.		50'	25/35'	30' from RE, SR & SA prop.	8'		
M-2 Heavy Mfg.	Heavy industrial uses.	M-1 uses, plus all mfg. and industrial uses, with hazardous or offensive uses requiring conditional permit.		50'	25/35'	30' from RE, SR & SA prop.	8'		

Bulk Requirements

Zone Classification	Intent and Basic Characteristics	General Description of Zone	Lot Area (sq. ft.)	Lot Width	Front Yard	Rear Yard	Side Yard
C - General Use	Least restrictive zone, used in relatively undeveloped rural area with no immediate prospect of residential development	All uses permitted. Unusually hazardous or offensive uses require conditional permit.	SA & A uses - 9,000 sq. ft. Other uses - 8,000 sq. ft.	60'	25/35'	30'	8'
A - Agricultural	To preserve highly productive Agri. lands by limiting urban expansion.	Outright & Cond. uses of RE, SR & SA zones, Housing facilities for agri. employees.	5 acres	330'	25/35'	30'	8'
FR - Forestry & Recreation	Preserve natural resources of area and provide for controlled exploitation of native materials	Forest camps, hunting & fishing camps, logging, saw mills, harvesting of any wild crop.	5,000	50'	25/35'	30'	8'
I-2 - Industrial Park	To provide ind'l. area of high performance standards acceptable in outlying nonindustrial areas.	M-1 & M-2 uses; public utilities; accessory uses in connection with any permitted use, subject to limitations.	5 acre minimum site area				

II. SPECIAL ZONE CLASSIFICATIONS

2014 Requirements

Zone Classification	Intert and Basic Characteristics	General Description of Zone	Lot Area (sq. ft.)	Lot Width	Front Yard	Rear Yard	Side Yard
SS-1 Planned Neighborhood Shopping Center	To provide for a planned retail development acceptable to a generally residential neighborhood where needed.	C-1 retail uses. Subject to approval of site plan for the entire shopping center, incl. screening, traffic pattern, etc. within 12 mo. of zone change. 10 acre max. size			25/35'	30'	5'
SS-2 Planned Community Shopping Center	Planned retail development at the community level.	C-1 & C-2 retail uses. Subject to site plan approval within 12 months. For developments over 10 acres.			25/35'	30'	9'
SS - Freeway Service District	Business offering products & services required by freeway user; not a retail business zone.	Motels, hotels, restaurants, servicing of vehicles.		50'	25/35'	30'	8'
SS - Highway Service District	To provide needed commercial facilities on major thoroughfare with a minimum of induced traffic congestion.	Outright & Cond. uses of RMH class. Service stations, restaurants. No general retail.		50'	25/35'	30' from "R" prop.	30' from "R" prop.
SS - Professional Estates	Planned development for nonretail & nonindustrial employment centers.	Outright & Cond. uses of RE, SR, RM & RHM zones; research labs.	7,200	60'	25/35'	30'	5'

PERMITTED USES

ZONING ORDINANCE TACOMA, WASHINGTON

NOTE: THIS LIST IS INTENDED ONLY AS A GENERAL GUIDE AND DOES NOT CONTAIN ALL SPECIFIC INFORMATION REGARDING THE PERMITTED USES AND REQUIREMENTS OF THE ZONING ORDINANCE.

For additional information contact the City Planning Department, Room 336, County-City Building, Phone - 593-4170.

'R-1' ONE-FAMILY DWELLING DISTRICT

USE REGULATIONS

1. One-Family Dwellings
2. Publicly-owned parks, playgrounds, playfields, and community centers on sites and in locations approved by the Planning Comm. and with side yards as required in Sec. 13.06.360.
3. Public schools, public libraries and churches in locations and on sites approved by the City Planning Commission and with side yards as required in Section 13.06.360.
4. Necessary public utilities and public service uses or structures on sites and in locations approved by the City Planning Commission.
5. Agricultural uses including truck gardening and horticulture nurseries as a land use on a lot not less than twenty thousand square feet in area. Buildings shall not be permitted in connection with such use, except greenhouses having total floor area not in excess of six hundred square feet.
6. Golf courses, except midget golf courses or driving ranges or similar commercial enterprises.
7. Accessory uses and buildings customarily incidental to the above uses including one private garage and one private stable, provided, however, that no garage or parking space shall be allowed for more than four automobiles on the lot, nor shall a private stable be permitted on a lot having an area of less than twenty thousand square feet. Detached accessory buildings shall be located not less than sixty feet from the front lot line and on corner lots shall not project into the required side yard on the street side of such corner lot. A stable shall be located not less than twenty-five feet from any street line nor less than seven and one-half feet from any side lot line. The capacity of a private stable shall not exceed one horse for each twenty thousand square feet of lot area.
8. One nonilluminated temporary sign not exceeding twelve square feet in area appertaining to the lease, rental or sale of a building or premises on which it is located. One bulletin board not exceeding twelve square feet in area for each church or community center. No other signs are permitted.
9. Group Care Homes Class I for the care of not more than eight residents.
10. Family Day Care Homes licensed by the State of Washington.

'R-2' ONE-FAMILY DWELLING DISTRICT

USE REGULATIONS

1. Any use permitted in the 'R-1' One-Family Dwelling District.
2. Home occupations.
3. Colleges and universities (not carried on as a commercial enterprise) in locations and on sites approved by the City Plan. Comm. and with side yards as required in Sec. 13.06.360.
4. Accessory uses and buildings as permitted in the 'R-1' One-Family Dwelling District.
5. Name plates and signs:
One nonilluminated name plate not exceeding one and one-half square feet in area, placed flat against the building, for each dwelling containing a home occupation. One nonilluminated, temporary sign not exceeding twelve square feet in area appertaining to the lease, rental or sale of the building or premises on which it is located. One bulletin board not exceeding twelve square feet in area for each church, school, college or community center. No other signs are permitted.
6. Foster homes for not more than two adults (as per Zoning Ordinance).
7. Provision of lodging or boarding and lodging for not more than two persons for compensation (as per Zoning Ordinance).

'R-3' TWO AND THREE-FAMILY DWELLING DISTRICT

USE REGULATIONS

1. Any use permitted in the 'R-2' One-Family Dwelling District.
2. Two-Family Dwellings on lots having at least 6000 square feet.
3. Accessory uses and buildings as permitted in the 'R-1' One-Family Dwelling District.
4. Name plates and signs as permitted in the 'R-2' One-Family Dwelling District.
5. Boarding and lodging houses for not more than four college students only (as per Zoning Ordinance).
6. Three-Family dwellings on lots having at least 9000 square feet.
7. Group Care Homes Class I for the care of not more than ten residents.
8. Group Care Homes Class II for the care of not more than eight residents.

'R-4-L' LOW DENSITY MULTIPLE FAMILY DWELLING DISTRICT

USE REGULATIONS

1. Permitted Uses
 - a. Any use permitted in an 'R-3' Two-Family Dwelling District
 - b. Multiple-family dwellings
2. Conditional Uses when authorized by the Planning Commission, SOME of which include mobile home park, nursery school, nursing home, retirement home, hospitals and private club, Group Care Homes, Boarding Homes for the aged, as per Zoning Ordinance, etc. (See Zoning Ordinance for other uses).
3. Accessory uses and buildings as permitted in the 'R-1' One-Family Dwelling District.
A business office for a multiple-family dwelling or mobile home park may be located in such dwelling or park or may be located in a one- or two-family dwelling on the same lot and shall be considered a home occupation under this chapter. Also permitted are recreational facilities such as swimming pools, tennis courts and playgrounds for small children. The above listed accessory uses and buildings are subject to the height and setback requirements of 'R-1' One-Family Dwelling District except as provided in this section.
4. Name plates and signs as permitted in the 'R-2' One-Family Dwelling District; and other signs (as specified in Zoning Ordinance).

'R-4' MULTIPLE-FAMILY DWELLING DISTRICT

USE REGULATIONS

1. Permitted Uses
 - a. Any use permitted in an 'R-3' Two-Family Dwelling District
 - b. Multiple-family dwellings
 - c. Group Care Homes Class I for the care of not more than twenty residents.
2. Conditional Uses when authorized by the Planning Commission, SOME of which include apartment hotel, nursery school, nursing home, retirement home, hospital and private club, Group Care Homes, Boarding Homes for the aged, as per Zoning Ordinance, etc. (See Zoning Ordinance for other uses).
3. Accessory uses and buildings as permitted in the 'R-1' One-Family Dwelling District.
4. Name plates and signs: One nonilluminated name plate not exceeding one and one-half square feet in area, placed flat against the building, for each dwelling unit containing a home occupation. One nonilluminated, temporary sign not exceeding twelve square feet in area appertaining to the lease, rental or sale of the building or premises on which it is located. One nonilluminated sign not exceeding six square feet in area, placed flat against the building, for each multiple-family dwelling or for a building other than a dwelling. One lighted sign not exceeding twenty square feet in area for each hospital or sanatorium. One bulletin board not exceeding sixteen square feet in area for each church, community center or educational institution. Lighted signs shall not be a flashing or animated character.

'R-5' MULTIPLE-FAMILY DWELLING DISTRICT

USE REGULATIONS

1. Permitted Uses
 - a. Any uses permitted in the 'R-4' Multiple-Family Dwelling District.
 - b. Residential hotels, retirement homes, apartment-hotels, and apartments, within which may be permitted minor retail businesses such as drug stores, soda fountains, newsstands, beauty parlors, and restaurants providing for the needs of the people living within the building. Other accessory uses as set forth in Section 13.06.010.5(2).
2. Conditional Uses when authorized by Planning Commission SOME of which include boarding house, day nursery, hospital, nursing home and private clubs, etc. (see Zoning Ord. for other uses).
3. Accessory uses and buildings as permitted in the 'R-1' One-Family Dwelling District.
4. Name plates and signs as permitted in the 'R-4' Multiple-Family Dwelling District.

'PRD' PLANNED RESIDENTIAL DEVELOPMENT DISTRICT

USE REGULATIONS

1. The uses of property permitted in the regular zoning district with which the PRD District is combined.
 2. Townhouses, retirement homes, and condominiums in all PRD Districts (as specified in Zoning Ordinance).
 3. Apartments in all PRD Districts except 'R-1-PRD' and 'R-2-PRD' Districts.
 4. Indoor and outdoor recreational facilities and structures for the exclusive use of the residents of the PRD District.
 5. Name plates and signs as permitted in the residential district with which combined.
- NOTE: The site plan must be approved by the Planning Commission prior to issuance of a building permit.

'T' RESIDENTIAL - COMMERCIAL TRANSITIONAL DISTRICT

USE REGULATIONS

- (a) The uses of property permitted in the regular residential zoning district with which the T District is combined.
- (b) The following permitted uses, provided that the residential character of the neighborhood is maintained by the provisions of adequate open space setbacks and the control of advertising:
1. Permitted in R-2-T, R-3-T, R-4-LT, R-4-T and R-5-T Districts only:
 - (1) Dental and medical clinics including a medical pharmacy as an accessory use of the clinic.
 - (2) Offices offering the following professional services: Dentists, doctors, lawyers, architects and engineers.
 - (3) Day care centers licensed by the State of Washington and nursery schools.
 2. Permitted in R-4-T and R-5-T Districts only:
 - (1) Business cottages, trade schools, music conservatories, and similar organizations offering vocational training in a specific field (as specified in Zoning Ordinance).
 - (2) Libraries, museums, and art galleries.
 3. Conditional uses in all 'T' residential districts except 'R-1' when authorized by the City Planning Commission at a duly advertised public hearing.
 - (a) Business or corporation offices, provided that the occupancy does not regularly involve contact in person, on the premises with clients, customers or general public; and provided further that the merchandise is handled and merchandising services rendered only incidentally to the main office use.
 - (b) Business or corporation offices abutting a frontage road, provided that merchandise is handled, and merchandise services rendered only incidentally to the main office use.
 4. Name plates and signs as follows:
 - (a) R-2-T, R-3-T, R-4-LT, R-4-T and R-5-T as specified in the Zoning Ordinance.
 - (b) In all 'T' Districts abutting a frontage road as specified in the Zoning Ordinance.
 - (c) Other nameplates, sign and bulletin boards shall be permitted as provided in the Zoning Ordinance. Section 13.08.230.A.9.

'T-M' MEDICAL CENTER TRANSITIONAL DISTRICT

USE REGULATIONS

- (a) Any use permitted in the R District in conjunction with which this transitional district is established.
- (b) Dental and medical clinics including a medical pharmacy as an accessory use.
- (c) Hospitals or sanitariums properly licensed by the state, county or city (except commercial institutions and those for mental, alcoholic or drug addict cases and animal clinics), provided that the building or buildings be located not less than fifty ft. from any side lot line.
- (d) Nursing homes, properly licensed by the state, county, or city.
- (e) Day care centers licensed by the State of Washington and nursery schools.
- (f) Conditional uses only when authorized by the City Planning Commission. Hospitals or sanitariums treating epileptics, drug addicts or alcoholic patients and asylums for the mentally ill, properly licensed by the state, county or city, provided that the building or buildings be located not less than fifty feet from any side lot line.
- (g) Nameplates and signs as specified in the Zoning Ordinance.

'C-F' FREEMAN COMMERCIAL DISTRICT

A. 'C-F-V' Freeway Commercial Vehicular Services District

USE REGULATIONS

- (a) Automobile service station including servicing of motorcycles and trailers in accordance with development standards as set forth in subsection D, Section 13.08.376 of the Zoning Ordinance.
- (b) Truck service station
- (c) Automobile, motorcycle and truck repair and sale of automotive accessories as an accessory use only to an automobile, motorcycle or truck service station and conducted entirely within a building.
- (d) Restaurant, tea room, cafe, cafeteria, soda fountain, lunch counter, drive-in restaurant. The sale of alcoholic beverages shall be permitted as an accessory use only.
- (e) Confectionery, candy store, delicatessen, provided such uses shall have a gross floor area not exceeding fifteen hundred square feet.
- (f) Gift, curio, novelty shop, provided such uses shall have a gross floor area not exceeding two thousand square feet.
- (g) Ice storage dispensing structure, not more than five tons in capacity.
- (h) Signs advertising or relating to products sold or services rendered on the property are permitted on buildings, and, in addition, one such sign shall be permitted as a free standing structure to identify the facility to be constructed.
- (i) Accessory uses customarily incidental to the above uses provided that such accessory use shall be carried on within the same building as the principal use.
- (j) Automatic and self-service car washing facilities as an accessory use to an automobile service station not to exceed two stalls, in accordance with provisions of Section 13.08.377 of Zoning Ordinance.
- (k) Christmas tree sales lots.

B. 'C-F-P' Freeway Commercial Personal Services District

USE REGULATIONS

- (a) Restaurant, tea room, cafe, cafeteria, soda fountain, lunch counter, including drive-in. The sale of alcoholic beverages shall be permitted as an accessory use only.
- (b) Confectionery, candy store, delicatessen, provided such uses shall have a gross floor area not exceeding fifteen hundred square feet.
- (c) Gift, curio, novelty shop, provided such uses shall have a gross floor area not exceeding two thousand square feet.
- (d) Motel or Motor-hotel including any of the above-listed uses in 2(a), 2(b) and 2(c) as accessory uses.
- (e) Tourist trailer court or tourist camp (including any of the above-listed uses in 2(a), 2(b) and 2(c) as accessory uses).
- (f) Bleaching rooms, swimming pools and other recreational uses as an accessory use only to a motel, motor-hotel, trailer court or tourist camp.
- (g) Caretaker's or proprietor's residence as an accessory use only to a motel, motor-hotel, trailer court or tourist camp.
- (h) Signs as permitted in the C-F-V District.
- (i) Accessory uses customarily incidental to the above uses provided that such accessory use shall be carried on within the same building as the principal use.
- (j) Christmas tree sales lots.

'C-P' PLANNED SHOPPING CENTER DISTRICTS

A. 'C-P-N' Planned Neighborhood Shopping Center District

USE REGULATIONS

- (a) Signs are permitted on buildings and marquee (excluding billboards) and must meet standards specified in the Electric Sign Code. One additional free-standing sign or structure to identify the shopping center shall be permitted. (See Zoning Ordinance for additional information.)
- (b) Antique shop
- (c) Art supply store, art shop
- (d) Auto accessory store
- (e) Automobile service station
- (f) Bakery, retail only, the products of which are sold only on the premises
- (g) Bank, savings and loan association
- (h) Barber shop
- (i) Beauty shop
- (j) Bicycle shop
- (k) Book or stationery store
- (l) Clinics, medical and dental
- (m) Clothes cleaning agency or pressing shop (excluding cleaning and dyeing on the premises, other than spot cleaning)
- (n) Clothing store or tailor shop
- (o) Confectionery or candy store
- (p) Delicatessen
- (q) Drug store
- (r) Dairy products store
- (s) Dry goods store, drapery store, millinery or dress shop
- (t) Finance company (excluding pawn shop)
- (u) Florist shop
- (v) Furniture store
- (w) Gift shop
- (x) Grocery, fruit or vegetable store, meat market, supermarket
- (y) Hardware or appliance store
- (z) Hobby shop, fruit shop
- (aa) Jewelry store
- (ab) Laundry agency or self-service laundry (excluding laundry)
- (ac) Lumber goods or luggage store
- (ad) Package liquor store
- (ae) Music store, record shop
- (af) Offices (business or professional)
- (ag) Photographer's shop or studio, camera shop
- (ah) Radio and TV shop
- (ai) Restaurant, tea room, cafeteria (excluding cabaret, cocktail lounge, bar, or tavern, and excluding restaurant where food is served or consumed in automobiles).
- (aj) Shoe store or shoe repair shop
- (ak) Soda fountain, lunch counter
- (al) Studios, music, art, voice, dance
- (am) Theaters (excluding outdoor theaters)
- (an) Toy stores
- (ao) Variety store, 5 and 10 cent store
- (ap) Branch post office
- (aq) Branch library
- (ar) Sporting goods store
- (as) Automatic and self-service car washing facilities as an accessory use to an automobile service station not to exceed two stalls, in accordance with provisions of Section 13.08.377.
- (at) Christmas tree sales lots.

B. 'C-P-C' Planned Community Shopping Center District

USE REGULATIONS

- (a) All uses permitted in the 'C-P-N' Neighborhood Shopping Centers, except that 2 free-standing signs or structures identifying the shopping center shall be allowed.
- (b) Auto sales (conducted entirely within a building)
- (c) Book sales (conducted entirely within a building)
- (d) Bowling alley, gymnasium
- (e) 5 - 10 cent store
- (f) Department store
- (g) Garden supplies store as a retail business
- (h) Ticket office for railroad, steamship, bus and air lines
- (i) Travel agency
- (j) Office supply store
- (k) Blueprinting and photostating, engineering supply store
- (l) Cocktail lounge, tavern, drive-in restaurant
- (m) Pet shop, (as defined in City Zoning Ordinance)
- (n) Rafter skating or ice skating rink, ballroom
- (o) Sign shop (conducted entirely within a building)
- (p) Veterinary out clinic (as defined in Zoning Ordinance)
- (q) Automatic car washing facilities and self-service car washing facilities as an independent establishment with a special use permit approved by the City Planning Commission.

C. 'C-P-R' Planned Regional Shopping Center District

USE REGULATIONS

- (a) All uses permitted in the neighborhood and community shopping centers (except that more than 2 free-standing signs or structures identifying the shopping center may be permitted by the Planning Commission)
- (b) Express office
- (c) Bus station
- (d) Government buildings
- (e) Interior decorating store
- (f) Printing, lithographing and publishing
- (g) Radio or TV studio
- (h) Hotel
- (i) Auditorium

Also permitted in the above 3 types of 'C-P' Districts are accessory uses customarily incidental to the permitted uses, including the repair of goods of the type sold in stores in the center, provided that they are not separate businesses, except as specifically permitted in these regulations, and provided that they are carried on entirely within a building.

'R-P' PLANNED RESEARCH PARK DISTRICT

USE REGULATIONS

1. Principal Uses
 - a. Research and experimental laboratory uses
 - b. Business and corporation offices having limited contact with the general public.
 - c. Professional Offices
 - d. Residential use for caretakers only
 - e. Retail commercial as accessory uses only
 - f. Personal services as accessory uses for use by the employees of the Research Park.
2. Additional Uses - where found to be within the spirit and intent of the district may be permitted by the Planning Commission subject to City Council approval.
3. Accessory Uses - customarily incidental to the above uses provided they do not exceed an area equal to 10% of the gross floor area of the Principal Uses and are operated and maintained under the same ownership.
4. Non-conforming uses - All non-conforming uses within an 'R-P' district shall be removed or provisions made for their removal prior to any site approval by the City Planning Commission.

'C-1' COMMERCIAL DISTRICT

USE REGULATIONS

A building, structure or land shall be used and a building or structure hereafter built, altered or enlarged, shall be used for only the following permitted uses:

1. Any use permitted in the 'R-5' Multiple-Family Dwelling District, subject to Section 8 herein, except that group care homes shall be allowed to have only the resident numbers permitted in the 'R-1' One-Family Dwelling District.
2. Automobile Service Station with a special use permit approved by the City Planning Commission.
3. Bakery, retail only and the products of which are sold only on the premises.
4. Bank.
5. Barber shop or beauty parlor.
6. Bicycle shop.
7. Book or stationery store.
8. Clinics, medical and dental.
9. Clothes cleaning agency or pressing shop (excluding cleaning and dyeing on the premises).
10. Clothing store or tailor shop.
11. Confectionery store.
12. Delicatessen.
13. Drug store.
14. Dry goods store, millinery or dress shop.
15. Florist shop.
16. Foxon food locker, renting lockers for individual and family use.
17. Gift shop.
18. Grocery, fruit or vegetable store.
19. Hardware or electrical appliance store.
20. Jewelry store.
21. Laundry agency (excluding laundry).
22. Meat market.
23. Motel on a lot or parcel of ground that is adjacent to a Federal or State highway and has access to such highway or its frontage road.
24. Notions or variety store.
25. Office (business and professional).
26. Photographer's shop.
27. Public parking area, subject to regulations in Section 13.05.350.
28. Restaurant, bar room or cafeteria (excluding dancing, entertainment, drive-in restaurant).
29. Shoe store or shoe repair shop.
30. Theaters, contained entirely within a building.
31. Accessory uses and buildings customarily incidental to the above retail stores, shops and businesses and permitting only such incidental processing, manufacturing, assembling or treatment of products as is necessary to prepare retail goods sold only on the premises.
32. Signs as permitted by ordinance and codes of the City of Tacoma (excluding billboards).
33. Self-service laundry.
34. Self-service car washing facilities as an accessory use to an automobile service station not to exceed two stalls, in accordance with provisions of Section 13.05.377 of the Zoning Ordinance.
35. Studio, music, art, voice, etc. (excluding motion picture studios) provided there is no sound or vibration from such.
36. Accessory uses and buildings customarily incidental to the above retail stores, shops and businesses and permitting only such incidental processing, manufacturing, assembling or treatment of products as is necessary to prepare retail goods sold only on the premises.
37. Signs as permitted by ordinance and codes of the City of Tacoma (excluding billboards).
38. Christmas tree sales lots.
39. Day care centers licensed by the State of Washington and nursery schools.

'C-2' COMMERCIAL DISTRICT

A building, structure or land shall be used and a building or structure hereafter built, altered or enlarged, shall be used for only the following permitted uses:

1. Any use permitted in the 'C-1' Commercial District.
2. Auditoriums.
3. Automobile, truck and trailer sales establishments, as well as sales establishments for boats, motorcycles, snowmobiles, all-terrain vehicles and other recreational vehicles. Servicing and repair of vehicles shall be permitted as an accessory use to such sales establishments or as an independent use, provided all servicing and repair of vehicles shall be conducted entirely within the building and when any structure or portion thereof, wherein the servicing or repair of vehicles is conducted, is located within fifty (50) feet of a dwelling district, there shall be no openings in the building walls facing the boundaries of the dwelling district other than stationary windows, except where the building walls abut streets or alleys.
4. Baseball or football stadium.
5. Banks, public.
6. Battery repairing.
7. Bicycle repair shop.
8. Billiard hall and bowling alley.
9. Blue printing and photostating.
10. Business college.
11. Cabinet shop, conducted within the building as a retail business only and in which not more than three thousand board feet of lumber may be stored.
12. Clothes cleaning and pressing establishments (excluding dyeing on the premises).
13. Department store.
14. Express office.
15. Fish market, retail.
16. Feed and seed store, conducted entirely within the building.
17. Furniture store.
18. Garden supplies store or florist shop, including greenhouse, as a retail business.
19. Harness shop or leather goods or luggage store.
20. Ice storage building, not more than five tons in capacity.
- 20.5 Packaging and distribution of cosmetics, drugs, pharmaceutical products, perfume, and toiletries conducted within a building not to exceed 5000 sq. ft. in floor space.
21. Pawnshop.
22. Pet shop (as defined in City Zoning Ordinance).
23. Printing or short mail shop, conducted entirely within the building.
24. Printing, lithographing and publishing.
25. Private club, lodge or fraternal organizations operated as a commercial enterprise.
26. Public garage, including usual automobile repairs and servicing conducted entirely within the building. When a public garage is within fifty feet of a Dwelling District there shall be no openings in the building walls facing the boundaries of the Dwelling District other than stationary windows, except where the building walls abut streets or alleys.
27. Restaurant, tea room, cafeteria, including drive-in restaurant and establishments where alcoholic beverages are served as permitted by law.
28. Retail stores and shops.
29. Second hand store or antique shop, conducted entirely within the building.
30. Landscaping.
31. Signs painting shop, conducted entirely within the building.
32. Signs and billboards as permitted by ordinance and codes of the City of Tacoma.
- 32.5 Skating rinks.
33. Storage building for household goods.
34. Studio, music, art, voice, etc. (excluding motion picture studios).
35. Tavern, any establishment with special space and accommodations for sale by the glass and for consumption on the premises of beer and/or wine.
36. Tire shop, conducted entirely within the building.
37. Tourist court, camp or motel, trailer court.
38. Undertaking establishment.
39. Upholstering shop or interior decorating store.
40. Welfare organizations including nightclubs.
41. Accessory uses and buildings customarily incidental to the above retail stores, shops and businesses and permitting only such incidental processing, manufacturing, assembling or treatment of products as is necessary to prepare retail goods sold only on the premises.
42. Post office agencies, (as defined in City Zoning Ordinance).
43. Miniature golf courses.
44. Veterinary ambulatory, (as defined in Zoning Ordinance).
45. Automatic car washing facilities and self-service car washing facilities, as independent establishments with a special use permit approved by the City Planning Commission.
46. Group Care Home Class I for the care of not more than twenty residents.
47. Group Care Home Class II for the care of not more than eight residents.

'C-3' COMMERCIAL DISTRICT

USE REGULATIONS

Same as 'C-2' Commercial District.

"B" - DOWNTOWN BUSINESS DISTRICTS

USE REGULATIONS

A building, structure or land shall be used and a building or structure hereafter built, altered or enlarged, shall be used for any use permitted in the "C-2" Commercial District and the following permitted uses, provided they are enclosed within a building.

1. Art glass works and ceramics manufacture using only electric kilns and excluding the grinding or preparation of clay.
2. Battery assembling.
3. Cigar, cigarette and tobacco manufacture but excluding the manufacture of chewing tobacco and snuff.
4. Cleaning, dyeing and pressing of clothing and rugs.
5. Cosmetics, drugs, pharmaceutical products, perfume and toiletries manufacture.
6. Electric appliances and equipment assembling, repair and maintenance including the manufacture of small parts and electric signs.
7. Jewelry, precision instruments and optical goods manufacturing, using only electric power and electric furnace.
8. Laboratories (experimental and research).
9. Machine shop, plumbing shop, sheet metal works and the assembling of light machinery, toys and mechanical equipment including painting but excluding the use of heavy and automatic machines such as drop and power hammers, punch presses and screw machines that are offensive by reason of noise and vibration.
10. Manufacture of objects made by the assembling of the following materials that have been prepared elsewhere: bone, cloth, cork, cellophane, feathers, felt, fibre, fur, glass, hair, horn, leather, metal, paper, plastic, straw, stone and rubber.
11. Packaging and distribution of food products, bakery goods, candy and confections but excluding meat, vinegar, sauerkraut and yeast.
12. Poultry and rabbit killing incidental to a retail business conducted on the premises.
13. Rebuilding, repair and maintenance of automobiles, motorcycles and trucks, including painting and upholstery.
14. Skating rink, dance hall, boxing arena, penny arcade, shooting gallery or similar amusement enterprise.
15. Wholesale business.
16. Customary accessory uses and buildings.

"M-1" LIGHT INDUSTRIAL DISTRICT

A building, structure or land shall be used and a building or structure hereafter built, altered or enlarged shall be used for any use permitted in the "B" Business District and the following permitted uses, provided, they also the uses so designated in the "B" Business District regulations shall be enclosed within a building.

1. Assembling, rebuilding, repair and maintenance of automobiles, motorcycles, trucks and farm vehicles including painting and upholstery.
 2. Blacksmith shop.
 3. Bottling Works and Manufacturing of soft drinks and beer.
 4. Canning and Manufacturing of food products, bakery goods, candy confections (excluding meat, fish, vinegar, sauerkraut, yeast and the rendering or preparation of oils and fats).
 5. Livery Stable, auto laundry, tire recapping and vulcanizing establishments.
 6. Mirror works.
 7. Poultry and stock feed manufacturing.
 8. Public services, such as electric power and light substations, radio stations, fire stations, police stations, and telephone exchanges.
 9. Transportation or freight terminal.
 10. Veterinary or pet shop, hospital, kennel, and hatchery.
 11. Warehouse cold storage, frozen food storage, transfer company, grain elevator or commissary business (excluding the storage of volatile substances and explosives).
 12. Wood products manufacturing (excluding planing and lumber mills).
 13. Accessory uses on the same lot.
 14. Agencies engaged in the storage and distribution of stove and fuel oils, other than liquid petroleum gas and natural gas, subject to the City Fire Prevention Ordinance.
- The following uses may occupy yard space other than required front and side yards and such occupied yard space shall be enclosed by a wall or fence of sturdy construction and uniform color, or an evergreen hedge not less than six (6) ft. in height, further provided that such wall or fence shall not be used for advertising purposes, and when adjacent to dwelling districts, the wall fence or evergreen hedge shall be of a sight-obscuring nature.
- (a) Retail lumber yard and building materials yard, (excluding concrete mixing).
 - (b) Retail feed and fuel yard.
 - (c) Contractor's equipment yard.
 - (d) Drying, trucking and automobile freighting yard.
 - (e) Game or fur farm.
 - (f) Small boat yard for the building or repair of boats, not exceeding sixty-five (65) ft. in length.

"M-2" HEAVY INDUSTRIAL DISTRICT

A building, structure, or land shall be used and a building or structure hereafter built, altered or enlarged, shall be used for only the following permitted uses.

1. Any use permitted in the "M-1" Light Industrial District within or outside of a building or fence, provided, however, that all residential uses are prohibited in the "M-2" Heavy Industrial District except necessary quarters for caretakers and watchmen provided a special permit has been approved in accordance with Section 13.06.375, provided further, that group care homes, day care centers and nursery schools are also prohibited from "M-2" Heavy Industrial Districts.
2. Alcohol manufacture or liquor distillery.
3. Asbestos products manufacture.
4. Asphalt manufacture and creosote manufacture and treatment plants.
5. Bag Cleaning.
6. Brick, tile, terra cotta and pottery manufacture.
7. Carborundum and abrasive manufacture.
8. Cloth, cord, rope and thread manufacture.
9. Chemicals manufacture but excluding acid manufacture.
10. Concrete and concrete products manufacture.
11. Coke Ovens.
12. Felt manufacture.
13. Fish curing, smoking and canning.
14. Flour, feed and cereal manufacture.
15. Gutter, pipe, ter and rubber goods manufacture.
16. Iron, steel, brass, copper and other metals, foundry and fabrication (excluding smelter and blast furnaces).
17. Lampblack, paint, varnish, oil and turpentine manufacture.
18. Linoleum and oil cloth manufacture.
19. Meat and food manufacture and processing but excluding the slaughter of animals and rendering of fat.
20. Mining, rock quarry and rock, sand and gravel cleaning, crushing and processing.
21. Railroad repair and classification yard.
22. Rolling mill.
23. Petroleum and petroleum products above ground storage in excess of 1,000 gallons.
24. Plastics manufacture.
25. Salt works.
26. Saw and planing mill.
27. Soap manufacture.
28. Ship yard.
29. Tobacco products manufacture.
30. Wool pulling or scouring.
31. Accessory uses when located on the same lot.

"M-3" HEAVY INDUSTRIAL DISTRICT

A building, structure or land may be used or a building or structure hereafter built, altered or enlarged, may be used for any use other than those uses which are excluded from the City of Tacoma by ordinance.

Provided, however, that all residential uses are prohibited in the "M-3" Heavy Industrial Districts except necessary quarters for caretakers and watchmen. Automobile house trailers and mobile homes are allowed for such caretaker and watchman quarters provided a special permit has been approved in accordance with Section 13.06.375, provided further, that group care homes, day care centers and nursery schools are also prohibited from "M-3" Heavy Industrial Districts. And further provided that yards for the storage or baling of rags, paper, metal and junk and automobile salvage and wrecking yards shall be enclosed within a sight board or masonry fence or similar permanent structure not less than seven feet in height. Such fence shall be neutral in color and shall not be used for advertising purposes. Such enclosure shall not include required front or side yard.

PERMITTED USES AS OF OCTOBER 31, 1974 --- SUBJECT TO REVISION

DISTRICT	USE	HEIGHT		FRONT YARD	SIDE YARD	REAR YARD	LOT AREA PER FAMILY
		Fdet	Stories				
R-1	ONE - FAMILY DWELLINGS Parks, playgrounds, schools, community centers, libraries, churches, agriculture	35	2½	25 ft.	7½ ft.	25 ft.	7500 sq. ft.
R-2	ONE - FAMILY DWELLINGS Uses permitted in "R-1" Districts, Home occupations, colleges, universities	35	2½	20 ft.	7½ ft.	25 ft.	5000 sq. ft.
R-3	TWO & THREE FAMILY DWELLINGS Uses permitted in "R-2" Districts	35	2½	20 ft.	7½ ft.	25 ft.	(1) Family - 5000 sq. ft. (2) Family - 6000 sq. ft. (3) Family - 9000 sq. ft.
R-4-L	MULTIPLE - FAMILY DWELLINGS Uses permitted in "R-3" Districts. Mobile home parks with Special Use Permit on 3½ acre site.	35	2½	20 ft.	7½ ft.	25 ft.	Same as "R-3" Districts. 1500 sq. ft. per unit for apartments.
R-4	MULTIPLE - FAMILY DWELLINGS Uses permitted in "R-3" Districts. Boarding houses, private schools, fraternities, hospitals, institutions.	60	4	15 ft. or to established setbacks	7½ ft.	20 ft.	Same as "R-3" District. 5000 sq. ft. for one-family; 6000 sq. ft. - 2-family; 9000 sq. ft. minimum for apartments.
PRD	PLANNED RESIDENTIAL DEV. Uses permitted in Districts combined with: also townhouses and condominiums.	Same as District combined with.		Contact the City Planning Department for this information.			Same as District combined with except 1500 sq. ft. for R-4 & R-5 PRD.
R-5	MULTIPLE - FAMILY DWELLINGS Uses permitted in "R-4" Districts. Hotels and apartment hotels.	150*		10 ft. or to established setback	7½ ft. for 6 story building plus 1 ft. ea. story over 6	20 ft.	Same as "R-4" District
T	OFFICE AND INSTITUTIONAL Uses permitted in Districts combined with.	Same as District combined with.		Same as District combined with.	T or T-M use combined with R-1 - 20 ft. R-2, R-3 - 15 ft. R-4, R-5 - 10 ft. For Dwellings, same as District combined with.	Same as District combined with.	Same as District combined with.
T-M	MEDICAL CENTER Uses permitted in Districts combined with.	Same as District combined with.		Same as District combined with.		Same as District combined with.	Same as District combined with.
C-F	FREEWAY COMMERCIAL USES On a Freeway Frontage Road. "C-F-V" and "C-F-P"	35		Contact the City Planning Department for this information.			Dwellings not permitted.
C-P	PLANNED SHOPPING CENTERS On limited sized sites - "C-P-N", "C-P-C" and "C-P-R"	CPN - 35 ft. CPC - 45 ft. CPR - 75 ft.		Contact the City Planning Department for this information.			Dwellings not permitted.
C-1	COMMERCIAL Uses permitted in "R-5" Districts; commercial uses necessary to a neighborhood.	45	3	None required except in a dwelling block.	7½ ft. for dwellings and adjacent to dwellings	20 ft.	For dwellings same as "R-3", Two-family dwelling district.
C-2	COMMERCIAL Uses permitted in "C-1" District. Retail stores and shops.	45	3	None required except in a dwelling block.	7½ ft. for dwellings and adjacent to dwellings.	20 ft.	For dwellings same as "R-4" Multiple-family dwelling district.
C-3	COMMERCIAL Uses same as "C-2" Commercial District	150		None required except in a dwelling block.	7½ ft. for dwellings and adjacent to dwellings.	20 ft. interior lots; 15 ft. corner lots.	For dwellings same as "R-5" Multiple-family dwelling district.
B	BUSINESS Uses permitted in "C-2" Commercial District, and certain light industries that are not objectionable.	Height controlled by Floor Area Ratio		None required except for dwellings.	None required except for dwellings.	None required except for dwellings.	For dwellings same as "R-5" Multiple-family dwelling district.
M-1	LIGHT INDUSTRIAL Uses permitted in "C-2" District and industries not objectionable because of smoke, dust, odor, noise.	75	5	None required except in a dwelling block.	7½ ft. for dwellings and adjacent to dwellings	20 ft. interior and 15 ft. corner lots abutting dwellings.	For dwellings same as "R-5" Multiple-family dwelling district.
M-2	HEAVY INDUSTRIAL Uses permitted in "M-1" District. Heavy industries except noxious, very noisy or dangerous industries.	100 ft. at lot lines with setback above.		None required except in a dwelling block.	7½ ft. when abutting dwelling districts.	20 ft. interior and 10 ft. corner lots abutting dwellings.	Dwellings not permitted.
M-3	HEAVY INDUSTRIAL Uses permitted in "M-2" District, and any other use not excluded from Tacoma by other ordinance	100 ft. at lot lines with setback above.		None required except in a dwelling block.	7½ ft. when abutting dwelling districts.	20 ft. interior and 10 ft. corner lots abutting dwellings.	Dwellings not permitted.
R-P	RESEARCH PARK Research and experimental laboratory uses, offices.	35	2½	70 ft. abutting residential zones, otherwise 20 ft. along boundary of district.			Dwellings not permitted.

* R-5 - 200 ft. for a non-profit organization or governmental entity with a conditional use permit approved by the City Planning Commission

