Master Program for Shoreline Development

City of Tacoma, Washington

MASTER PROGRAM
FOR SHORELINE DEVELOPMENT

TACOMA, WASHINGTON

an element of the long-range, comprehensive
Land Use Management Plan of the City of Tacoma

REVISED AND RECOMMENDED
TACOMA SHORELINE MASTER PROGRAM
CITIZENS' ADVISORY COMMITTEE
DECEMBER, 1975

REVISED
TACOMA PLANNING COMMISSION
AUGUST, 1976

ADOPTED TACOMA CITY COUNCIL
DECEMBER, 1976

AMENDED TACOMA CITY COUNCIL
March 25, 1996

ADOPTED WASHINGTON DEPARTMENT OF ECOLOGY
April 17, 1996

"The preparation of this report was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 306 of the Coastal Zone Management Act of 1972."

Background

In 1971, the legislature of the State of Washington created the Shoreline Management Act to regulate development along the State's shorelines.

The Shoreline Management Act of 1971 was based on the philosophy that the shorelines of the State are among the most valuable, and fragile, of its natural resources and that there was great concern throughout the State relating to their utilization, protection, restoration, and preservation. Therefore, coordinated planning was deemed necessary in order to protect the public interest associated with the shorelines of the State, while at the same time recognizing and protecting private property rights consistent with public interest. This planning was to be a rational and concerted effort, jointly performed by federal, state and local government. It was further felt that the interest of all of the people should be paramount in the management of shorelines of state-wide significance, and that the public should have the opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the State.

The expressed purpose of the Shoreline Management Act was to provide for management of Washington's shorelines by planning for and fostering all reasonable and appropriate uses. This policy was directed at enhancement of shorelines rather than restriction of uses.

In accordance with the provisions of the Shoreline Management Act, the City of Tacoma was required to prepare a master program for the regulation of the uses of the shorelines within the City's jurisdiction. This program was required to be developed in accordance with guidelines established by the Department of Ecology and to include substantial citizen input. The Tacoma *Master Program For Shoreline Development* was developed to satisfy these requirements.

The *Master Program* reflects the unique shoreline conditions and development requirements which exist and are projected in the City of Tacoma. It was developed to be general, comprehensive, and long-range in order to be applicable to the entire City shoreline for a reasonable length of time under changing conditions.

The policies, proposals and guidelines are not directed towards any specific site but to all shorelines generally. The program is directed towards all land and water uses, their impact on the environment and logical estimates of future growth. And it recognizes plans and programs of other governmental units, adjacent jurisdictions and private developers. In addition, the *Master Program* was directed 20 to 30 years in the future, looking beyond immediate issues and following creative objectives rather than current trends and conditions.

Plan Concept

The *Master Program For Shoreline Development* outlines local policies concerning the development of the City's shorelines and indicates how these policies relate to the goals of the local citizens and to specific regulations of uses affecting physical development.

The *Master Program* distributes shorelines uses into a pattern of mixed public and private uses, private water-oriented uses, industrial uses, and conservation and park uses. Mixed public and private is described as placing emphasis on public shorelines acquisition, for development of water-oriented parks, open space and recreation facilities, within limits of community desire and financial capability. Private water-oriented uses would be subject to compliance with shorelines development, policies, and design and performance standards.

The General Plan Concept consists basically of reserving the deep water area along Schuster Parkway for possible development of industrial deep water terminals, with mixed public and private uses along Ruston Way, Marine View Drive, the Thea Foss (City) Waterway and from Titlow Beach south to the city limits. The port area is conceived as industrial, Point Defiance as park, and the area from the park through Titlow Beach as conservation.

Policies and Recommendations

To facilitate the development of the shoreline plan concept, more detailed information on various shoreline uses was compiled. As part of the shoreline inventory undertaken in 1972, study area segments were created, each segment being distinguished from the rest by topography, land use, and potential for development.

Present use activities are identified and recommendations made for possible future uses. Special and unique features are considered when appropriate. Designated environments in each shoreline district are identified. General categories of permitted use activities are identified. Height limits for structure improvements are identified. With this detailed background analysis and with the identification of permitted uses, it is intended that each of these areas can be developed to its best potential as part of a related system of shoreline uses.

The shoreline districts and their conceived intents are summarized as follows:

"S-1" SHORELINE DISTRICT - WESTERN SLOPE SOUTH

Intent: To retain the existing character of the area and prohibit development of uses which will have a significant adverse impact on existing housing.

"S-2" SHORELINE DISTRICT - WESTERN SLOPE CENTRAL

Intent: To encourage recreational development within the area; retain the natural beach areas for their educational, scientific and scenic value; and retain the natural steep slopes as a buffer and noise dampener between the railroad and residential areas.

"S-3" SHORELINE DISTRICT - WESTERN SLOPE NORTH

Intent: To generally conserve the entire area in its natural state and which will allow the continuation of the residential community of Salmon Beach as an historic area of the City.

"S-4" SHORELINE DISTRICT - POINT DEFIANCE NATURAL

Intent: To protect the existing natural environment of the area, provide for perpetual utilization for park purposes, and permit the creation and improvement of view areas and trail systems.

"S-5" SHORELINE DISTRICT - POINT DEFIANCE CONSERVATION

Intent: To protect the existing natural environment of the area, provide for perpetual utilization for park purposes, and permit the creation and improvement of view areas and trail systems and allow development of marinas, boat launch facilities and other water-oriented commercial uses.

"S-6" SHORELINE DISTRICT - RUSTON WAY

Intent: To encourage development of a coordinated plan of mixed public and private water-oriented use activities, including commercial, recreational and open space development which will prohibit development of new residential and industrial use activities.

"S-7" SHORELINE DISTRICT - SCHUSTER PARKWAY

Intent: To allow development of deep water terminal and light industrial facilities, but to preserve the character and quality of life in adjoining residential areas, school and park properties.

"S-8" SHORELINE DISTRICT - THEA FOSS WATERWAY

Intent: Improve the environmental quality of Thea Foss Waterway and encourage the reuse and redevelopment of the area for mixed use development, cultural facilities, marinas and related facilities, water-oriented commercial uses, water-oriented public park and public facilities development, and waterborne transportation and to encourage existing industrial and terminal uses to continue their current operations and leases to industrial tenants.

"S-9" SHORELINE DISTRICT - PUYALLUP RIVER

Intent: To permit recreational development of the riverfront while allowing industrial development of adjacent upland areas and to encourage continued preservation of Clear Creek, its associated wetlands, and related ecosystems.

"S-10" SHORELINE DISTRICT - PORT INDUSTRIAL

Intent: To allow the continued development of the Port Industrial Area, with an increase in the intensity of development and a greater emphasis on terminal facilities within the City.

"S-11" SHORELINE DISTRICT - MARINE VIEW DRIVE SOUTH

Intent: To permit the development of water-oriented parks, open space, and recreation facilities and allow development of marinas and related facilities, water-oriented commercial uses, and residential uses.

"S-12" SHORELINE DISTRICT - MARINE VIEW DRIVE NORTH

Intent: To permit the development of water-related parks, open space, and recreation facilities and allow development of marinas and related facilities, water-oriented commercial uses, and residential uses.

"S-13" SHORELINE DISTRICT - COMMENCEMENT BAY AND TACOMA NARROWS

Intent: To maintain these bodies in substantially their natural state for use by the public for navigation, commerce and recreation purposes.

"S-14" SHORELINE DISTRICT - WAPATO LAKE

Intent: To encourage continued preservation of the lake, marsh, wetlands and related ecosystems. To provide for perpetual utilization for park, recreational, and open space uses.

Implementation

In order to implement the goals, policies and intended objectives of the *Master Program for Shoreline Development*, a shoreline management ordinance was developed. This ordinance sets forth fourteen (14) shoreline districts and describes those uses which will be permitted within each district. In addition, it sets forth regulations for the permitted use activities and permit procedures.

Under the provisions of the Shoreline Management Act of 1971, local governments are required to prepare master programs for the regulation of the uses of the shorelines within each local governmental jurisdiction. Such programs must be in accordance with guidelines established by the Department of Ecology. This document is intended to satisfy the master program requirement for the City of Tacoma.

The master program should clearly outline local policies concerning the development of shorelines and indicate how these policies relate to the goals of the local citizens and to specific regulations or uses affecting physical development.

The master program should also reflect the unique shoreline conditions and development requirements which exist and are projected in the area. As part of the process of master program development, local governments can identify problems and seek solutions which best satisfy their needs.

By its definition, a master program is general, comprehensive and long-range in order to be applicable to the whole area for a reasonable length of time under changing conditions. "General" means that the policies, proposals and guidelines are not directed towards any specific site. "Comprehensive" means that the program is directed towards all land and water uses, their impact on the environment and logical estimates of future growth. It also means that the program should recognize plans and programs of other governmental units, adjacent lands, and jurisdictions. The program is intended to be reviewed as necessary to manage changing conditions and knowledge.

"Long-range" means that the program is to be directed at least 20 to 30 years into the future, look beyond immediate issues, and follow creative objectives rather than a simple projection of current trends and conditions.

Each local governmental jurisdiction in the State, under the provisions of the Shoreline Management Act, is responsible for:

1. Administration of a permit system for proposed "substantial development" within 200 feet of designated water bodies.
2. Development of an inventory of natural features and land use patterns along designated water bodies.
3. Preparation of a master program for the regulation of the uses of the shorelines within each local jurisdiction, utilizing inventory information and a citizen advisory committee.

In November 1971, the City of Tacoma, in a letter of intent to the Department of Ecology, committed itself to the completion of the above stated tasks.

As required by the Shoreline Management Act of 1971, the Department of Ecology developed a set of guidelines to serve as standards for implementation of the policy of the Act. These guidelines were written in relatively general terms to be used by all local governments, regardless of size or geographical location. The guidelines have been modified to fit the specific needs of the City of Tacoma and serve as the basic framework for the City's master program.

The City embarked on the development of the *Master Program* in 1973 with the formulation of a Citizens Advisory Committee and detailed staff study of methods of meeting the standards set by the Department of Ecology. It should be noted, however, that while this *Master Program* was being developed, it was being done in conjunction with and with the cooperation of many state and local agencies. Only through a close cooperation among the various agencies and interest groups involved was a workable document achieved that is acceptable to all concerned and serves their best interests.

The *Master Program for Shoreline Development* has been developed to include:

Part I — a Shoreline Plan which includes shoreline management goals, policies, maps, diagrams, charts, inventory, and other descriptive material and text adopted by resolution.

Part II — a Shoreline Ordinance which includes shoreline district designations, use regulations, and permit procedures adopted by ordinance to implement said goals, policies, etc.

The *Master Program for Shoreline Development* is an element of the City's long-range comprehensive *Land Use Management Plan* concerning the development of Tacoma, and is pursuant to the authority conferred by the Washington State Constitution, and Title 13 of the Tacoma City Charter, and specifically General Tacoma City Ordinance No. 20266 which established the *Land Use Management Plan* and elements thereof.

PART I

SHORELINE PLAN

THE LONG-RANGE COMPREHENSIVE LAND USE GOALS AND POLICIES FOR SHORELINE MANAGEMENT

In order to develop a working framework for the analysis of shoreline areas, a basic environmental inventory of all natural aspects must first be established. Pursuant to the guidelines of the Department of Ecology, several methods of categorizing shoreline areas are used herein.

"Shoreline Environments" classifies shorelines into four (4) distinct environments which provide the framework for implementing shoreline policies and regulatory measures.

1. Natural environments - to preserve and restore those shoreline areas existing relatively free of human influence.
2. Conservancy environments - to protect, conserve and manage existing natural resources and valuable historic and cultural areas.
3. Rural environments - to protect agricultural land from urban expansion.
4. Urban environments - to ensure optimum utilization of shorelines within urbanized areas

"Shorelines of Statewide Significance" designates specific shorelines that are of importance to the entire state. "Shorelines of Statewide Significance" in Tacoma are the Puyallup River and its associated wetlands and all marine areas lying seaward from the line of extreme low tide.

"Natural Shoreline Systems" describes the natural geographic systems around which the Shoreline Management Program is designed. These systems include:

1. Puget Sound Waters
2. Puget Sound Beaches
3. The Puyallup River System
4. Wapato Lake and Associated Wetlands

"Biological Systems" describes the characteristic vegetation and animal life occurring within the various shoreline systems. Special emphasis is given to those protected, rare, and endangered species occurring in the area.

Shoreline Environments - Definitions

In order to plan and effectively manage shoreline resources, a system of categorizing shoreline areas has been developed by the Department of Ecology in the preparation of master programs. The system is designed to provide a uniform basis for applying policies and use regulations within distinctively different shoreline areas. To accomplish this, the environmental designation to be given any specific area is to be based on the existing

development pattern, the bio-physical capabilities and limitations of the shoreline being considered for development and the goals and aspirations of local citizenry.

The recommended system of the Department of Ecology, State of Washington Final Guidelines Shorelines Management Act of 1971 classifies shorelines into four distinct environments:

1. Natural Environment

The natural environment is intended to preserve and restore those natural resource systems existing relatively free of human influence. Local policies to achieve this objective should aim to regulate all potential developments degrading or changing the natural characteristics which make these areas unique and valuable.

The main emphasis of regulation in these areas should be on natural systems and resources which require severe restrictions of intensities and types of uses to maintain them in a natural state. Therefore, activities which may degrade the actual or potential value of this environment should be strictly regulated. Any activity which would bring about a change in the existing situation would be desirable only if such a change would contribute to the preservation of the existing character.

The primary determinant for designating an area as a natural environment is the actual presence of some unique natural or cultural features considered valuable in their natural or original condition which are relatively intolerant of intensive human use. Such features should be defined, identified and quantified in the shoreline inventory. The relative value of the resources is to be based on local citizen opinion and the needs and desires of other people in the rest of the State.

2. Conservancy Environment

The objective in designating a conservancy environment is to protect, conserve and manage existing natural resources and valuable historic and cultural areas in order to ensure a continuous flow of recreational benefits to the public and to achieve sustained resource utilization.

The conservancy environment is for those areas which are intended to maintain their existing character. The preferred uses are those which are non consumptive of the physical and biological resources of the area.

Non consumptive uses are those uses which can utilize resources on a sustained yield basis while minimally reducing opportunities for other future uses of the resources in the area. Activities and uses of a non permanent nature which do not substantially degrade the existing character of an area are appropriate uses for a conservancy environment. Examples of uses that might be predominant in a conservancy environment include diffuse outdoor recreation activities, timber harvesting on a sustained yield basis, passive agricultural uses such as pasture and range lands, and other related uses and activities.

The designation of conservancy environments should seek to satisfy the needs of the community as to the present and future location of recreational areas proximate to concentrations of population, either existing or projected. For example, a conservancy environment designation can be used to complement City, County or State plans to legally acquire public access to the water.

The conservancy environment would also be the most suitable designation for those areas which present too severe biophysical limitations to be designated as rural or urban environments. Such limitations would include areas of steep slopes presenting erosion and slide hazards, areas prone to flooding, and areas which cannot provide adequate water supply or sewage disposal.

3. Rural Environment

The rural environment is intended to protect agricultural land from urban expansion, restrict intensive development along undeveloped shorelines, function as a buffer between urban areas, and maintain open spaces and opportunities for recreational uses compatible with agricultural activities.

The rural environment is intended for those areas characterized by intensive agricultural and recreational uses and those areas having a high capability to support active agricultural practices and intensive recreational development. Hence, those areas that are already used for agricultural purposes, or which have agricultural potential should be maintained for present and future agricultural needs. Designation of rural environments should also seek to alleviate pressures of urban expansion on prime farming areas.

New developments in a rural environment are to reflect the character of the surrounding area by limiting residential density, providing permanent open space and by maintaining adequate building setbacks from the water to prevent shoreline resources from being destroyed for other rural types of uses.

Public recreation facilities for public use which can be located and designed to minimize conflicts with agricultural activities are recommended for the rural environment. Linear water access which will prevent overcrowding in any one area, trail systems for safe non-motorized traffic along scenic corridors and provisions for recreational viewing of water areas illustrate some of the ways to ensure maximum enjoyment of recreational opportunities along shorelines without conflicting with agricultural uses. In a similar fashion, agricultural activities should be conducted in a manner which will enhance the opportunities for shoreline recreation. Farm management practices which prevent erosion and subsequent siltation of water bodies and minimize the flow of waste material into water courses are to be encouraged by the master program for rural environments.

4. Urban Environment

The 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 urban environment is an area of high-intensity land-use including residential, commercial, and industrial development. The environment does not necessarily include all shorelines within an incorporated city, but is particularly suitable to those areas presently subjected to extremely intensive use pressures, as well as areas planned to accommodate urban expansion. Shorelines planned for future urban expansion should present few biophysical limitations for urban activities and not have a high priority for designation as an alternative environment.

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.

In the master program, priority is also to be given to planning for public visual and physical access to water in the urban environment. Identifying needs and planning for the acquisition of urban land for permanent public access to the water in the urban environment should be accomplished in the master program. To enhance the waterfront and ensure maximum public use, industrial and commercial facilities should be designed to permit pedestrian waterfront activities. Where practical, various access points ought to be linked to non-motorized transportation routes, such as bicycle and hiking paths.

The classification of shoreline environments for Tacoma's shorelines is designated as shown on the following map. The criteria used in the designations are described below.

Shoreline Environments - Area Designations

South 19th Street to 6th Avenue extended

The shoreline area from South 19th Street to the southern extent of Titlow Park (6th Avenue extended) is designated as "urban." This area includes two marinas, residences, and various small commercial sites.

Western Slope

The area from the southern extent of Titlow Park to the northern end of Salmon Beach is designated a "conservancy" environment. This area is unusually rich in aquatic and shoreline wildlife resources. Railroad tracks occupy nearly the entire length of the area at the water's edge. There is a small residential community at Salmon Beach. The ~~con~~siderable area of steep slopes should be maintained in vegetative cover for erosion control and protection of shoreline areas and for protection of the wide variety of wildlife species that occur throughout the area.

Point Defiance

The area of Point Defiance Park from the northern edge of the Salmon Beach community around Point Defiance to the northern limit of beach fill at Owen Beach as it appeared on January 15, 1974 (the date of adoption of the *Tacoma Master Program*) is designated a "natural" environment. The area is beach and steep bluffs and without substantial permanent man-made encroachments. The soil type of the bluffs is of a rather unstable nature and is best suited to limited or no development.

It is the intent of the natural designation to preserve the natural biophysical functions of the shoreline. The natural forces of wind, rain and ocean waves, tides, and currents will continue their gradual effects on the Point Defiance area and it is desirable that these effects continue to produce the slopes and beaches which are unique to the Point. This shoreline is especially valuable as a natural environment because of its close proximity to highly urbanized areas.

Point Defiance Park

The remaining areas of Owen Beach and Point Defiance Park are designated as "conservancy" because of their public- oriented recreational nature. This area contains a public beach, boathouse, restaurant and shops, a public ferry landing and yacht club.

Ruston Way

The Ruston Way shoreline from the southern town limits of Ruston to the southern limit of the public ownership is designated an "urban" environment. A combination of public and private ownerships, the area is in close proximity to existing urban uses and is served by the existing street system.

Schuster Parkway

This area, from the southern limit of the public ownership to the mouth of the Thea Foss Waterway is designated an "urban" environment. It is in close proximity to existing urban development and has potential to maintain and expand its deep draft shipping facilities.

Thea Foss Waterway

The Thea Foss Waterway is a unique urban waterway with existing commercial and water-related uses adjacent to an intensely developed business area. The potential for people-oriented, water-oriented development is great. This area is designated as "urban."

Port Industrial

The Port of Tacoma occupies the reclaimed delta of the Puyallup River and is designated as "urban." This is the most heavily industrialized area of Tacoma's shorelands and is the area best suited to meeting Tacoma's future water-dependent commercial and industrial needs.

Puyallup River

The Puyallup River within the City of Tacoma has been diked as part of a United States Army Corps of Engineers flood control project. The "urban" designation was chosen because of the river's close proximity to Port Industrial activities and adjacent developed uses. Recreational access is encouraged for the Puyallup River shoreline areas.

Marine View Drive

The shoreline area from the mouth of the Hylebos Waterway north to the northeast City limits is designated as "urban." The area is presently developed with shoreline residences, some commercial uses, and log storage.

Wapato Lake

The shorelines of Wapato Lake are designated as "conservancy." The Metropolitan Park District owns the majority of the lakefront and it is desired that such recreational use of the lake continue.

Shorelines of Statewide Significance

The Shoreline Management Act of 1971 designated certain shorelines as "Shorelines of Statewide Significance," and further established that local master programs shall give preference to uses and development of such shorelines which will be of long-range statewide benefit.

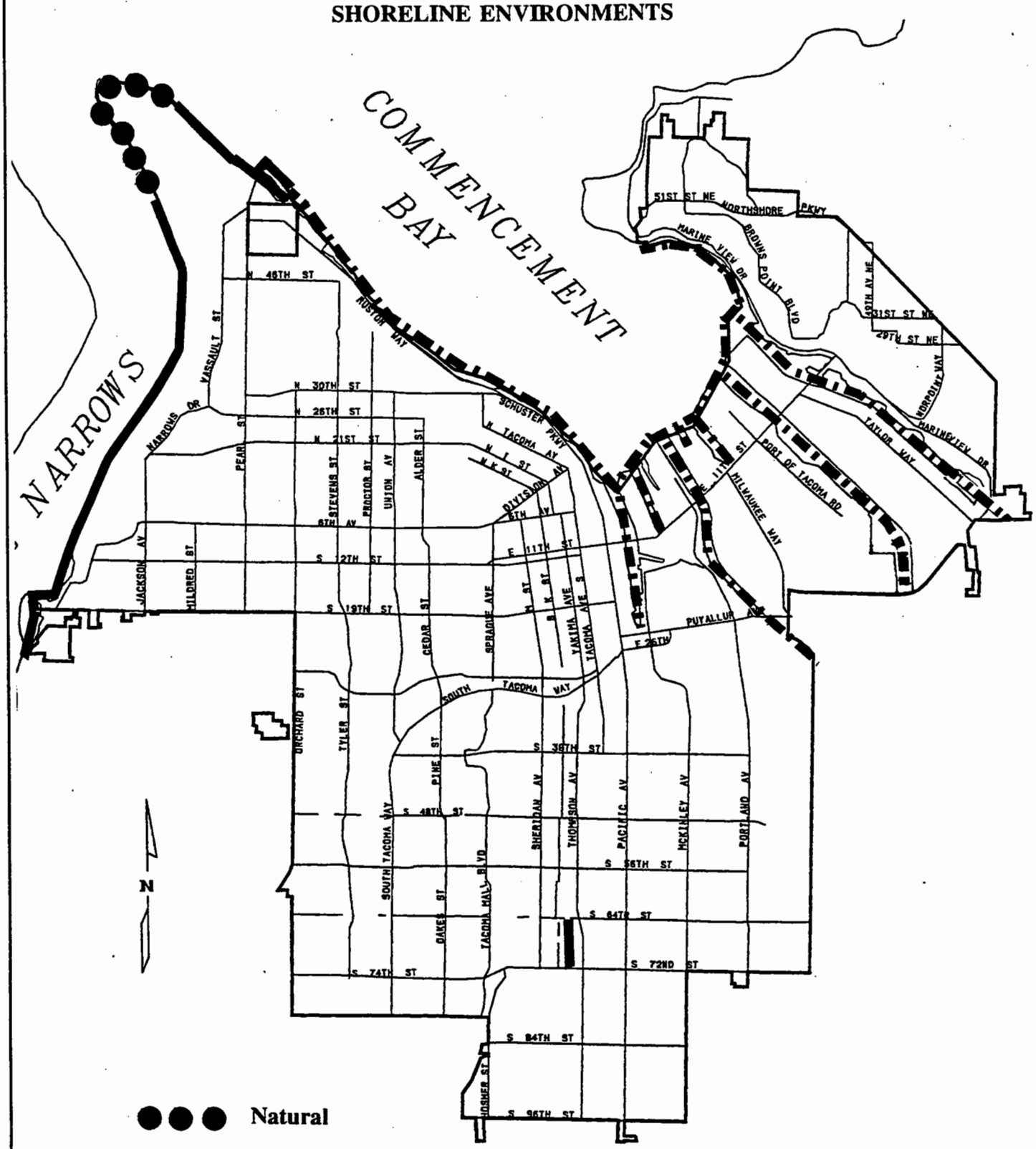
Those shorelines of the City of Tacoma which have been defined by the Department of Ecology as "Shorelines of Statewide Significance" include that portion of the Puyallup River which passes through the city and associated wetlands.

It is particularly noted; however, that the original natural character of the Puyallup River no longer exists because it has been diked and channeled in an artificial course. This channelization was part of a United States Army Corps of Engineers flood control project completed in 1950.

As a result of this channelization, the original natural function of the Puyallup River estuary was substantially altered. And as a result of dredge and fill operations over an extended period, the delta has now developed into a major port industrial area within the region. Because of the existing scale of man-made development in the Puyallup estuary, it is readily acknowledged that the original natural character of the river will not be restored.

Because the Puyallup River within the City of Tacoma has been diked, the Shorelines of Statewide Significance area includes the shoreline area on both sides of the river landward 200 feet of the ordinary high water mark. Where dikes are located beyond 200 feet of the ordinary high water mark, the shorelands will be that area lying between the apex of the dike and ordinary high water mark.

SHORELINE ENVIRONMENTS



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The only other Shorelines of Statewide Significance within the City of Tacoma are:

"Those areas of Puget Sound ... lying seaward from the line of extreme low tide."

In some waterways, where extensive bulkheading has taken place, the line of extreme low tide may only mean a difference in water depth within the channel. In these situations, the Shoreline of Statewide Significance is taken from the water line at extreme low tide seaward.

The City of Tacoma, in planning for the use and development of Shorelines of Statewide Significance, within the regulations of the U. S. Army Corps of Engineers and the State Department of Natural Resources, adheres to the following principles and guidelines which are in accordance with the Shoreline Management Act.

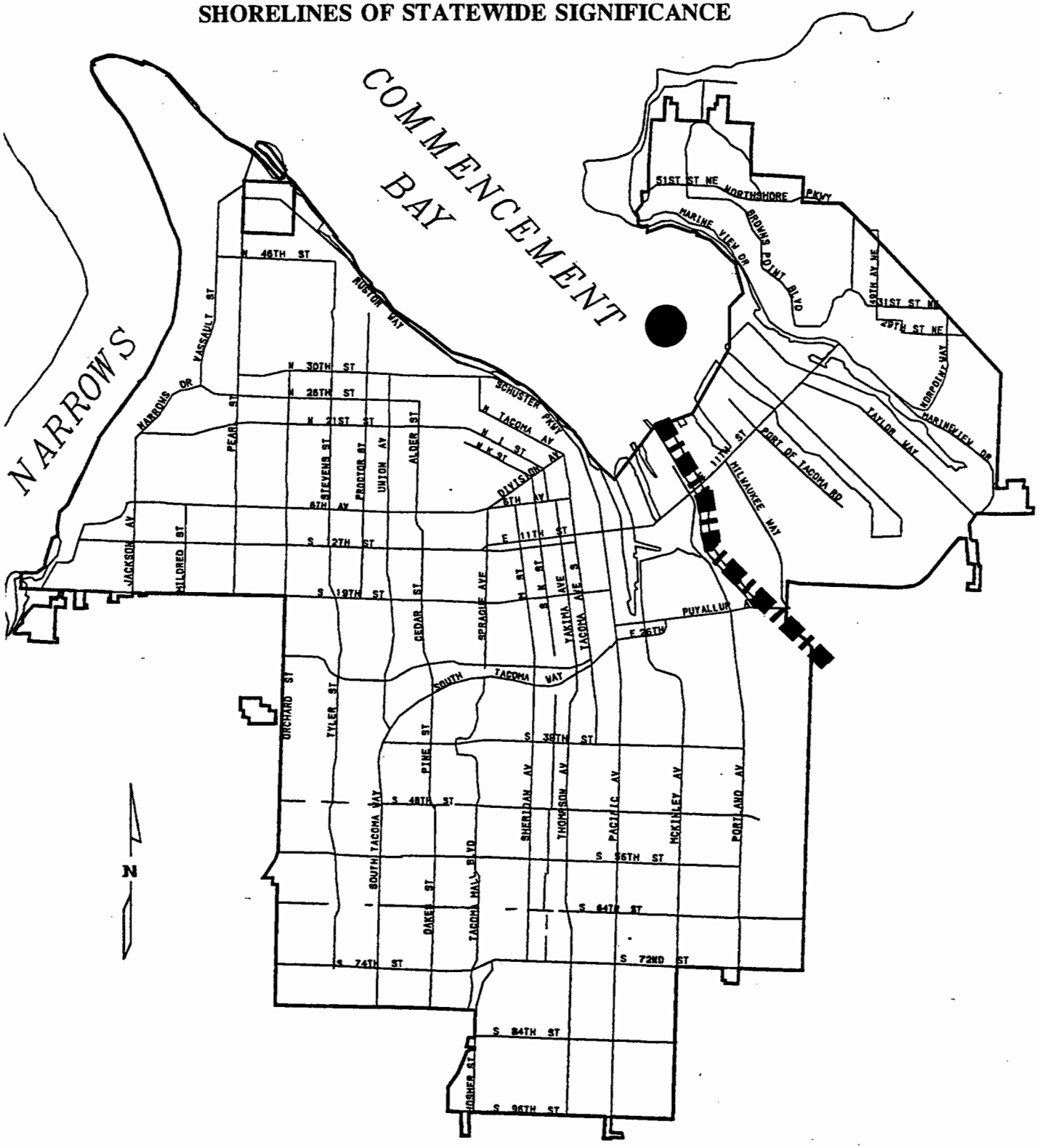
- Recognize and protect the state-wide interest over local interest after considering the interests of (1) the general public, (2) state-wide interest groups, (3) appropriate state agencies, and (4) through utilization of expertise from scientific fields pertinent to shoreline management.

- 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 undeveloped 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 state-wide significance, by evaluating the short term economic gains or convenience of developments in relationship to long term and potentially costly impairments to the natural environment, and by actively promoting aesthetic considerations when contemplating new development, redevelopment of existing facilities or for the general improvement 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.

SHORELINES OF STATEWIDE SIGNIFICANCE



Shorelines of Statewide Significance

Puyallup River

Those areas of Puget Sound and within man-made waterways in Commencement Bay lying seaward from the line of extreme low tide.

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- 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 non-motorized vehicles, developing upland parking, and by locating new major development inland from the ordinary high water mark so that public access is improved.

- Increase recreational opportunities for the public on the shorelines by planning for and encouraging and implementing development of facilities for water-oriented recreational use.

Natural Shoreline Systems

This section contains brief and general descriptions of the natural geographic systems which form the shoreline environment of Tacoma. The intent of the section is to define those natural systems to which the Shoreline Management Act applies, to highlight some of the features of those systems which are susceptible to damage from human activity, and to provide a basis for the guidelines pertaining to human-use activities.

1. Puget Sound Waters

Puget Sound is a complex of interconnected inlets, bays, and channels with tidal sea water entering from the west and freshwater streams entering at many points throughout the system. Most of what is known as Puget Sound was formed by glacial action that terminated near Tenino in Thurston County. In the Puget Sound region, three huge glaciers converged on the Sound; one came from the Olympic mountains, the second and a larger one gathered along the base of the Cascades and the third and largest one flowed south from between Vancouver Island and the mainland of British Columbia. The results as we know them now are incomparable harbors of great water depths.

The entire system, of which Puget Sound is actually a small portion, also includes the Strait of Georgia and the Strait of Juan de Fuca. The large complex may be divided into nine oceanographic areas which are interrelated: Strait of Juan de Fuca, Admiralty Inlet, Puget Sound Basin, Southern Puget Sound, Hood Canal, Possession Sound, Bellingham Bay, San Juan Archipelago, and Georgia Strait.

Puget Sound waters are rich in nutrients and support a wide variety of marine fish and shellfish species. An estimated 2,820 miles of stream are utilized by anadromous fish for spawning and rearing throughout the area. Some of these fish are chinook, coho, sockeye, pink and chum salmon, steelhead, sea-run cutthroat and Dolly Varden trout. All these fish spend a portion of their lives in the saltwaters of Puget Sound and the Pacific Ocean before returning to streams of origin to spawn. The juveniles of these fish spend varying amounts of time in the shore waters of the area before moving to sea to grow to maturity.

Hylebos Creek and the Puyallup River both enter Puget Sound within the City of Tacoma, with the Puyallup River supporting a substantial fish run and Hylebos Creek a lesser but important run. Any change or development occurring in these areas must consider the potential of these waterways for developing or supporting fish runs.

The Narrows is another important element of the Puget Sound System. It provides the only link between the Central and Southern Sound Areas and the extreme narrowness and steep topography of the passage accentuates the need for careful planning and development in this area.

2. Puget Sound Beaches

Beaches are relatively level land areas which are contiguous with the sea and are directly affected by the sea even to the point of origination. The most common types of beaches in Washington marine waters are:

a. Sandy Beaches

Waves, wind, tide and geological material are the principal factors involved in the formation of beaches. The beach material can usually be traced to one of four possible sources: the cliffs behind the beach; from the land via rivers, offshore wind, and finally from longshore drifting of material. Longshore drifting material must have been derived initially from the first three sources. Most beach material in Puget Sound is eroded from the adjacent bluffs composed of glacial till.

The effect of wave action on the movement and deposition of beach material varies depending upon the size of the material. Hence, in most cases, beaches composed of different sized material are usually characterized by different slopes and profiles. The entire process of beach formation is a dynamic process resulting from the effect of wave action on material transport and deposition. Initially, wave action will establish currents which transport and deposit material in various patterns. However, once a particular beach form and profile is established, it begins to modify the effect of waves thus altering the initial patterns of material transport and deposition. Hence, in building beach structures such as groins, bulkheads or jetties, it is particularly important to recognize that subsequent changes in wave and current patterns will result in a series of changes in beach formation over time.

In the process of beach formation, sand particles are transported up the beach by breaking waves that wash onto the beach in a diagonal direction and retreat in a vertical direction. At the same time, longshore currents are created in the submerged intertidal area by the force of diagonally approaching waves. Beach material suspended by the force of the breaking waves is transported in one direction or another by the longshore current. Longshore drifting of material often results in the net transportation of beach material in one direction causing the loss of material in some areas and gains in others.

The profile of a beach at any time will be determined by the wave conditions during the preceding period. Severe storms will erode or scour much material away from the beaches due to the force of retreating waves. During calm weather, however, the waves will constructively move material back onto the beach. This destructive and constructive action, called cut and fill, is evidenced by the presence of beach ridges or berms. New ridges are built up in front of those that survive storm conditions as sand is supplied to the beach in succeeding phases of calmer weather. In time, the more stable landward ridges are colonized by successional stages of vegetation. The vegetation stabilizes the ridges, protects them from erosion and promotes the development of soil.

b. Rocky Beaches

Rocky beaches, composed of cobbles, boulders and/or exposed bedrock are usually steeper and more stable than sandy shores. Coarse material is very permeable which allows attacking waves to sink into the beach causing the backwash to be reduced correspondingly. On sandy shores a strong backwash distributes sand more evenly, thus creating a flatter slope.

On rocky shores a zonal pattern in the distribution of plants and animals is more evident than on muddy or sandy shores. The upper beach zone is frequently very dry, limiting inhabitants to species which can tolerate a dry environment. The intertidal zone is a narrow area between mean low tide and mean high tide that experiences uninterrupted covering and uncovering by tidal action. One of the major characteristics of this zone is the occurrence of tidal pools which harbor separate communities which can be considered subzones within the intertidal zone. The subtidal zone is characterized by less stressful tidal influences but is subject to the forces of waves and currents which affect the distribution and kinds of organisms in this zone.

c. Muddy Shores

Muddy shores occur where the energy of coastal currents and wave action is minimal, allowing fine particles of silt to settle to the bottom. The result is an accumulation of mud on the shores of protected bays and mouths of coastal streams and rivers. Most muddy beaches occur in estuarine areas. However, some muddy shore areas may be found in coastal inlets and embayments where salinity is about the same as the adjacent sea.

Few plants have adapted to living on muddy shores. Their growth is restricted by turbidity which reduces light penetration into the water and thereby inhibits photosynthesis. In addition, the lack of solid structures to which algae may attach itself and siltation which smothers plants effectively prevents much plant colonization of muddy shores. While the lack of oxygen in mud makes life for fauna in muddy shores difficult, the abundance of food as organic detritus provides nutrition for a large number of detritus feeders.

d. Spits and Bars

Spits and bars are natural formations composed of sand and gravel and shaped by wind and water currents and littoral drifting. Generally a spit is formed from a headland beach (tall cliff with a curved beach at the foot) and extends out into the water (hooks are simply hook shaped spits). While spits usually have one end free in open water, bars generally are attached to land at both ends. These natural forms enclose an area which is protected from wave action, allowing life forms such as shellfish, to reproduce and live protected from the violence of the open coast.

The shoreline resources of Puget Sound include few beach areas which are not covered at high tide. Bluffs ranging from 10 to 500 feet in height rim nearly the entire extent of the Sound making access to beach and intertidal areas difficult. Because of the glacial-till composition of these bluffs, they are susceptible to fluvial and marine erosion and present constant slide hazards. Although Puget Sound is protected from the direct influence of Pacific Ocean weather, storm conditions can create very turbulent and sometimes destructive wave action. Without recognizing the tremendous energy contained in storm waves, improper development of shoreline resources can be hazardous and deleterious to the resource characteristics which make Puget Sound beaches attractive.

3. Wetlands and Aquatic Resources

Wetlands are among the most valuable natural resources in the City. Types of wetlands include ponds, wet meadows, forests, shrub and scrub wetlands, shallow or deep marshes, bogs and swamps. These types of wetlands are characterized by having a water table very close to the surface of the ground that supports a prevalence of vegetation adapted to saturated soils. They were formerly shallow water areas that gradually filled through nature's processes of sedimentation (often accelerated by man's activities) and the decay of shallow water vegetation.

Although once considered wastelands by many, these wet areas play a vital role in our citizenry's health, safety, and well-being. In addition, many species of both animal and plant life depend on this wet environment for their existence. For instance, many species of birds and waterfowl choose these locations for nesting places. They serve as important feeding, nesting, and resting sites for a variety of wildlife. Wetlands also help to purify surface water and recharge ground water supplies. Finally, wetlands serve an important natural erosion and flood control function.

A high-water table and the presence of organic soils in these areas result in poor foundation support which makes development difficult. These wet areas have value as open space although unlimited public access into them may cause damage to the fragile plant and animal life residing there. Because of their important functions and difficulty in development, wetlands can be utilized as green space and recreational areas.

The following are local habitat types:

a. Isolated Ponds

A number of isolated ponds are scattered throughout the City and Tacoma Port Industrial area. They are generally shallow; although designated as open water at the time of investigation, many may go dry by later summer. Rainfall and local runoff are the only source of water for these sites. Substrate may vary, but it often consists of dredged material or "hog fuel" (wood waste). Isolated ponds often serve as catch basins and may be highly polluted from upland runoff associated with urban and industrial activities.

b. Ponds

In addition to the isolated ponds, there are other ponds with a regular input of fresh water. They may be large drainage ditches, or portions of a small stream where flow velocities are extremely low. The stream supplying these areas may be intermittent during certain times of the year. These habitat types are frequently characterized by open water surrounded by cattails, marsh grasses, and other vegetation.

c. Intertidal Flats

These flat areas are generally located above mean lower low water (MLLW). They are found only in protected low energy locations. The substrate is usually mud or sand and may support extensive algae populations in some areas; benthic invertebrates dominate the community.

d. Salt Marsh (High)

This community is characterized by a mixture of pickleweed (Salicornia pacifica) and saltgrass (Distichlis spicata), with occasional scattered areas of jaumea (Jaumea carnosa) and baltic rush (Juncus balticus). The upper reaches of the community may contain some bulrushes (Scirpus spp.) or sedge (Carex sp.), especially in areas with upland runoff. Salt marshes are generally inundated about once a day.

e. Salt Marsh (Low)

At lower elevations, this salt marsh community is dominated by arrowgrass (Triglochin maritimum), although saltgrass and pickleweed may be present in small amounts. The arrowgrass marsh is generally dense at high elevations in the community but sparse in the lower reaches. The community is probably inundated twice a day.

f. Salt Marsh (Mixed)

This includes both high and low salt marsh vegetation.

g. Cattail Marsh

Cattails may be the best known of the freshwater wetland plants. They are common in drainage ditches, adjacent to or interspersed within ponds and elsewhere where water levels remain at between 6 inches and 2 feet through much of the year. Cattail stands tend to be monotypic with few, if any other, species present.

h. Redtop/Rush Marsh

Redtop (Agrostis alba) and soft rush (Juncus effusus) are the dominant species here. Spike rush (eleocharis palustris) may also be common. Although the area is only wet for a portion of the year, that time is evidently sufficient to preclude the weedy upland grasses which are prevalent in adjacent areas.

i. Mixed Seasonal Marsh

The seasonal marsh contains a mixed community of redtop and saltgrass. Large patches of baltic rush and clumps of soft rush are widely scattered. Small patches of stunted sedge may also be found. Velvet grass (Holcus lanatus), dandelions, and the delicate orchid, ladies tresses (Spiranthes romanzoffiana) may be sparsely distributed. These sites are seasonally wet and notably inundated with runoff throughout the winter and spring.

j. Seasonal Pond/Spike Rush Marsh

This wetland type occurs in low-lying, central portions of mixed seasonal marshes. In winter and spring, rainfall and storm water runoff fill these low spots, creating an isolated open-water pond habitat. By mid- to late summer, surface water evaporates, the water table drops, ponds dry up, and mudflats are exposed. Where a salty crust or filamentous algae mat is present to slow evaporation of subsurface water, the small spike rush (Eleocharis parvula) and common spike rush may invade the area, encroaching from the edge of the pond. In the lowest spots, deep polygonal cracking may become a key feature as drying occurs.

k. Swamp

Wetlands which are dominated by woody vegetation are referred to as swamps. Although surface water and/or saturated soils may be present during portions of the winter and early spring, swamps can become quite dry in the summer months. The shrub, spiraea (Spiraea douglasii), dominates the small, isolated swamps within the Tacoma Port Industrial area.

4. The Puyallup River System

Generally, rivers, streams and creeks can be defined as surface-water runoff flowing in a natural or modified channel. Runoff results either from excessive precipitation which cannot infiltrate the soil, or from groundwater where the water table intersects the surface of the

ground. Drawn by gravity to progressively lower levels and eventually to the sea, the surface runoff organizes into a system of channels which drain a particular geographic area.

The drainage system serves as a transportation network for nature's leveling process, selectively eroding materials from the higher altitudes and transporting the materials to lower elevations where they are deposited. A portion of these materials eventually reaches the sea where they may form beaches, dunes or spits.

Typically, a river exhibits several distinct stages as it flows from the headwaters to the mouth. In the upper reaches where the gradient is steepest, the hydraulic action of the flowing water results in a net erosion of the stream bed and a V-shaped cross section, with the stream occupying all or most of the valley floor.

Proceeding downstream, the gradient decreases and the valley walls become gentler in slope. A point is eventually reached where erosion and deposition equalize and the action of the stream changes from vertical cutting to lateral meandering. As the lateral movement continues, a flood plain is formed, over which the river meanders and upon which materials are deposited during floods. Finally, when the river enters a body of standing water, the remaining sediment load is deposited.

Extensive human use is made of rivers, including transportation, recreation, waste and sewage dumping and for drinking water. Rivers are dammed for the production of electric power, diked for flood control and withdrawn for the irrigation of crops. Many of these activities directly affect the natural hydraulic functioning of the streams and rivers as well as the biology of the water courses. These effects are especially important on watercourses supporting or having the potential for anadromous fish runs. Within Tacoma, in the case of the Puyallup River, and Hylebos and Wapato Creeks, fish runs are present and are an important consideration in future developments.

A flood plain is a shoreland area which has been or is subject to flooding - a natural corridor for water which has accumulated from snow melt or from heavy rainfall in a short period. Flood plains are usually flat areas with rich soil, having been formed by deposits from flood waters. As such, they are attractive places for development until the next flood.

In the case of the Puyallup River within Tacoma the plain has been "flood proofed" by the building of levees along the river, with provisions for large amounts of water that will sooner or later be generated by weather conditions. This channelization tends to destroy the vital and fragile flood plain shoreline habitats and increase the velocity of waters in times of extreme flow.

The Puyallup River flood plain within the City has long been committed to industrial development and the threat of flooding virtually eliminated. But development of the area is still affected by the high water table which still occurs throughout.

An estuary is that portion of a coastal stream influenced by the tide of the marine waters into which it flows and within which the sea water is measurably diluted with freshwater derived from land drainage.

Estuaries are zones of ecological transition between fresh and saltwater. The coastal brackish water areas are rich in aquatic life, some species of which are important food organisms for anadromous fish species which use these areas for feeding, rearing and migration.

The Puyallup River estuary has been radically changed over the years as the site of the Port of Tacoma's principal development. Little of the original Puyallup River delta remains, having been filled and dredged.

In spite of this past action, the estuary should still be given careful attention in the planning process. Any plans for development which could reduce the area of the estuary or interfere with water flow should be carefully studied. And equally important are those upstream projects which could deplete the freshwater supply of the estuary.

5. Wapato Lake and Associated Wetlands

A lake can be defined broadly as a body of standing water located inland. The present configuration of surface water in the Tacoma area is largely a result of past glacial action. The various lakes in the area fill depressions gouged by the glaciers.

A lake, like its inhabitants, has a life span. This lifetime may be thousands of years for a large lake or just a few years for a pond. This process of a lake aging is known generally as eutrophication. It is a natural process which is usually accelerated by man's activities. Human sewage, industrial waste, and the drainage from agricultural lands increases the nutrients in a lake which in turn increases the growth of algae and other plants. As plants die, the chemical process of the decomposition depletes the water's supply of oxygen necessary for fish and other animal life. These life forms then disappear from the lake, and the lake becomes a marsh or swamp.

Shallow lakes are extremely susceptible to increases in the rate of eutrophication resulting from discharges of waste and nutrient-laden runoff waters. Temperature stratification does not normally occur in shallow lakes. Efficient bottom-to-surface circulation of water in these shallow lakes moves nutrients to the surface photosynthetic zone encouraging increased biotic productivity. Large quantities of organic matter are produced under these conditions. Upon decomposition, heavy demands are made on the dissolved oxygen content of shallow lakes. Eventually, the oxygen level drops and some fish and other life forms die.

The entire ecosystem of a lake can be altered by man. By removing the surrounding forest for lumber or to provide a building site or farm land, erosion into the lake is accelerated. Fertilizers, whether agricultural or those used by homeowners, can enter the lake either from runoff or leaching along with other chemicals that interfere with the intricate balance of

living organisms. The construction of bulkheads to control erosion and filling behind them to enlarge individual properties can rob small fish and amphibians of their habitats. The indiscriminate construction of docks, boathouses, and other facilities can deprive all of the waterfront owners and the general public of a serene natural view and reduce the lake's surface.

Wapato Lake is a relatively small urban lake which is included as a part of the City's park system. Presently, approximately 75% of the lake's shoreline is in public ownership and preserved as park land. The remainder is developed as single family residential. Because of its small size and proximity to heavily populated urban areas and Interstate 5, the lake is extremely susceptible to the rapid technological changes in the surrounding environment.

There is a marsh associated with Wapato Lake and the relationship of these ecosystems is an important consideration.

Care should be taken to preserve and restore the marsh. It is a nesting area for songbirds and waterfowl and together with the lake itself is a popular location for birding. It is important that the marsh should not be used for landfill or dumping of any nature.

Biological Systems

This section outlines generally, by ecological and use categories, the nature of the vegetation and animal life occurring within the designated shoreline sectors and its historical pattern of development. Attention is given to rare and endangered species, those of special biological interest, and those groups of importance to sportsman, fishermen, divers, trappers, nature lovers and photographers. Floral characteristics of the major habitats: terrestrial, freshwater, and marine are indicated. Comment is made concerning some effects of human activity on upland, shoreland, and water areas. The overriding importance of photosynthetic plants in supplying the energy requirements of all animal communities is suggested as of paramount importance and as being useful as a tool in their future management.

1. General Patterns

In general, the Tacoma shorelands have been greatly affected by human activity. Consequently native plant cover and its dependent wildlife species have been severely reduced and restricted to rather small, often steep sloped or marshy areas. Because of steepness or unstable soil or water conditions, such relic areas are generally difficult and expensive to use for building purposes but lend themselves well to open space, greenbelt, and wildlife preservation. Their relatively small area and lineal configuration, however, limit the type and amount of vegetation and wildlife able to persist there. Consequently what is found in these areas is a complex of native and invasive species of plants and animals able to stand exposure and competition, and of limited territorial requirements. Resident animals include mountain beaver, Douglas squirrel, chipmunk, flying squirrel, raccoon, weasel, fox, skunk, feral cats, small rodents, and insectivores, garter snakes and lizards, tree and wood frogs, newts and salamanders, and such birds as band-tailed pigeons,

quail, song sparrows, wrens, crows, chickadees, kinglets, nuthatches, woodpeckers and kingfishers, small owls and occasional larger species, the composition varying with the site.

Plant life is dominated by evergreen and broadleaf trees with an understory and ground cover of broadleaf shrubs, vines, herbs and grasses. Fern, moss, fungus and lichen species are prevalent, and in open and marshy areas cattails and horsetails, sedges, and rushes prevail. Locally such furbearers as the native snowshoe and introduced cottontail rabbits, muskrat, mink, and otter still occur.

Around Point Defiance these steep slopes are backed by a considerable extent of mature upland forest approximating original conditions and providing range requirements for such larger species as deer, pileated woodpecker, great blue heron, eagles and hawks, and the numerous large gulches tributary to the waterfront at the many places often still support the western gray squirrel, here at the northernmost extent of its coast wide range. These slopes also provide habitat for cliff nesters such as pigeon guillemot, kingfishers, and rough-winged swallows. Coyote and porcupine are sparsely invasive at many places throughout the area. Along the beachline such water birds as the glaucous-winged gull, belted kingfisher, and great blue heron are resident, and migrants such as sandpipers, many divers, and waterfowl feed and rest. Offshore large numbers of marine diving birds and several marine mammals occur in season.

2. Aquatic Vegetation

Aquatic vegetation of great life-support value includes a wide variety of submerged, emergent, and marginal communities. Among these are freshwater and marine types and a considerable number of intermediate preference, and each is supportive of distinct but ecologically interwoven animal food-chains or energy pyramids, many terminating with man as the ultimate predator. Included are the following:

a. Phytoplankton

The passively floating, most microscopic plant life of the sound, lakes and ponds, and to a lesser extent of tributary streams. This is a complex of prime trophic importance, ranging widely in species composition and abundance and in its effectiveness as a source of food and oxygen. Abundance and composition vary according to such variables as illumination, water clarity, temperature, competitive effects, and concentration of nutrient salts, pollutants and toxins. Encouragement of optimum conditions in any plankton flora is one of the best tools available to aquatic management, and research in this field is a continuing need.

b. Holdfasted and Rooted Marine Vegetation

Extensive beds of seaweeds (algae) including the giant kelps, and eel-grass (Zostera--a seed plant), are found variously throughout intertidal and subtidal waters bordering the Tacoma shoreline. Densities and variety of species are greatest over rock bottoms in water of maximum salt content and clarity, and in depths of ten fathoms

or less. Significant detrital quantities from these beds are found much deeper, playing a substantial role as a food source even at 100 fathoms. A great variety of invertebrates, fishes, and birds find their food and/or cover requirements best met in association with these beds, and since a number of species within them are of potential aquacultural value, they warrant continuous study and protection.

c. Submerged and Emergent Vegetation of Freshwater Habitats

These play a similar role to the above (b), in a different medium and with an entirely different cast of species. Pondweeds (Potamogeton), water starwort (Callitriche), duckweeds (Lemnaceae), anacharis (Elodea), bulrushes (Scirpus), cattails, sedges, burreeds, rushes, grasses, bog and marsh plants and filamentous algae all contribute to freshwater environments and serve as direct forage for a great variety of animal life. Dredging and filling, channelization, culverting and damming, and stormwater contamination are the principal threats to these plants and the values which they support. Inventory and analytical studies are sorely needed for protection and evaluation purposes.

d. Marsh Habitats

Salt marsh areas featuring such plants as Salicornia, Distichlis, Triglochin, Grindelia, Atriplex, Cuscuta, Deschampsia were once extensive in the Tacoma shorelines area comprising the first border of sod back of the exposed tide flats and extending natively to the shrub and tree line at the mouth of the Puyallup valley. This flora is open and productive of fruits and seeds and grazing foliage of great value to ducks and geese. Peat accumulations from this source were moderate and heavily silted; they were seldom used agriculturally unless diked and freshened to provide hay and graze for cattle.

Industrially, however, by virtue of location and level configuration, they were especially valuable and therefore subject lately to obliteration by filling, usually with dredge spoils in port areas. Small salt marshes often met the same fate at the hands of private owners wishing to provide bulkheaded lawn areas in front of beach homes, and railroad and highway construction has had similar effects. The small salt marsh complex in the Titlow basin was eliminated by park development. Retention of as many as possible of the remaining saltmarsh formations is desirable to preserve this distinctive flora and its dependent wildlife.

Freshwater marshes, once extensive back from the Puyallup Valley saltmarsh habitats, have often succumbed to the same draining and filling practices. Minor creek side or pond water marshes are still found in gulch mouths and behind the beach line where drainage is impeded. Cattails, little fruit bulrush, and sedges are typical with muskrat, red-wing blackbird, song sparrows, occasional mallard pairs, wood frogs, tree frogs, newts and mole salamanders, stickle backs and crayfish frequently resident. The marshes around Wapato Lake are extensive and formerly were much more so. They have supported long-billed marsh wren, Virginia and sora

rails, yellowthroat, bitterns and herons, bullfrogs and turtles, some of which have disappeared recently as a result of filling and park usage.

The need for marsh preservation and rehabilitation is everywhere apparent.

3. Waterfowl

The waters and shores of Puget Sound are important resting and feeding grounds for many species of water birds utilizing the Pacific Flyway during their migrations. Lesser numbers are resident here the year round or are winter residents, leaving only to breed in northern or inland areas during spring and summer months. Much of the area comprising the head of Commencement Bay and the Puyallup Valley beyond is still considered important as waterfowl habitat at one season or another, although dredging, filling, and development have modified all facets of the environment and have brought the once famous Tacoma "goose-flats" to the point of extinction. Most of the North American species of waterfowl occur here at least rarely, and it seems pointless to list them all until more detailed treatment can accompany the categories. Species of the greatest importance numerically in the local kill by hunters include mallard, wigeon, teal, pintail, shoveler, ruddy, scaup, golden-eye, bufflehead -- not all of which are highly prized as food -- plus a few other duck species and still fewer geese. Bird students find a great diversity of other types of water birds using the shorelines and offshore areas, often in great abundance. This is an important wintering ground for a variety of gulls, grebes, loons, cormorants, and alcids for example, and spectacular swarms of shorebirds are commonplace.

4. Fish and Fishing

Fisheries, sport and commercial, of the widest variety are practiced at many points along the designated waterfront areas. Trout and spiny-ray fishermen work the fresh waters for bass, perch, catfish, cutthroat, rainbow-steelhead and lesser species. Diggers and gatherers ply the beaches for clams, geoducks, oysters, crabs, mussels, shrimp and seaweeds. Skin divers spear rockfish, cods and other fish, and gather a wide variety of invertebrates for food or curiosity value. Shell hunters and scientists, aquarium collectors, and hobbyists employ methods suited to their specialties. Salmon are sought most intensively for both sport and commercial purposes, five species being caught here at various times and places throughout the year, and with Indian gill-netting fisheries extending well up the Puyallup. Boathouses and marinas base much of their business activity on this salmon resource and a considerable fleet of sport and commercial craft are used in the prosecution of this fishery. Spawning runs of salmon still occur in a substantial number of streams and could be reinstated in many that have been rendered sterile. The Puyallup runs are of major importance, while those of Chambers Creek, extralimital at its mouth but a part of the Wapato Lake and Flett and Clover Creek drainages of the City of Tacoma, is one of the most important fish-cultural streams of the State. The Narrows, Point Defiance, Point Dalco, Quartermaster Harbor, Brown's Point and Dash Point, and the mouth of the Puyallup are regionally known as salmon angling hot spots.

Bottom fish also abound at depth in all of these and other areas, where lingcod, rockfish, flatfish, true cod, black cod, occasional halibut, and a variety of rough species are taken by sport and commercial fishermen. At times in the past fish livers were sought commercially for oil and vitamin content, and this may shortly be again important. The species sought were elasmobrachs (such as dogfish and other sharks, skates, and ratfish) and lingcod.

Inshore fisheries include beach-casting, dock-fishing, and trolling or casting for trout. Surf and striped perch, copper rockfish, cabezone, greenlings, and cutthroat trout are the principal species sought along with crabs and shrimp, and make a valuable contribution to the food and sport resources of the resident population.

5. Protected, Rare and Endangered Species

Excluding food-fish, the generally protected status of all higher, nonverminous, native animals is noted as a function of (1) the City laws against discharge of firearms, (2) the Washington Department of Fish and Wildlife (3) the U.S. Fish and Wildlife Service, and National Marine Fisheries Service and (4) international treaties covering migratory birds, mammals, and certain fishes. Size, season, and place as well as licensing and method of capture are generally stipulated by the appropriate agencies for those game or commercial species whose killing or capture is authorized. Major federal laws protecting many plants and animals include the Endangered Species Act, the Marine Mammal Protection Act, the Migratory Bird Treaty Act, and the Bald Eagle Protection Act.

Protected species commonly found here include harbor seals, California and Steller sea lions, killer whale and other cetaceans, hawks, owls, songbirds, flying squirrels, chipmunks, and turtles. Rare or endangered species occasionally found in the designated shoreline areas are given special protection; examples are the peregrine falcon, sandhill crane, bluebirds, osprey, bald eagle, and the western grey squirrel, while two reptile species, the sharp-tailed snake and the western pond turtle may possibly also occur, most likely in the Wapato Lake area. All of these require maximum protection and encouragement wherever they chance to appear.

MASTER PROGRAM ELEMENTS - GOALS AND POLICIES

It is the general shoreline use goal of the City of Tacoma 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.*

The following list of policies is determined to be pertinent to the achievement of the above stated goal.

1. To seek public acquisition of shoreline property wherever it can be assembled into a logical pattern of public ownership and wherever otherwise generally feasible.
2. To seek development of both public and private shorelines in a coordinated plan of water-oriented uses.
3. To establish public access to and along the City's shorelines where appropriate.
4. To restore, replenish and maintain publicly-owned shoreline properties as nearly as possible as natural beach areas.
5. To maximize efforts to control and eliminate shoreline pollution -- air, water and land.
6. To prohibit mineral extraction or exploration on or adjacent to Tacoma's shoreline and the waters of Puget Sound in general.
7. To establish and maintain reasonable structural standards for maintenance and development of Tacoma's shoreline.
8. To encourage close cooperation and coordination between both public and private shoreline interests including private property owners, the City, the Metropolitan Park District and the Port of Tacoma in the overall management and/or development of Tacoma's shoreline.
9. To be concerned with and to seek ways to satisfy the growing need for aquatic recreational facilities.
10. To be concerned with and to seek ways to provide modern competitive marine terminal facilities for world trade with due concern for the environment and consistent with other program elements.
11. To encourage aquaculture operations if their location and operation will preclude damage to specific fragile areas and generally maintain the highest possible levels of environmental quality.
12. To encourage preservation and improvement of fish and wildlife in this area for future generations in cooperation with State and Federal agencies.

13. To give priority to water-dependent uses requiring frontage on navigable water and to upland sites for non-water dependent improvements.
14. To define appropriate shoreline uses and to assure that such uses are compatible with the site, the surrounding area and the environment.
15. To require that all shoreline uses conform to all applicable federal, state and local laws and regulations relating to environmental quality and resource protection.
16. To preserve views of the water and scenic waterfront routes.
17. To provide safe, reasonable, and adequate circulation systems to shorelines where routes will have the least possible effect on unique or fragile shoreline features and existing ecological systems, while contributing to the functional and visual improvement of the shoreline.
18. In addition to the shoreline development oriented policies stated herein, other community improvement policies, as may relate to the shoreline area and as stated in the City's *A Statement of Goals & Policies for Community Improvement* are acknowledged and supported.
19. In addition to the shoreline development oriented policies stated herein, other generalized land use policies, as may relate to the shoreline areas and as stated in the City's *Generalized Land Use Plan* are acknowledged and supported.

Consistent with the general nature of master programs, the following land and water use elements are dealt with in this section. By dealing with shoreline uses, systematically as belonging to these general classes of activities, the policies and goals in the master program can be clearly applied to different shoreline uses. Without this kind of specificity in the master program, the application of policy and use regulations could be inconsistent and arbitrary.

The plan elements:

Conservation, Restoration, and Natural Environment
Economic Development
Historical, Cultural, Scientific, and Educational
Public Access and Circulation
Recreation
Unifying Design Elements
Urban Design

Conservation, Restoration, and Natural Environment

This element is for the preservation, restoration and improvement of the natural shoreline resources, considering such characteristics as scenic views, open space, estuarine areas and other important fish and wildlife habitat, beaches and other valuable natural or esthetic features.

1. Intent

To identify, protect and restore shoreline areas having exceptional geological, ecological or biological significance.

To identify, protect and restore shoreline areas required to support publicly-owned natural resources.

To identify, protect and restore shoreline open space for resource conservation and the improvement of urban life.

To encourage a program for continuing scientific study of the city's shoreline.

2. Policies

The following list of policies, as particularly related to shoreline development, is determined to be pertinent to the achievement of the above stated intent:

a. In recognition of the limited supply of and unique character of Tacoma's shoreline, acquire or otherwise protect an optimum amount of prime habitat for conservation purposes.

b. Recognize and conserve urban open space to provide habitat for wildlife and native plants.

c. Encourage the restoration to a useful condition those shoreline areas which are blighted by abandoned and dilapidated structures or other nonproductive conditions.

d. Encourage protection of shoreline plants and animals by public and private owners.

e. Cooperate and coordinate with state and federal agencies having jurisdiction over fish and wildlife resources.

f. Support implementation and adequate funding of state baseline studies legislation.

g. Encourage local educational institutions to include baseline studies in their coursework and to make their findings available to the city.

h. Support programs to compile and coordinate data presently available in various agencies and institutions.

i. Conserve the steep slope areas for the safety and health of Tacoma citizens. Small streams and ravines should be conserved for their unique benefits to the community.

j. Preserve to the greatest extent feasible the physical and aesthetic qualities of shorelines.

~~k.~~ Conserve the anadromous fish runs of Hylebos and Wapato Creeks and the Puyallup River and its tributaries.

Economic Development

This element is for the location and design of industries, transportation facilities, port facilities, tourist and recreation facilities, commercial and other developments that are particularly dependent on shoreline locations.

1. Intent

To develop and maintain a dynamic and diversified economy capable of providing an increasing number of employment and business opportunities.

2. Policies

The following list of generalized policies, as particularly related to shoreline development, is determined to be pertinent to the achievement of the above stated intent:

a. Encourage and actively promote diversification of industry within the City of Tacoma. Acknowledge the kinds of industry socially desired and for which the City has a comparative advantage, such as deep water port terminal and related industrial development.

b. Suggest and encourage means by which economic balance can be better obtained.

   Encourage industries which provide products and services with relatively stable demand.

   Investigate means of maintaining and balancing seasonal employment in resource industries such as forestry, agriculture, and fisheries.

   Encourage non-polluting industries which will employ large numbers of Tacomans.

c. Encourage efforts to alter the location of log storage sites from water to land sites so that valuable waterfront lands might be developed for other higher and better water-dependent use.

d. Encourage, wherever and whenever feasible, plans by existing industries and public agencies occupying waterfront lands for as much public accessibility to the water as possible.

e. Shoreline location by new industry should be limited to clean, water-related or water-dependent industry.

f. The preferred location for future industry not requiring water location should be away from the shoreline.

g. Non-water dependent industries presently occupying shoreline locations should be encouraged to relocate to non-water backup sites.

h. Because of the great natural deep water potential of Commencement Bay new deep water terminal and port-related industrial development is encouraged.

i. New industry locating along the Puyallup River should provide and maintain a river bank strip for public access and use.

j. Encourage the efforts of the Washington Department of Fish and Wildlife and other applicable agencies in sustaining the fisheries resources of Puget Sound.

k. Because of the exceptional value of Puget Sound shorelines for residential, recreational, resource and other economic elements requiring clean water, deep water terminal expansion should not include oil super tanker transfer or super tanker storage facilities.

Historical, Cultural, Scientific and Educational

This element is for protection and restoration of buildings, sites and areas having historic, cultural, educational or scientific values.

1. Intent

To preserve sites identified with the history of the City and the region; buildings of unique or characteristic architecture; whole neighborhoods, groups of buildings, and facades; and smaller sites and single buildings that are symbols of many social and ethnic groups who built the City.

To preserve and enhance the maritime character of significant areas, sites, and structures including:

a. "Old Tacoma" and significant related structures
b. Thea Foss Waterway
c. Salmon Beach

To preserve natural shorelines of educational and scientific value, including:

a. Point Defiance
b. Titlow Park, including Hidden Beach

2. Policies

The following list of policies, as particularly related to shoreline development, is determined to be pertinent to the achievement of the above stated intent:

a. As the historical aspect of the Tacoma waterfront is an important element in the City's history, all developments should preserve to the greatest extent possible, buildings of architectural quality or historical interest.

b. Encourage educational, historical, cultural, and scientific use of the shoreline environment.

Public Access and Circulation

This element provides for public access to and along shorelines, including both physical and visual access, and for vehicular and non-vehicular routes needed to serve shorelines and shoreline facilities, and motorized and non-motorized boater access to and along the shorelines.

1. Intent

To incorporate public access and view access in shoreline development where appropriate, to provide pedestrian and other non-motorized access to and along shorelines, to provide and/or retain view corridors.

To develop a system for the efficient movement of goods and people, based upon projected needs of local activities, and upon the transportation systems of the City and region emphasizing facilities for pedestrian and transit circulation.

To improve access to shoreline areas from other parts of the City, to develop a coherent network of streets and footpaths, to relate the circulation system more closely to the area it serves, and to keep intrusive traffic out of shoreline areas.

To provide standards for uniform recognizable design and signage elements in public access areas.

To protect state-owned Harbor Areas for development of landings, wharves, streets, and other conveniences of navigation and commerce.

2. Policies

The following list of policies, as particularly related to shoreline development, is determined to be pertinent to the achievement of the above stated intent:

Public Access

a. Recognize and protect the public's right to the use of navigable waters.
b. Preserve, to the greatest extent feasible, the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the City.
c. Recognize the unique opportunity to establish in Tacoma a linear system of public access, starting with high-density intensive-use urban activity on Thea Foss Waterway, moving to moderate use urban "paved sidewalk" on Schuster Parkway, to a high-density intensive-use paved pathway on Ruston Way, then to a moderate intensity promenade in Point Defiance Park from the boathouse to Owen Beach, culminating in completely natural beach walk from Owen Beach to Salmon Beach.

Protect and promote the use of these diverse shoreline areas as an attraction unique to Tacoma.

d. Work to establish a continuous waterfront bicycle/pedestrian route from Owen Beach at Point Defiance Park to join a Pierce County pathway along the Puyallup River.

e. Require public access elements to and along the water's edge in public and private developments where appropriate.

f. Abandoned or unused road or railroad rights-of-way in the shorelines should be acquired and/or retained to provide public access where feasible.

g. Record on Deed of Title and on the face of the plat or short plat, as a condition running with the life of the project, all dedications, easements, and permit conditions which secure public access.

h. Encourage appropriate mitigation including off-site access, for any diminishment of public access for water-oriented developments in which access requirements would cause unavoidable safety or security hazards.

i. Locate and design public access to shorelines so as to preserve or improve environmental quality.

j. Encourage development of a system of vistas, view areas, scenic drives, trails and bike paths to take advantage of the siting of Tacoma and its unique relationship to Puget Sound.

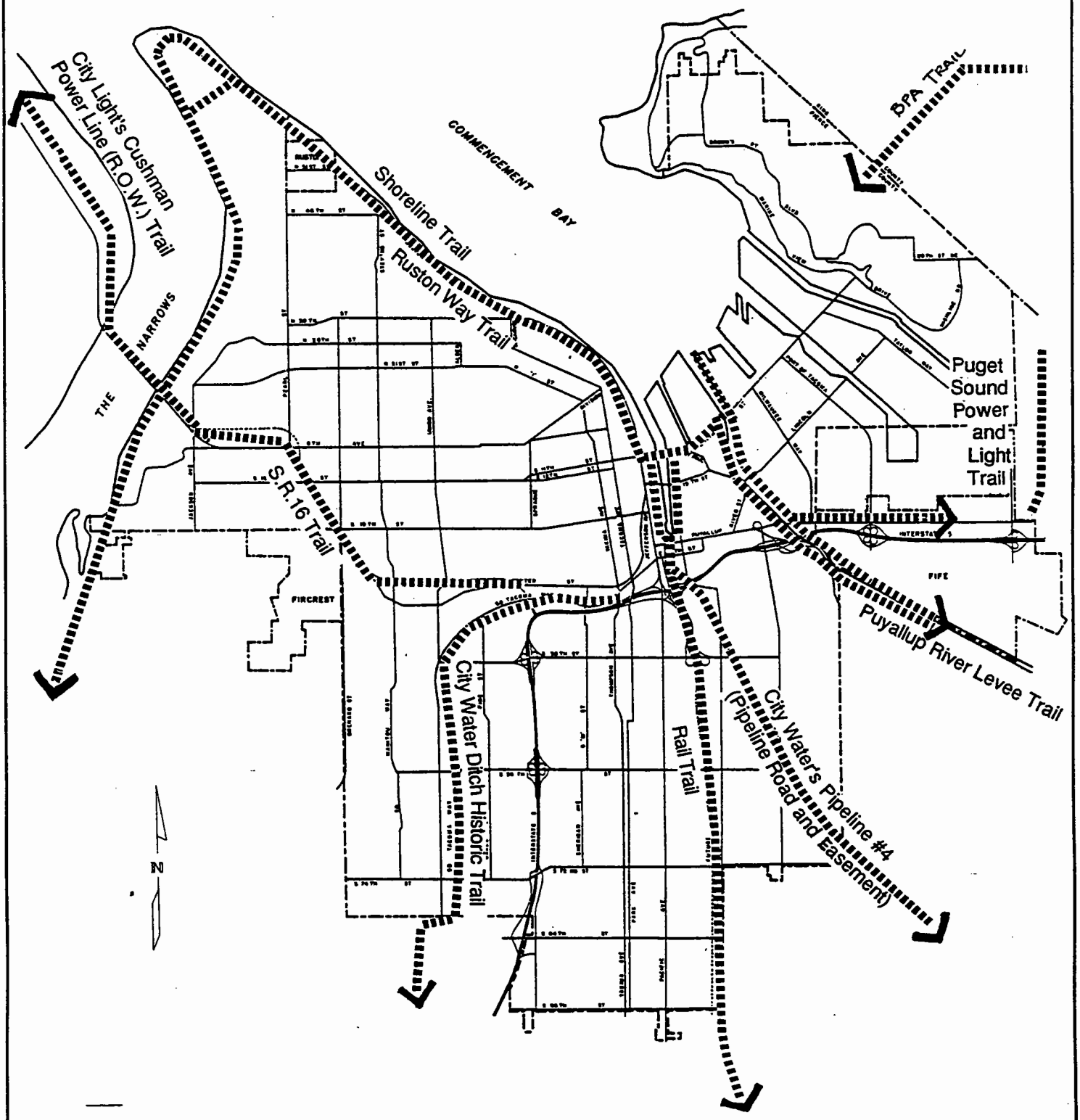
k. Retain existing street ends for public use where feasible. Require removal of uses which are unlawfully encroaching on such public areas.

l. Set standards for access, including but not limited to: width of sidewalks, trails, paths and promenades; building setbacks from pedestrian paths; minimum distances between pedestrian paths linking adjacent streets with the water's edge.

m. Set standards for view access in water-oriented public and private development including but not limited to building location, orientation and design; and viewing structures such as decks and roof gardens; distance between view corridors from street to water and width of such corridors.

n. Set standards for design elements and landscaping of parks, beaches, piers, wharves, docks, floats, public areas and public access ways.

POTENTIAL NON-MOTORIZED TRAILS AND PARK CORRIDORS*



*This map also indicates connections to potential trails in other jurisdictions.

Circulation

a. Roads located within the shoreline area should be adequate to serve shoreline facilities.

b. Roads intended to serve through traffic should be located outside the shoreline area where feasible.

c. Roads within the shoreline area should incorporate public access elements including turnouts at scenic viewpoints and street end access where feasible.

d. Shorelines having water-enjoyment uses or recreation activities should be adequately served by public transportation.

e. Public transportation may include streetcars and water taxis where appropriate.

f. Inter- and intra-city commuter water transportation is encouraged.

g. Transient moorage is encouraged at marinas and at water-enjoyment commercial facilities where feasible.

Recreation

This element is for the preservation and expansion of recreational opportunities through programs of acquisition, development and various means of less-than-fee acquisition.

1. Intent

To make the shoreline an asset to adjoining areas and to the entire City and attractive to its visitors.

To acquire, administer and/or develop designated portions of the shoreline as major water-oriented recreational and open space assets of the City.

To promote improvement of the unique view potential of the physical location of Tacoma.

2. Policies

The following list of policies, as particularly related to shoreline development, is determined to be pertinent to the achievement of the above stated intent:

a. Locate only water-oriented recreational uses on the shorelines.

b. Insure that any recreational use is consistent with the ability of the shoreline to support that use. Inventory shorelines for unique attributes and qualities especially valuable for recreational uses and assign acquisition priorities accordingly.

c. Encourage development of marina and boat launch facilities where appropriate, where physical space is available to alleviate unmet needs, and where it can be accommodated with minimal damage to the environment.

Unifying Design Elements

Tacoma's shoreline is as varied as are the types of uses that are located there. The use of "unifying design elements" is encouraged in an effort to coordinate shoreline access and scenic viewing areas. The use of the same or similar design elements such as landscaping, signs and lighting will provide visual continuity. Although each site will retain its distinct and individual character, the presence of unifying design elements will link diverse areas of the shoreline together.

Some of these unifying elements may be installed at recommended sites. The size of the site and activities possible in the area will determine exactly what unifying elements will be placed. These unifying elements include:

1. Benches
2. Tables
3. Signs
4. Bollards
5. Bicycle racks
6. Light standards
7. Trash receptacles
8. Drinking fountains
9. Educational Panels
10. Banners
11. Kiosks
12. Exercise and Play Structures

Property owners along the shoreline will be encouraged to incorporate these elements in their developments whenever possible to aid in establishing a unified character for waterfront areas.

Many of the design elements listed in this section have been used in waterfront projects. For more information, refer to the *Ruston Way Plan*, the *Thea Foss Waterway Design and Development Plan* , the *Shoreline Amenities Study*, and the *Ruston Way Design Booklet*, which are available at the Tacoma Planning and Development Services Department or the Main Branch of the Tacoma Public Library.

1. Intent

To encourage design details such as form, scale, proportion, color, materials and texture to be compatible within shoreline areas wherever feasible.

To assure that design details are considered part of development and redevelopment efforts within shoreline areas wherever feasible.

To consider "human scale" in the design and construction of developments within shoreline areas.

2. Policies

The following policy, as particularly related to shoreline development, is determined to be pertinent to the achievement of the above stated intent:

> Encourage the use of unifying design elements in shoreline areas in an effort to coordinate shoreline access and scenic viewing areas and to establish a unified character for waterfront areas.

Urban Design

This element is concerned with the order and form of the shoreline areas and the forces which influence the physical developments of these areas.

1. Intent

To enhance the shoreline's positive and distinctive features, to unify shoreline areas visually, and to give definition to sub-areas.

To improve the appearance of the City's shoreline for those who live and work there, and to make these areas attractive and interesting places to visit.

To encourage planning and design standards which will conserve valuable shoreline and aquatic resources.

2. Policies

The following list of policies, as particularly related to shoreline development, is determined to be pertinent to the achievement of the above stated intent:

a. In accordance with existing City policy, views and the physical form of the waterfront should be preserved by maintaining low structures near the water and at the tops of the bluffs, and by allowing non view blocking vertical development at the base of the bluffs.

b. Continuous planting or other ground surface treatment should be used to physically and visually link the waterfront areas to the City and to each other.

c. Develop and/or utilize publicly-owned waterfront lands for water-oriented recreational use. In general, emphasize the water as a unique community asset.

d. Emphasize the bluffs abutting waterfront areas as design features and keep the tops of the bluffs as open landscaped view points where practicable and feasible.

e. Provide design and construction standards for shoreline projects, in cooperation with state and federal agencies, which will minimize adverse environmental impact.

This section has been developed for the purpose of more specifically defining the regulation of proposed shoreline uses. It has been developed to accomplish three basic functions:

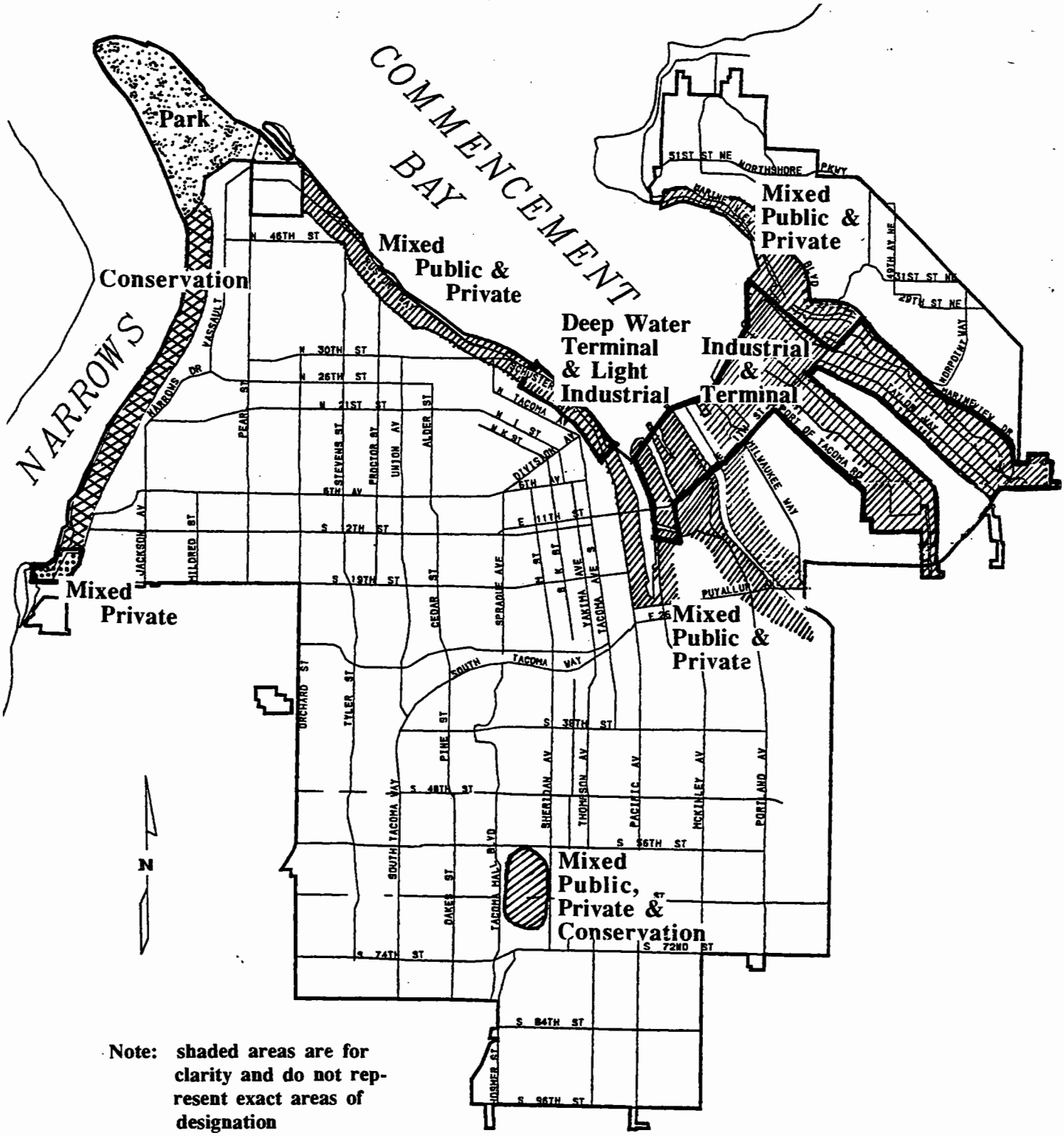
1. Establish a general plan concept for shoreline use.
2. Define use regulations for specific shoreline districts.
3. Provide for variances, conditional uses, and emergencies.

General Plan Concept for Shoreline Use

The information presented in the General Plan Concept was evolved from a careful analysis of shoreline development, based on past patterns and future growth potential. The plan distributes shoreline uses into a pattern of mixed public and private uses, private water-oriented uses, industrial uses, conservation and park uses. Mixed public and private is described as placing emphasis on public shoreline acquisition, for development of water-oriented parks, open space and recreation facilities, within limits of community desire and financial capability. Private water oriented uses would be subject to compliance with shoreline development policies, and design and performance standards.

The General Plan Concept consists basically of reserving the deep water area along Schuster Parkway for possible development of industrial deep water terminals, with mixed public and private uses along Ruston Way, Marine View Drive, the Thea Foss Waterway and from Titlow Beach south to the city limits. The port area is conceived as industrial, Point Defiance as park and the area from the Park through Titlow Beach as conservation.

GENERAL PLAN CONCEPT FOR SHORELINE USE



Shoreline District Descriptions

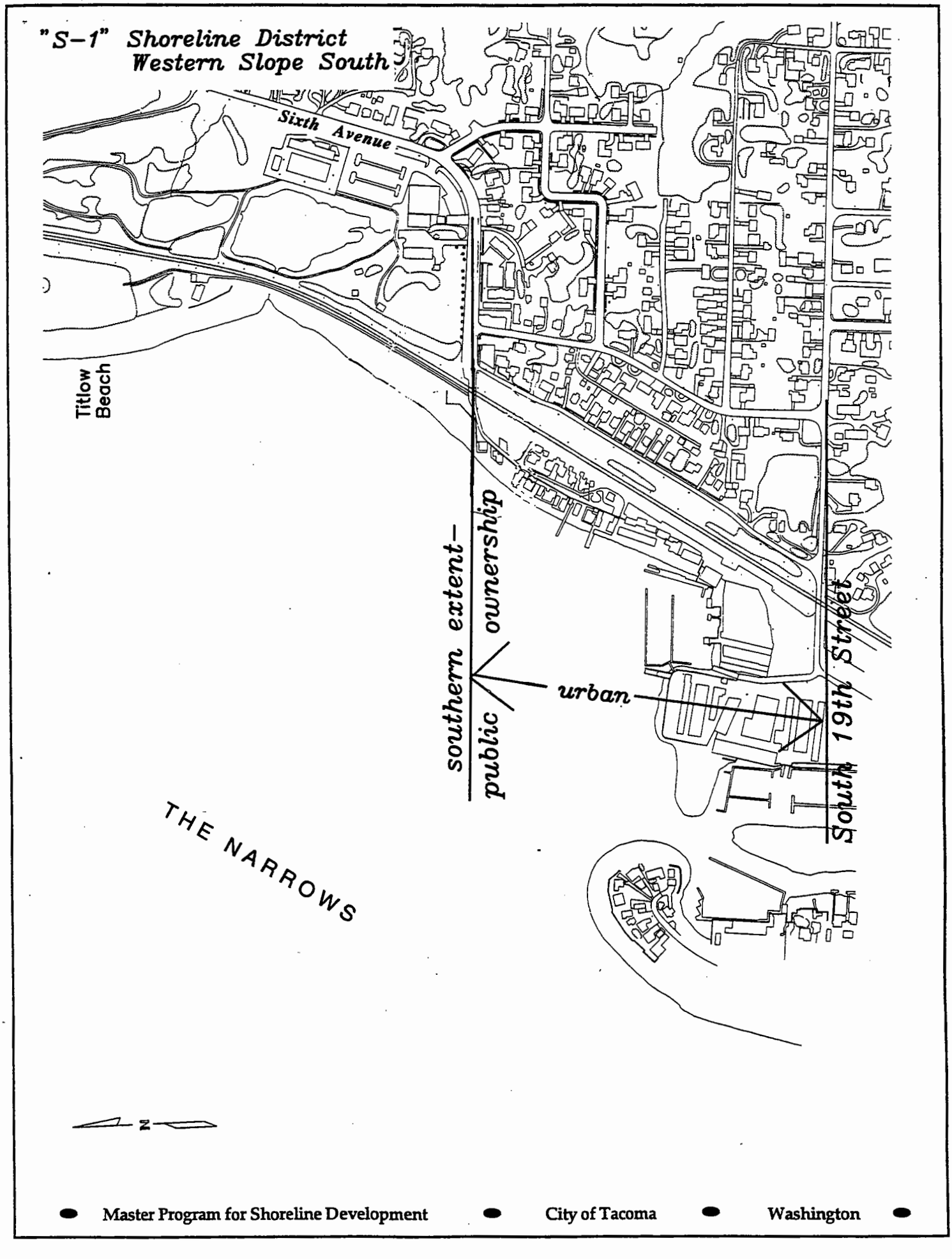
To facilitate the development of the shoreline plan concept, more detailed information on various shoreline uses was desired. As part of the shoreline inventory undertaken in 1972, study area segments were created, each segment being distinguished from the rest by topography, land use, and potential for development. In 1979, the study area segments were revised to shoreline districts. The shoreline districts include:

"S-1" Western Slope South - Mixed Private
"S-2" Western Slope Central - Conservation
"S-3" Western Slope North - Conservation
"S-4" Point Defiance Natural - Park
"S-5" Point Defiance Conservation - Park
"S-6" Ruston Way - Mixed Public and Private
"S-7" Schuster Parkway - Deep Water Terminal and Light Industrial
"S-8" Thea Foss Waterway - Mixed Public and Private
"S-9" Puyallup River - Mixed Public and Private
"S-10" Port Industrial - Industrial and Terminal
"S-11" Marine View Drive South - Mixed Public and Private
"S-12" Marine View Drive North - Mixed Public and Private
"S-13" Commencement Bay and Tacoma Narrows - Marine Navigation
"S-14" Wapato Lake - Mixed Public and Private and Conservation

Each of the districts is identified as to location, topography, and beach characteristics. Present use activities are identified and recommendations made for possible future uses. Special and unique features are considered when appropriate. Designated environments in each shoreline district and relevant shoreline management regulations are identified. With this detailed background analysis and with the identification of shoreline management regulations, it is hoped that each of these districts can be developed to its best potential as part of a related system of shoreline uses. These shoreline districts are identified and discussed on the following pages.

"S-1" SHORELINE DISTRICT: Western Slope South - Mixed Private

Location: The area comprises the southern most portion of the Western Slope from the southern extent of beachfront public ownership at Titlow Park south to the City Limits. (Legal description of the "S-1" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)


"S–1" Shoreline District
Western Slope South
Sixth Avenue
Titlow Beach
southern extent–
public ownership
urban
South 19th Street
THE NARROWS
N

Beach Characteristics: This portion of the shoreline has been modified by commercial and residential development throughout its length. Dominant beach types are sand and gravel, with some clay outcropping and large rocks overlaid with deposited rubble and debris. Natural tidal fluctuation is from +15.5 feet (extreme high water) to -4.5 feet (extreme low water), based on mean lower low water datum.

Upland Topography: The topography of this area consists generally of moderately rolling hills rising away from the water. The predominant soil classifications consist of Sinclair Gravelly Loam, Rolling (SH) and Sinclair Gravelly Fine Sandy Loam, Hilly (SE).

Present Use Activities: Present development includes a variety of commercial and residential construction along the water backed by a small residential street and a mainline railroad. Two marinas are located within this district.

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: The character of the area has been established by past development. It is the policy of the City of Tacoma that the present character be retained. No large industrial or excessively noisy uses should be permitted because of the close proximity to housing.

Regulations: Permitted use activities and appropriate use regulations for the "S-1" Shoreline District are set forth in Section 13.10.040 of the Official Code of the City of Tacoma and contained herein.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

"S-2" SHORELINE DISTRICT: Western Slope Central - Conservation

Location: This area comprises a part of the western most boundary of the city, extending from the Narrows Bridge on the north through the southern extent of publicly owned beach front at Titlow Park on the south. (Legal description of the "S-2" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

Beach Characteristics: Part of the shoreline has been modified by the placement of a mainline railroad located at the water's edge. Riprap bulkhead protects the roadbed of the railroad. Dominant beach types are sand and gravel, with some clay outcropping and large

rocks. That part of Titlow Park known as Rocky Point or Hidden Beach is unusually rich in aquatic and shoreline wildlife resources. Titlow Park includes a modified saltwater lagoon and tributary marsh. Natural tidal fluctuation is from +15.5 feet (extreme high water) to -4.5 feet (extreme low water), based on mean lower low water datum.

Upland Topography: The topography in the vicinity of the Narrows Bridge is steep with varying slopes up to 60%. Toward the southern part of the area the terrain becomes more gradual and access to the water is considerably easier.

Present Use Activities: Titlow Park, with 56 acres of shoreline and adjacent upland property, is presently the predominant use in the area. The bank along the park shoreline records a number of the glacial events that created the physical structure of Tacoma. It is therefore a valued educational and historic site as well as a highly scenic shoreline. The beach itself has long been used by area teachers for field trips because of the geology, the variety of marine life found here, and the ready accessibility to the metropolitan area. The upland area on the waterside of the railroad tracks is used for day-camp and educational purposes. One section is presently leased by the Metropolitan Park Board to a private outboard association.

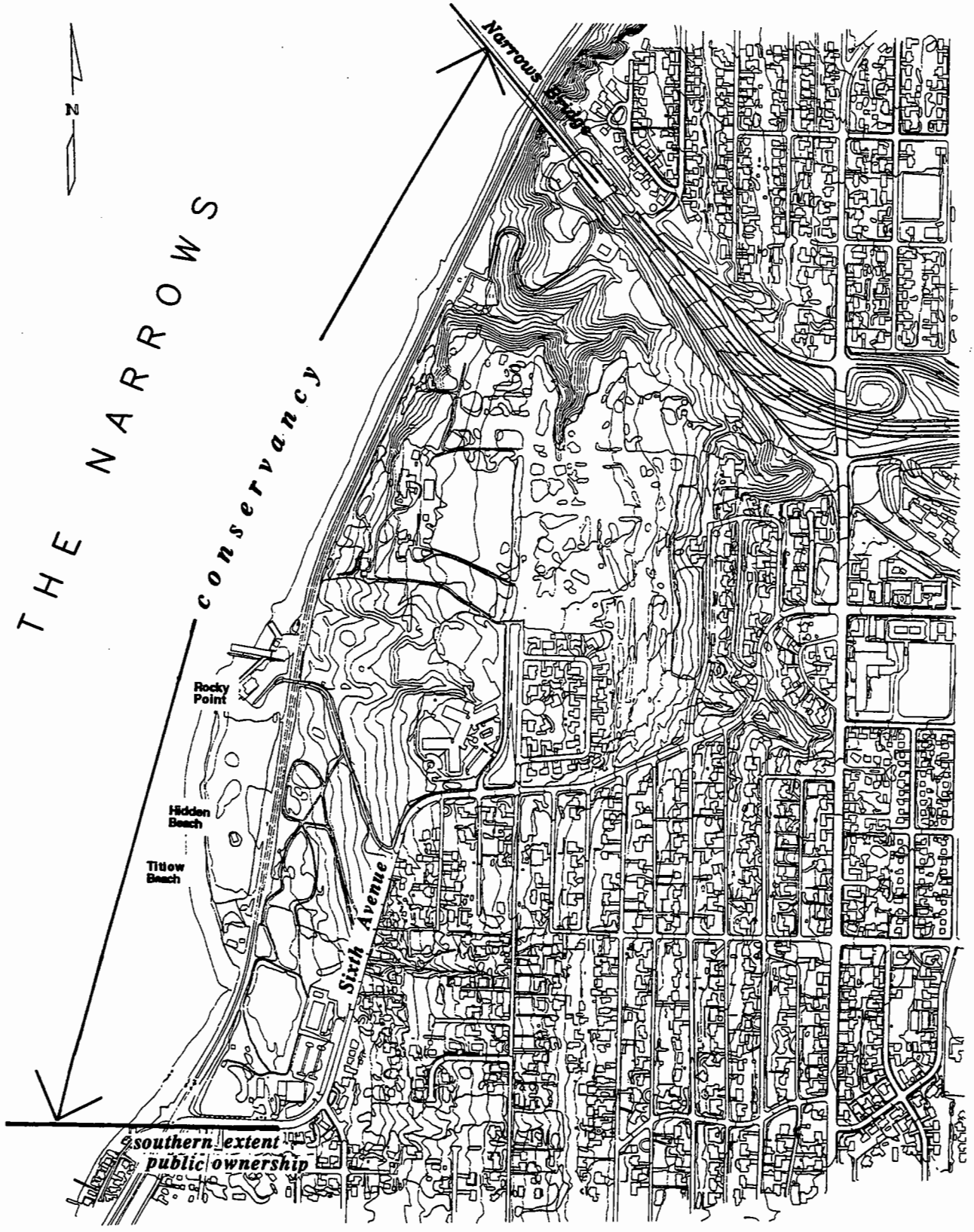
Environmental Designation: Conservancy (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: The need for recreational development of this area is evident as this is the only available access to the shoreline on the Western Slope. The Titlow Park shoreline offers a great recreational potential. Part of the Titlow Park property lies between the railroad and Puget Sound. Here, the nearly vertical, medium-height bank is composed of highly compacted glacial material. This area, known as Rocky Point, or Hidden Beach, should be retained as a natural beach because of its educational, scientific and scenic value.

The area of steep slopes above the railroad should be maintained in vegetative cover to prevent landslides and siltation of the beach areas and to serve as a noise dampener between the railroad and housing areas. The steep slopes should be preserved for public benefit and safety by acquisition, easement, and other programs including limitations of development based on soil stability.

The Park Board has acquired the small amount of residential development located on the shoreline, adjacent to existing Titlow Park, and provided the opportunity for future development of public boating facilities and a much needed shoreline recreation facility of Tacoma's West End. Before development of new facilities, consideration should be given to mixed public and private use of the existing leased Tacoma Outboard Association facility.

"S-2" Shoreline District – Western Slope Central



Regulations: Permitted use activities and appropriate use regulations for the "S-2" Shoreline District are set forth in Section 13.10.050 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: The cold, deep waters and lengthy underwater rock shoals in the offshore waterfront areas of this district provides one of the world's prime octopus habitat. Some of the largest known octopi species are found in this location. Special consideration should be given to this very unique wildlife resource in any utilization of this shoreline area.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

"S-3" SHORELINE DISTRICT: Western Slope North - Conservation

Location: This area comprises a part of the westernmost boundary of the city, extending from Point Defiance Park (northern edge of Salmon Beach community) on the north to the Narrows Bridge on the south. (Legal description of the "S-3" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

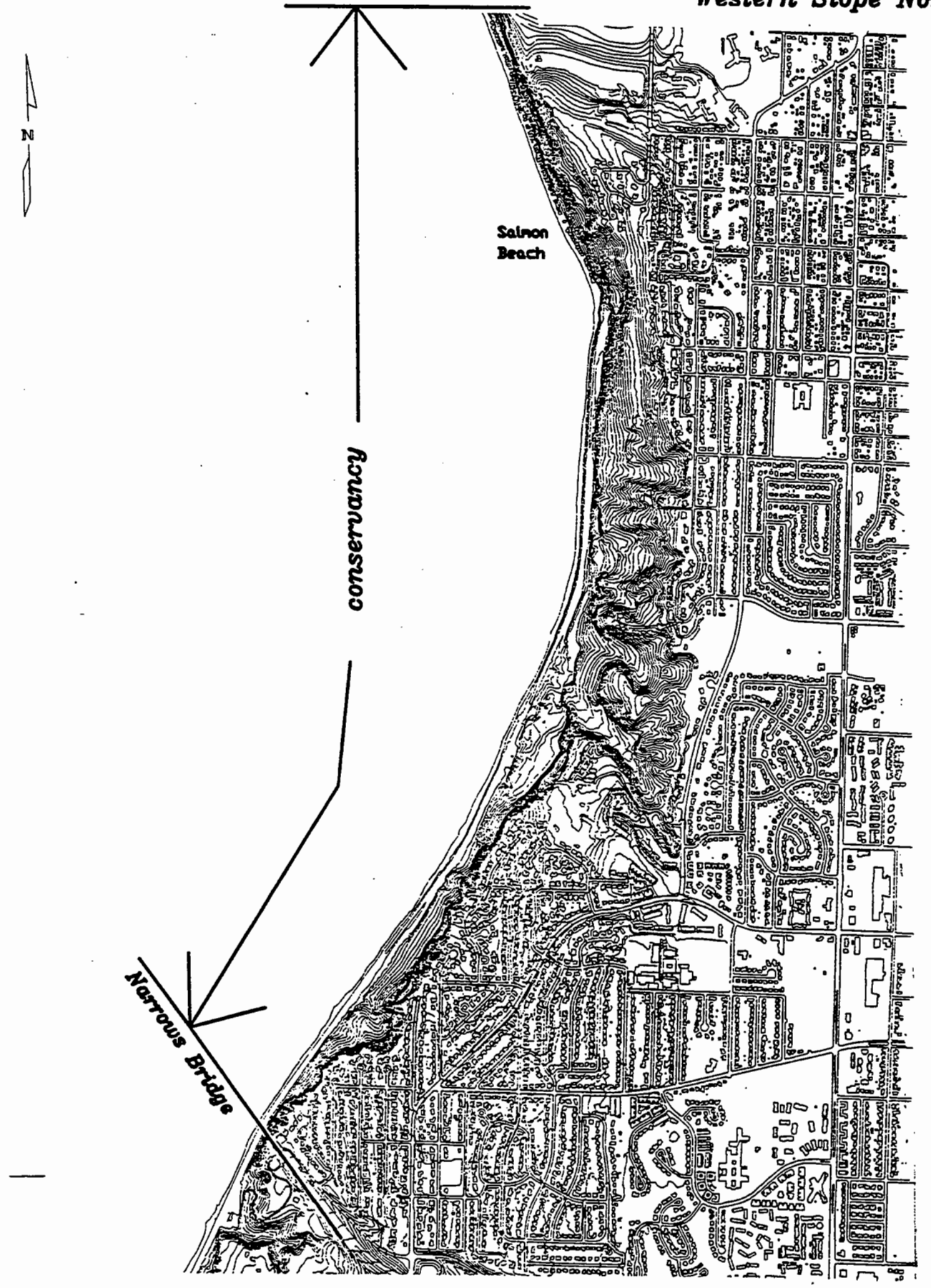
Beach Characteristics: Much of the beach has been modified by the placement of a mainline railroad located at the water's edge. Dominant beach types are sand and gravel, with some clay outcropping and large rocks, and having steep slope. Natural tidal fluctuation is from +15.5 feet (extreme high water) to -4.5 feet (extreme low water), based on mean lower low water datum. Riprap bulkhead protects the roadbed of the railroad.

Upland Topography: The topography along the entire length is steep with varying slopes up to 60%. Soils are generally classified as Rough Broken Land (Rd).

Present Use Activities: The area remains generally in its natural state, with the use of the railroad as the only significant activity. At the extreme northern end of the area (Salmon Beach) is a row of privately owned, single-family structures on pilings at the high water line.

Environmental Designation: Conservancy (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

"S-3" Shoreline District — Western Slope North



Permitted Use Activities: The entire area should be conserved in its natural state, subject, however, to the preservation of existing rights as by law provided in the residential area of Salmon Beach. Upon termination of that residential community for any reason, efforts should be made for appropriate acquisition and/or dedication of said area for public purposes.

Regulations: Permitted use activities and appropriate use regulations for the "S-3" Shoreline District are set forth in Section 13.10.060 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: Salmon Beach is an exception to the general policy against overwater residential use. The community began during the first decades of this century as a residential area for fishermen, timber workers and their families. It has survived to this day despite landslides, bootlegging and the hostility of the landowner on whose property the original residents began squatting.

Houses should not be allowed to expand significantly and additional overwater construction should be limited. Repairs and maintenance should be permitted and when accidental destruction occurs, owners should be allowed to rebuild.

Maximum understanding should be given to the importance of the steep slope areas, retention of the vegetative cover and restriction of uses throughout.

The greatest potential for the Western Slope lies in the establishment of major view areas, the development of a trail system and scenic route along the top of the bluff, and the conservation of the area's steep banks. Vassault Street has been completed along the edge of the bluff as part of a scenic roads and parkway facility within the city. Presently, it offers some outstanding views of the Narrow's Bridge, the water, Gold Creek Gulch, and the peninsula beyond. Public acquisition of Gold Creek Gulch is recommended to provide open space and as a recreational link between the west end residential area and the shoreline.

Although the steep banks offer little chance for development, construction is presently taking place in several places along the sides of the hill. If this practice were to continue and spread, serious consequences could result in loss of scenic beauty and disruption of the ecological balance. Since this is a rapidly developing area of the City, special and prompt consideration should be given to the City's policies in the development of steep slope areas. Consideration should also be given to possible future use along the railroad for hiking and bicycle trails.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

"S-4" SHORELINE DISTRICT: Point Defiance Natural - Park

Location: Point Defiance Park occupies the entire end of the peninsula on which Tacoma is situated, and represents one of the most outstanding areas of open space in the region. This district encompasses that portion of the Park extending from the northern edge of Salmon Beach housing around Point Defiance to the northern limit of beach fill at Owen Beach as it existed on January 15, 1974. (Legal description of the "S-4" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

Beach Characteristics: Dominant beach types are sand and gravel with steep and moderate slope. A typical Puget Sound high sea cliff formation includes exposed clay banks which are lake bed materials from an earlier glacial period. Natural tidal fluctuation is from +15.5 feet to -4.5 feet, based on mean lower low water datum.

Upland Topography: This is predominantly a high bank area, with steep topography and slopes varying up to 60%. The opportunity for waterfront access is severely limited. Soils are generally classified as Rough Broken Land (Rd).

Present Use Activities: This portion of the shoreline is still in its natural state, virtually untouched by human development and offering the rare experience of a wilderness beach hike within the limits of a large urbanized area.

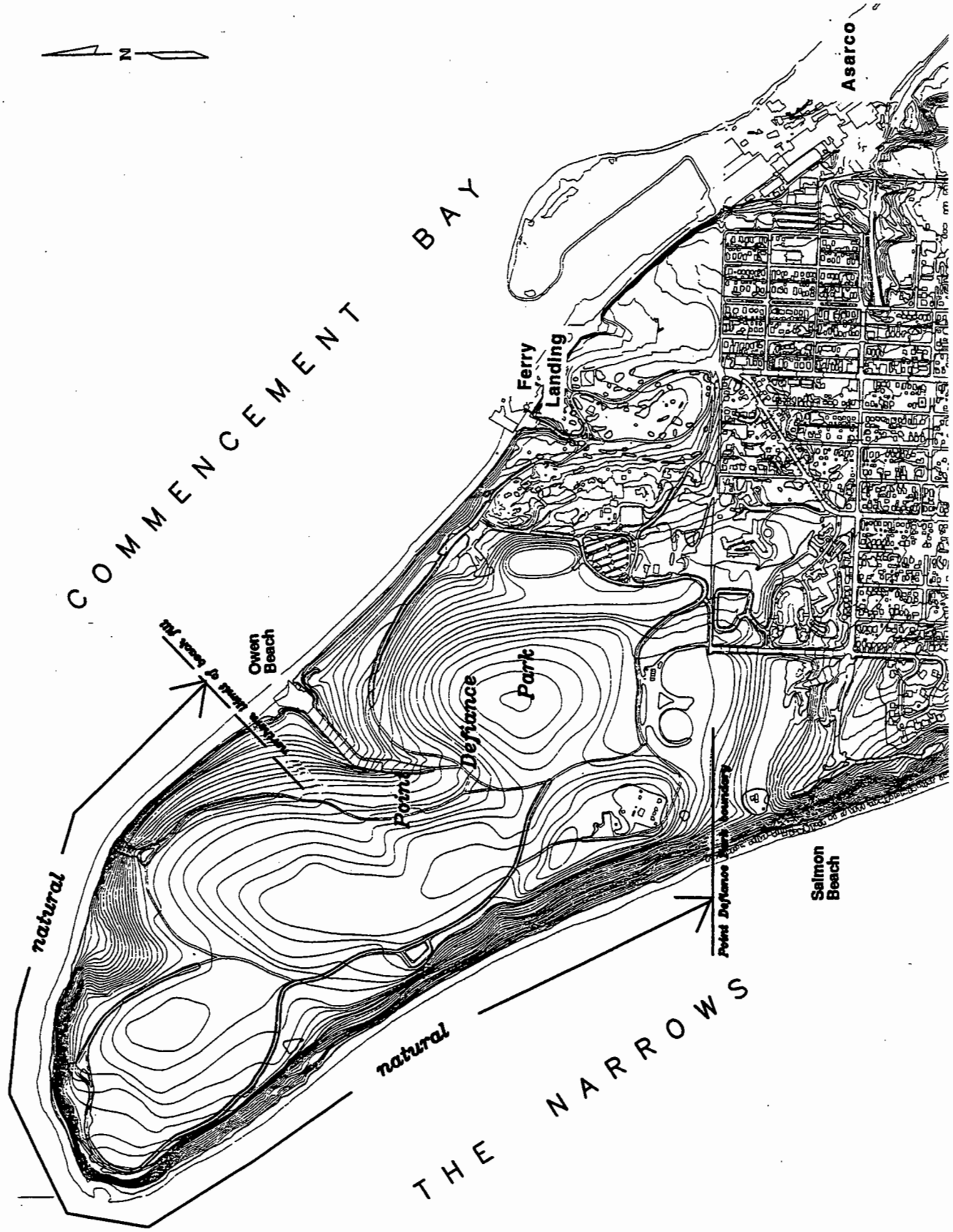
Environmental Designation: Natural (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: The greatest potential for this area lies certainly in protection of the designated natural environment, perpetual utilization for park purposes and in the creation and improvement of view areas and trail systems. Much of this potential has been realized by the Metropolitan Park Board, which has established many such areas along the Five Mile Drive within the Park.

Regulations: Permitted use activities and appropriate use regulations for the "S-4" Shoreline District are set forth in Section 13.10.070 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: In 1979 the Metropolitan Park Board authorized the formulation of a master plan for Point Defiance Park which resulted in the *Point Defiance Park-Comprehensive Improvement Plan.* This long range improvement plan for the entire park was developed in conjunction and is consistent with this *Master Program.* It was adopted by the City as a supporting element of the *Recreation and Open Space Facilities Plan.*

"S-4" Shoreline District - Point Defiance Natural



Point Defiance Park will continue to serve as a major regional park and will continue to provide for a diversity of interests which are in harmony with the unique natural features and consistent with traditional positive park uses.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

"S-5" SHORELINE DISTRICT: Point Defiance Conservation - Park

Location: This district encompasses that portion of Point Defiance Park extending southeasterly from the northern limit of beach fill at Owen Beach as it existed on January 15, 1974, to the southeasterly limit of the shoreline of the public ownership of the Park, including the Tacoma Yacht Club and accompanying slag breakwater. (Legal description of the "S-5" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

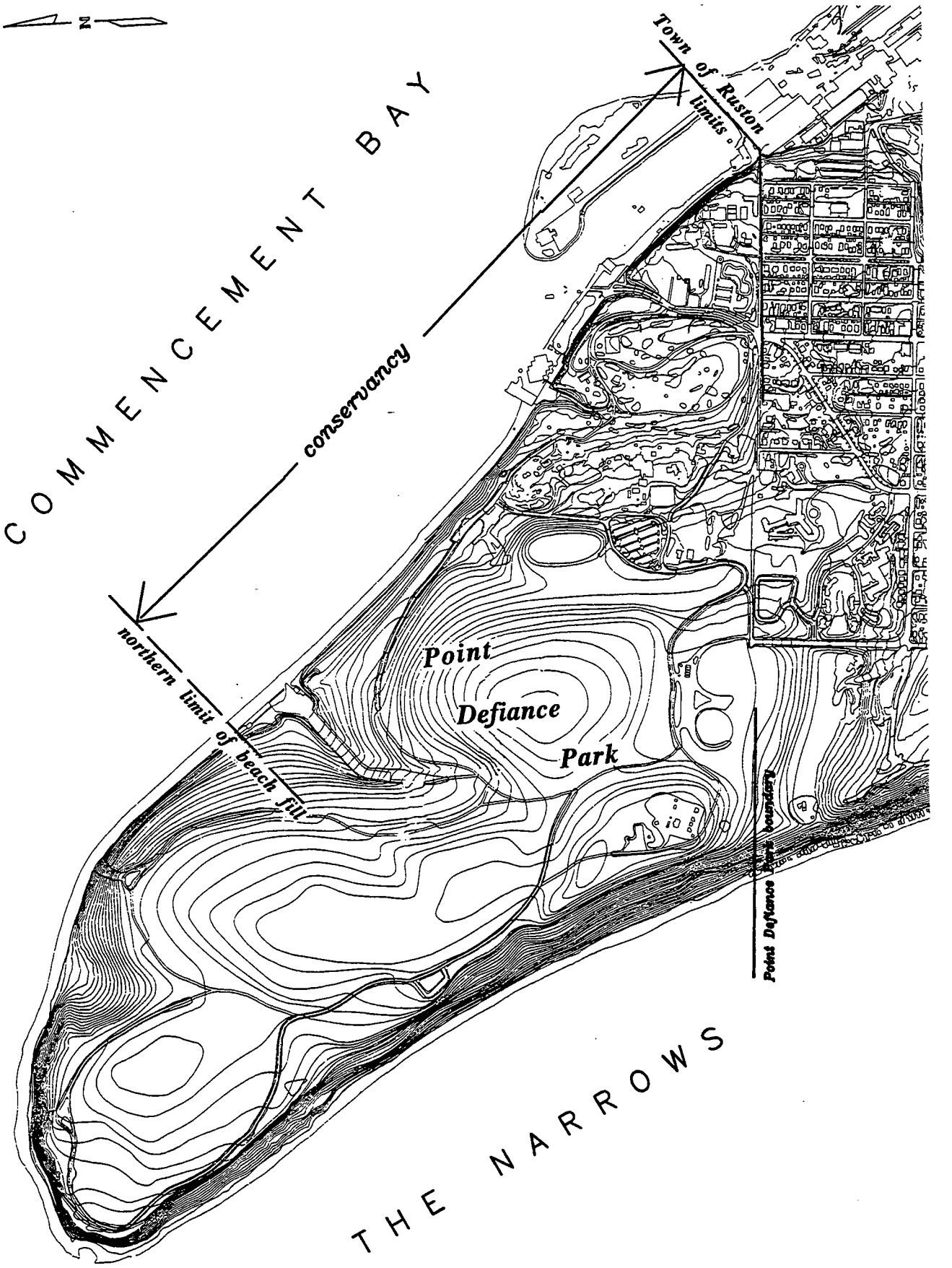
Beach Characteristics: Dominant beach types are sand and gravel with steep and moderate slope. Natural tidal fluctuation is from +15.5 feet to -4.5 feet, based on mean lower low water datum. Near the southeastern edge of the Park, a slag fill by ASARCO, Inc. has created a large breakwater.

Upland Topography: This is primarily a high to medium bank area, with steep topography and slopes varying up to 60%. The opportunity for waterfront access is generally limited to three major breaks in the bluff by gulches extending into the upland areas. Soils are generally classified as Rough Broken Land (Rd).

Present Use Activities: Owen Beach presently contains one of the few major publicly developed waterfront recreational facilities within the City. Included here is a small bathing beach and picnic area, with concrete bulkheads and roadway development. The area is restricted, however, by its relatively small size and limited access; leaving very little opportunity for development. A pedestrian promenade connects Owen Beach with the restaurant boathouse complex to the south. Development includes concrete bulkheads, roadway development, public boating facilities and ferry landing facilities for the Vashon Island ferry route. The Tacoma Yacht Club occupies a large portion of this area. Railroad lines bypass the area by means of the Bennett Tunnel.

Environmental Designation: Conservancy (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

"S-5" Shoreline District – Point Defiance Conservation



Permitted Use Activities: The greatest potential for this area lies certainly in protection of the designated natural environment, perpetual utilization for park purposes and in the creation and improvement of view areas and trail systems.

Regulations: Permitted use activities and appropriate use regulations for the "S-5" Shoreline District are set forth in Section 13.10.080 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: In 1979 the Metropolitan Park Board authorized the formulation of a master plan for Point Defiance Park which resulted in the Point *Defiance Park-Comprehensive Improvement Plan.* This is a long range improvement plan for the entire park. It has been adopted by the City as a supporting element of the *Recreation and Open Space Facilities Plan.*

Point Defiance Park will continue to serve as a major regional park and will continue to provide for a diversity of interests which are in harmony with the unique natural features and consistent with traditional positive park uses.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

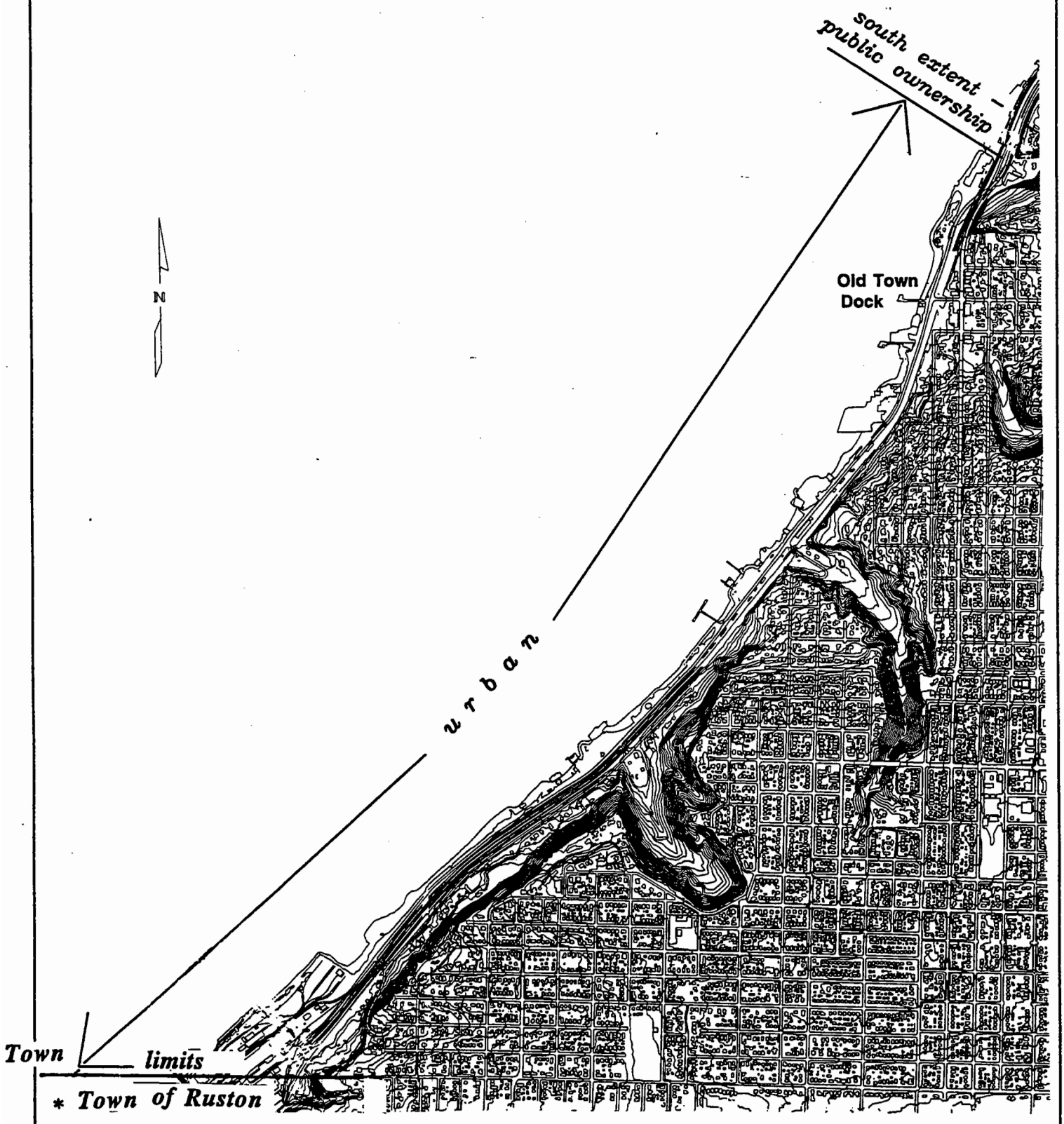
The Metropolitan Park District is presently working with the ASARCO site planning team to develop a master plan for the slag pile, boat basin, maintenance shop, and the old "Funland" area in conjunction with the ASARCO site. The City is working with the planning group to ensure conformity with the *Shoreline Master Program* and intends to modify the program as necessary once the master plan is developed.

"S-6" SHORELINE DISTRICT: Ruston Way - Mixed Public and Private

Location: The Ruston Way shoreline is located along the western side of Commencement Bay from the southeasterly extent of the shoreline of the public ownership of Point Defiance Park, excluding that area lying within the corporate limits of the Town of Ruston, to the southeasterly extent of the shoreline of the public ownership lying east of McCarver Street. (Legal description of the "S-6" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

Beach Characteristics: This portion of the shoreline has been modified through its entire length. Dominant beach types are sand and gravel sometimes overlaid with deposited rubble and debris and with the remains of abandoned lumber mills and other commercial and industrial developments. However, in many areas, heavy rock riprap has been installed and

"S-6" Shoreline District – Ruston Way



* pending ruling by Court of Appeals Case No. 20387-1-II

beaches have been cleared of rubble and opened to public recreation. Natural tidal fluctuation is from +15.5 feet to -4.5 feet, based on mean lower low water datum. The area supports a variety of migratory and resident fish and wildlife.

Upland Topography: Ruston Way, running along the waterfront, is constructed on filled land and protected by riprap and rubble. Above Ruston Way, there is a flat, narrow area lying below a steep bluff which is periodically broken by a series of wooded ravines or gulches extending into the residential areas above. The upland topography varies in slope up to 60%. Soils are generally classified as Rough, Broken Land (Rd) and Rolling Sinclair Gravelly Fine Sandy Loam (Sf).

Present Use Activities: Present development includes commercial, parks and recreational uses interspersed along the waterside of Ruston Way and mainline railroad on the landward side.

Most of the commercial activities are water- oriented, and they generally are located partly on filled land and partly on open-piling structures. Recreational activities on public beaches and the public docks include fishing, boating, swimming, picnicking, beachcombing, birding and sightseeing (scenic viewing). A bicycle/pedestrian path runs the length of Ruston Way.

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: The future of development along Ruston Way is to a great extent affected by the waterfront acquisition policies and programs of the City of Tacoma. At the present time, approximately 50% of the two miles of Ruston Way waterfront property has been assembled into public ownership for recreation and open space use.

It is the adopted policy of the City of Tacoma concerning waterfront properties to protect areas of natural scenic beauty or historic interest, or areas to be developed as parkways, scenic or historic routes or sites, or other open space as deemed appropriate through acquisition by acceptable legal means of easements or other property interests.

As expressed in the City's *Recreation and Open Space Facilities Plan*, it is not the intent of the City to acquire control of the entire length of Ruston Way waterfront; rather it is planned that future development involve a coordinated plan of mixed public and private development of water-oriented land use. This plan is consistent with both past and present proposals for desired development of Ruston Way into a quality waterfront attraction including possible parkways, roadside rests, public fishing piers, wharves, docks, and floats, and picnic and boating facilities. It is specifically noted that residential use of the area should not be considered except as expressly described below.

The City is currently working with the ASARCO site planning team to develop a master plan for the ASARCO property--the northwesterly 2,155 feet of the "S-6" Ruston Way

Shoreline District. The City intends to modify the *Shoreline Master Program* as necessary once the master plan is developed; however, as discussed below, a variety of uses for the area away from the shoreline edge are already proposed.

With regard to the northwesterly 2,155 feet of the "S-6" Ruston Way Shoreline District landward 150 feet of the OHWM, it is contemplated that land uses may include water-oriented commercial, retail, entertainment, educational, and recreational as well as residential uses. Preference should be given to creating an activity center within said area that can serve as a natural destination and is fully compatible and coordinated with existing recreational and transportation uses in the adjacent shoreline areas. The City requires that development proposals in the immediate non-shoreline areas of the "S-6" Shoreline District be compatible with permitted shoreline development as provided herein.

Regulations: Permitted use activities and appropriate use regulations for the "S-6" Shoreline District are set forth in Section 13.10.090 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: The importance of Ruston Way lies in the retention and improvement of aesthetics, open space and view potential for the public. In addition, special consideration should be given to the gulches and their role in a coordinated open space system for the area. As stated earlier, these areas should be retained and included in such a system because of their scenic beauty and their functional considerations. Presently, the gulches provide a visual link between the water and the residential areas on top of the bluffs. With the development of paths and trails, they also have the potential of becoming physical links.

The special problem of limited space along Ruston Way can be resolved by creative and unique designs. These designs should preserve (1) pedestrian access to and along the water's edge, (2) view access to the water, and (3) wildlife resources. Other special considerations should be aesthetics of buildings, renewing the historic flavor of Old Town, increased vegetation, and transportation facilities which consume less space.

Special note is made of the utilization of the shoreline along this district for potential as public beaches. Consideration should be given to use of selective riprap or other materials suitable to this shoreline area for the creative rehabilitation of this potentially unlimited recreational area for exploring, hiking, birding, fishing, biking, beachcombing and related activities.

Future roadway development should generally be limited to a maximum of two moving lanes. The intent is to limit through traffic to one lane in each direction.

The *Ruston Way Plan* was adopted by the City in 1981. The plan discusses opportunities for private and public development and will assist these developments by setting forth intents, policies, design recommendations and common design elements. These common elements will unify diverse developments and foster continuity along the Ruston Way shoreline.

Detailed drawings and general specifications of these unifying design elements have been prepared to assist the development and design of proposed projects and are contained in the *Ruston Way Design Booklet*. Consideration of unifying design elements is an important part of project and shoreline permit review.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

"S-7" SHORELINE DISTRICT: Schuster Parkway - Deep Water Terminal and Light Industrial

Location: This district lies along the western side of Commencement Bay from the southeasterly extent of the shoreline of the public ownership lying east of McCarver Street to the mouth of the Thea Foss Waterway. (Legal description of the "S-7" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

Beach Characteristics: The entire length of the shoreline in this area has been modified. Soils are classified generally as Rough Broken Land (Rd), and Rolling Sinclair Gravelly Fine Loam (Sf). There is also a significant amount of "made land" in the area and very little beach exposure. Natural tidal fluctuation is from +15.5 feet to -4.5 feet, based on mean lower low water datum.

Upland Topography: The modified configuration of the area is a narrow flat shelf between the water's edge and the high bank on the upland side. The upland topography is generally steep through the entire length with slopes ranging up to 60%.

Present Use Activities: Almost all of the development in the area lies on fill or on land created by cutting into the hillside. Present development includes a city street (Schuster Parkway), a railroad main line and other spur trackage, and shipping terminal facilities.

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: Natural deep water lying immediately off shore is a significant characteristic of the area, making it extremely desirable for port development. The Port of Tacoma has developed an export grain terminal facility in the area and has expressed interest in other and similar types of development.

"S-7" Shoreline District – Schuster Parkway

Recognizing the City of Tacoma ownership adjacent to the north and the residential nature of the adjoining upland neighborhood, and in the interest of gradual transition between dissimilar land uses, special consideration is given to the interrelationship of these particular areas.

Because of the availability of the deep water and proximity to existing industrial areas, it is recommended that the remaining area extending to the Thea Foss Waterway be used for deep water terminal and light industrial facilities.

Because of its proximity to in-city residential areas, school and park properties, care must be given to allow only those activities which will not diminish the quality of life in those established areas.

Regulations: Permitted use activities and appropriate use regulations for the "S-7" Shoreline District are set forth in Section 13.10.100 of the Official Code of the City of Tacoma and contained herein.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

"S-8" SHORELINE DISTRICT: Thea Foss Waterway - Mixed Public and Private

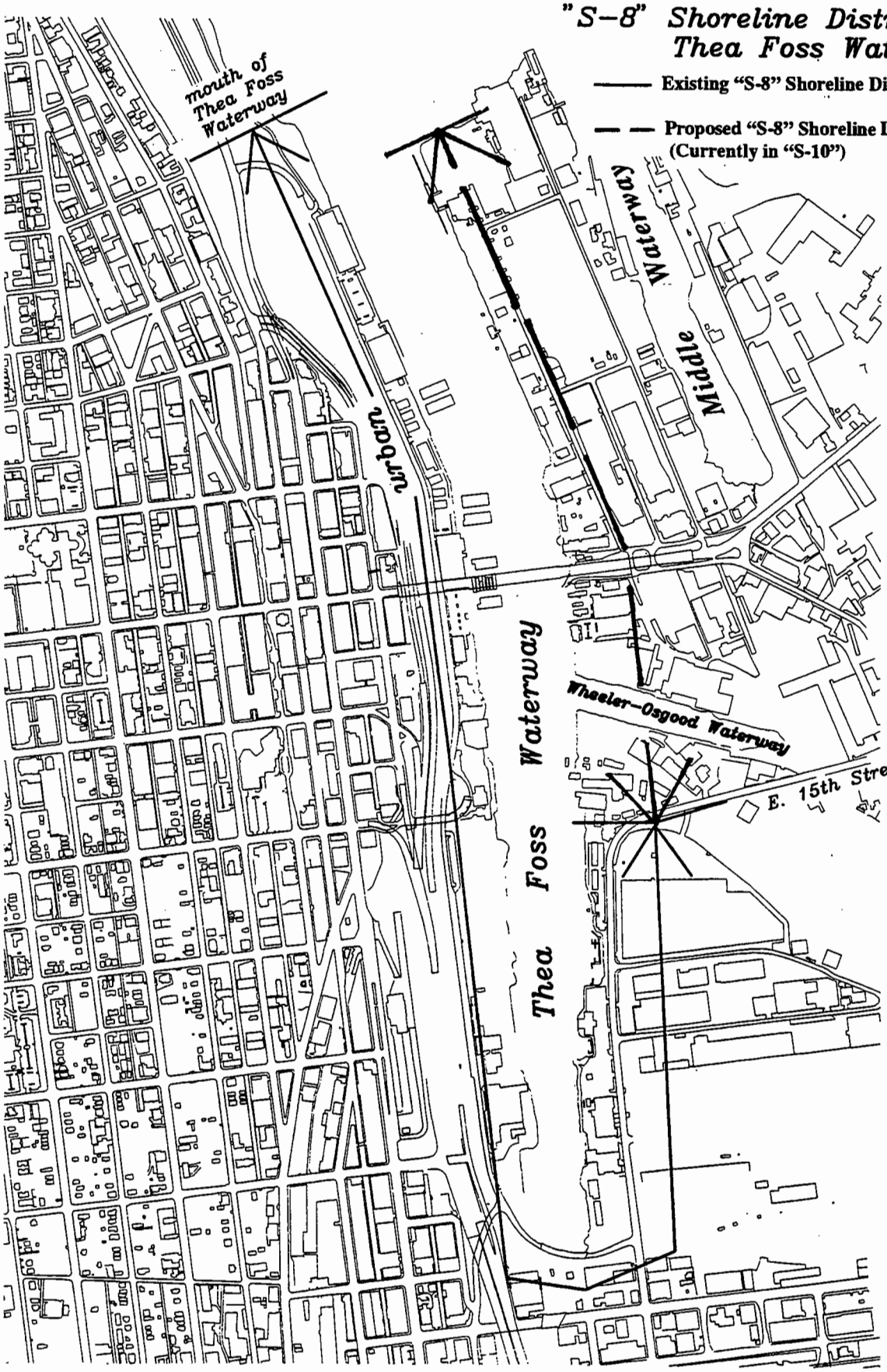
Location: The Thea Foss Waterway is located below a steep bluff at the edge of the Central Business District (CBD) and at the head of Commencement Bay. This district includes both sides of the Waterway, as shown on the general plan concept map. Immediately adjacent to the east is the Port Industrial Area. (Legal description of the "S-8" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

Beach Characteristics: The Waterway is defined by a variety of bulkhead types and piers, wharves, docks, and floats, including concrete, piling and riprap. Many of these are in a poor state of repair.

Upland Topography: The topography of the area is flat. The soils are classified as Made Land (Ma) and are composed of a wide variety of materials, some of which are substantial.

Present Use Activities: Present development includes city streets and rail facilities. Activities on the west side of the Waterway include warehouses, boat marinas, various wholesaling outlets and a number of new water-oriented uses. On the east side, land uses include shipbuilding, petroleum storage, paper, metal and lumber processing, and marinas

"S-8" Shoreline District – Thea Foss Waterway



and water-oriented commercial uses. The western side is predominantly in public ownership but has not been developed for public use; however, some recreational uses have been created on the southern portion of the waterfront.

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: Considerable redevelopment has occurred along Thea Foss Waterway during the past decade. In many instances, however, conditions in the area remain substandard. The condition of many piers, wharves, docks, floats, and bulkheads are unsafe and unsightly, and many of the existing uses do not need waterfront locations and should be relocated.

The greatest reuse and redevelopment potential of Thea Foss Waterway is for mixed use development, including cultural facilities, residential, marinas, water-oriented commercial, water-oriented public park and public facilities development, and waterborne transportation. The waterfront and proximity to the downtown offer a combination which should be utilized in developing a transition area with unique character. In order to achieve this, many improvements will have to be undertaken including a beautification program, changes in land uses, and the addition of recreation facilities. In other words, a complete renewal of the area is necessary, maintaining only those facilities which are compatible with the desired character.

The east side of the waterway contains active industrial and commercial development. The long-range intent of the plan is to encourage a transition to mixed use development, but allow existing industrial uses to remain and provide for new industrial uses in appropriate locations.

Specifically included within these improvements is the renovation and reuse of Union Station for federal courthouse space and courtrooms. Additionally, a State Historical Museum is under construction south of the Station. It is hoped that Union Station, which was for many years one of the main entrances to the City and a prominent landmark, might be included in a future water-oriented redevelopment project for the Waterway.

Several specific proposals for the Thea Foss Waterway have been suggested or are presently being considered. Redevelopment of publicly-owned property along the waterway is considered highly desirable, with mixed water-oriented commercial, park and public facilities being proposed.

Regulations: Permitted use activities and appropriate use regulations for the "S-8" Shoreline District are set forth in Section 13.10.110 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: In 1992, the City adopted the *Thea Foss Waterway Design and Development Plan* as part of its comprehensive plan and this *Master Program*. The plan is

the City's blueprint for the Waterway. The purpose of the plan is to provide design guidelines for new development, both public and private, and to explore various options of shoreline uses. The plan promotes public access and the enjoyment of the shoreline.

An areawide Environmental Impact Statement was prepared for the western side of the Waterway in 1995, for use by future development. This document was the basis for amendments to the *Thea Foss Waterway Design and Development Plan* and the *Master Program*. Design guidelines were identified in these Plan amendments. Consideration of unifying design elements is an important part of project and shoreline permit review.

In 1989, the City adopted the *Shoreline Trails Plan*, which discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes, and gulches from Thea Foss Waterway north to Ruston Way, Point Defiance and south along the western shores of Tacoma. The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network thereby providing an alternative means of travel to and from shoreline areas and neighborhoods.

"S-9" SHORELINE DISTRICT: Puyallup River - Mixed Public and Private

Location: This area comprises that territory immediately adjacent to both sides of the Puyallup River, from East 11th Street to the Tacoma City Limits and the tidally influenced portions of Clear Creek. (Legal description of the "S-9" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

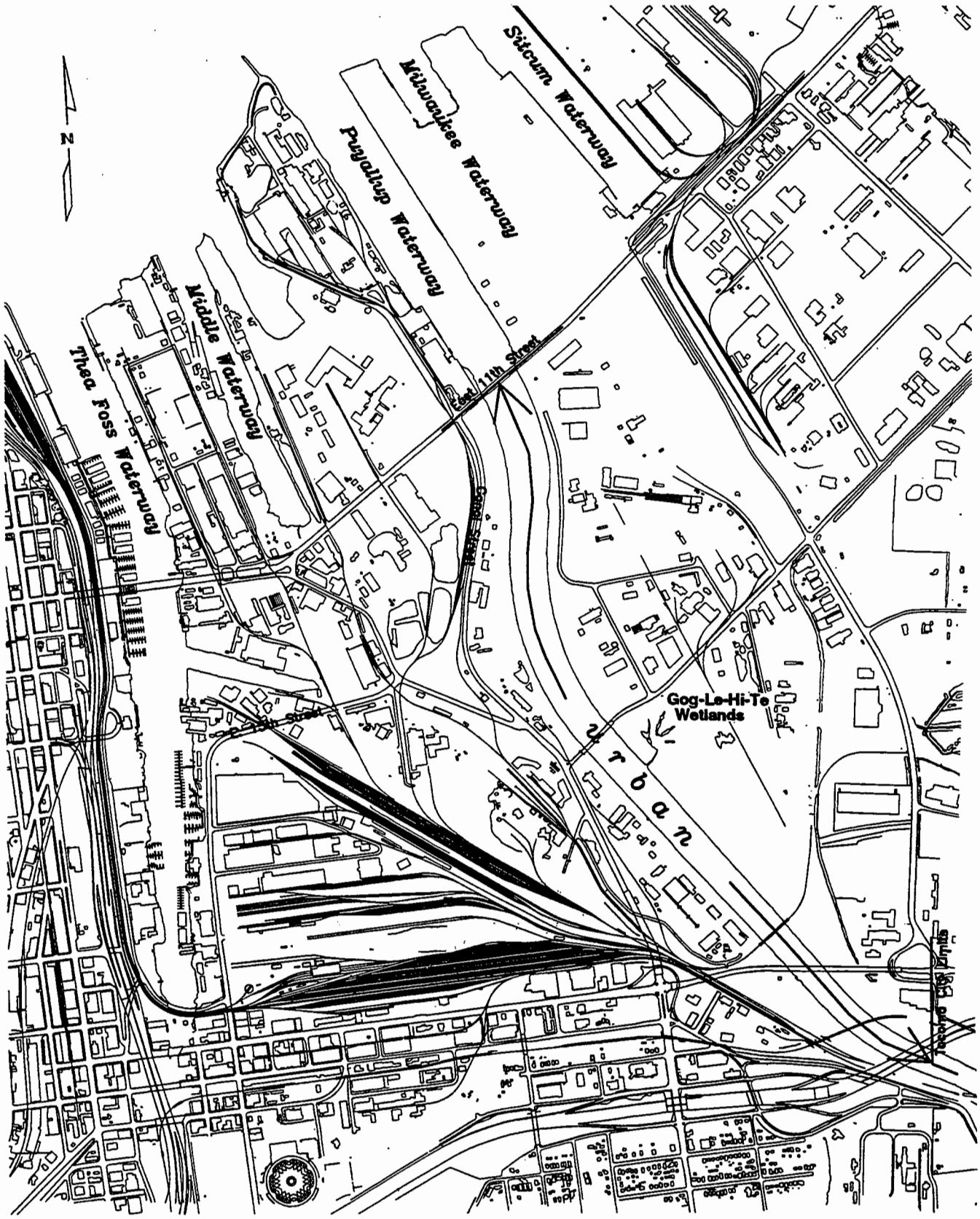
The City acknowledges the existence of the Puyallup Tribe of Indians' reservation within this district and the responsibility for close cooperation with Tribal authorities to ensure mutually agreed regulation of uses within this district.

Beach Characteristics: The present channel of the Puyallup River is a modification of the original natural configuration of the Puyallup River estuary. Under a U.S. Army Corps of Engineers Flood control project, the River has been channeled through the construction of dikes within the City of Tacoma and beyond up river into Pierce County.

Upland Topography: The topography of the entire immediate area is flat. Soils are classified as Made Land (Ma) and are composed predominantly of dredge spoils and bank run gravel from nearby gravel deposits.

Present Use Activities: Access to the river and control of development along the river is subject to jurisdiction of the U.S. Army Corps of Engineers. Much of the riverfront property within the city is presently undeveloped and in local governmental, federal or tribal ownership.

"S–9" Shoreline District – Puyallup River



Master Program for Shoreline Development • City of Tacoma • Washington

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: Increasing industrial development may fill much of the area adjacent to the diked Puyallup riverfront within the city. Special use should be made of remaining local and federal properties to take advantage of the unique recreation advantages offered by a generally undeveloped riverfront in an urban setting. A study for pedestrian and bicycle trails along the dike should be undertaken.

Regulations: Permitted use activities and appropriate use regulations for the "S-9" Shoreline District are set forth in Section 13.20.120 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: The Puyallup River supports a substantial anadromous fish run and much of the river basin has historical and archaeological significance. It would be desirable for the City of Tacoma to join with Pierce County and the Puyallup Tribe in developing the natural resource, historical and recreational advantages of this river environment.

The Port of Tacoma has constructed Gog-le-hi-te wetland off the river at the end of Lincoln Avenue. Gog-le-hi-te mitigated loss of fish habitat to a landfill project in the Port. It also attracts wildlife and provides an excellent opportunity for wildlife observation and photography, and for interpretation of nature and natural resources.

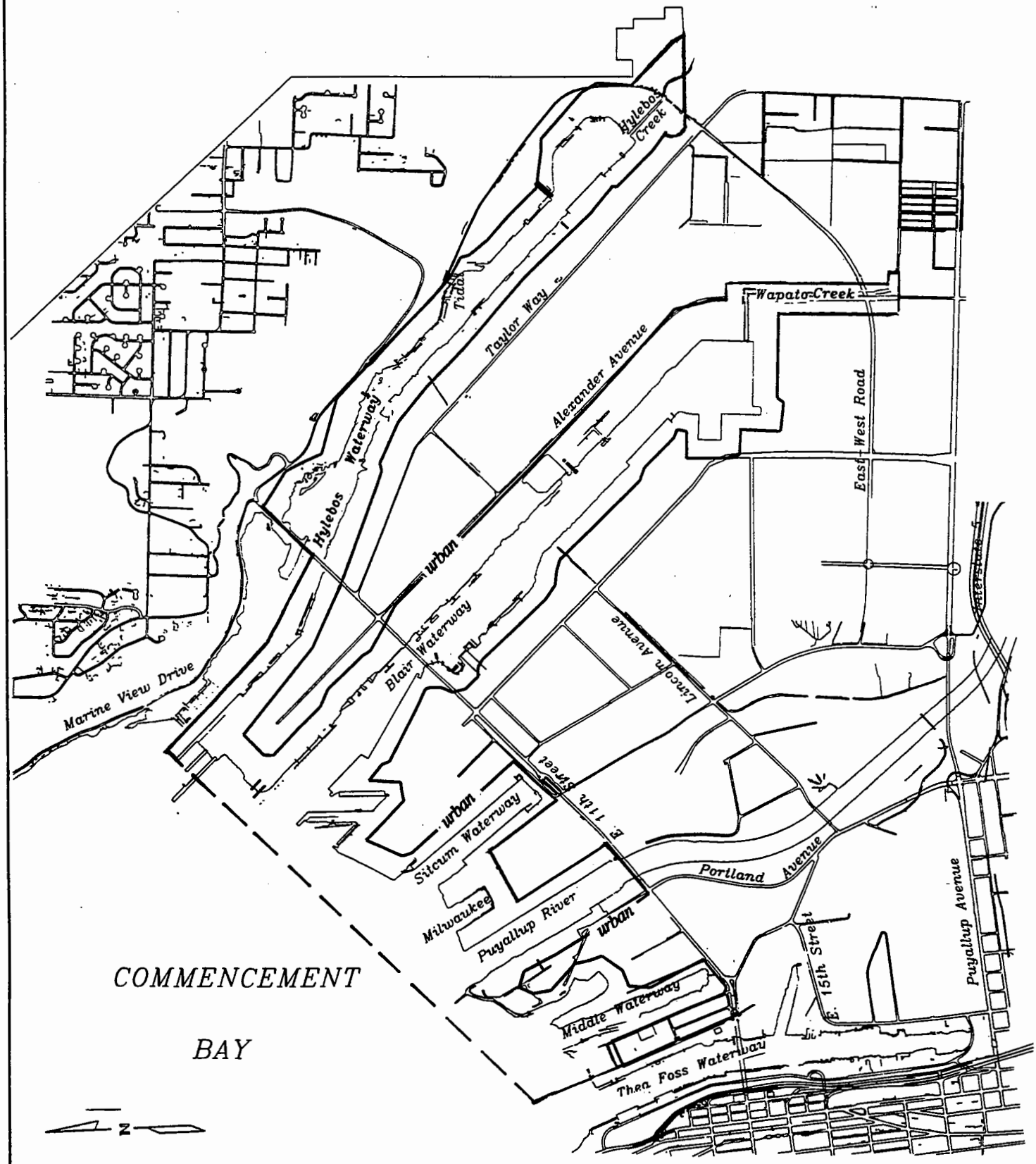
"S-10" SHORELINE DISTRICT: Port Industrial - Industrial and Terminal

Location: The Port Industrial Area occupies most of the reclaimed Puyallup River estuary at the head of Commencement Bay, including that portion of the Puyallup River lying north of East 11th Street and that portion of Hylebos Waterway lying south of East 11th Street, the west side of the Hylebos Waterway north of East 11th Street, as shown on the general plan concept map. (Legal description of the "S-10" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

The City acknowledges the existence of the Puyallup Tribe of Indians' reservation within this district and the responsibility for close cooperation with Tribal authorities to ensure mutually agreed regulation of uses within this district.

Beach Characteristics: The area is almost entirely modified shoreline. The Puyallup River has been channeled within the original estuary and the existing land form has been created through dredge and fill operations over an extended period of years. Tidal fluctuation is from +15.5 to -4.5 feet, mean lower low water.

"S-10" Shoreline District– Port Industrial



Upland Topography: The topography of the entire area is flat and lies within a few feet of the high water line. Soils are classified as Made Land (Ma) and are composed predominantly of dredge materials and bank run gravel from nearby gravel deposits.

Present Use Activities: The Port of Tacoma has a continuing program of waterway and terminal facility improvements and other private developers are also involved in development programs within this area. Present development includes terminal shipping facilities and some non-terminal uses which have given way to new terminal development.

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: Future use activities in the Port Industrial Area are expected to remain the same, with an increase in the intensity of development and greater emphasis on terminal facilities within the City.

Regulations: Permitted use activities and appropriate use regulations for the "S-10" Shoreline District are set forth in Section 13.10.130 of the Official Code of the City of Tacoma and contained herein.

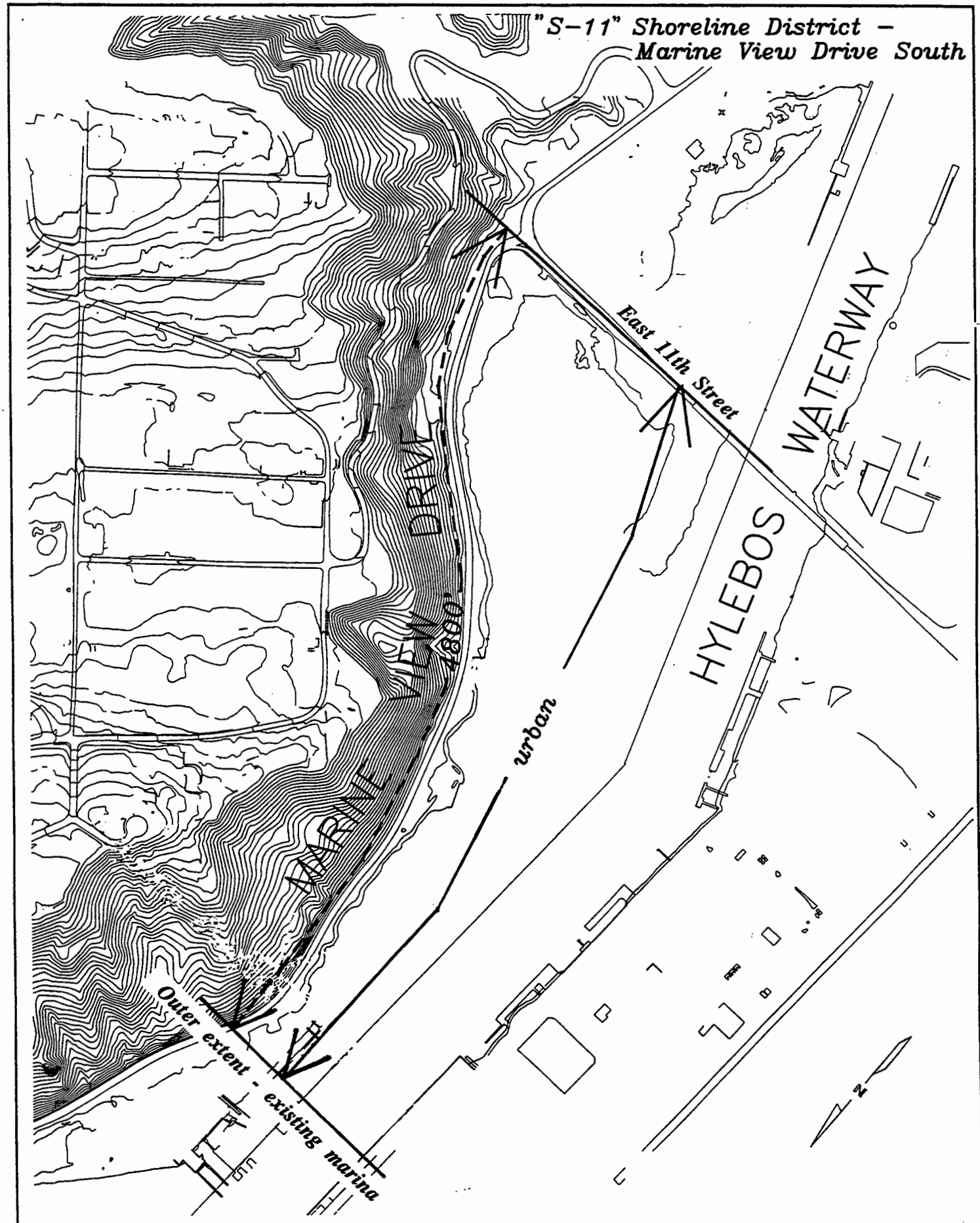
Special Considerations: The present industrial orientation of this area offers limited use for public enjoyment. However, the Port of Tacoma maintains a viewing tower with telescope and interpretive materials at the head of Sitcum Waterway. Additional viewing sites at appropriate locations in the "S-10" District are desirable. Because the port is most often seen from a distance, good industrial design, landscaping and elimination of pollutants is important to make the area visually more appealing.

The Puyallup River and Hylebos Creek support a substantial anadromous fish run and much of these areas have historical and archaeological significance. It would be desirable for the City of Tacoma to join with the Puyallup Tribe and Pierce County in developing the natural resource, historical and recreational advantages of these areas.

"S-11" SHORELINE DISTRICT: Marine View Drive South - Mixed Public and Private

Location: This area lies on the northeasterly shore on Hylebos Waterway and comprises 4800 feet of Marine View Drive extending northwesterly from East 11th Street. This is generally the area between the Hylebos (East 11th Street) Bridge and the outer extent of the existing marina facility located within the waterway. (Legal description of the "S-11" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

The City acknowledges the existence of the Puyallup Tribe of Indians' reservation within this district and the responsibility for close cooperation with Tribal authorities to ensure


"S-11" Shoreline District -
Marine View Drive South
East 11th Street
HYLEBOS WATERWAY
MARINE VIEW DRIVE
4800'
urban
Outer extent - existing marina
N

mutually agreed regulation of uses within this district and acknowledges its sovereign rights under the 1988 Agreement.

Beach Characteristics: Beach types in this area are generally sand, gravel, and mud. Some of the tideland areas are classified as Made Land (Ma), composed of dredge materials and bank run gravel taken from upland areas.

Upland Topography: Much of this district has been modified by road construction, channel modification, dredge and fill operations, and by cutting into the hillside. The upland topography is generally steep with varying slopes up to 60%. Marine View Drive, running along the water's edge, is narrow and curving and maintains a relatively level route of approximately +18 feet through the area. Upland soils are classified as Rough Broken Land (Rd).

Present Use Activities: The area presently consists of commercial marinas, some light industrial and commercial development, and a number of single family dwellings, many of which are on pilings. Much of the residential development is presently in substandard condition.

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: This area should be developed in mixed public and private use, including residential uses, with emphasis on public shoreline acquisition, for development of water-oriented parks, open space and recreation facilities, within limits of community desire and financial capacity. Private water-oriented uses are subject to compliance with shoreline development policies, and design and performance standards.

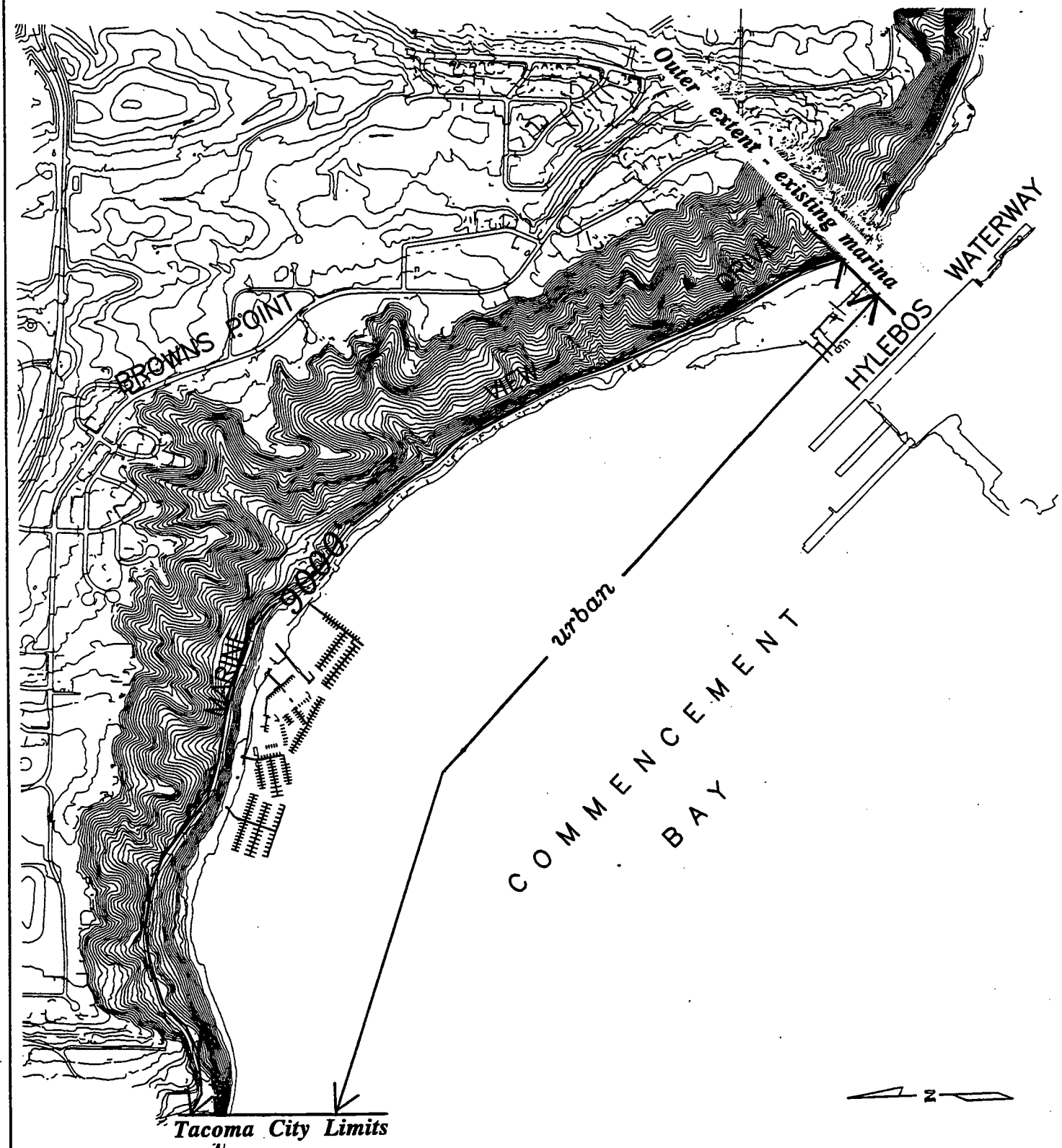
Regulations: Permitted use activities and appropriate use regulations for the "S-11" Shoreline District are set forth in Section 13.10.140 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: Hylebos Creek supports an anadromous fish run. Activities which would damage or diminish this run should be conditioned, mitigated, or prohibited.

"S-12" SHORELINE DISTRICT: Marine View Drive North - Mixed Public and Private

Location: This area lies on the northeasterly shore of Commencement Bay, and comprises 9000 feet of Marine View Drive extending southeasterly from the City limits. This is generally the area between the outer extent of the existing marina facility within the waterway and the City Limits. (Legal description of the "S-12" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

"S-12" Shoreline District – Marine View Drive North



The City acknowledges the existence of the Puyallup Tribe of Indians' reservation within this district and the responsibility for close cooperation with Tribal authorities to ensure mutually agreed regulation of uses within this district.

Beach Characteristics: Beach types in the area are generally sand, gravel, and mud. A portion of the tidelands near the southern end of the area is classified as Made Land (Ma). The existing spit in this area was formed about 1930 by the placing of dredge material on the existing tidal flats and is a re-establishment of typical saltmarsh vegetation over man-made fill.

Upland Topography: Much of this district has been modified by road construction cutting into the hillside. The upland topography is generally steep with varying slopes up to 60%. Much of Marine View Drive, running along the water's edge, is narrow and curving and rises from +18 feet to approximately +225 feet along its waterfront route. In most cases, the area between street and water is very narrow, with the topography often dropping directly from street to water. Upland soils are generally classified as Rough Broken Land (Rd).

Present Use Activities: This area is developed with three marinas, some log storage and a number of single family residences, many of which are on pilings. Much of this residential development is presently in substandard condition.

Environmental Designation: Urban (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: This area should be developed in mixed public and private use, including residential uses, with emphasis on public shoreline acquisition, for development of water-oriented parks, open space and recreation facilities, within limits of community desire and financial capacity. Private water-oriented uses are subject to compliance with shoreline development policies, and design and performance standards.

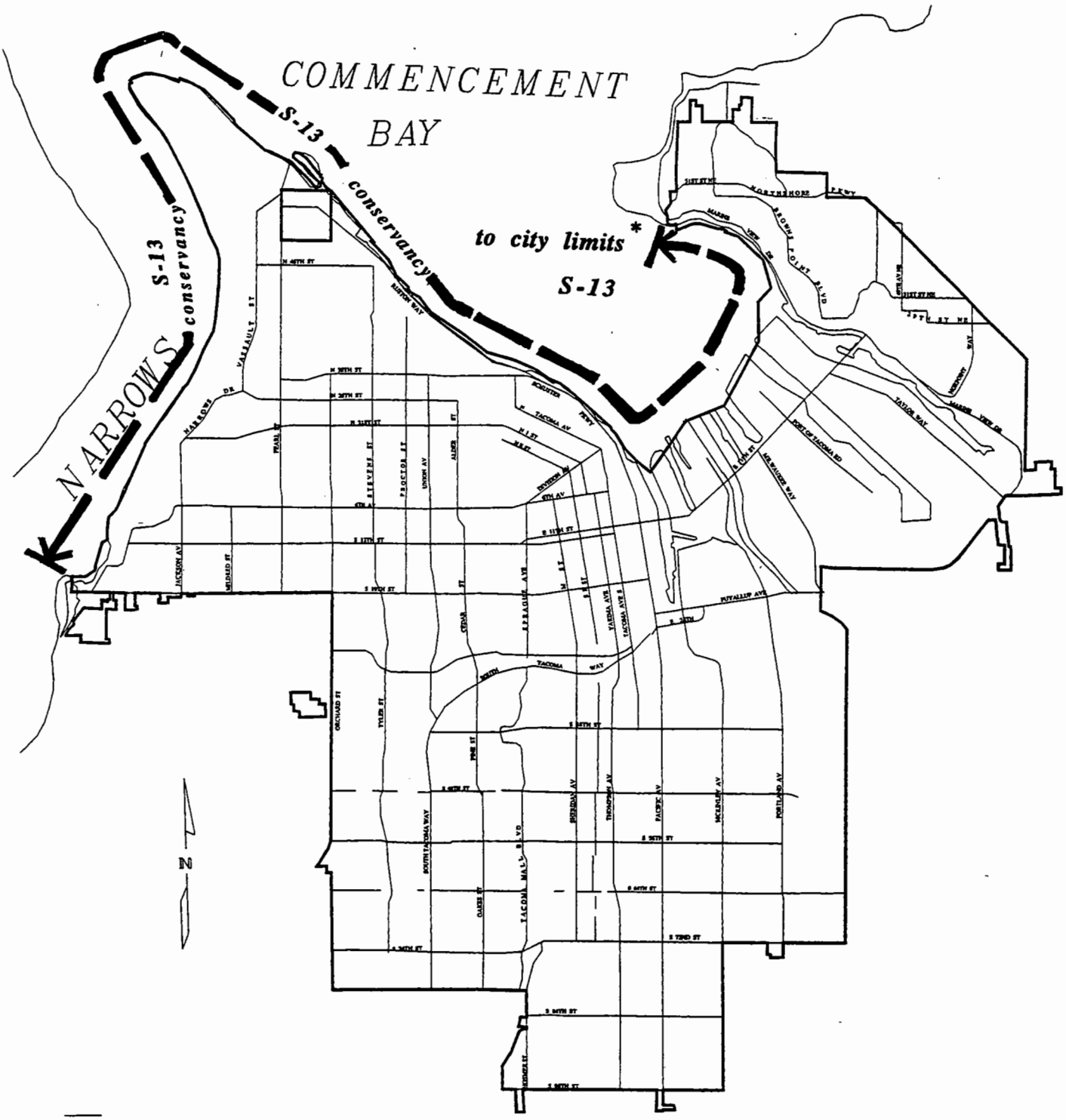
Regulations: Permitted use activities and appropriate use regulations for the "S-12" Shoreline District are set forth in Section 13.10.150 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: Hylebos Creek supports an anadromous fish run. Activities which would damage or diminish this run should be conditioned, mitigated, or prohibited.

"S-13" SHORELINE DISTRICT: Commencement Bay and Tacoma Narrows - Marine Navigation

Location: This district comprises all of the saltwater areas of the City, together with the lands underlying them; lying seaward of the Outer Harbor Line of Commencement Bay, the

"S-13" Shoreline District – Commencement Bay & Tacoma Narrows



*Area waterward of the Outer Harbor Line of Commencement Bay and Tacoma Narrows or the Federal Pierhead Line in areas where the Outer Harbor Line is nonexistent.

Federal Pierhead Line in areas where the Outer Harbor Line is nonexistent, or the line of extreme low water where there is no Outer Harbor Line or Federal Pierhead Line. (Legal description of the "S-13" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

Beach Characteristics: Commencement Bay and the Tacoma Narrows are part of the Puget Sound waterway system. The marine waters of Puget Sound are one of the deepest salt water basins in the United States, with depths of 550 feet in the areas of the Tacoma Narrows and 200 feet to 500 feet over most of Commencement Bay. The currents through the Narrows are extremely turbulent, with velocity as high as 480 feet/minute and vertical mixing to depths as great as 180 feet. Natural tidal fluctuations is from +15.5 feet (extreme high water) to -4.5 feet (extreme low water), based on mean lower low water datum.

Upland Topography: The topography of adjacent uplands are described in detail in Shoreline Districts "S-1" through "S-12".

Present Use Activities: Present use of these water areas includes navigation, commerce and recreational activities. The water is a habitat for fish, wildlife, shellfish, and aquatic plants which are publicly-owned resources.

Environmental Designation: Conservancy (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: Use of the waters of Commencement Bay and the Narrows are governed by provisions of the Constitution of the State of Washington and the Constitution of the United States of America and regulations developed thereunder pertaining to navigation and commerce.

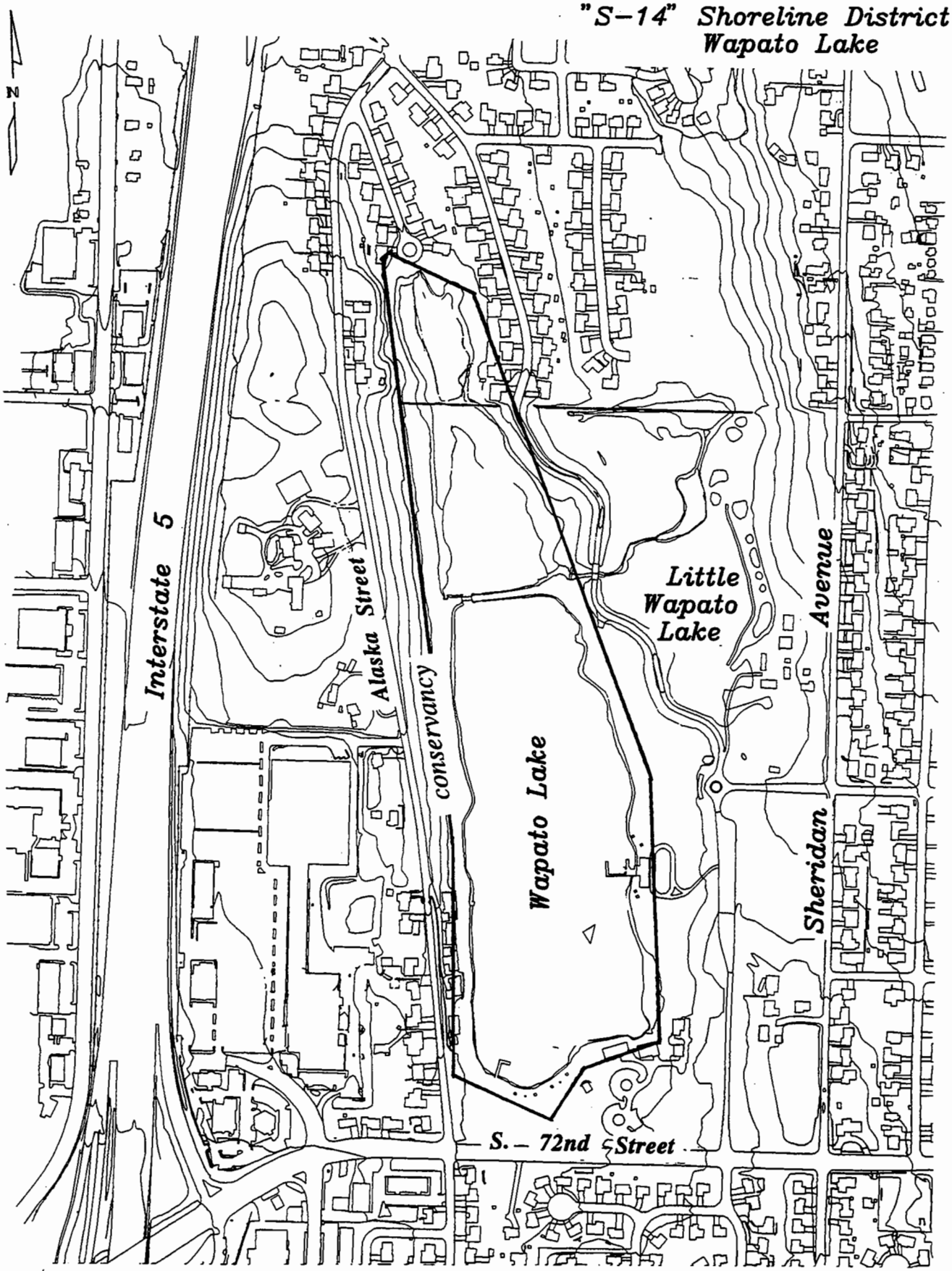
Regulations: Permitted use activities and appropriate use regulations for the "S-13" Shoreline District are set forth in Section 13.10.160 of the Official Code of the City of Tacoma and contained herein.

"S-14" SHORELINE DISTRICT: Wapato Lake - Mixed Public and Private and Conservation

Location: Wapato Lake is located in the City's South End and covers an area of approximately 29 acres immediately north of South 72nd Street and east of Interstate 5. (Legal description of the "S-14" Shoreline District is set forth in Chapter 13.10 of the Official Code of the City of Tacoma.)

Beach Characteristics: Dominant beach type is sand and gravel. There is no significant water level fluctuation.

"S-14" Shoreline District – Wapato Lake



Upland Topography: The Wapato Lake Shoreline is mostly low bank with some beach exposure. The topography is generally classified as Undulating Kapowsin Gravelly Loam (Kd) and Rolling Alderwood Gravelly Sandy Loam, with some limited presence of other classifications. A marsh is located at the northern end of the lake.

Present Use Activities: At the present time, approximately 27% of the lake's shoreline is developed as single family residential. The remaining 73% is included as a part of the city's park system. Wapato Park presently has an area of 79.4 acres.

Environmental Designation: Conservancy (as set forth in Chapter 13.10 of the Official Code of the City of Tacoma and as further defined in the Natural Elements Section of this document).

Permitted Use Activities: Wapato Park provides needed open space for Tacoma's South End and should be maintained by the Metropolitan Park District for recreational purposes. Consideration should also be given to the possible acquisition of adjoining private properties at such time as they are offered for sale.

Regulations: Permitted use activities and appropriate use regulations for the "S-14" Shoreline District are set forth in Section 13.10.170 of the Official Code of the City of Tacoma and contained herein.

Special Considerations: It should be realized that the entire ecosystem of Wapato Lake is very fragile and easily affected by man. Its relatively small size and proximity to urbanized areas render it even more vulnerable. Removal of surrounding vegetation, indiscriminate use of fertilizers and chemicals, and construction of bulkheads should be prohibited along the lakefront. The construction of docks, boathouses, and other facilities should be limited so as to preserve natural views and maintain the lake's surface area.

Care should be taken to preserve and restore the marsh since it appears to be the only freshwater marsh in the City under jurisdiction of the Shoreline Management Act. It is a nesting area for songbirds and waterfowl and together with the lake itself is a popular location for birding. It is important that the marsh not be used for landfill or dumping of any nature. Additionally, new storm drains into the lake or marsh should be prohibited.

This section concerns the influence of human uses on the shoreline areas. It is the intent to define policy guidelines for the regulation of use activities proposed for shorelines. Each topic, representing a specific use or group of uses, is broadly defined and followed by several policy guidelines. These guidelines represent the criteria upon which judgments for proposed shoreline developments will be based.

These guidelines have been prepared in recognition of the flexibility needed to carry out effective local planning of shorelines. The interpretation and application of the guidelines may vary relative to different local conditions. Exceptions to specific provisions of these guidelines may occur where local circumstances justify such departure. Any departure from these guidelines must, however, be compatible with the intent of the act as enunciated in RCW 90.58.020.

Guidelines are developed for the following use activities:

- Agricultural and Forest Management Use Activities
- Aquaculture
- Breakwaters
- Bulkheads
- Commercial
- Dredging
- Educational, Historical, Cultural, and Archaeological Areas
- Environmental Remediation
- Habitat Improvement
- Jetties and Groins
- Landfill
- Log Storage and Rafting
- Marinas and Boat Launch Facilities
- Mineral Extraction (Excluding dredging)
- Outdoor Advertising, Signs and Billboards
- Piers, Wharves, Docks and Floats
- Port, Terminal, and Industrial
- Recreation, Water-Oriented
- Residential
- Road and Railroad Construction and Location
- Shoreline Protection (Streams)
- Solid Waste Disposal
- Utilities

Agricultural and Forest Management Use Activities

Because of the absence of any existing or foreseeable shoreline areas within the City of Tacoma devoted to agricultural or forest management use specific guidance solely for these uses is not provided. The intent of the basic guidance for other uses contained in this *Master Program* should be considered when evaluating any future requests to use shoreline areas for these purposes.

Aquaculture

Aquaculture (popularly known as fish farming) is the culture of farming of food fish, shellfish, or other aquatic plants and animals. Potential locations for aquacultural enterprises are relatively restricted due to specific requirements for water quality, temperature, flows,

oxygen content, and, in marine waters, salinity. The technology associated with present-day aquaculture is still in its formative stages and experimental. Guidelines for aquaculture should therefore recognize the necessity for some latitude in the development of this emerging economic water use as well as its potential impact on existing uses and natural systems.

1. Policies

   a. Aquaculture enterprises should be located in areas of high water quality where the navigational access of upland owners and commercial traffic is not significantly restricted.

   b. Recognition should be given to the possible detrimental impact aquacultural development might have on the visual access of upland owners and on the general aesthetic quality of the shoreline area and on water quality.

   c. As aquaculture technology expands with increasing knowledge and experience, emphasis should be placed on underwater structures which do not interfere with navigation or impair the aesthetic quality of Washington shorelines.

   d. Aquaculture should not eliminate or destroy naturally occurring areas of great biological productivity.

2. Regulations

Shoreline management regulations regarding aquaculture development are set forth in Section 13.10.175.B.1 of the Official Code of the City of Tacoma and are contained herein.

Breakwaters

Breakwaters are a protective structure usually built offshore to protect beaches, bluffs, dunes, or harbor areas from wave action. However, because offshore breakwaters are costly to build, they are seldom constructed to protect the natural features alone. Breakwaters can be of either fixed construction or floating. The fixed breakwaters which are usually constructed of steel, timber, riprap, or rock, have both beneficial and detrimental effects on the shore. All breakwaters reduce wave action and thus can protect the shore immediately behind them. They also may alter the drift along the shoreline and affect the nourishment of adjacent beaches. Floating breakwaters have less effect on sand movement than do fixed breakwaters, but may not be feasible within intensive wave climates.

1. Policies

   a. Floating breakwaters are preferred to fixed landfill types in order to maintain sand movement and fish habitat.

   b. When permitted, fixed breakwaters should be constructed to minimize detrimental effects on the movement of sand and circulation of water.

   c. The restriction of the public use of the water surface as a result of breakwater construction must be recognized and considered in evaluating requests for shoreline

permits for their construction. Preference will be given to projects which minimize such restriction of public use.

d. Encourage the above water surfaces of breakwaters to be used for recreational sightseeing and fishing.

2. Regulations

Shoreline management regulations regarding breakwater development are set forth in Section 13.10.175.B.2 of the Official Code of the City of Tacoma and are contained herein.

Bulkheads (also see Shoreline Protection)

Bulkheads or seawalls are structures erected parallel to and near the high-water mark for the purpose of protecting adjacent uplands from the action of waves and currents. Bulkheads are constructed of steel, timber or concrete piling.

While bulkheads and seawalls may protect the uplands, they do not protect the adjacent beaches or their functions as habitat for migrating and local wildlife. In many cases bulkheads and seawalls are actually detrimental to the beaches and wildlife. Bulkheads may speed up erosion of the sand in front of the structures.

The following policies apply to the construction of bulkheads and seawalls designed to protect the existing immediate upland area. Proposals for landfill must comply with the guidelines for landfill.

1. Policies

a. Location and construction of bulkheads and seawalls should not adversely affect nearby beaches and should minimize alterations of the natural shoreline.

b. Bulkheads and seawalls should be constructed in such a way as to minimize damage to fish and shellfish habitats, should conform to Washington Department of Fish and Wildlife criteria, and when possible, should improve fisheries resources.

c. Bulkheads and seawalls should be designed to blend in with the surroundings and not to detract from the aesthetic qualities of the shoreline.

d. The construction of bulkheads should be permitted only where they provide protection to upland areas or facilities, not for the indirect purpose of creating land by filling behind the bulkhead. Bulkhead and fill construction for water-dependent uses may be allowed in committed industrial waterways or where such construction can be integrated with the existing shoreline in such a way that will substantially preclude any resultant damage to marine resources or adverse effects on adjacent properties. Landfill operations should satisfy the guidelines for landfills.

e. Bulkheads should be discouraged in designated conservancy environments and should not be permitted in natural environments.

2. Regulations

Shoreline management regulations regarding bulkhead development are set forth in Section 13.10.175.B.3 of the Official Code of the City of Tacoma and are contained herein.

Commercial

Commercial uses are those uses which are involved in wholesale and retail trade or business activities. Commercial uses range from small business within residences, to high-rise office buildings. Commercial uses are intensive users of space because of extensive floor areas and because of facilities, such as parking, necessary to service them.

1. Policies

   a. Although many commercial uses benefit by a shoreline location, priority should be given to those commercial uses which are particularly dependent on their location and/or use of the shorelines of the state and other uses that will provide an opportunity for substantial numbers of the people to enjoy the shorelines of the state. Non water-oriented uses should be conditional uses in shoreline areas.

   b. New commercial uses on shorelines should be encouraged to locate in those areas where current commercial uses exist.

   c. An assessment should be made of the effect a commercial structure will have on a scenic view significant to a given area or enjoyed by a significant number of people.

   d. Parking facilities should be placed inland away from the immediate water's edge and recreational beaches.

   e. Commercial uses should contain provisions for substantial public access to the shoreline. Such access should be appropriately signed and may be regulated to a reasonable degree, but should be generally available to the public and guaranteed by dedication, easement, or other legally binding document.

   f. The following provisions should be considered in evaluating proposals for commercial uses:

      Public Access. Public access elements may include, but should not be limited to the following:

      - Bicycle paths along or adjacent to the shoreline.
      - Shoreline parks.
      - Beach areas.
      - Piers, wharves, docks, and floats.
      - Transient moorage.
      - Trails, promenades, or other pedestrian ways along or adjacent to the shoreline edge.

View opportunities. View opportunities do not of themselves satisfy the need for public access in commercial developments. However, view opportunity elements should be included in those commercial developments which meet the *Master Program* criteria for a shoreline location. These elements may include, but should not be limited to, the following:

- Structure orientation and location which provide for large open spaces between structures which allow viewing of the shorelines and waters of the City.
- Building design which provides for significant viewing opportunities from within buildings and which may include viewing areas specifically designed and designated for the general public.
- Decks and rooftop structures which provide viewing by the public of the shorelines and waters of the City.

2. Regulations

Shoreline management regulations regarding commercial uses are set forth in Section 13.10.175.B.4 of the Official Code of the City of Tacoma and are contained herein.

Dredging

Dredging is the removal of earth from a stream, river, lake, bay or other water body for the purposes of deepening or widening a navigational channel or berthing area, or for obtaining materials for landfill or other beneficial uses. A significant portion of all dredged materials are deposited either in the water or immediately adjacent to it. Dredging, disposal, and water quality monitoring requirements to minimize impacts are established on a project by project basis by state and federal permitting agencies. Dredge disposal sites in deep water areas have been approved by the Army Corps of Engineers, in cooperation with other appropriate state and federal agencies. These sites are located outside the City of Tacoma, and are managed and owned by the Washington Department of Natural Resources.

1. Policies

a. Shoreline dredging should be controlled to minimize damage to existing ecological values and natural resources of both the area to be dredged and the area for deposit of dredged materials.

b. Dredging of bottom materials for the primary purpose of obtaining fill material should be prohibited.

2. Regulations

Shoreline management regulations regarding dredging are set forth in Section 13.10.175.B.5 of the Official Code of the City of Tacoma and are contained herein.

Educational, Historical, Cultural, and Archaeological Areas

The National Historic Preservation Act of 1966 and chapter 27.34 RCW provide for the protection, rehabilitation, restoration and reconstruction of districts, sites, buildings, structures and objects significant in American and Washington history, architecture, archeology or culture. The state legislation names the director of the Washington Office of Archaeology and Historic Preservation as the person responsible for this program. Guidelines:

1. Policies
   a. Archaeological and historical areas such as ancient villages, military forts, old settlers' homes, ghost towns, historic trails, kitchen middens, early residential, commercial, and industrial structures, and historic cemeteries are being lost through present day changes in land use and urbanization. Because of their significance and the educational link they provide to our past, these locations should be identified and preserved.
   b. Professional archaeologists, architects, and/or preservation planners should be consulted to identify and maintain an inventory of areas containing potentially valuable data, and to establish procedures for salvaging or maintaining the data.
   c. In areas known to contain educational, archaeological, historical, or cultural data, local governments should attach a special condition to a shoreline permit providing for a site inspection and evaluation by an archaeologist, architect, and/or preservation planner to ensure that possible archaeological data are properly salvaged or protected. Such a condition should also require approval by local government before work can resume on the project following such an examination.
   d. Shoreline permits, should contain special provisions which require developers to notify local governments if any possible archaeological data are uncovered during excavations.
   e. The archaeological inventory provided for in guideline "b." should include an inventory of past populations of native flora and fauna. The inventory should discuss uses of these plants and animals made by early settlers and native Americans.
   f. When a site is restored, interpretative materials should explain the significance of its location in relation to shoreline resources.
   g. Access trails to shorelines should be routed to avoid damage to protected, educational, historical, cultural, and archaeological sites and areas.
   h. Public acquisition and preservation of educational, historical, cultural, and archaeological sites is encouraged.
   i. Inventories should identify, protect, and enhance objects, sites, structures, buildings, and districts which reflect outstanding examples of cultural, artistic, social, economic, political, architectural, historic, or ethnic significance.

2. Regulations

Shoreline management regulations regarding educational, historical, cultural, and archaeological areas are set forth in Section 13.10.175.B.6 of the Official Code of the City of Tacoma and are contained herein. In addition, Chapters 1.42 and 13.07 of the Official Code describe the certified local government process for landmark protection within the City of Tacoma.

Environmental Remediation

Environmental remediation consists of those actions taken to identify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment. Such actions include any investigative, site remediation, and monitoring activities undertaken with respect to any release or threatened release of a hazardous substance. Improving the water quality of marine and fresh waters through upland source control and in-water sediment remediation is necessary to ensure that existing natural systems continue to support diverse and healthy populations of plant and animal species. Contaminate-free shoreline areas increase the City's limited inventory of sites suitable for habitat improvement; water-oriented recreation; water-oriented commercial development; and water-dependent and water-related port, terminal and industrial development.

1. Policies

   a. The environmental quality of Commencement Bay, its associated waterways, and the Tacoma watershed, including all nearshore and adjacent upland areas, should be improved through comprehensive cleanup strategies.

   b. The identification and characterization of all contaminated sites which adversely affect the shoreline areas and surface waters of the City should remain a high priority.

   c. Source control of all contaminated sites within and adjacent to the City's shoreline areas or which impact shoreline areas or surface waters should remain a high priority.

   d. The City should continue to work closely with the Environmental Protection Agency, the Washington Department of Ecology, and other agencies to form public and public/private partnerships whenever possible to ensure the most comprehensive, timely and cost-effective cleanup actions.

   e. Non-polluting commercial and industrial development should receive priority for locating on the shorelines of the City.

   f. Best Management Practices should be employed by private industry and municipal government to prevent recontamination of shoreline areas.

2. Regulations

Shoreline management regulations regarding environmental remediation are set forth in Section 13.10.175.B.7 of the Official Code of the City of Tacoma and are contained herein.

Habitat Improvement

Habitat improvement means any actions taken to intentionally improve the overall processes, functions and values of critical habitats, including wetland, stream and aquatic habitats. Such actions may or may not be in conjunction with a specific development proposal, and include, but are not limited to, restoration, creation, enhancement, preservation, acquisition, maintenance and monitoring. Habitat improvement includes actions to acquire and preserve key natural areas that remain; and to improve existing environmental conditions, such as providing new or better habitat, better water quality or other supporting factors, or increasing the number or diversity of species.

The City's goal is that in the short term, there is no net loss of wetland, stream, and aquatic habitat functions and acreage, and that in the long term, there is a net gain of wetland, stream and aquatic habitat.

To meet the City's goal of long term gain of aquatic, wetland and stream habitat, the City shall review all development actions and ensure that unavoidable losses to habitat are appropriately mitigated, and promote voluntary habitat improvements through a variety of incentives.

1. Policies
   a. Habitat improvement actions should provide functioning and sustainable habitats. These habitats need not be pristine, but should contain functional elements of a healthy ecosystem.
   b. Habitat improvement actions are encouraged in all shoreline districts, and are considered to be consistent with all kinds of uses, including residential, commercial, and industrial, provided that both are designed sensitively.
   c. Habitat improvement actions should be focused on sites with low possibilities of contamination.
   d. The City should seek to protect habitat improvement projects in perpetuity.
   e. Habitat improvement actions should be integrated with any other regulatory efforts, including environmental remediation, source control, and site development actions, as well as long range planning activities.
   f. Public access should be considered in all habitat improvement projects where appropriate. Where provided, such access should complement, not disrupt, the habitat improvement action.
   g. Habitat improvement actions should be approached on a watershed basis, and should seek to promote an ecosystem or landscape approach, including integrating projects into their surrounding environments, promoting greenbelts for movement and use by species.
   h. Where habitat improvements are proposed as mitigation measures, a nexus should be established between the impacted and proposed habitat, considering habitat type, size, functions, and values, and connection to the larger ecosystem.

i. The environmental quality of Commencement Bay, its associated waterways, and the Tacoma watershed, including all nearshore and adjacent upland areas, should be improved through comprehensive cleanup strategies, which combine, wherever and whenever possible, environmental cleanup, source control, habitat improvement and redevelopment activities as a means of achieving environmental and economic benefits and reducing the costs of implementing each separate activity.

2. Regulations

Shoreline management regulations regarding habitat improvement are set forth in Section 13.10.175.B.8 of the Official Code of the City of Tacoma and are contained herein.

Jetties and Groins

Jetties and groins are structures designed to modify or control sand movement. A jetty is generally employed at inlets for the purpose of navigation improvements. When sand being transported along the coast by waves and currents arrives at an inlet, it flows inward on the flood tide to form an inner bar, and outward on ebb tide to form an outer bar. Both formations are harmful to navigation through the inlet.

A jetty is usually constructed of steel, timber, concrete or rock. The type depends on foundation conditions and wave, climate and economic considerations. To be of maximum aid in maintaining the navigation channel, the jetty must be high enough to completely obstruct the sand stream. The adverse effect of a jetty is that sand is impounded at the updrift jetty and the supply of sand to the shore downdrift from the inlet is reduced, contributing to erosion.

Groins are barrier type structures extending from the backshore seaward across the beach. The basic purpose of a groin is to interrupt the sand movement along a shore.

Groins can be constructed in many ways using timber, steel, concrete or rock, but can be classified into basic physical categories as high or low, long or short, and permeable or impermeable.

Trapping of sand by a groin is done at the expense of the adjacent downdrift shore, unless the groin system is filled with sand to its entrapment capacity.

1. Policies

a. Consider the total pattern of sand movement and the effect of proposed jetties or groins on that sand movement and potential erosion of down-drift properties. Provisions can be made to compensate for the adverse effects of the structures either by artificially transporting sand to the downdrift side of an inlet with jetties, or by artificially feeding the beaches in case of groins.

b. Give attention to the effect of proposed jetty and groin structures on wildlife propagation and movement.

c. Give attention to the design of proposed jetties and groins so they do not detract from the aesthetic quality of the shoreline.

d. Jetties and groins should be designed to provide public access or multiple use opportunities that increase public use and enjoyment of the shoreline where appropriate.

2. Regulations

Shoreline management regulations regarding jetties and groins are set forth in Section 13.10.175.B.9 of the Official Code of the City of Tacoma and are contained herein.

Landfill

Landfill along a shoreline is the creation of dry upland area by the filling or depositing of sand, soil or gravel. Landfills also occur to replace shoreland areas removed by wave action or the normal erosive processes of nature, and to fill depressions or to provide desired elevations on uplands. However, most landfills destroy the natural character of land, create unnatural heavy erosion and silting problems and diminish the existing water surface. Landfills may have a detrimental effect on the survival rates of some species of migrating fish and birds. Landfills often eliminate shallows which are necessary for the safety and feeding of many species of wildlife.

1. Policies

a. Shoreline landfills should be considered only for water-dependent uses in committed industrial waterways or where such construction can be integrated with the existing shoreline to substantially preclude any resultant damage to marine resources or adverse effects on adjacent properties. In evaluating fill projects and in designating areas appropriate for fill, such factors as total water surface reduction, navigation restriction, impediment to water flow and circulation, reduction of water quality and destruction of habitat, and the effects on state-owned resources should be considered.

b. Landfills should not be authorized unless a specific use for the site is evaluated and permitted. Speculative landfills should not be permitted.

c. Proposals for landfills and the associated use should demonstrate that the operation will not be detrimental to the public interest and uses of the shoreline and water body, including navigation and recreation.

d. Landfills and associated uses should enhance public access to the shoreline and water body where appropriate.

e. Shoreline fills or cuts should be designed and located to avoid significant damage to existing environmental values or natural resources. Fills and cuts should not alter local currents as this would create a hazard to adjacent life, property, and natural resource systems.

f. All perimeters of fills should be provided with vegetation, retaining walls, or other mechanisms for erosion prevention.

g. Fill materials should not degrade water quality. Shoreline areas should not be considered for sanitary landfills or for the disposal of solid waste; however, disposal of hazardous substances and other materials should be permitted if in conjunction with an environmental cleanup in accordance with state and federal regulations.

h. Also refer to policy guidelines for bulkheads, preceding.

2. Regulations

Shoreline management regulations regarding landfills are set forth in Section 13.10.175.B.10 of the Official Code of the City of Tacoma and are contained herein.

Log Storage and Rafting

Available research findings show that log debris, bark, and wood leachates resulting from log handling in public waters can adversely affect water quality. The range of effects varies from mild to gross depending upon the specific characteristics of both the involved water body and log handling practices. In most instances where logs cause a decrease in water quality, there are a number of practicable changes that can be made to improve conditions.

1. Policies

a. Water storage of logs should be limited to locations and periods of time required for cargo handling purposes.

b. Positive bark and wood debris controls, collection, and disposal methods should be employed at log dumps, raft building areas, and mill side handling zones. This would be required for both floating and sinking particles.

c. Where water depths will permit the floating of bundled logs, they should be secured in bundles on land before being placed in the water. Bundles should not be broken again except on land or at mill side.

d. The inventory of logs in public waters for any purpose should be kept to the lowest possible number for the shortest possible time.

2. Regulations

Shoreline management regulations regarding log storage and rafting are set forth in Section 13.10.175.B.11 of the Official Code of the City of Tacoma and are contained herein.

Marinas and Boat Launch Facilities

Marinas are facilities which provide boat launching, storage, supplies and services for small pleasure craft. Different modes and elements of marina construction have varying effects on the biological and physical environment of the site and adjacent areas. Such elements affecting erosion, sedimentation, circulation, water quality, and the biota are affected by the

type of protection afforded to the harbor and adjacent uplands and by fill for the purpose of accreting land. Boat launch facilities include solid ramps for unloading and loading boats from trailers, parking facilities and related activities.

1. Policies
   a. In locating marinas and boat launch facilities, provisions for protection and/or improvement of resources should be incorporated within the design of the facility. Location and design of marinas and boat launch facilities should minimize damage to naturally occurring areas of great biological productivity.
   b. Marinas and boat launch facilities should be designed in a manner that will reduce damage to fish and shellfish resources and be aesthetically compatible with adjacent areas.
   c. Special attention should be given to the design and development of operational procedures for fuel handling and storage in order to minimize accidental spillage and provide satisfactory means for handling those spills that do occur.
   d. Shallow water embayments with poor flushing action should not be considered for overnight and long-term moorage facilities.
   e. Marinas should be located so as to minimize the consumption of our limited shoreline resource. This implies dry land, inland marinas when appropriate.
   f. Boat launch facilities should be located in areas to minimize water pollution and should be separated from swimming beaches.
   g. Discourage enclosed moorages where view of water or boats is an important element of the shoreline use. Where covered berthing stalls are contemplated, such coverage must be of uniform design, designed and constructed as a part of the overall project.
   h. Encourage new boat handling technology which will conserve space, be less damaging to the environment, and be more efficient.
   i. Encourage more efficient use and additions to existing marinas where appropriate rather than proliferations of new marinas.
   j. Parking areas for marinas and boat launch facilities should be located on sites away from the shoreline and should be properly screened.
   k. Marinas should incorporate public access with regard to security, good design, and adequate view corridors.
   l. Marinas with live-aboard vessels should be permitted where compatible with the surrounding area and where adequate facilities exist.
   m. Boaters should be encouraged to use biodegradable cleaning products to help minimize water pollution.

2. Regulations

Shoreline management regulations regarding marinas and boat launch facilities are set forth in Section 13.10.175.B.12 of the Official Code of the City of Tacoma and are contained herein.

Mineral Extraction (excluding dredging)

Mineral extraction is the removal of naturally occurring materials from the earth for economic use. The removal of sand, gravel and other rock or granular material from shoreline areas of Washington usually result in erosion of land and silting of water. These operations can create silt and kill bottom-living animals. The removal of sand from marine beaches can deplete a limited resource which may not be restored through natural processes.

Oil extraction can result in many undesirable effects such as water quality degradation and aesthetic degradation.

1. Policies

   a. Mineral extraction, including sand and gravel and other rock or granular materials from shorelines and related wetlands of the City of Tacoma should be expressly prohibited.

   b. Oil extraction including exploratory drilling from shorelines and related wetlands of the City of Tacoma should be expressly prohibited.

   c. Encourage programs to restore and revegetate existing mining sites on the shorelines when extraction of minerals is completed.

2. Regulations

Shoreline management regulations regarding mineral extraction are set forth in Section 13.10.175.B.13 of the Official Code of the City of Tacoma and are contained herein.

Outdoor Advertising, Signs and Billboards

Signs are publicly displayed boards whose purpose is to provide information, direction, or advertising. Signs may be pleasing or distracting, depending upon their design and location. A sign, in order to be effective, must attract attention. However, a message can be clear and distinct without being offensive. There are areas where signs are not desirable, but generally it is the design that is undesirable, not the sign itself. Guidelines:

1. Policies

   a. Off-premise outdoor advertising signs and billboards should be prohibited.

   b. Vistas and viewpoints should not be degraded and visual access to the water from such vistas should not be impaired by the design, placement, or lack of maintenance of signs.

c. When feasible, signs should be constructed against existing buildings to minimize visual obstructions of the shoreline and water bodies.

2. Regulations

Shoreline management regulations regarding outdoor advertising, signs, and billboards are set forth in Section 13.10.175.A.4 of the Official Code of the City of Tacoma and are contained herein.

Piers, Wharves, Docks, and Floats

Structures which abut the shoreline and are built over or floating on the water can be used as landing places for commercial or recreational craft or for access for public uses. These structures include piers, wharves, docks, and floats.

All of these structures may have substantial visual impact, although docks and floats have less. Piers, wharves, docks, and floats can alter beach sand patterns where tides and littoral drift are significant and can interfere with boat traffic and shoreline trolling. A proliferation of structures along the shoreline can substantially reduce public access and the usable water surface. Guidelines:

1. Policies

a. Piers, wharves, docks and floats should be designed to minimize interference with public use of the water and shoreline. Whenever possible, the design should enhance public access.

b. Multiple use and expansion of existing facilities should be required in preference to the addition of new facilities. New projects should demonstrate public benefit.

c. Pier, wharf, dock and float projects should provide public access, unless access is incompatible with a water-dependent use.

d. Views from surrounding properties should not be impaired.

e. Piers, wharves, docks, and floats should be constructed so as to not obstruct or impair the navigational use of surface waters.

f. The cooperative use of piers, wharves, docks, and floats is encouraged. Priority should be given to community facilities in all waterfront development where appropriate.

g. Environmental impact, navigational impact, waste disposal, oil and gas spillage, parking availability, and the impact on adjacent lands should be considered in evaluating requests for projects involving the construction of piers, wharves, docks, and floats.

h. Regulations should be developed regarding the maintenance of piers, wharves, docks, and floats, their removal and the improvement of sites after removal.

i. Non-commercial structures should be encouraged to be built perpendicular rather than parallel to the shoreline.

j. Open pile structures are encouraged

- where shore trolling is important,
- where there is significant littoral drift,
- where scenic values are not impaired,
- where damage to marine resources can be minimized,
- where alterations to the existing shoreline are minimized.

k. Floating docks are encouraged

- where littoral drift is not significant,
- where they will not interfere with fishing or recreational boating.

l. Where non-biodegradable materials are used in structures, precautions must be taken to contain them. The use of such materials is to be discouraged.

m. Piers, wharves, docks, and floats should conform to the Washington Department of Fish and Wildlife development criteria.

n. The use of pilings made of materials other than treated wood or creosote should be required where possible.

2. Regulations

Shoreline management regulations regarding piers, wharves, docks, and floats are set forth in Section 13.10.175.B.14 of the Official Code of the City of Tacoma and are contained herein.

Port, Terminal, and Industrial

The past geologic development of the Puget Sound Basin has created one of the few areas in the world which provides several deepwater inland harbors. The use of Puget Sound waters by deep-draft vessels is on the increase due in part to its proximity to the developing Pacific Rim countries. This increased trade will attract more industry and more people which will put more use pressure on the Sound in the forms of recreation (sport fishing, boating and other water-related sports) and the requirements for increased food supply.

The Port of Tacoma is a major center for waterborne traffic and as such has become a gravitational point for industrial and manufacturing firms. Heavy industry may not specifically require a waterfront location, but is attracted to the port area because of the variety of transportation available.

1. Policies

   a. Water-dependent terminal, commercial and industrial uses should have shoreline location priority over all other uses in designated shoreline industrial areas.

   b. The preferred location for future non-water dependent industry is in industrial areas away from the shoreline.

   c. Non-water dependent industries presently occupying waterfront locations are encouraged to relocate to backup industrial areas away from the shoreline.

   d. The cooperative use of docking, parking, cargo handling and storage facilities is strongly encouraged in waterfront industrial areas.

   e. Land transportation and utility corridors serving ports and water-related industry should follow the guidelines provided under the sections dealing with utilities and road and railroad construction. Where feasible, transportation and utility corridors should be located upland to reduce pressures for the use of waterfront sites.

   f. Sewage treatment, water reclamation, desalinization and power plants should be located where they do not interfere with and are compatible with recreational, residential, food production, or other public uses of the water and shorelands. Waste treatment ponds for water-related industry should occupy as little shoreline as possible. If materials are toxic to wildlife, ponds should be covered, screened or otherwise protected.

   g. Petroleum products sump ponds should be covered, screened or otherwise protected to prevent bird kill.

   h. Procedures for handling toxic materials in shoreline areas should prevent their entering the air or water.

   i. Port, terminal, and industrial uses should be encouraged to permit viewing of harbor areas from viewpoints, and similar public facilities which would not interfere with operations or endanger public health and safety.

   j. Since industrial piers, wharves, docks, and floats are often longer and greater in bulk than recreational or residential piers, wharves, docks, and floats, careful planning must be undertaken to reduce the adverse impact of such facilities on other water-dependent uses and shoreline resources.

   k. Prior to allocating shorelines for industrial and terminal uses, consideration should be given to the overall statewide and regional needs and to similar available and planned facilities within the Puget Sound area.

   l. Special attention should be given to the design and development of facilities and operational procedures for fuel handling and storage in order to minimize accidental spills and to the provision of means for satisfactorily handling those spills which do occur.

   m. Because of the exceptional value of Puget Sound shorelines for residential, recreational, resource and other economic elements requiring clean water, deep-water

terminal expansion should not include oil super tanker transfer or super tanker storage facilities.

2. Regulations

Shoreline management regulations regarding port, terminal, and industrial uses are set forth in Section 13.10.175.B.15 of the Official Code of the City of Tacoma and are contained herein.

Recreation, Water-Oriented

Recreation is the refreshment of body and mind through forms of play, sports, relaxation, amusement or contemplation.

Recreation policies and regulations apply to both publicly and privately-owned shoreline facilities intended for use by the general public, private clubs, groups or associations.

Recreational use of shorelines is a stated priority in the Shoreline Management Act.

1. Policies

a. Recreational developments should be located, designed and operated to be compatible with and minimize adverse effects on environmental quality and valuable natural features, as well as on adjacent and surrounding land and water uses.

b. In approving shoreline recreational developments, the City should ensure that the development will preserve, enhance, restore or create desirable shoreline features. Such features include unique and fragile areas, scenic vistas and aesthetic values. The City should make specific stipulations as to the method and means of development, i.e., adjust and/or prescribe project dimensions, location of project components on the site, intensity of use, screening, parking requirements, setbacks.

c. The public's right to the use of navigable waters should be strongly protected.

d. Shoreline parks and public access points should be linked through a continuous linear route abutting the shoreline. Preference is given to non-motorized uses such as pedestrian easements along tidelands, hiking paths and bicycle trails.

e. Non-water-oriented recreational facilities should be located outside the shoreline area.

f. Diversity of recreational uses should be based on the natural features of the shorelines and the preservation of scenic views. Reconstruction of shorelines to meet design criteria that degrades natural features should be severely restricted. Examples of uses based on natural features are use of sandy beaches for swimming, preservation of "lily pad" shorelines for fishing, preservation of sea cliffs and their beaches as natural areas.

g. In the Point Defiance Natural Environment ("S-4" Shoreline District) and in the Hidden Beach area of Titlow Park ("S-2" Shoreline District), recreational uses should

not require structural modification of the shoreline other than construction and maintenance of access trails.

h. Public and private recreational development is encouraged with the following considerations:

(1) Recreational development in urban areas and in commercial projects which promotes multiple use of the shoreline is encouraged.
(2) Existing recreational facilities should be preserved and, where appropriate, expanded.
(3) Overuse of recreational shorelines should be prevented through regular environmental reviews. Curtailment of use should be required when overuse is demonstrated.

i. Additional shoreline recreational lands should be acquired through a variety of means including donations and fee purchase. Acquisition of easements, options and development rights can also provide recreational opportunities.

j. To avoid wasteful use of the limited supply of recreational shoreline, parking areas should be located inland away from the immediate edge of the water and from beaches. Access should be provided by walkways or other methods. Vehicular traffic on beaches and fragile areas should be prohibited.

k. Regulations should be adopted to prevent chemicals, fertilizers and other pollutants from entering waters.

l. Also refer to policy guidelines for *Master Program* Elements - Goals and Policies - public access and circulation.

2. Regulations

Shoreline management regulations regarding recreational uses are set forth in Section 13.10.175.B.16 of the Official Code of the City of Tacoma and are contained herein.

Residential

The following provisions should be considered when evaluating proposals for residential developments. Due to the limited amount of waterfront land available and the recognized need to conserve these lands for water-oriented uses, these guidelines are adopted. Such activities as residential uses may be sited in the Ruston Way, Thea Foss Waterway, Port Industrial, and Marine View Drive North and South shoreline districts as appropriate. Guidelines:

1. Policies

a. Development should be designed at a level of density of site coverage that is compatible with the adjoining uses and the physical capabilities of the shoreline and water.

b. Developments should be required to provide public pedestrian access to and along the waterfront within the project where appropriate.

c. Developments should be designed to adequately protect the water and shoreline aesthetic characteristics.

d. Residential development overwater and floating homes should generally be prohibited.

e. Residential proposals should be required to provide plans to preserve existing shore vegetation and to control erosion during construction.

f. Sewage disposal, water supply and storm drainage facilities should be provided in full compliance with City and State health regulations. The developer is responsible for disposal of surface runoff by using a separate collection system that will prohibit damage to the adjacent water and shorelines.

g. The slope stability and soil weight bearing characteristics of steep sloped areas should be considered in granting permits.

h. Where other than single family residential uses are permitted, residential units should occupy the upper floors of structures and ground floors should be occupied by water-oriented uses when possible.

i. Parking for residential development should be located on the uplands on the street/landward side of the building.

2. Regulations

Shoreline management regulations regarding residential uses are set forth in Section 13.10.175.B.17 of the Official Code of the City of Tacoma and are contained herein.

Road and Railroad Construction and Location

A road is a linear passageway, usually for motor vehicles and a railroad is a surface linear passageway with tracks for train traffic. Their construction can limit access to shorelines, impair the visual qualities of water-oriented vistas, expose soils to erosion and retard or hasten the runoff.

1. Policies

a. Only under exceptional circumstances should major highways, freeways and railways be located near shorelines, except in port and heavy industrial areas, so that existing shoreline roads may be reserved for slow moving recreational traffic.

b. Roads located in wetland areas should be designed and maintained to prevent erosion and to permit a natural movement of water.

c. All debris, overburden, and other waste materials from construction should be disposed of in such a way as to prevent their entry by erosion from drainage, high water, or by other means into any water body.

d. Road locations should be planned to fit the topography so that minimum alterations of natural conditions will be necessary. If a planned road or railroad will subject a shoreline area to slide, erosion or other uncontrollable conditions which endanger people or public resources, other locations should be found.

e. Scenic corridors with public roadways should have provision for safe pedestrian and other non motorized travel. Also, provision should be made for sufficient view points, rest areas and picnic areas in public shorelines.

f. Extensive loops or spurs of old highways with high aesthetic quality should be kept in service as low volume pleasure bypass routes, especially where main highways, paralleling the old highway, must carry large traffic volumes at high speeds.

g. Since land-use and transportation facilities are so highly interrelated, the plans for each should be coordinated. The designation of potential high-use areas should be done after the environmental impact of the transportation facilities needed to serve those areas have been assessed.

h. Transportation facilities that substantially increase levels of air, noise, and water pollution should be discouraged.

i. Pedestrian overpasses should be built where access to the shoreline has been or could be cut off by transportation facilities.

j. Pollution free transportation methods should be encouraged.

k. Also refer to the policy guidelines for *Master Program* Elements - Goals and Policies - public access and circulation.

2. Regulations

Shoreline management regulations regarding road and railroad construction and location are set forth in Section 13.10.175.B.18 of the Official Code of the City of Tacoma and are contained herein.

Shoreline Protection (Streams)

Flood protection and streamway modifications are those activities occurring within the streamway and wetland areas which are designed to reduce over bank flow of high waters and stabilize eroding stream banks. Reduction of flood damage, bank stabilization to reduce sedimentation, and protection of property from erosion are normally achieved through watershed and flood plain management and by structural works. Such measures are often complementary to one another and several measures together may be necessary to achieve the desired end.

1. Policies

a. Riprapping and other bank stabilization measures should be located, designed and constructed so as to avoid the need for channelization and to protect the natural

character of the streamway. Bank stabilization by planting of native vegetation should be encouraged.

b. Where flood protection measures such as dikes are planned, they should be placed landward of the streamway, including associated swamps and marshes and other wetlands directly interrelated and interdependent with the stream proper.

c. Flood protection measures which result in channelization should be avoided.

d. Biological alternatives to riprap should be pursued where appropriate.

2. Regulations

Shoreline management regulations regarding shoreline protection are set forth in Section 13.10.175.B.19 of the Official Code of the City of Tacoma and are contained herein.

Solid Waste Disposal

Generally, all solid waste is a possible source of nuisance. Rapid, safe and nuisance-free storage, collection, transportation and disposal are of vital concern to all persons and communities. If the disposal of solid waste material is not carefully planned and regulated, it can become not only a nuisance but a severe threat to the health and safety of human beings, wildlife and other living things. It is the intent of these provisions that there be no discharge of refuse, sewage, oil, or other inappropriate materials into or upon the land areas or waters of the Puget Sound area.

1. Policies

a. Shoreline areas should not be disposal sites for solid waste; however, disposal of hazardous substances and other materials should be permitted if in conjunction with an environmental cleanup in accordance with state and federal regulations.

b. All developments, public and private, should provide for an adequate means for disposal of solid waste.

c. All shoreline areas should be kept litter-free. Private shoreline owners should be encouraged to maintain litter-free beaches.

d. Recycling of solid waste now existing or generated within shoreline areas should be encouraged.

e. Where solid waste disposal sites are presently located in shoreline areas, the site should be rehabilitated to control leaching of contaminants.

f. The use of biodegradable products should be encouraged to minimize pollution from boat cleaning and from grey water.

2. Regulations

Shoreline management regulations regarding solid waste disposal are set forth in Section 13.10.175.B.20 of the Official Code of the City of Tacoma and are contained herein.

Utilities

Utilities are services which produce and carry electric power, gas, sewage, communications, oil, water and storm drains. Various types of utilities that serve locally are tied to large transmission and distribution networks that could span well beyond any one jurisdiction's boundary. These systems are influenced by both local and regional growth. The local utility network is closely planned in conjunction with the related regional system planning efforts. Changes in supply and demand may dictate the future siting and prompt system adjustments of local and regional facilities.

1. Policies

   a. Upon completion of installation/maintenance projects on shorelines, banks should be restored to pre-project configuration, replanted and provided maintenance care until the newly planted vegetation is established. Plantings should be native species and/or be similar to vegetation in the surrounding area.

   b. The undergrounding of existing overhead lines should adhere to the criteria in the *Utilities Plan* adopted by the Tacoma City Council. When such facilities cannot be placed underground, a location outside the shoreline area should be encouraged if reasonable. All new transmission lines should be constructed overhead.

   c. To the extent reasonable, major transmission line rights-of-way on shorelines should be incorporated into programs for public access to and along water bodies.

   d. Utilities should be located to meet the needs of future populations in areas planned to accommodate this growth.

   e. When reasonably feasible, the co-location of new public and private utility distribution facilities should be promoted in shared trenches and overhead rights-of-way. The timing of construction should be coordinated to minimize construction-related disruptions to the public and reduce the cost to the public utility delivery.

   f. Outfalls shall be located and constructed in accordance with regulations of the Washington Department of Ecology, the U.S. Environmental Protection Agency and any other agency having regulatory jurisdiction.

2. Regulations

Shoreline management regulations regarding utilities are set forth in Section 13.10.175.B.21 of the Official Code of the City of Tacoma and are contained herein.

The Washington State Thermal Power Plant Siting Law (Chapter RCW 80.50) regulates the location of electrical generating and distribution facilities. Under this law, the state preempts the certification and regulation of thermal power plant sites and thermal power plants. (See Chapter 80.50 RCW, Thermal Power Plants - Site Locations.)

The Act states that each local master program shall contain provisions covering conditional uses and variances. Any permit for a variance or a conditional use granted by the local government under approved master programs must be submitted to the Department of Ecology for approval.

The Act also provides exemptions for emergency construction necessary to protect property from the elements.

The Land Use Administrator shall have authority to take action on conditional use permits and variances in the administration of the Tacoma *Master Program for Shoreline Development*. This authority should be exercised in a way that protects the environment while allowing a reasonable use of the property in question. Existing property uses which become non-conforming uses under the *Master Program* are subject to Chapter 13.10 of the Official City Code of Tacoma.

Variances

Upon proper application, a shoreline management substantial development permit may be granted which is at variance with the criteria established in the *Master Program* where, owing to special conditions pertaining to the specific piece of property, the literal interpretation and strict application of the criteria established in the *Master Program* would cause undue and unnecessary hardship or practical difficulties. The applicant must show that if he complies with the provisions he cannot make any reasonable use of his property. The fact that he might make a greater profit by using his property in a matter contrary to the intent of the *Master Program* is not a sufficient reason for a variance.

A variance will be granted only after the applicant can demonstrate the following:

a. The hardship which serves as the basis for granting of the variance is specifically related to the property of the applicant;
b. The hardship results from the application of the requirements of the Act and *Master Program* and not from, for example, deed restrictions or the applicant's own actions;
c. The variance granted will be in harmony with the general purpose and intent of the *Master Program*.
d. Public welfare and interest will be preserved; if more harm will be done to the area by granting the variance than would be done to the applicant by denying it, the variance will be denied.

Regulations for variances are set forth in Section 13.10.180.C of the Official Code of the City of Tacoma and contained herein. Additionally, requests for variances are requests for conditional uses and must be evaluated according to the criteria set forth in Section

13.10.180.B of the Official Code of the City of Tacoma and Washington Administrative Codes (WAC) 173-14-140 and 173-14-150.

Conditional Uses

Upon proper application, a shoreline management substantial development permit may be conditionally granted. The objective of a conditional use provision is to provide more control and flexibility for implementing the regulations of the *Master Program.* With provisions to control undesirable effects, the scope of uses within each of the four environments can be expanded to include many uses.

Uses classified as conditional uses can be permitted only after consideration by the local government and by meeting such performance standards that make the use compatible with other permitted uses within that area.

Conditional use permits will be granted only after the applicant can demonstrate all of the following:

a. The use will cause no unreasonably adverse effects on the environment or other uses;
b. The use will not interfere with public use of public shorelines;
c. Design of the site will be compatible with the surroundings and the *Master Program*;
d. The proposed use will not be contrary to the general intent of the *Master Program.*

Regulations for conditional uses are set forth in Section 13.10.180.B of the Official Code of the City of Tacoma and contained herein. Uses not classified or set forth in the regulations may be authorized provided the applicant can demonstrate that extraordinary circumstances preclude reasonable use of the property in a manner consistent with the regulations and the criteria set forth in WAC 173-14-140 and Section 13.10.180.B of the Official Code of the City of Tacoma.

Emergencies

Emergency construction necessary to protect or repair property from damage by the elements is exempt in accordance with the provisions of the Shoreline Management Act. However, the least intrusive temporary measures should be undertaken in the event of such an emergency, and such construction should be modified to comply with the *Master Program.* The applicant is also required to notify the City of any emergency actions taken on the first business day following the commencement of the action.

Permitted and Conditional Use Activities

Use Activity	Shoreline District													
	"S-1"	"S-2"	"S-3"	"S-4"	"S-5"	"S-6"	"S-7"	"S-8"	"S-9"	"S-10"	"S-11"	"S-12"	"S-13"	"S-14"
Aquaculture	P	P	P		P	P	P	X	P	P	P	P	C	
Breakwaters	C	C			C	C	P	C		P	C	C	C	
Bulkheads	P	C	C		P	P	P	P	C	P	P	P		C
Commercial	C				P	P/C	P/C	P/C	P/C	P/C	P/C	P/C		
Dredging, Maint. and Non-Maint.	P/C	P/C	P		P/C	P/C	P/C	P/C	P/C	P/C	P/C	P/C		C/X
Educ., Hist., and Arch. Areas	P	P	P	P	P	P	P	P	P	P	P	P		P
Environmental Remediation	P	P	P		P	P	P	P	P	P/C	P	P	C	
Habitat Improvement	P	P	P		P	P	P	P	P	P	P	P	C	
Hotels, Motels, and Boatels						P/X		P/C						
Jetties and Groins	C	C				C	C		C	P/C	C	C	C	
Landfill	P/C	P/C	P/C		P/C	P/C	P/C	P/C	P/X	P	P/C	P/C		C/X
Log Storage and Rafting										P	P	P	C	
Marinas/Boat Launch Facilities	P	C/X			P	P	C	P/X	C	P/X	P	P		
Mineral Extraction														
Outdoor Advertising, Signs														
Piers, Wharves, Docks, and Floats	P	C	C		P	P	P	P	C	P	P	P		P
Port , Terminal, and Industrial							P/C	P/C	P	P/C				
Recreation, Water-Oriented	P	P/X	P	P	P	P		P	P	P	P	P		P
Residential	P		P/C			P/X		P		P	P	P		P
Roads and Railroads	P	P/X	P		P	P/C	P	P	P	P	P	P	P	P
Shoreline Protection (Streams)									P	P				
Utilities	P	P	P	P	P	P	P	P	P	P	P	P		P/X

Key:
P = Permitted use
C = Conditional use
X = Prohibited use

NOTE: This list is to be used as a general guide only. For specific regulations, refer to Chapter 13.10 of the Official Code of the City of Tacoma, contained herein.

APPENDIX A
CITIZEN INVOLVEMENT IN THE SHORELINE PLANNING PROCESS

General Discussion:

The Shoreline Management Act requires that prior to approval or adoption of a master program, or a portion thereof, by the Department of Ecology, at least one public hearing shall be held in each county affected by the program for the purpose of obtaining the views and comments of the public.

The Act charges the state and local government with not only the responsibility of making reasonable efforts to inform the people of the State about the shoreline management program, but also actively encourages participation of all persons, private groups, and entities, which have an interest in shoreline management.

Recognizing the intention of the State to maximize citizen participation in the development of master programs, the City of Tacoma established a Shoreline Master Program Citizens Advisory Committee consisting of representatives from various agencies, organizations and societies interested in the development of shorelines in and about the City. The Committee was established by resolution on June 12, 1973 and charged with the responsibility of assisting in the formation of a master program through a series of public meetings and hearings and providing certain information and citizen participation in:

1. Studying existing public policies related to shorelines;
2. Defining the needs to satisfy local demands for shorelines;
3. Studying the type of condition of local shorelines relative to needs;
4. Developing goals and policies for the master program with the local government fulfilling the specifications of the master program, including designation of the environments;
5. Identifying use conflicts;
6. Proposing alternatives for the use of shorelines;
7. Examining the effects of the master program on the environment.

The use of citizen involvement has been a successful effort to the extent that the appointed citizens advisory committee accomplished what they were requested to do, and, given more time and the benefit of the committee experience, it would be expected that the advisory committee can provide even more meaningful input into the *Master Program* planning process. General public interest in the shoreline committee meetings was very limited, and again, with more time, efforts can be made to stimulate greater general public interest in the future.

On the question of measurement of concurrence, the advisory committee was obviously polarized with reference to some economic and environmental issues, but in general, each interest was sensitive to the concerns of the total best interest or future development of Tacoma's shorelines.

List of Tacoma Shoreline Master Program Citizen Advisory Committee

Members and Organization Represented

Mr. Don Hansen, Chairman	Citizen at large
Mrs. Nancy Kroening	Tahoma Audubon Society
Dr. Curtis Mehlhaff	Pierce County Action
Mr. Ted Litzenberger	American Institute of Architects
Mrs. Alberta Wilcox	Tacoma City Planning Commission
Mr. Bill Peterson	Port of Tacoma
Dr. Ernest Banfield	Metropolitan Park District
Mr. Jim Metcalf	Old Town Improvement Club
Mr. Ed Bevis	Propeller Club
Mr. Ken Johnson (alternate)	Propeller Club
Mr. Paul Pazooki	Tacoma Engineers Club
Mr. Dennis McNenamin (alternate)	Tacoma Engineers Club
Ms. Nancy Thomas	Washington Environmental Council
Mrs. Thelma Gilmur (alternate)	Washington Environmental Council
Mrs. Thomas J. (Mimi) Miskovsky	Tacoma Pierce County League of Women Voters
Mrs. Gail Elliott (alternate)	Tacoma Pierce County League of Women Voters
Dr. William Mattson	Isaac Walton League
Dr. Samuel E. Adams	Public Utilities Board
Mr. Robert Dilger	Building Trades Union
Mr. Al Rose	Navy League
Mr. Larry Jenner	Burlington Northern
Mr. Philip Lelli	Longshoremen
Mr. Jack Giseburt	Northwest Boating Council
Mr. John E. Gaul	Tacoma Chamber of Commerce Industrial Committee
Mr. Carl Virgil (alternate)	Tacoma Chamber of Commerce Industrial Committee
Mr. Cline Schweikart (alternate)	Tacoma Chamber of Commerce Industrial Committee
Mr. William McCarty	Tacoma Chamber of Commerce Marine Affairs Committee
Mr. Bill Buckley (alternate)	Tacoma Chamber of Commerce Marine Affairs Committee
Mr. Frank Jacobs	Citizen at large
Mr. Jeff Miller (alternate)	Citizen at large

Planning Commission hearings recommending adoption were held July 26, 1976 and August 9, 1976. The City Council hearing adopting the *Master Program* was held December 14, 1976.

In December, 1989, the Urban Waterfront Committee was created as an advisory body to the Tacoma Planning Commission on waterfront planning and development matters. The membership of the committee consisted of nine residents of Tacoma appointed by the City Council. The members of the Committee had interests or expertise in shoreline issues, planning, design, environment, business, real estate, or maritime issues.

As one of their projects, the Urban Waterfront Committee conducted a comprehensive review of the *Tacoma Master Program for Shoreline Development.* Over a period of approximately two-and-a-half years, the Urban Waterfront Committee held over 50 public meetings where the *Master Program* was studied and recommended amendments were proposed. In 1992, the Urban Waterfront Committee, upon recommendation of the Planning Commission, was sunset by the City Council. During its existence, the members and staff of the committee included:

Ms. Barbara Bingham
Mr. David D. Foreman
Mr. Frank H. Jacobs
Mr. Jerry T. Maule
Ms. Nancy C. Thomas
Mr. Phillip Timpke
Mr. Bill Colby
Mr. John Gronewold
Mr. Jeffrey S. Lyon
Ms. Mimi Miskovsky
Mr. John Shaw
Mr. John W. Weaver

Planning Department Staff:
Mr. Michael Smith
Mr. Richard Gilmur
Ms. Molly Harris

Planning Commission hearings on the proposed amendments to the *Master Program* were held April 6 and August 3, 1994. The City Council hearing was held August 30, 1994.

APPENDIX B
SUMMARY OF RELATED PLANS AND PROGRAMS APPENDIX B - Summary Of Related Plans And Programs

Adjacent Lands Report

This report focuses on the land areas located adjacent to the City's shorelines, but outside the jurisdiction regulated by Shoreline Substantial Development Permits. It also reviewed Tacoma's land use policies and regulations for consistency with the State Shoreline Management Act.

Aquatic Survey and Assessment of Ruston Way Shoreline

This report entailed detailed biological surveys at five designated locations along Ruston Way. The effects of development are considered for each of the sites and information is provided for assessing and mitigating environmental impacts at designated points along Ruston Way. Evaluations and recommendations are made regarding developmental activities and the marine biological and environmental policies and requirements set forth in Tacoma's *Master Program for Shoreline Development.*

Central Business District Plan: Greater CBD

The Greater Central Business District Plan is a statement of intent by the City of :Tacoma concerning the future growth and development of the Greater Central Business District area. The development concept for the plan is directed toward high and medium intensity development consistent with the City's adopted Generalized Land Use Plan.

Chambers-Clover Creek Watershed Action Plan

The Chambers-Clover Creek Watershed Action Plan is being developed by Pierce County with the cooperation of a variety of public agencies, including the City of Tacoma, two Indian tribes, and private groups, to address the control of non-point source water pollution in the Chambers-Clover Creek Watershed. The shoreline districts within this watershed include part of the S-6, and the S-1 through S-5 districts in their entirety. The final plan, which will summarize existing conditions, source control action items, and a program of implementation and monitoring, will be published in early 1995.

Environmental Reconnaissance Inventory of Washington Atlas

The Army Corps of Engineers has prepared an atlas of Washington State which provides detailed descriptions and maps of environmental values of statewide or national significance. The inventory will identify those resources that should be protected, preserved or treated with particular care.

Generalized Land Use Plan

Originally adopted in 1960, this plan was revised in 1985 to reflect changes in land use within Tacoma's boundaries. This document is intended to be used in harmony with other elements of the City's *Land Use Management Plan.* Collectively, these elements and their respective policies should be applied to growth and development issues whenever appropriate. More detailed plans, studies and reports concerning the locational arrangement, type and intensity of land use may also be used to augment the plan.

Interim Regional Development Plan

The Puget Sound Governmental Conference has prepared an interim development plan to serve as a guide for the growth and development of human and natural resources in the Central Puget Sound region. It is not the ultimate answer for dealing with the never ending issues and problems ahead. But it is a constructive step toward an ideal: an integrated system of planning and managing our total environment.

Land Use Management Plan

In 1983 and revised in 1986, the *Land Use Management Plan* document reflects the adoption of several plan elements and replaces the 1975 document. It is a descriptive and reference document containing an overview of the City's planning process and a collection of summaries of adopted plan elements. It has been prepared to explain to the plan user (citizen, developer or public official) what the Land Use Management Plan consists of, and how the various elements are intended to be used.

Lower Puyallup Watershed Action Plan

The Lower Puyallup Watershed Action Plan was developed during 1992 and 1993 by Pierce County with the cooperation of a variety of public agencies, including the City of Tacoma, two Indian tribes, and private groups, to address the control of non-point source water pollution in the Lower Puyallup River Watershed. The shoreline districts within this watershed include part of the S-6, and the S-7 through S-12 districts in their entirety. The final plan, which summarizes existing conditions, source control action items, and a program of implementation and monitoring, was published in December, 1993.

North Slope Plan

The North Slope Plan serves as a statement of intent by the City of Tacoma with the respect to the future growth and development of the North Slope area. This plan is to be utilized by the City of Tacoma in its decision-making process on proposed land use changes and will also aid in the planning and development of public facilities and improvements.

Port Development Plan

Development of the Port of Tacoma follows the Comprehensive Plan Summary of the Port of Tacoma, April 1993, and subsequent updates.

Project Open Space - Summary Report

This report is a summary of thirty-three separate open space studies prepared by the Puget Sound Governmental Conference. Their purpose is to acquaint all interested people with the opportunities available, the scope of interest and activity which has taken place in the past, and the actions which will be required to meet the growing open space needs of the region in the future.

Puget Sound and Adjacent Waters - Summary Report

The Puget Sound Task Force of the Pacific Northwest River Basins Commission has described the needs of the Puget Sound Area's future population for water and related land resources projected to the year 2020 and presents a comprehensive plan for meeting these needs, dated 1971.

Puget Sound Environmental Atlas

The Department of Natural Resources has prepared a compilation of existing information on maritime activities and marine environments of Washington.

Recommended Study Program for the Waterfront Areas of Tacoma, Washington

This report presents an outline setting forth a long range planning program for the City's waterfront areas. The recommendations embodied within were approved unanimously by the Planning Commission at a February 3, 1964 public meeting.

Recreation and Open Space Plan

This document was prepared and adopted in 1983 by the City of Tacoma, the Metropolitan Park District of Tacoma, and Tacoma School District #10. It is a guide for the location, acquisition, development, and improvement of recreation and open space facilities in Tacoma.

Ruston Way Design Booklet

The unifying design elements listed in this booklet are recommended in the Ruston Way Plan to promote consistency and continuity along the Ruston Way shoreline. These unifying design elements are intended to be incorporated into proposed Ruston Way waterfront projects wherever possible and appropriate. Detailed drawings and general specifications of these unifying design elements have been prepared to assist the development and design of proposed projects. Consideration of unifying design elements is an important part of project and shoreline permit review. These drawings may be updated periodically to reflect changes in projects or needs.

Ruston Way Plan

The Ruston Way Plan discusses opportunities for private and public development and will assist these developments by setting forth intents, policies, design recommendations and

common design elements. These common elements will unify diverse developments and foster continuity along the Ruston Way shoreline.

Shoreline Amenities Study

Prepared in 1981, this study encompasses the waterfront areas within the boundaries of the City of Tacoma. Discussion in the study is limited to the potential for scenic viewing or physical access to the water on publicly-owned properties and proposed public improvements for some of these properties.

Shoreline Trails Plan

This plan is a guide for the location, development, and future land acquisition for trails along the shoreline areas of the Tacoma peninsula.

Subdivision Ordinance

This ordinance, adopted in 1972, sets forth standards for the development of subdivisions within the city.

Summary Report - Shoreline Inventory for Tacoma, Washington

This summary report of shoreline inventory for Tacoma was prepared in accordance with the Shoreline Management Act of 1971, and in accordance with the procedural guidelines set forth by the Department of Ecology. It was transmitted to the Department of Ecology in November 1972.

Tacoma-Pierce County Stormwater Management Manual

The Tacoma-Pierce County Stormwater Management Manual consists of three volumes. Volume one defines the minimum stormwater standards for all new development redevelopment. It contains requirements for the control of stormwater runoff quantity, which if uncontrolled, can lead to flooding, property damage and habitat degradation. Requirements for the control of stormwater runoff quality are also included, because stormwater carries toxic materials and sediments that can pollute both groundwater and Puget Sound. Implementation of the manual will affect all new development projects in the City, although the requirements for small projects, such as single family homes, are minimal. Many redevelopment projects will also have to address stormwater concerns, based on the size and type of the project.

The second volume of the manual includes source control best management practices for industrial and commercial businesses. Implementation of these best management practices will help to keep toxic chemicals from getting into the groundwater and from getting into the storm drains which lead to Puget Sound. The requirements will be applicable to all industrial and commercial business operations in Tacoma. (The implementation plan for volume two has yet to be developed.)

The third volume will contain the City's comprehensive stormwater management plan. It will identify current and future stormwater quantity and quality management programs, such as maintenance of stormwater systems, source control, spill response, catch basin cleaning, outfall monitoring and public education.

Tacoma Port Industrial Area - Wetland Study

The City of Tacoma's 1984 Coastal Zone Management project involved completing an inventory and mapping of wetland areas in the Tacoma Port Industrial Area, incorporating into the *Master Program for Shoreline Development* those areas which met the "associated wetland" designation criteria as outlined in WAC 173-22-040, and amending the shoreline regulations so as to ensure the protection and/or proper use of the wetland areas included in the *Master Program for Shoreline Development.*

Thea Foss Waterway Design and Development Plan

This plan provides guidelines for new development, both public and private, explores various options of shoreline uses, and provides detailed design specifications for developments on the Thea Foss Waterway. The plan essentially provides a blueprint to frame the waterway's future.

Vision for Commencement Bay

This document was adopted in 1993 by the Commencement Bay Cleanup Action Committee (CBCAC), a local forum representing a broad range of interests within the local community and aimed at facilitating effective and expeditious cleanup and restoration actions in Commencement Bay. The document provides a pictorial and written vision statement that illustrates the multiple uses of the Bay valued and shared by local governments, large and small businesses, and the many users of the Bay. It also describes, in written goals and principles and a restoration landscape concept plan, opportunities for improving the condition of the Bay's environment and natural resources while maintaining and building a strong local economy.

Zoning Code

The present zoning code of the City of Tacoma is a composite of an original zoning ordinance adopted in 1953 and an ongoing series of ordinances modifying the 1953 act. Included are a variety of zone classifications, with permitted uses and development standards for each zone classification, along with the usual provisions for special permits, variances, etc.

APPENDIX C
SHORELINE INVENTORY

A shoreline inventory and the summary report are on file within the Planning and Development Services Department and are incorporated herein by this reference.

Following is an outline of the content of the inventory summary report.

Land Use and Ownership Inventory
Summary of Natural Characteristics
Summary of Related Plans and Programs

The existing shoreline inventory is somewhat limited, and will require expansion and periodic up dating to be a useful shoreline planning tool.

The following additional information is also intended for inclusion in future revisions of the shoreline inventory document:

Shoreline Management

- Shoreline Management Act Compliance
  - Substantial Development Permit System
  - Shoreline inventory
  - Shoreline Master Program
- Shoreline Jurisdiction
- City Control of Use and Development
  - Zoning
  - Substantial Development Permit System
  - Variances
  - Conditional Uses
- Harbor Safety
  - Fire Prevention and Fire Fighting
  - Patrol and Safety
  - Rescue/First Aid/Medical
  - Debris Removal
  - Buoy Location and Marking
  - Storm Warning
- Harbor Pollution Control
  - Air Quality Management
  - Water Quality Management
  - Solid Waste Management
  - Debris Removal
  - Deep Water Spoils Disposal
- State Harbor Land Management

APPENDIX D
ADJACENT LANDS

The Adjacent Lands Report was developed by the City in 1982. The purpose of this report is to review Tacoma's land use policies and regulations for consistency with the State Shoreline Management Act.

The focus is on land areas located adjacent to the City's Shorelines but outside the jurisdiction regulated by Shoreline Substantial Development Permits.

Scope

City and State shoreline permit requirements apply to the upland area located within 200 feet measured from the ordinary high water mark of fresh and marine waters and to "associated wetlands." Associated wetlands as defined by the State Shoreline Management Act (SMA) are those areas " . . . which either influence or are influenced by and are in close proximity to any stream, river, lake or tidal water or combination thereof . . ."

It has been determined that a strict interpretation of the SMA limiting its authority to the above described areas is not appropriate. The impacts of development activities can extend further than the limits of the project site and a project developed outside the 200 foot boundary could impact shoreline areas. These impacts need to be considered.

The issue of the impacts of activities occurring on "adjacent lands" is of concern to the Washington Department of Ecology and the Office of Ocean and Coastal Resource Management. The State has defined adjacent lands as "...those lands immediately adjacent to and abutting lands under permit jurisdiction extending landward to the extent necessary to control direct and significant impacts to shorelands and to implement the management policy articulated in the Act, the guidelines, and the *Master Program*. The inland extent will necessarily vary with the particular management objectives for the shoreline setting."

Historic

The City has previously addressed the issue of consistency of adjacent lands with shoreline policies and regulations. In fact, this issue was taken into consideration during the development of the *Master Program for Shoreline Development*.

The environmental designations for each shoreline district were established by taking into account existing and anticipated development and adjacent land uses. Adjacent land uses were carefully considered in determining the most appropriate shoreline designation to ensure consistency and compatibility. The permitted uses in each shoreline district were primarily determined by existing shoreline development and adjacent land uses. In 1979, the City amended its Shoreline Ordinance to remove the zoning underlying the shoreline districts and established the shoreline district designations as the official zone for the affected properties.

During this time, the City reviewed the boundaries of its shoreline districts and found that a strict adherence to the 200 feet area designated for permit authority under the State Shoreline Management Act was not workable. The existing terrain, land uses and barriers such as railroad tracks and roads were taken into consideration. Lines were re-drawn that had more logical boundaries such as the top of bluffs or the railroad tracks.

By extending the boundaries of the newly created shoreline district zones beyond the 200 feet requirements, the City in effect extended its zoning authority over shoreline development. Although shoreline substantial development permits are not required for projects falling outside the 200 feet but within the boundaries of a shoreline district, these projects were required to be consistent with the shoreline regulations for that particular district. The extent of the districts, therefore, differ slightly from area to area depending on the conditions found at each shoreline area.

As stated in the Adjacent Lands Report, Tacoma's shorelines are perhaps unusual because they generally have limited accessibility. Although Tacoma is surrounded by water, there are relatively few areas outside of the waterways in the Port Industrial District and the Ruston Way shoreline where one can actually get to the water. At those shoreline areas where access is possible, the uplands are extremely limited, thereby reducing greatly the potential for land use conflicts.

Problems

Although the City's unusual situation of having the majority of its shorelines adjacent to steep slopes and railroad tracks has severely reduced the probability of adjacent land use conflicts, this same situation also poses the potential for environmental conflicts.

The City's slopes are generally unstable. Removal of their vegetation by grading or excavating requires extreme care to prevent erosion. The City's grading ordinance sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments. It establishes the administrative procedure for issuance of permits and provides for approval of plans and inspection of grading construction.

The majority of these slopes are zoned for single-family residential uses. In addition, special policies govern development of steep slope properties. These policies allow only very low density development (less than 3 units per acre). The City also has a policy to acquire slope properties for open space preservation. This program has been very successful and in a few areas, the City owns the majority of slope properties. These publicly-owned properties will remain undeveloped except perhaps for some nature trail development in appropriate areas.

The *Recreation and Open Space Facilities Plan* was adopted by the City in 1983 as an element of the *Land Use Management Plan*. The plan sets forth the City's intent with regard to all of the City's parks and open space areas. The document contains policies regarding the acquisition and preservation of steep sloped areas, the majority of which abut the City's

shoreline districts. In addition, the City has developed an *Environmental Policy Plan* which provides further management of steep slope properties.

Recommendations

The City is very aware of the fragile nature of its shorelines and has strived to protect them with policies, regulations and enforcement.

Considering the extent of City-wide and neighborhood planning which has occurred and remains on-going, the issue of inconsistency between shoreline districts and adjacent lands generally does not constitute a significant problem in the City of Tacoma.

Ruston Way Plan

Adopted: June 30, 1981
City Council Resolution No. 27024

Background

The Ruston Way shoreline is a two mile stretch of urban waterfront located along the southern border of Commencement Bay. Tacoma's earliest industrial area was located along this shoreline. Space limitations, changing technology, and the growth of the Port of Tacoma as the City's industrial center led to the closure or relocation of most of the industrial and commercial operations located there. As industry abandoned the Ruston Way waterfront, the area began to deteriorate. However, the scenic and recreation potential was very apparent and in the mid 1960's, the City, recognizing this potential, acquired nearly one-half of the shoreside properties for future public use and enjoyment.

Early City planning efforts spoke of a vision of developing a quality, people-oriented, waterfront area of public and private developments. Tacoma's *Master Program For Shoreline Development*, adopted in 1976 after extensive citizen participation, designated the Ruston Way shoreline area for "mixed public and private" development. New industrial development was prohibited and the area slowly began to change.

Plan Concept

Because of the sensitive nature of this shoreline area and its extensive redevelopment potential, the *Ruston Way Plan* was developed and adopted. The Plan reaffirms the intent expressed in earlier planning efforts 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. A mixture of public and private development has been successful in redeveloping urban waterfronts across the nation and has proven successful in Tacoma.

Existing public ownerships are primarily clustered in three large areas. Areas of private ownership fall between the public properties. These large areas will be emphasized. Development concepts for the three large public properties are proposed with each being distinct

yet compatible with the overall area. The first large public ownership is the Commencement Park and Old Town Dock area located near the Old Town community. The Park and adjacent dock provide opportunities for fishing, sunbathing, picnicking, and other recreational activities. The second large public ownership is located in the central area of the Ruston Way shoreline. A major public fishing pier and adjacent marine park are located there. The third site lies toward the northwesterly end of the shoreline.

This site is envisioned as a park with beach improvements and small boat access. Other smaller public properties will be developed as small parks and viewing areas to complement the three large ownerships and the overall shoreline area. Other properties may be acquired as they become available and as funding permits if they are needed and desired for some public use. Private development activities will be coordinated with public developments by incorporating unifying design elements in their design in order to provide continuity. These same design elements will also be used in public developments. While different and individual in character, public and private developments will be visually linked together to form a unified character.

The *Plan* also discusses the residential character of the Waterview Street area, a relatively isolated neighborhood located at the base of the slopes at the northwesterly end of Ruston Way. The residential area is intended to remain low intensity but some duplexes, triplexes, townhouses, condominiums and small garden-court apartments may be permitted. The desirability of trail development in the slope and gulch areas to facilitate pedestrian travel and provide linkages from the upland residential areas to the waterfront is also discussed. Some of the design elements will be used in the trail developments in order to strengthen ties between the adjacent hillside and the waterfront.

Policies and Recommendations

The *Ruston Way Plan* contains intent statements, policies, and design recommendations specifically intended for the planning, design, and development of public and private urban waterfront projects. Since much of Ruston Way area is undeveloped, new development, redevelopment, and remodeling will have considerable impact on the character of the waterfront. Therefore, design is very important along the Ruston Way shoreline.

The *Plan* recommends the use of specific design elements that will create the desired unified image and continuity. These unifying design elements include landscaping, street furniture, signs, lighting, and certain materials. Their use is strongly encouraged to provide visual continuity and consistency with the Pacific Northwest marine character.

It is recommended that the public and private sectors coordinate their redevelopment efforts to achieve well designed, compatible developments. It is not intended that every development along the Ruston Way shoreline appear alike but rather it is intended that all developments be compatible in design and character.

The importance of views of the water for waterfront visitors and residents is recognized. Existing views are to be maintained to the extent possible and integrated into proposed

developments by use of structure orientation, location, building design, and where possible, by provision of large, open spaces between buildings.

The opportunity to move along the water is important to the development of the Ruston Way shoreline. It is the intent of the Plan to develop the Ruston Way street as a two-lane, low speed, attractively landscaped, scenic parkway. Improved pedestrian and bicycle facilities will provide additional opportunities to enjoy the shoreline. Continuous bicycle/pedestrian paths along the water are encouraged as well as trails through the steep slope area to connect the waterfront to nearby residential areas. Shoreline edge protection and clean-up are also very important to provide for better public access use. Any modification to the shoreline edge must be consistent with shoreline regulations. Erosion of the shoreline edge is a continuous problem and protection is necessary.

The provision of street furniture and human scale amenities will enhance public use of the shoreline. These include signs, lighting, seating, tables, shelters, drinking fountains, and trash receptacles.

Implementing Ruston Way waterfront development projects, both public and private, will require a broad base of community support: cooperation between public and private property owners; financial assistance from federal, state, and local sources; and City staff resources. The success of these projects will require the public and private sectors working together in a partnership manner. The private sector must be willing to actively support the revitalization of the area, make capital investments, and share the cost of public improvements. The public sector must continue and strengthen its intent to redevelop the shoreline area by actively seeking funds for improvements, providing coordination between private property owners and public officials for site planning and development, and maintaining staff resources.

Shoreline Trails Plan

Adopted: December 12, 1989
City Council Resolution No. 30672

Background

The need and desire for a shoreline trail system has been documented in previous waterfront open space studies and plans. The majority of the shorelines within the plan area are bounded by steep, wooded slopes and gulches. These natural areas are a prime location for the development of a recreational trail system. Their generally undeveloped status offers a pleasant contrast to the urban environment and their location provides close-in, passive recreational opportunities for Tacoma's citizens. An urban, pedestrian network will unify and connect the city's shoreline areas and provide a unique recreational trail. The proposed trail system provides opportunities for traveling to and along the waterfront. Spectacular marine and mountain views are possible at many locations within the proposed trail network.

Plan Concept

The *Shoreline Trails Plan* discusses an urban pedestrian trail system lying within the shoreline districts, steep slopes and gulches from City Waterway north to Ruston Way, through Point Defiance Park, and south along the western shores of Tacoma.

The plan proposes a coordinated trail system that will tie individual trail segments together into a unified, urban pedestrian network. The trail system will provide an alternative means of travel to and from shoreline areas and neighborhoods. The trail segments will be linked together by connecting trails and, where this is not possible, by using nearby streets and sidewalks. The trail system is composed of a corridor trail, access trails, trailheads, trail access points, viewpoints, shoreline access points, and destination locations.

The corridor trail is the primary route of travel. Access trails will feed into and connect nearby neighborhoods with the corridor trail and will allow the trail user frequent opportunities to enter and leave the trail network.

The proposed trail system is intended to connect with other existing and planned trail systems within the city and Pierce and King Counties to become part of a region-wide trail network.

Implementation

The *Shoreline Trails Plan* will be used as a guide for future land acquisition and the location, development, and improvement of a shoreline trail system. Implementation of the plan's recommendations and proposals will be shared by the City of Tacoma and the Metropolitan Park District.

The Metropolitan Park District is the primary provider of public recreation and open space facilities. The District owns, operates, and maintains parks, playgrounds, playfields, and other recreation facilities in the City limits as well as some recreation facilities located outside the City's boundaries, but under the jurisdiction of the District.

The City of Tacoma is charged with serving the overall needs of the community which includes recreation. The City provides some funds to the Metropolitan Park District for administration, development, and maintenance of recreational facilities. The City also has developed some limited recreation facilities and has acquired a considerable amount of property for natural, open space areas.

It is anticipated that the responsibility to develop the trail system will be shared by the City and the Metropolitan Park District. Maintenance of the developed trail system will be carried out by the District with support by the City.

A preliminary estimate for accomplishing the proposed shoreline trail system ranges from approximately 4 million to 5.2 million dollars. This cost estimate is based on 1989 dollars. The figures represent an estimate which reflects acquisition and development costs. Actual cost may significantly differ from these estimated costs, depending on site conditions, property ownership, and final design. More detailed analysis of these costs will occur prior to construction of the trail system and its segments.

Many factors will influence the successful implementation of the plan's proposals including community support, timing, and availability of funding. Due to funding constraints, it is unlikely that the entire shoreline trail system will be developed at one time, but smaller portions of the trail system may be developed over time. Some parts of the proposed system may never be developed.

Securing funding will be the most difficult part of plan implementation. The City and the Metropolitan Park District should seek funds needed to acquire land, develop and improve the trail system, and provide on-going maintenance. Acquisition costs may be reduced through obtaining trail easements or land donations. Development and maintenance costs may be reduced through programs using citizen volunteers.

Recommendations

The plan makes several recommendations which will help achieve the desired continuous trail system. These recommendations are summarized below. More detailed discussion of the

recommendations can be found in the "Shoreline Trail System" and "Shoreline Trail Development Proposals" sections of the plan document.

Recommendations for the development of the proposed trail system are as follows:

a. Responsibility to develop the trail system should be shared by the City and the Metropolitan Park District of Tacoma. Maintenance of the trail system should be conducted by the Metropolitan Park District of Tacoma with support from the City.

b. The Metropolitan Park District of Tacoma should develop an "Adopt-A-Trail" or similar volunteer program to help reduce the costs of development and maintenance of trails.

c. The trail system should be developed in a manner sensitive to the fragile environment within the steep slope and gulch areas.

d. Future links from the shoreline trail system to other trails within the city or neighboring jurisdictions that are existing or planned should be developed.

e. Development of the trail system should include rehabilitation or restoration of deteriorating conditions within the public open space lands through which the trail will pass.

f. The City should continue its program of purchasing open space lands. Properties lying within the proposed trail system should be considered as a high priority.

g. Easements should be obtained, wherever possible, to provide for trail access and development and to lower costs of land acquisition in developing the trail system.

h. The City and the Metropolitan Park District of Tacoma should seek funds needed to acquire land, and develop and improve the shoreline trail system.

i. The City and the Metropolitan Park District of Tacoma should identify funds for annual, complete, and regular maintenance of the shoreline trail system.

j. The City and the Metropolitan Park District of Tacoma should initiate negotiations with Burlington Northern to use railroad right-of-way for trail development.

k. Shoreline developments within the plan area should be required to provide waterfront public access and to develop any corresponding portions of the shoreline trail system.

l. Developments which do not have direct waterfront access within the plan area should be required to develop any corresponding portions of the shoreline trail system.

m. Use of utility easements should be negotiated where appropriate for development of the shoreline trail system.

n. Utility sub-station property should be negotiated where appropriate for development of the shoreline trail system.

o. If use of the Western Slopes Wastewater Treatment Plant is discontinued, it should be acquired and/or used for a public use which complements the shoreline trail system.

Thea Foss Waterway Design and Development Plan

Adopted: May 19, 1992
City Council Resolution No. 31714
Amended: December 5, 1995
City Council Ordinance No. 25798

Background

Thea Foss Waterway is approximately three and one half miles of continuous shoreline adjacent to Commencement Bay and to the City of Tacoma's Central Business District (CBD). The Waterway represents a unique opportunity for the City of Tacoma to create an attractive focal place for the enjoyment of the inland waters of Puget Sound within an urban context. There is a great deal of potential for redevelopment along the Waterway, which may be realized with the adoption of this plan and support and encouragement at the public and private level. Developing a mix of uses along the Waterway will bring the economic vitality needed to turn Thea Foss Waterway into a showcase for Tacoma.

Recognizing the Waterway's great importance and potential, the City has conducted a variety of studies that both directly and indirectly pertain to the Waterway. This plan follows several others which provided insight and valuable information incorporated into this plan. Three documents that dealt with design issues were *Central Business District Plan: Greater CBD, Phase II Tacoma Waterfront Analysis: Ruston Way-Schuster Parkway-City Waterway,* and *City Waterway Concept Plan.* Also providing information and guidance were: *City Waterway Environmental Review* and *Boat Launch Study*. Other documents that were useful were *Master Program for Shoreline Development, Ruston Way Plan,* Chapter 13.10 of the *Land Use Regulatory Code* (Shoreline Management), *the Pierce Transit Downtown Tacoma Center Circulation and Regional Access Study*, the *Strategic Plan for Thea Foss Waterway Environment and Redevelopment,* and the *Thea Foss Waterway Development Alternatives Environmental Impact Statement*.

The first phase of the *Thea Foss Waterway Design and Development Plan* was completed in 1990 but adoption was delayed until 1992 after the City of Tacoma and Metropolitan Park District acquired 26.8 acres of property on the Waterway. Following the acquisition of these properties, the City of Tacoma decided to revise the draft *Thea Foss Waterway Design and*

Development Plan to address the broader potential for public use along the waterfront and to better incorporate new information from recent environmental and transportation studies. The Plan was amended in 1994 and 1995 to reflect new information from public meetings, and land use, environmental, and circulation/parking studies. In addition to the studies that have been conducted by the City, considerable investment in Thea Foss Waterway has been made in previous years, including street and sewer improvements, building upgrades, walkways, site cleanup, and small parks.

Plan Goals

The *Thea Foss Waterway Design and Development Plan* is the City's blueprint to frame the future of the Waterway. The purpose is to provide design guidelines for new development, both private and public, and to explore various options of shoreline uses. The intent is promotion of public access and the enjoyment of the shoreline within these guidelines and options. The key for success lies not only in public access to the Waterway, but also in providing a strong connection from the Waterway to other parts of the City and beyond.

The four major tasks that direct this plan:

1. Create a public access system with a continuous esplanade along the shoreline and a coordinated set of design standards.
2. Establish design and development guidelines for land use and development of publicly-owned properties.
3. Manage the shoreline to further optimize circulation and public access, development, and environmental protection.
4. Provide opportunities for mixed use development, public/private investment and recreational opportunities, and public access to the shoreline for the citizens of Tacoma.

Plan Concept

The concept for Tacoma's *Thea Foss Waterway Design and Development Plan* emphasizes four primary components:

1. A Circulation Component that improves public access and utilization of the waterfront. It includes a continuous waterfront pathway system, links between downtown and the Waterway, and integrates pedestrian, bicycle, automobile, and public transportation systems.
2. A Shoreline Use Component that identifies special development, recreation and public access opportunities on the Waterway and promotes uses that are water-oriented and that allow public enjoyment of the shoreline while providing shoreline protection with environmentally appropriate landscaping, rip rap, or other appropriate protection. A key aspect of this component is dealing with the environmental concerns related to shoreline restoration, cleanup and water quality.
3. An Urban Design Component that upgrades the quality of development along the Waterway, adds visually attractive qualities, unifies design identity and emphasizes a

character compatible with the variety of recreational activities, historic resources and maritime businesses.

4. An **Environmental Quality Component** that acknowledges the specific cleanup actions required to take place prior to development along the Waterway including improvements of water quality and habitat.

Implementation Recommendations

This plan contains overall strategies for:

Transportation Strategy

Over time, develop ferry, transit, shuttle bus, and pedestrian access elements. Parking is to be within structures or in underground "trays."

Environmental Cleanup Strategy

Work cooperatively with regulatory agencies and property owners to address environmental cleanup issues.

Funding Strategy

Utilize various financing instruments such as bonds, certificates of participation and bond anticipation notes. Seek out federal, state, and local funding sources and leverage local funds with matching grants whenever possible. Seek public/private partnership opportunities.

Administration Strategy

Create a Public Development Authority to manage, market, and develop key publicly owned segments of the Waterway. City staff will assist in coordinating the development process.

Development Strategy

Use a phased development approach to systematically redevelop Foss Waterway. Use the site selection criteria to determine where development funds should be committed:

1. Areas where public or private funding has been committed.
2. Areas where waterfront development opportunities exist.
3. Projects that promote shoreline public access.
4. Projects that further mixed-use development.
5. Efforts that promote environmental cleanup of the area.

Achievement of the plan's redevelopment goals will require the coordinated, cooperative, and united support of all City departments, other public agencies, civic and community groups, property owners and tenants, the development community, and other interested citizens. Many factors will influence the implementation, including funding constraints, environmental cleanup, and development timing.

PART II
SHORELINE ORDINANCE

DISTRICT DESIGNATIONS, SHORELINE USE REGULATIONS AND PERMIT PROCEDURES FOR SHORELINE MANAGEMENT

PART II - CHAPTER 13.10 - SHORELINE MANAGEMENT REGULATIONS