City of Coos Bay
Comprehensive Plan 2000

Volume II – Plan Inventories

INTRODUCTION

CHAPTER 1

INTRODUCTION

Beginning in 1977, the officials of the City of Coos Bay embarked upon a comprehensive, 20-year plan which would comply with the statewide planning goals. Staff began the first step toward completion of this plan with a series of reports describing and assessing the economy, housing, public services, and physical characteristics of the area. The results are contained in this inventory document which constitutes Volume II of the City's Comprehensive Plan 2000.

Notably, this work involved extensive mapping and special surveys, such as a housing condition survey, a citizen attitude survey and a block-by-block examination of existing land use. Staff was ably assisted in the compilation of this information by the Committee for Citizen Involvement and by students participating in a summer work experience program. In addition, drafts of these inventories were critiqued by representatives of local, state, and federal agencies and by interested citizens *(See appendices of Vol. I - Plan Policy Document for comments).*

A good share of the cost of preparing the entire comprehensive plan was defrayed by planning assistance grants from the Land Conservation and Development Commission between July 1977 through June 1980. The total grant sum utilized by the city during this period was $9,272.56 with an average 40% yearly match of in-kind service. Any costs associated with the plan since 1980 have been borne entirely by the city.

In December of 1983 the City of Eastside was consolidated with the City of Coos Bay. Subsequently. The City of Coos Bay consolidated with the former City of Eastside Comprehensive Plan with the City of Coos Bay Comprehensive Plan. Elements from each plan were used to create one plan (City of Coos Bay Comprehensive Plan 2000).

As would be expected, each community developed plans that were unique to that particular city; thus, those elements that were consolidated do not always correspond. It should be noted that it was neither feasible nor practical to retain every element from each plan. Copies of the former plans are on file with the Public Works and Development Department.

City of Coos Bay
Comprehensive Plan 2000

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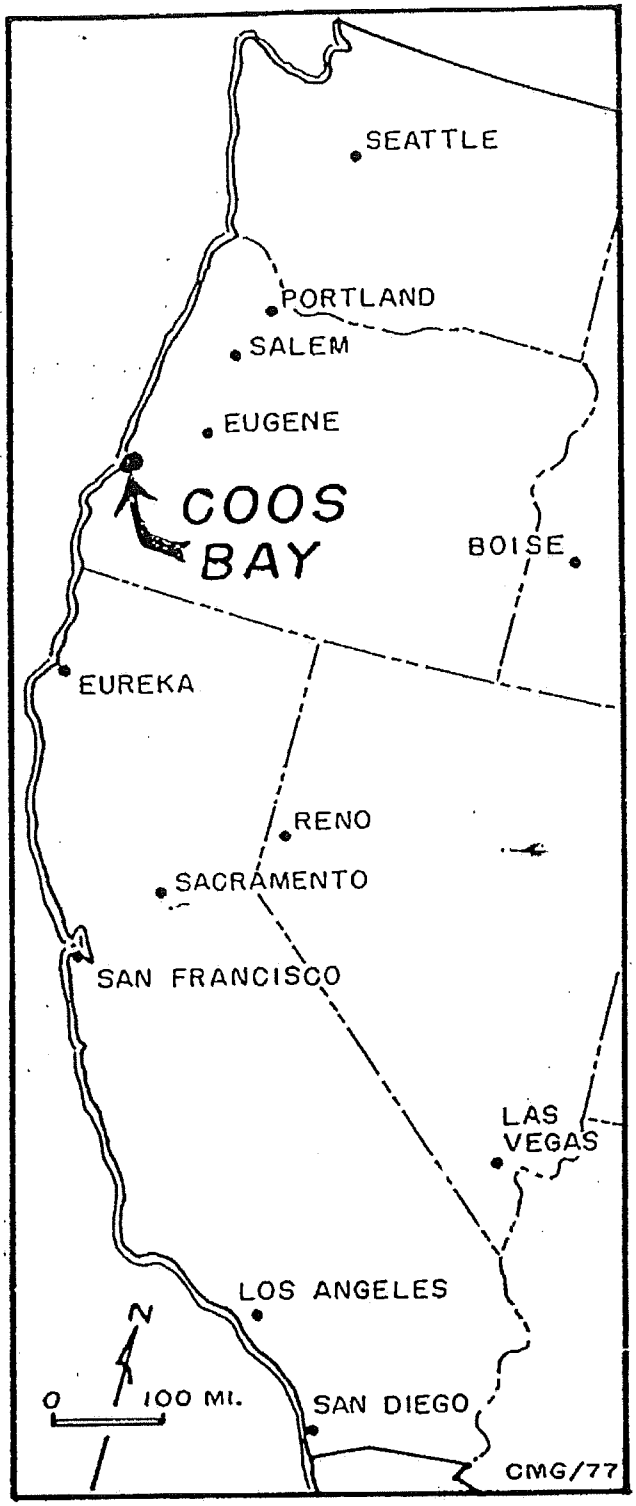
SETTING

CHAPTER 2


SEATTLE
PORTLAND
SALEM
EUGENE
COOS BAY
BOISE
EUREKA
RENO
SACRAMENTO
SAN FRANCISCO
LAS VEGAS
LOS ANGELES
SAN DIEGO
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Location

Coos Bay, a city of Coos County, is located on the southwestern Oregon coast, approximately 200 miles south of the Columbia River and 450 miles north of San Francisco Bay. In terms of distance from other Oregon cities, Coos Bay is 86 miles from Roseburg, 110 miles from Eugene and 225 Miles from Portland. With an estimated 1987 population of 14,290, it is part of the largest urban area on the Oregon coast. Its population, when combined with the City of North Bend (population 8,755) as well as other nearby communities easily qualifies the bay urban area as an important trade and service center for the southern Oregon and northern California coasts. However, Coos Bay, as it typical of other southwestern coastal Oregon cities, is relatively isolated because of its geographic position between the Coast Range and Pacific Ocean.

The majority of the bay area urban population has settled on a peninsula which is surrounded by Oregon's largest estuary, Coos Bay. This water body, which resembles as inverted horseshoe, and the adjoining topography of the Coast Range account for urbanization patterns in the area. Three sections of the City of Coos Bay, old Marshfield, Eastside and Empire specifically, are situated on the eastern and western extremities of this land peninsula. In terms of actual land coverage, Coos Bay contains 20.05 square miles of land area.

History

This land around the Coos Bay estuary is known to have been inhabited by the Coos Indians, composed of the Hanis and Miluk-speaking groups. Primarily hunters and gatherers, the Indians lived well off the abundant resources of the sea and land. By the 1850's, white trappers and military personnel, had made frequent appearance along the coast and in 1853, the first permanent settlement of whites was established in Empire as part of the Coos Bay Commercial enterprises. Soon thereafter, small settlements were founded at old Marshfield, at North Bend, and at various sites along the tributaries of Coos Bay. Like the Indians before them these pioneers were attracted to the area by plentiful resources and the commercial shipping possibilities of the bay.

Population

The population of the City of Coos Bay is estimated to be 14,290 persons as of 1987. This figure represents about 62% of the urban area population (represented by Coos Bay and North Bend, 24.9% of Coos County's population, and 0.5% of Oregon's estimated total population). The City of Coos Bay has traditionally been the largest city in Coos County since 1874 when Coos Bay was incorporated as the Town of Marshfield, although North Bend has closely paralleled this population growth. Coos Bay and North Bend share a common regional economic base and have historically depended on port activities for their economic existence. Minor climate and topographical variations between the two town account for the subtle variation in the historical development and population characteristics of the two places. However, the bay area has exhibited a general trend of faster population growth than Coos County and the State since the early part of this century.

During the most recent period of time, migration has been the primary factor affecting population change in the city, although during several of these years the migration was away from the city. This trend is markedly different than for the state as a whole which has experienced very high rates of immigration during the last decade.

Reflecting on the historical settlement trends of the city and the suitability of the terrain for housing, most of the population is concentrated in the old Marshfield area and in the residential sections of Empire and Eastside.

In December 1983 the City of Eastside was consolidated with the City of Coos Bay. This merger resulted in approximately 1,480 additional residents to Coos Bay.

City of Coos Bay
Comprehensive Plan 2000

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PHYSICAL ENVIRONMENT

CHAPTER 3

Introduction

The statewide planning program entails the conservation of open space, the production of scenic and historic areas for future generations, and the establishment of healthy and visually attractive environments in harmony with the natural landscape character. (LCDC 1977). In addition, other portions of the planning goals are designed to satisfy the recreational needs and correlate open space, and scenic, natural, and cultural attractions as an integral part of recreational opportunities. Because of the inherent overlap of goal requests and to avoid unnecessary duplication, open space and environmental resources will be addressed in this section. Preservation and conservation of scenic areas and historical places will be discussed in Section 5.7.

Open space, simply defined, is "space which is not used for buildings or structures". (Goodman and Freund 1968). Open space as defined by the statewide planning goals is expanded to include many uses which, in all instances precludes conventional development. In this sense, open space encompasses not only the concept of undeveloped land but also the protection, conservation, and preservation of natural resources and is treated as such in this inventory. Specific natural resources relevant to the Coos Bay planning area and inventoried here include:

1. Climate
2. Geology
3. Soils
4. Beaches and dunes
5. Wetlands and tidal marshes
6. Flora and fauna
7. Water resources
8. Agricultural and forest lands
9. Mineral resources
10. Scenic areas

3.1 CLIMATE

The climate of Coos Bay can be described as mid-latitude marine with mild summers and moist cool winters. Although a weather station is no longer located in Coos Bay, proper weather data for the City of North Bend is applicable to the City of Coos Bay because of similarity in geographic and topographic conditions. (U.S. Department of Commerce, National Oceanic and Atmospheric Administration n.d.).

The temperature of this area is best characterized by the absence of extremes, with a 30-year average annual temperature of 52.5°. Because of the moderating influence of the Pacific Ocean, there is only a 15° difference between the mean temperature of the coldest month (January) and the warmest (July).

The following table summarizes temperature averages (F°) between 1933 and 1963. (Table 3.1-1).

Precipitation occurs most frequently during the months of November through March, when approximately 75% of the average 62 inches per year of rainfall can be expected. Frequent snowfall is uncommon because of the tempering effect of the ocean; in those instances when snow does fall, the amount is generally light (1-2 inches) and melts quickly. During the warmer months fog and low stratus clouds persist a short distance inland. Table 3.1-2 presents precipitation data and annual averages for the years 1933 – 1963.

Area precipitation patterns vary according to topographic characteristics as can be seen from Map 3.1-1. Precipitation amounts increase incrementally toward upland areas east of Coos Bay, hence, the eastern extremities of the Coos Bay planning area might be expected to received up to an average of five inches more rainfall than the western portion of the planning area. Despite the frequent rains and foggy periods, late spring, summer, and early fall have numerous clear, sunny days. "The annual average daily cloudiness of 6.7 tenths of sky cover compares very favorably with most of the northern half of the United States. There is an average of over 200 days a year when no measurable precipitation occurs". (U.S. Department of Commerce, National Oceanic and Atmospheric Administration, n.d.:[1]).

Wind direction and velocity are marine-influenced along the coast. Prevailing winds during the months of October through April are from the southeast with the exception of January when winds are predominately from the south-southeast. This winter phenomenon is attributable to the occurrence of the north-flowing off-shore Davidson Current which appears in September until it is replaced in May by the south-flowing California Current. It is in May when prevailing wind direction changes from southeast to north-northwest; which continue until October. Wind rose data, illustrated in Figure 3.1-1 was compiled from 43,770 observations taken at the North Bend Municipal Airport by the U.S. Weather Bureau during the time period January 1, 1958 to December 31, 1962. (Table 3.1-3).

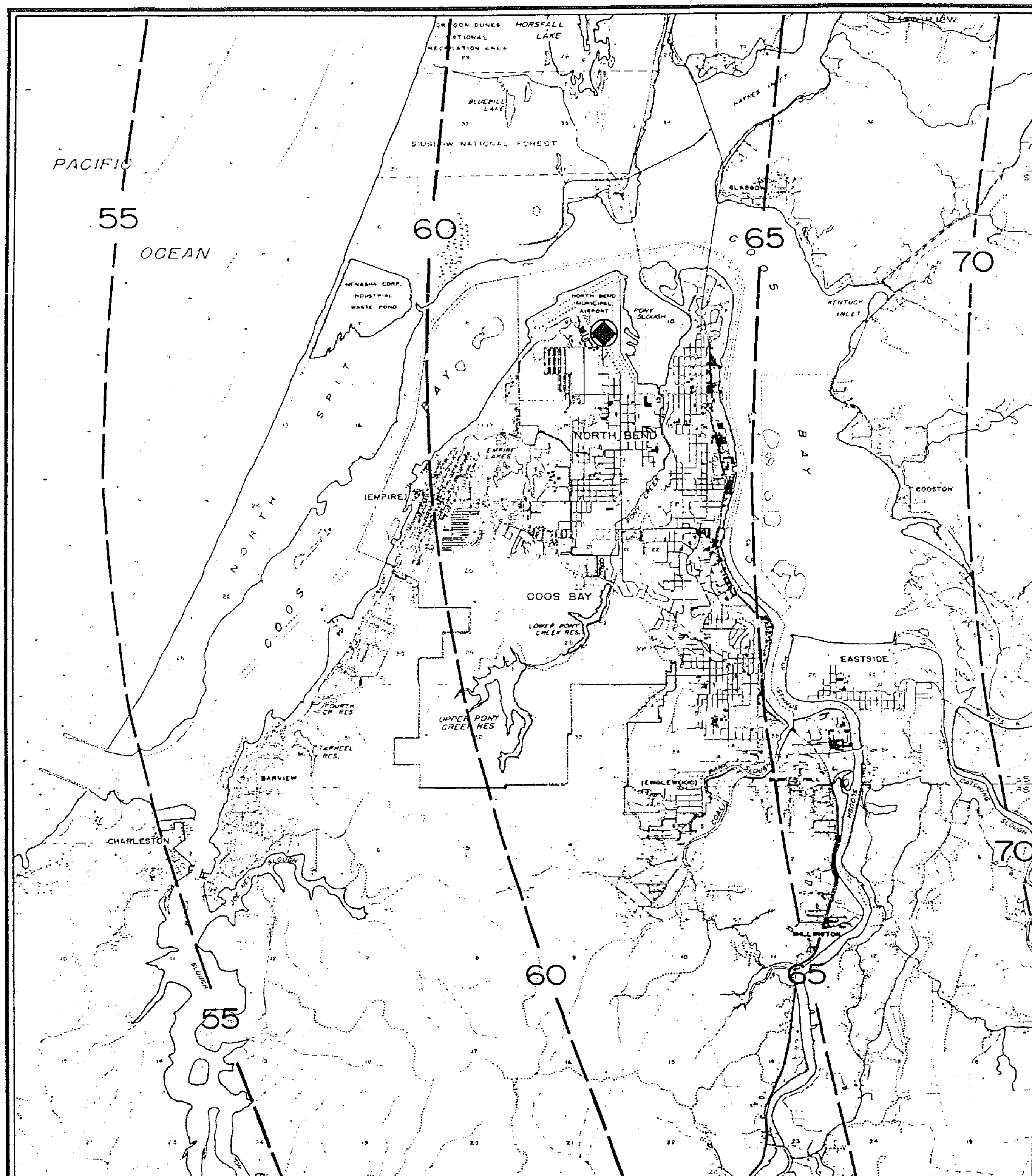
TABLE 3.1-1

AVERAGE MONTHLY AND ANNUAL TEMPERATURE, NORTH BEND STATION
1933 - 1963

Average Temperature (°F)

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Ann'l
1933	43.3	43.7	47.7	48.4	50.6	56.3	57.4	58.3	56.6	54.6	51.0	50.3	51.6
1934	50.7	52.3	55.6	54.0	58.0	57.4	59.4	60.2	57.3	56.6	53.2	48.4	55.3
1935	49.4	49.8	44.0	50.0	51.0	58.6	58.4	57.6	57.6	52.9	46.4	47.5	51.6
1936	47.6	45.6	46.4	51.8	55.9	60.4	61.2	61.2	57.6	55.7	49.2	46.8	53.3
1937	38.2	45.0	50.0	48.0	51.8	57.6	58.0	58.8	58.0	58.2	52.7	49.2	52.1
1938	47.2	46.4	46.8	50.2	52.8	55.6	56.9	58.1	59.4	55.2	47.8	46.6	51.9
1939	45.7	43.8	47.2	51.2	54.2	55.9	59.2	58.6	60.0	56.6	52.0	49.8	52.8
1940	48.3	48.4	50.3	52.1	55.6	56.4	60.4	60.3	61.1	58.2	49.6	48.4	54.1
1941	49.4	51.2	52.7	51.7	55.7	59.2	61.8	61.3	59.4	55.9	52.7	46.6	54.8
1942	47.5	46.2	47.2	50.8	53.8	57.3	62.8	61.6	58.0	55.8	50.2	48.5	53.3
1943	44.0	50.1	48.4	51.4	52.8	56.6	58.4	60.3	59.6	55.4	51.9	47.1	53.0
1944	46.4	45.0	47.2	49.7	53.4	57.2	59.4	61.6	58.8	57.2	50.0	48.2	52.8
1945	48.5	47.0	45.6	48.6	54.2	56.8	57.8	58.3	57.9	53.5	49.5	47.4	52.1
1946	45.6	45.8	47.0	49.4	54.7	57.6	60.1	59.2	59.0	51.8	47.8	46.8	52.1
1947	43.2	48.8	50.1	53.5	55.2	58.0	61.9	60.8	60.5	56.8	50.6	47.2	53.9
1949	36.6	44.0	48.0	50.2	54.2	55.0	56.9	60.9	58.1	50.5	53.0	44.0	51.0
1950	38.6	46.4	46.5	48.5	50.0	55.8	58.0	59.9	57.2	55.4	51.6	52.4	51.7
1951	44.4	46.5	43.6	49.1	53.3	54.6	58.6	58.0	55.9	55.3	51.3	42.7	51.1
1952	42.7	44.6	44.4	48.6	52.8	55.7	57.6	58.8	57.0	54.2	46.5	46.5	50.8
1953	50.1	45.7	45.9	49.0	52.5	55.6	58.5	60.4	59.5	55.8	52.4	47.4	52.8
1954	45.3	47.6	45.8	48.7	52.7	55.4	57.9	59.4	58.7	54.8	52.9	46.9	52.2
1955	43.8	43.5	44.6	45.4	50.5	54.5	58.2	56.4	56.3	53.8	48.3	47.0	50.2
1956	45.5	41.7	45.7	48.6	53.7	55.8	58.7	59.7	57.1	53.3	46.7	45.6	51.0
1957	40.0	47.2	47.9	50.1	55.2	59.2	60.1	61.2	60.8	55.2	48.8	48.1	52.8
1958	49.4	51.8	46.6	50.8	55.5	60.7	60.5	60.6	60.2	55.4	50.8	51.2	54.5
1959	48.4	45.0	48.2	51.0	53.2	58.4	58.6	57.9	58.0	55.9	50.2	46.2	52.6
1960	45.1	46.6	48.9	51.2	53.2	56.8	57.3	58.6	55.7	54.1	49.0	47.2	52.0
1961	49.3	48.0	48.1	49.6	53.5	58.0	61.0	59.0	55.9	54.6	50.0	46.3	52.8
1962	43.0	44.6	45.2	49.9	52.1	56.0	57.6	61.4	59.9	55.6	51.6	48.4	52.1
1963	41.7	53.4	48.4	49.6	54.2	58.2	58.1	58.9	60.1	55.0	49.8	47.5	52.9

Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, n.d.)



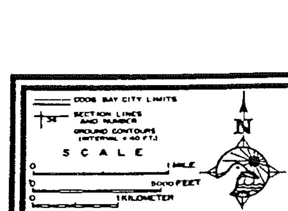
MAP 3.1-1

AVERAGE ANNUAL RAINFALL

KEY:

—60— ISOLINES REPRESENT MEAN AVERAGE ANNUAL RAINFALL FOR PERIOD 1930-57 (INCHES)

CLIMATOLOGICAL STATION



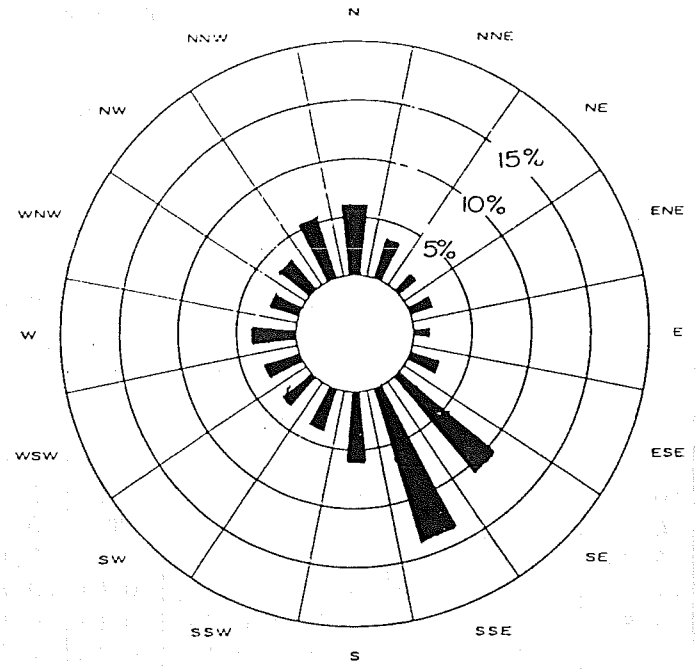
SOURCE: U.S. ARMY CORPS OF ENGINEERS

TABLE 3.1-2
AVERAGE MONTHLY AND ANNUAL PRECIPITATION, NORTH BEND, STATION
1933-1963

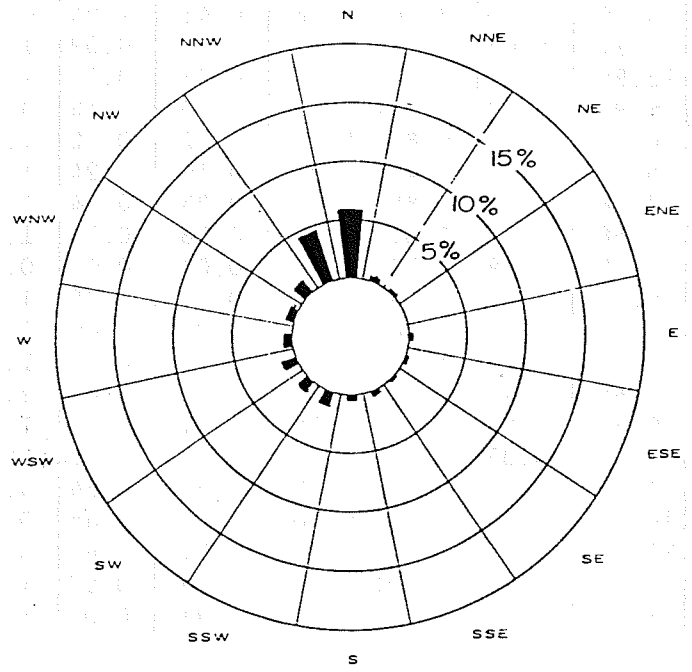
Total Precipitation (Inches)

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Ann'l
1933	17.33	8.35	9.59	2.30	7.21	2.85	T	0.53	3.52	3.64	2.26	14.15	71.00
1934	6.48	2.55	4.55	2.30	1.96	0.25	0.23	0.36	1.00	9.81	13.36	13.34	58.00
1935	7.47	4.95	10.33	3.93	0.50	0.70	0.35	0.12	1.65	5.86	4.26	8.01	48.00
1936	13.51	7.25	4.85	2.47	4.88	1.43	0.39	T	0.30	0.30	0.66	7.00	43.00
1937	12.69	16.89	6.39	9.12	2.62	5.57	0.11	0.62	2.83	5.06	18.86	10.41	91.00
1938	7.82	14.75	17.50	3.36	1.19	0.43	0.11	0.01	0.85	4.47	8.00	5.23	63.00
1939	8.25	7.83	4.83	1.00	1.49	2.79	0.86	0.62	0.93	3.95	1.01	13.51	47.00
1940	7.76	17.86	7.91	2.59	2.58	0.14	0.18	0.15	2.24	6.89	6.72	13.90	68.00
1941	10.55	3.91	2.78	4.04	3.23	3.18	0.29	0.59	4.61	4.14	10.68	18.56	66.00
1942	7.56	8.88	3.85	4.47	5.09	2.13	0.87	0.10	0.76	2.85	15.09	17.25	68.00
1943	9.70	4.00	8.39	4.00	3.16	1.68	0.48	1.24	0.08	9.82	6.12	3.51	52.00
1944	5.55	7.09	4.71	6.03	2.44	0.93	0.15	0.09	1.09	3.76	8.01	4.41	44.00
1945	6.68	10.05	12.98	6.27	3.53	0.44	0.33	0.33	1.74	2.98	18.00	12.67	76.00
1946	8.89	7.88	6.98	3.02	0.92	2.43	0.30	0.18	3.98	6.63	15.41	7.96	64.00
1947	5.37	4.21	6.54	2.77	0.87	5.72	2.22	0.32	1.58	13.83	5.04	7.20	55.00
1949	2.89	12.08	5.61	1.18	3.48	0.22	0.16	0.24	1.36	3.33	7.81	7.29	45.00
1950	21.95	7.48	7.26	3.26	1.85	1.49	0.35	0.64	1.67	13.65	12.09	7.38	79.00
1951	11.68	8.83	7.58	1.76	3.61	0.08	0.16	0.15	1.21	8.17	9.54	11.17	63.00
1952	12.79	5.99	9.09	1.19	0.78	2.37	0.03	0.02	0.63	0.98	3.42	11.46	48.00
1953	13.93	7.88	9.21	5.41	6.06	1.71	0.15	3.38	1.59	3.37	15.17	11.05	78.00
1954	15.11	5.56	6.80	4.31	0.70	2.38	0.20	3.00	2.33	4.07	6.46	12.07	62.00
1955	5.41	6.25	7.30	7.45	1.34	0.57	0.86	0.04	1.71	8.07	8.73	22.36	70.00
1956	17.50	9.47	4.65	0.42	2.03	2.06	T	0.04	2.14	11.94	1.45	6.61	58.00
1957	6.22	6.64	10.30	2.93	3.01	1.18	0.61	0.44	1.81	6.88	2.86	13.10	56.00
1958	11.70	14.98	7.06	5.33	1.24	2.42	0.74	0.16	1.52	3.39	10.48	7.31	66.00
1959	17.42	10.86	1.63	1.12	3.43	0.68	0.32	0.34	3.79	3.04	1.65	5.01	53.00
1960	8.65	8.63	10.25	3.44	6.47	0.10	T	0.45	0.19	3.88	15.56	4.18	61.00
1961	7.51	15.26	13.28	4.47	5.74	0.52	0.17	0.63	0.69	5.93	10.68	6.30	71.00
1962	2.41	8.24	9.05	2.55	2.00	0.65	0.09	0.57	1.38	6.54	7.36	4.10	44.00
1963	3.47	6.84	8.12	5.39	5.26	1.64	0.71	0.05	1.53	3.92	11.66	4.92	53.00

T: Trace, an amount too small to measure



WIND DIRECTION 4 TO 15 M.P.H.



WIND DIRECTION 15 M.P.H. AND OVER

FIGURE 3.1-1

DISTRIBUTION OF AVERAGE WIND DIRECTION AND VELOCITY AT THE NORTH BEND AIRPORT: JANUARY 1, 1958 THROUGH DECEMBER 31, 1962.

TABLE 3.1-3

MONTHLY WIND VELOCITY AND DIRECTION

Month	Velocity (MPH)	Prevailing Wind Direction
January	12.3	SSE
February	10.3	SE
March	10.7	SE
April	11.4	SE
May	12.4	NNW
June	11.4	NNW
July	14.5	NNW
August	11.3	NNW
September	9.2	NNW
October	8.3	SE
November	9.2	SE
December	10.7	SE
Yearly Average	11.0	SE

Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, n.d.

3.2
Geology

The Coos Bay planning area is underlain with two bedrock formations dating from the late Eocene Epoch. Both the Coaledo and Bastendorff bedrock formations were deposited in a marge embayment during this time, prior to the emergence of the Coastal Range from the Pacific Ocean some 15 million years ago. (Neocene Epoch).

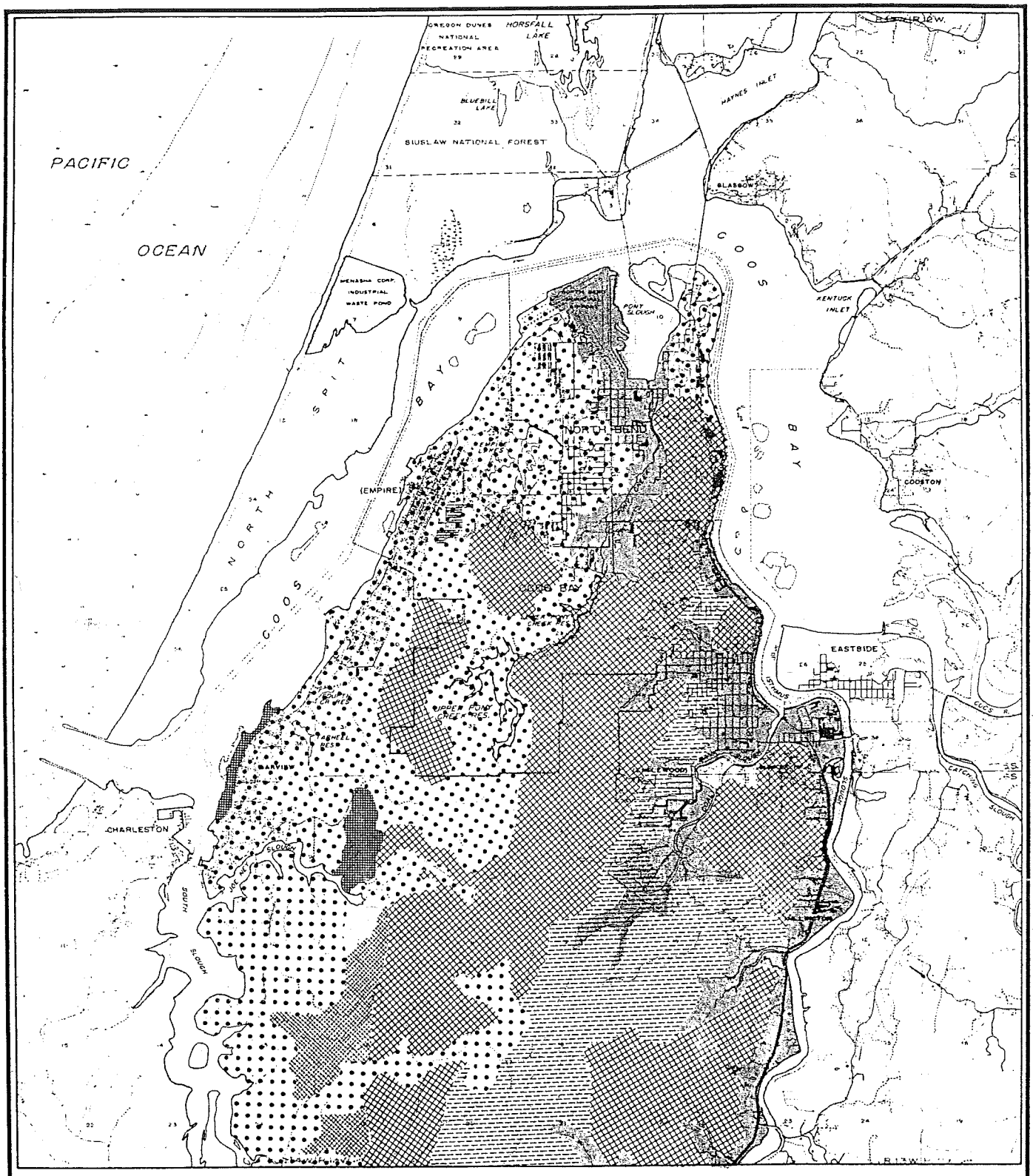
The Coaledo Formation, in the planning area consists only of the middle, and upper members, and is found throughout the central and eastern portions of the study area. It is in the upper member, composed of the sandstone estimated to be 2,300 feet thick, is composed of clayey and silty material.

Occurrence of the Bastendorff Formation is confined to the western portion of the study area. This bedrock unit consists of finely grained, easily-eroded shale and is reported to be approximately 2,900 feet thick.

Following upon the Coast Range uplift, the Empire Formation was laid down during the Pliocene Epoch. These massive sandstone beds of thicknesses ranging between 1,500 to 2,500 feet, contain abundant mollusk fossils. Evidence of this fossil-bearing deposit is found at Fossil Point in the lower bay of the study area.

Marine terrace and alluvium deposits followed in the late Pleistocene and Holocene Epochs. These deposits are the youngest in the age and occurred during periods of transgression and recession of the sea. The wide-spread occurrence of marine terrace deposits through the western portion of the study area are shown in Map 3.2-1. These marine-recessional layers consist of uncompacted, poorly-bedded sand and range in thickness from 10 to 50 feet. The presence of the extensive dune system in the western portion of the study area confirms this earlier deposition of marine terrace sands during the Pleistocene.

Alluvial deposits, consisting of unconsolidated clay, silt, sand and gravel, are evident along the eastern extremity of the study area. Alluvial deposition occurred in estuaries as the sea level rose at the end of the Pleistocene and formed broad, flat valleys now found near tidewater areas. Shorelands fringing the upper bay and sloughs are formed from alluvium and the bay itself is, most probably, filled with alluvial deposits 400-500 feet in depth. (Beaulieu and Hughes 1975)



MAP 3.2-1

GEOLOGIC FORMATIONS

KEY:

- QUATERNARY ALLUVIUM
- MARINE AND STREAM TERRACES
- EMPIRE FORMATION
- BASTENDORFF FORMATION
- COALEDO FORMATION (UPPER MEMBER)
- COALEDO FORMATION (MIDDLE MEMBER)

COOS BAY CITY LIMITS

SECTION LINES AND NUMBER

GROUND CONTOURS (INTERVAL = 40 FT.)

SCALE

1 MILE

5000 FEET

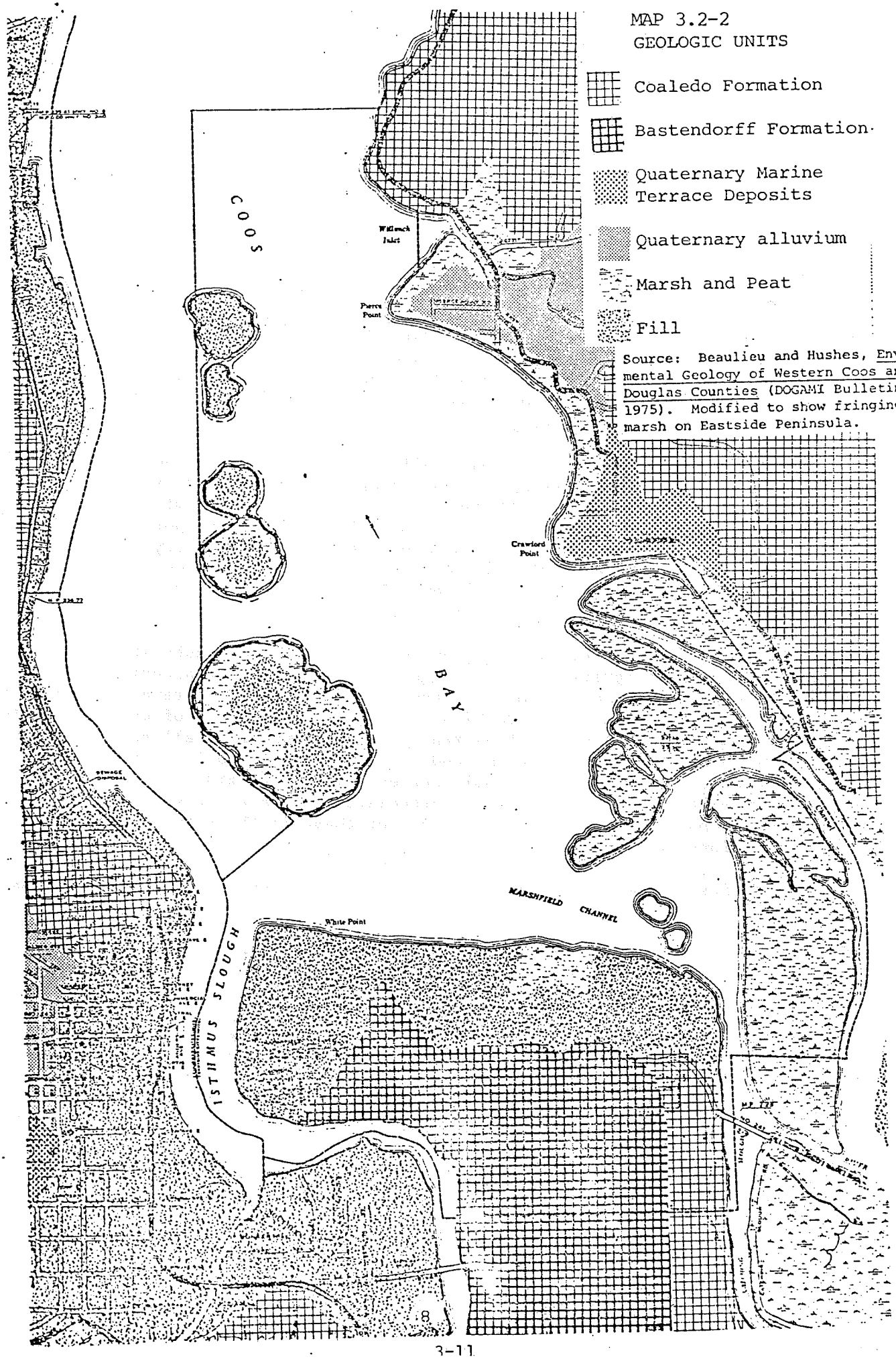
1 KILOMETER

N

PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT. BASE MAP: 1/24,000 U.S.G.S. QUADRANGLES (7½ MINUTE)

SOURCE: OREGON DEPARTMENT OF GEOLOGY AND MINERIAL INDUSTRIES

Map 3.2-2 titled Geologic Units identifies and shows the location of bedrock and surficial geologic units found in the Eastside area. Quaternary alluvium (Qal) refers to unconsolidated, poorly sorted gravel, sand, silt, and clay deposited in floodplains and channels of major rivers and streams. Quaternary alluvium may include beds of peaty soils which compress under light to moderate loads to produce hazardous settling over prolonged periods of time. The Bastendorff Formation (Teob) consists of shale and siltstone with minor sandstone interbeds. The Coaledo Formation (Tec) in this area consists of coarse to fine-grained hard, tuffaceous sandstone with minor siltstone interbeds. This unit tends to form steeper slopes than the Bastendorff Formation.


MAP 3.2-2
GEOLOGIC UNITS
Coaledo Formation
Bastendorff Formation
Quaternary Marine Terrace Deposits
Quaternary alluvium
Marsh and Peat
Fill
Source: Beaulieu and Hushes, Environmental Geology of Western Coos and Douglas Counties (DOGAMI Bulletin 87, 1975). Modified to show fringing marsh on Eastside Peninsula.
COOS
BAY
Pierce Point
Crawford Point
White Point
ISTHMUS SLOUGH
MARSHFIELD CHANNEL
Coaledo Formation
Bastendorff Formation
Quaternary Marine Terrace Deposits
Quaternary alluvium
Marsh and Peat
Fill

3.3
Soils

Soil types and their respective properties are critical factors in determining appropriate land uses. For instance, soil characteristics influence agricultural or timber productivity; they post constraints on building foundations, laying underground utilities, septic system performance, and street construction. Soils analysis is also a crucial factor in the buildable lands assessment.

In order to utilize to the fullest extent possible the data obtained in the course of inventorying and analyzing soils, the study area was separated into two units: (1) the presence incorporated limits of the City of Coos Bay excepting the Eastside area and (2) the remaining portion of the study area lying south of the corporate boundaries. Inventory data were compiled and mapped at different scales for each of these two units. This approach for the soils analysis allows closer scrutiny of currently undeveloped land within the city limits.

Soils data were derived from the U.S.D.A. Soil Conservation Service (SCS), Soils Interpretations for Oregon in which soil characteristics are described and rate for a range of land uses. The analysis reveals that in the entire planning area there are 17 distinct soil series (11 of which occur in the city limits). A soil series represents a grouping of all soils which have similar properties and is the method used to classify soils in the SCS organizational scheme. Often soil series will appear side by side in the landscape; these are called a soil association. There are six soil associations in the planning area; four of these in the city. Soil series descriptions follow:

Soil Series in the Planning Area. (*denotes soils occurring within Coos Bay's city limits)

*1. Bandon: Well drained, sandy loam over cemented loamy sand and sand soils formed in marine and aeolian sands on nearly level to moderately steep marine terraces. Slopes of 0-30%

*2. Bullards: Well drained, sandy loam over sand soils formed on old marine terraces in water and wind deposited sediments. These soils are on nearly level tops and steep sides of deeply dissected uplifted terraces at elevations of 50 to 600 feet. Slopes of 0-50%

3. Blacklock: Poorly drained soils that formed in unconsolidated sandy materials deposited by water and wind on nearly level and gently sloping marine terraces. Slopes 0-7%.

4. Chetco: Poorly drained soils formed in water deposited sediments from mixed sources and marine clay. They are on low nearly level marine terraces and deltas that are no longer subjected to tidal action. Slopes 0-1%.

5. Chitwood: Somewhat poorly and moderately well drained soils formed in old water deposited sediments. The soils are on nearly level to sloping old terraces, swales and alluvial fans above present flood plains. Slopes 0-12%.

6. Clatsop: Very poorly drained soils that formed in fine textured alluvium consisting of tidal "mud." They occupy nearly level or depressional topography in coastal bays.

*7. Coos Bay: Well drained silt loam over silty clay loam soils formed in silty colluvium and residuum on weathered sedimentary bedrock on nearly level terraces to steep hillsides of old marine terraces. Slopes of 0-50%.

*8. Coquille: Very poorly drained, very strongly acid soils that formed from sediments deposited in water subject to tidal fluctuations. The soils are on level and depressional flood plains and stream deltas along coastal tidelands. Slopes of 0-1%.

*9. Dement: Well drained soils that formed in colluvium from weathered sedimentary rock. The soils are on nearly level to very steep terraces and hillslopes above river flood plains. Slopes of 2-30%.

*10. Duneland: Wind drifted sand in the form of dunes, ridges or hummocks. The material is not stabilized and has no vegetation established on it.

*11. Heceta: Poorly drained sandy soils formed in stabilized dune sand. These nearly level soils are usually in long narrow interdunal swales and depressions, and on deflation planes between larger dunes and between foredunes and higher terraces at elevations of 0 to 80 feet. 0-3% slope.

*12. Joeney: Poorly drained soils formed in unconsolidated silty and sandy materials deposited by water and wind. They are on nearly level to gently sloping old marine terraces well above the present ocean level. Slope 0-7%.

*13. Langlois: Poorly drained, strongly acid soils that formed in water deposited sediments from mixed sources and marine clay. They are on low, nearly level to depressional flood plains and old tidal flats near coastal streams and rivers at elevations of 5 to 200 feet and are no longer subject to tidal action. Slope 0-1%.

14. Nestucca: Somewhat poorly drained soils that formed in mixed alluvium. The soils has 0 to 3% slopes on stream bottoms with shallow swales and depressions. Slope 0-3%.

*15. Netarts: Well drained soils formed on old stabilized sand dunes. Slopes 7-30%.

*16. Tidal flats: Low tidelands of bays, inlets, and estuaries along the coast. They were formed by deposition of alluvium into bays and river valleys drowned by the rise in sea level since the ice age (Pleistocene Epoch).

*17. Westport: Deep, excessively drained soils that formed in wind deposited material on nearly level to steep stabilized dunes. Slopes 0-30%.

Soil Associations in the Planning Area. (*denotes associations occurring in Coos Bay's city limits)

*1. Blacklock--Bandon: See soils series for both descriptions. Slopes 0-7%.

2. Coos Bay--Bullards: See soils series for both descriptions. *Slope 12-30%. Slope 30-50%.

3. Coos Bay--Templeton: See soil series for Coos Bay description Templeton soils are well drains silt loam over silty clay loam soils formed in silty colluvium from and on weathered sedimentary rocks. Slopes 7-12% and 50-70%. *Slope 12-50%.

4. Nestucca--Willanch: See soil series for Nestucca description. Willanch soils are poorly drained soils that formed in mixed alluvium and occur on stream bottoms. Slope 0-3%.

5. Orford--Etelka--Templeton: Orford soils is well drained and formed in colluvial and residual material from arkose sandstone and siltstone and occur on coastal mountainous topography. Etelka are moderately well drained and soils formed in colluvium and residuum from old, fractured and sheared sedimentary bedrock and occurs on coastal mountain.

   See soil association description for Temple description. Slope 12-30%.

*6. Westport--Heceta: See soil series for both descriptions. Slope 0-30%.

The distribution of these soil series and associations are illustrated in Map 3.3-1 and the total acreages per soil type within and outside the city limits are found in Table 3.3-1. By far, Coos Bay, Bullards, and Bandon compromise the most prevalent soil types in the planning area including the incorporated portion.

Table 3.3-1(a) and map 3.3-1(a) shows soil types in the Eastside area and also identifies limitation on each type of soil for various land uses. The map is based on data compiled by the Soil Conservation Service during 1974. The Soil Legend identifies each type of soil by using a number for the soil name and a letter to indicate the approximate slope of the area containing this soil. For example, in an area shown on the map with the symbol 220E, the predominant soil type is Coosbay silt loam, and the slope varies between 30 and 50 percent. Each area on the map is also identified as to the degree of soil limitations for (1) dwellings without basements, (2) septic tank drain fields and (3) local streets and roads. The darkly shaded areas have severe limitations for dwellings without basements and moderate limitations for septic tank drain fields and local streets and roads. The lighter shaded areas have moderate limitations for dwellings, and severe limitations for both septic tanks and roads. Unshaded areas have severe limitations for all three types of use.

As aforementioned, understanding soil type, characteristics, and slope should be factored into local standards for development and should guide the type and amount of land use. In instance where the soil characteristics warrant it, precautionary design and engineering requirements should be met to avoid soil loss or subsequent construction failure. For instance, soils with slopes of 12-30% are rated by the Soil Conservation Service as severely limited for the construction of streets and roads because of slope and low soil strength. In this instance, special engineering is required to avoid soil loss and to extend the life of the street. Awareness of soil and slope conditions can guide future land use activities in order to conserve soils, protect development, and also bring attention to other important considerations. Subdivisions constructed in areas requiring special engineering to mitigate soil limitations are obviously going to be more costly than those residential developments constructed in areas without soil problems.

TABLE 3.3-1

APPROXIMATE ACREAGE AMOUNTS OF
SOIL SERIES AND ASSOCIATIONS

in the
COOS BAY PLANNING AREA

TYPE	Acres WITHIN Corporate Limits	Acres OUTSIDE Corporate Limits	Total Acres
Bandon	1,540	1,132	2,672
Blacklock	0	170	170
Bullards	1,146	1,820	2,966
Chetco	0	194	194
Chitwood	0	106	106
Clatsop	0	96	96
Coos Bay	1,572	9,494	11,066
Coquille	4	48	52
Dement	204	390	594
Duneland	28	0	28
Heceta	24	34	58
Joeney	0	28	28
Langlois	26	120	146
Nestucca	0	112	112
Netarts	276	0	276
Tidal flats	192	1,048	1,240
Westport	176	0	176
Blacklock-Bandon	50	0	50

TYPE	Acres WITHIN Corporate Limits	Acres OUTSIDE Corporate Limits	Total Acres
Coos Bay-Bullards	64	436	500
Coos Bay-Templeton	280	744	1,024
Nestucca-Willanch	0	50	50
Orford-Etelka-Templeton	0	8	8
Westport-Heceta	30	0	30

Source: City of Coos Bay, Community Development Department

TABLE 3-3-1(a)

Symbol	Name	Limitations
FL	Coosbay Templeton silt loam, 30-50% slope	 SEVERE for dwellings without basements MODERATE septic tank drain fields MODERATE for local streets and roads
MT	Tidal Marsh	
5A	Coquille silt loam, 0-1% slopes	 MODERATE for dwellings without basements SEVERE for septic tank drain fields SEVERE for local streets and roads
50A	Barklow silt loam, 0-3% slopes	
106C	Dement silt loam, 0-12% slopes	 SEVERE for dwellings without basements SEVERE for septic tank drain fields SEVERE for local streets and roads
106D	Dement silt loam, 12-30% slopes	
106E	Dement silt loam, 30-50% slopes	
220B	Coosbay silt loam, 0-7% slopes	
220D	Coosbay silt loam, 12-30% slopes	
220E	Coosbay silt loam, 30-50% slopes	
228E	Coosbay Templeton silt loam, 30-50% slopes	
TF	Tide Flat	
W	Submerged	

The planning area and, in some instances specifically the incorporated area, have been mapped for slope and land cover, and for specific land uses which may be affected by soil type. Maps 3.3-2 through 3.3-19 illustrate the soil characteristics and degree of suitability for the following sample of development activities:

1. Dwellings with and without basements.

2. Small commercial buildings

3. Roads and streets

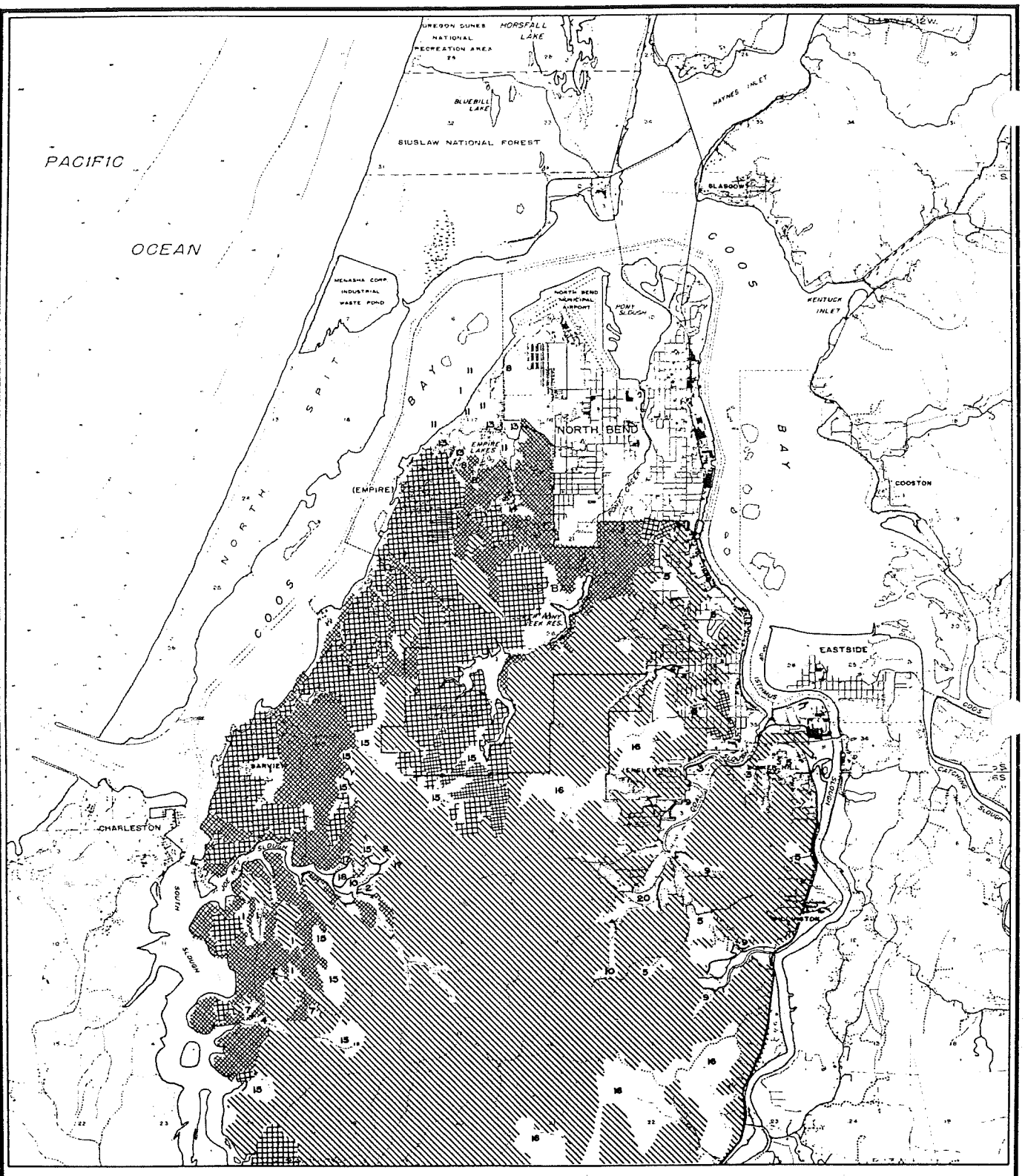
Detailed mapping at a smaller scale, rating a wider range of land use activities can be found in the Department of Community Development.

However, as the sample shows the predominant restrictive soil features involve extreme slope throughout the area; poor drainage due to cemented pan below the surface in the southwestern area; low strength of the soil to support development especially when wet in the downtown "Marshfield" area; and flooding potential near the estuary and sloughs.

Map 3.3-2(a) entitled Topographic Features shows the land contours in the Eastside area and the surrounding area. The contour lines represent land elevations above mean low water at 50-foot intervals.

As seen on the map, the land in the Eastside area generally slopes upward in a southeasterly direction reaching a maximum elevation of nearly 400 feet near the South City limits. Most of the more heavily developed areas of the Eastside area lie west of 14th Avenue and north of "F" Street. These areas are characterized by relatively gradual slopes and elevations of less than 200 feet.

Much of the southeastern portion of the Eastside area contains relatively sparse development at present, but this area is the focus of new residential construction. As seen on the map, the area is characterized by steep slopes and high elevations. The area is popular for those seeking homesites with good views of the bay and surrounding area; hence the large number of newer homes there. At the same time, the same topographic features which attract homebuilders to the area tend also to make construction more costly. Similarly, installation of streets, water and sewage facilities tends to become more costly in hilly areas such as this. However, careful and innovative design of development projects may help to alleviate these types of obstacles.



MAP 3.3-1

SOIL SERIES AND ASSOCIATIONS

KEY:

- ▨ – COOS BAY
- ▩ – BANDON
- ▦ – BULLARDS

REMAINING SOIL SERIES AND ASSOCIATIONS ARE IDENTIFIED NUMERICALLY:

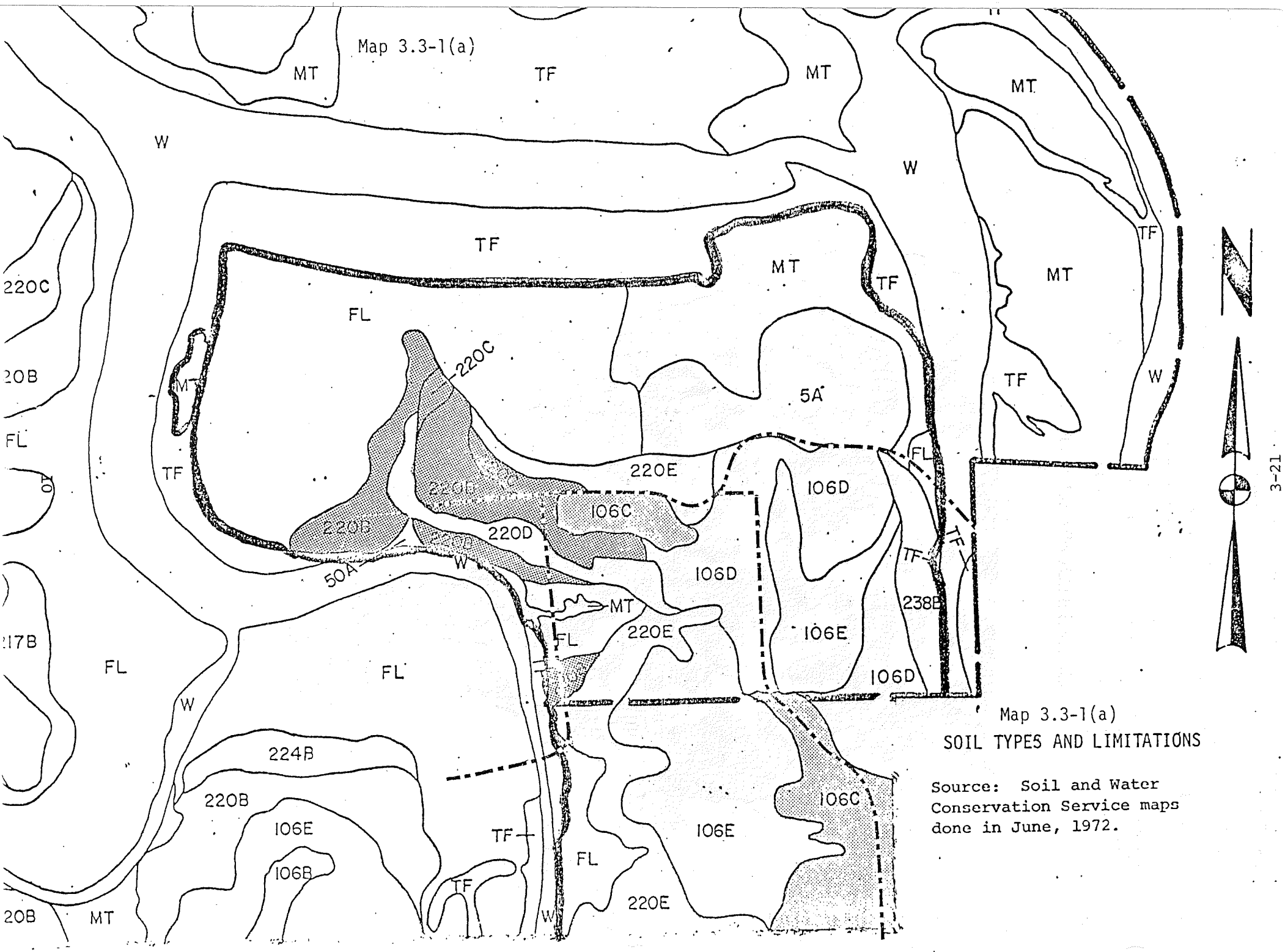
1 – BLACKLOCK	5 – DEMENT	10 – NESTUCCA	16 – COOS BAY-TEMPLETON
2 – CHITWOOD	7 – JOENEY	11 – NETARTS	17 – NESTUCCA-WILLANCH
3 – CLATSOP	8 – HECETA	13 – WESTPORT	18 – ORFORD-ETELKA
4 – COQUILLE	9 – LANGLOIS	14 – BLACKLOCK-BANDON	19 – WESTPORT-HECETA
		15 – COOS BAY-BULLARDS	20 – CHETCO

COOS BAY CITY LIMITS
SECTION LINES AND NUMBER
GROUND CONTOURS (INTERVAL 1 OR 2 FT.)

SCALE
0 1 MILE
0 5000 FEET
0 1 KILOMETER

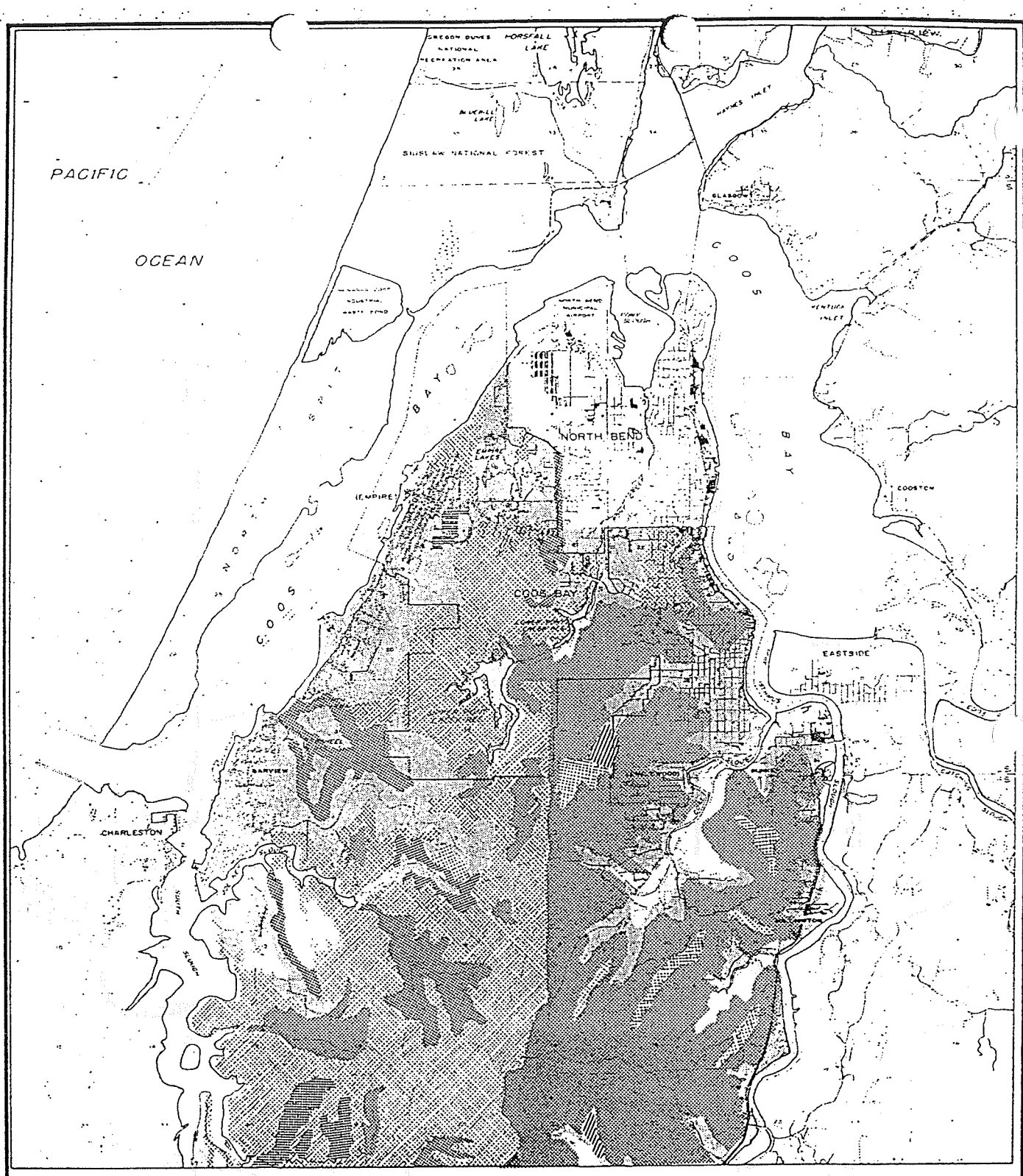
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT. BASE MAPS: 1:24,000 U.S.G.S. QUADRANGLES (7½ MINUTE)

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE



Map 3.3-1(a)
SOIL TYPES AND LIMITATIONS

Source: Soil and Water Conservation Service maps done in June, 1972.



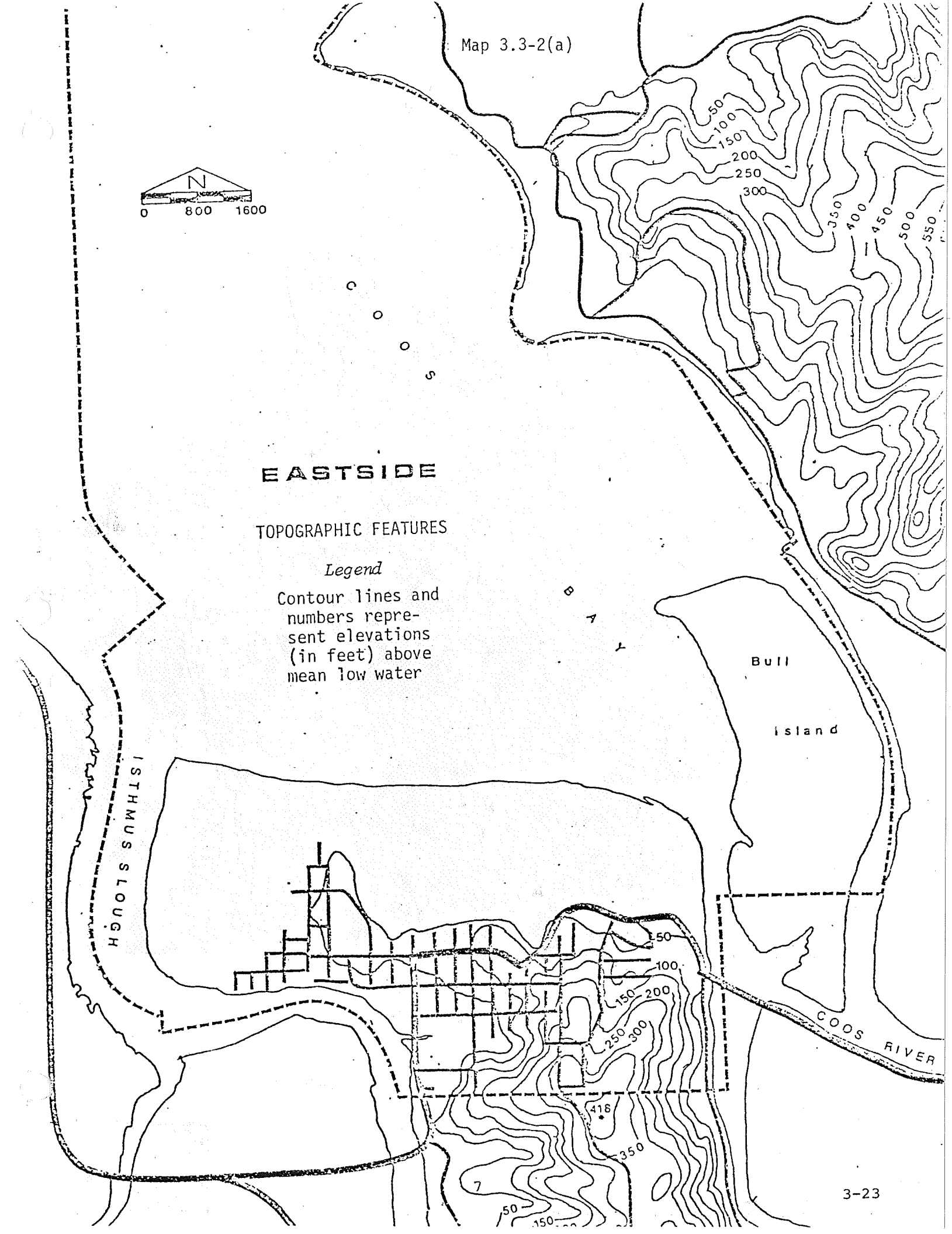
MAP 3.3-2

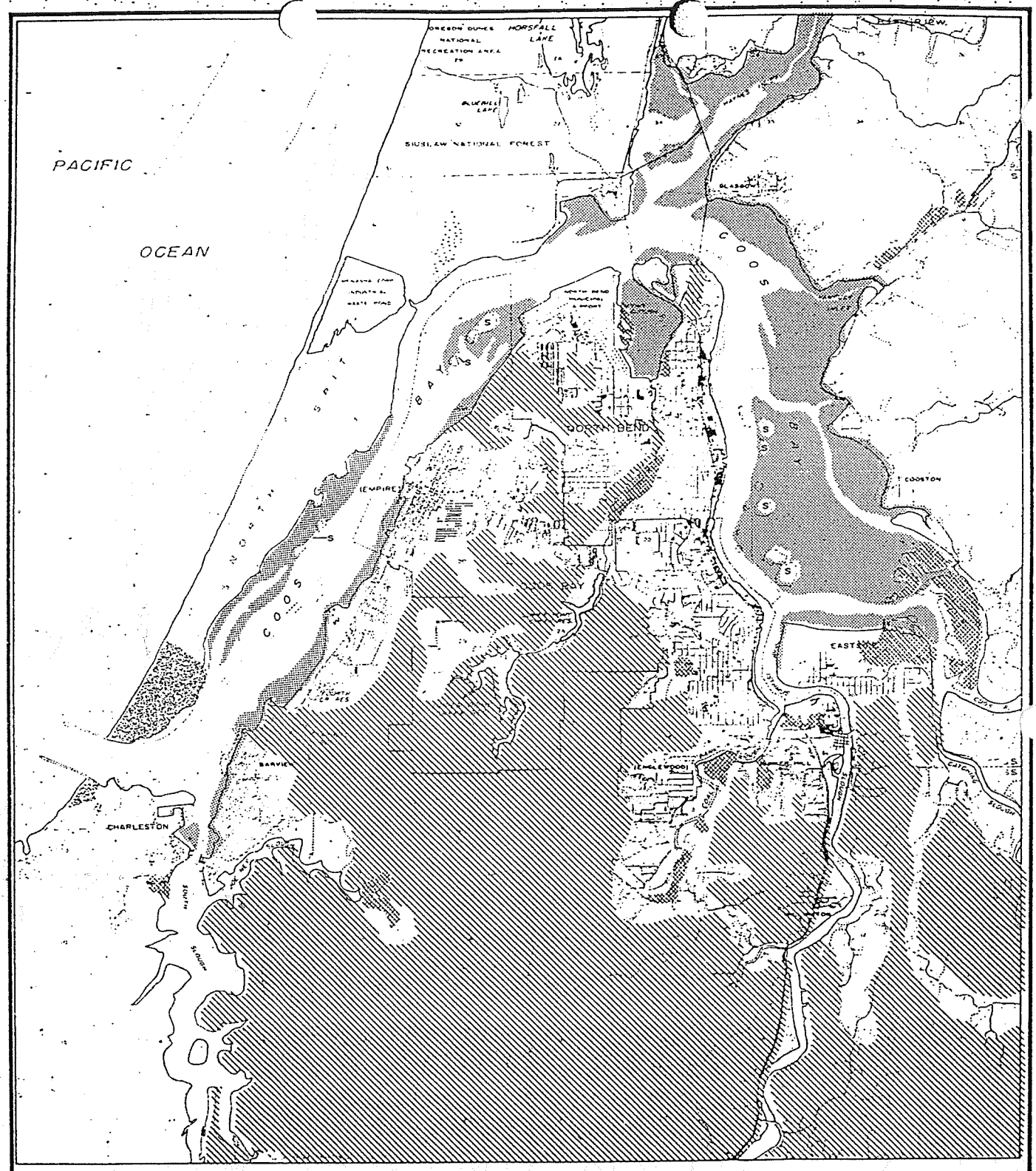
SLOPE CHARACTERISTICS

KEY:

- 0-5% SLOPE
- 5-15% SLOPE
- 15-30% SLOPE
- 30-50% SLOPE

SOURCE: GEOLOGIC HAZARD MAP OF THE COOS BAY QUADRANGLE


Map 3.3-2(a)
N
0 800 1600
EASTSIDE
TOPOGRAPHIC FEATURES
Legend
Contour lines and numbers represent elevations (in feet) above mean low water
ISTHMUS SLOUGH
Bull
Island
COOS RIVER
50
100
150
200
250
300
350
400
450
500
550
416



MAP 3.3-3

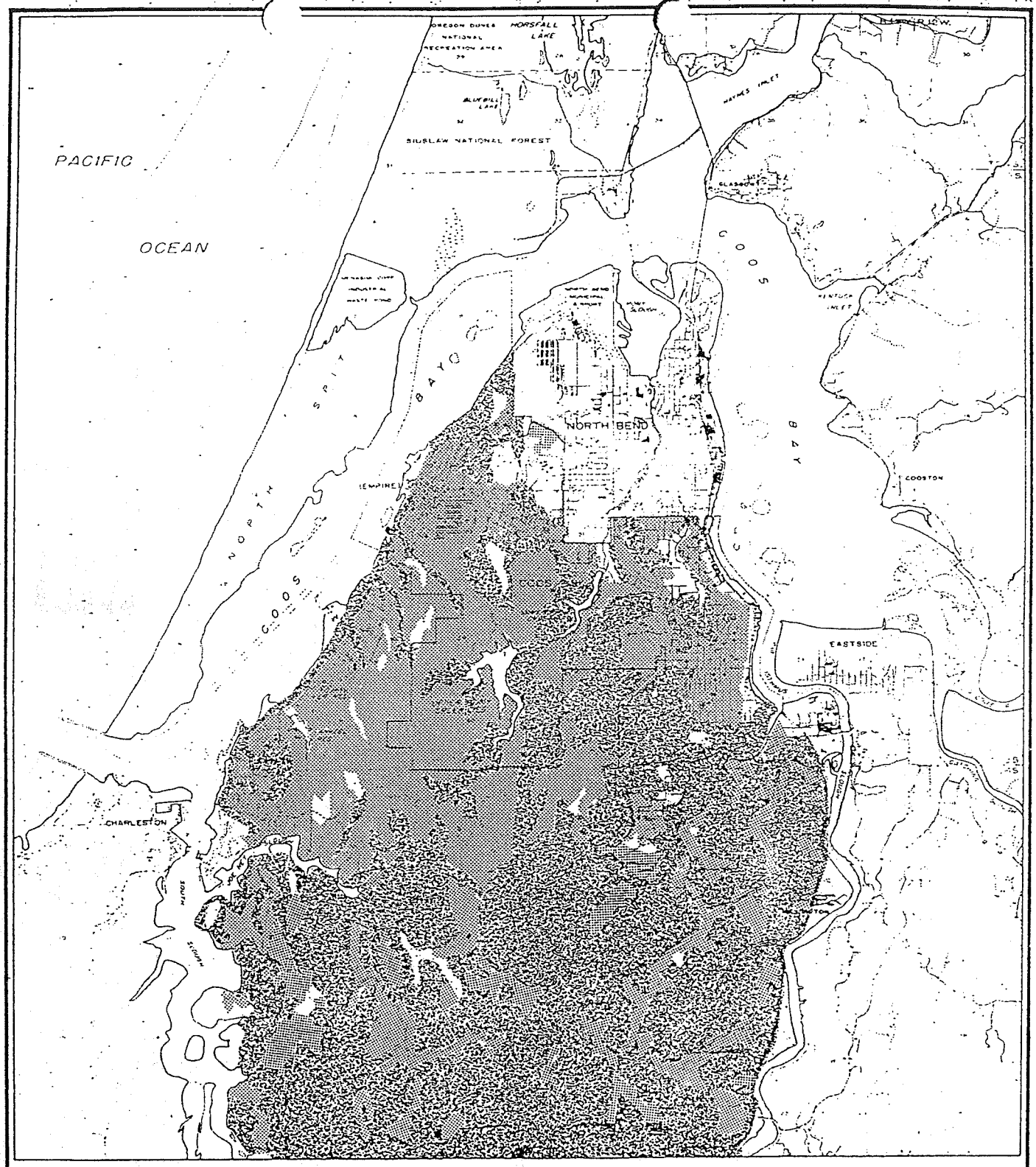
LAND COVER

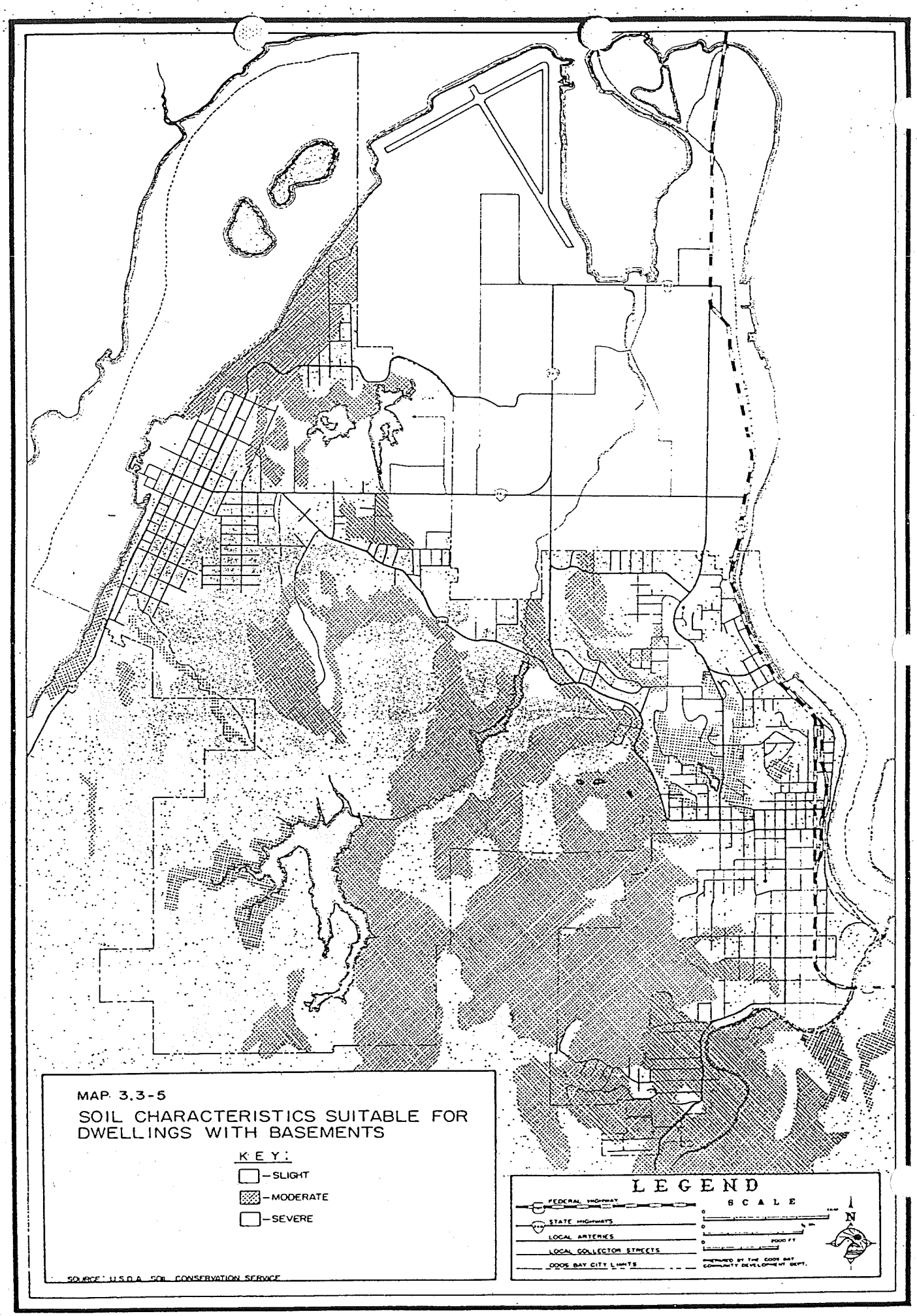
KEY:

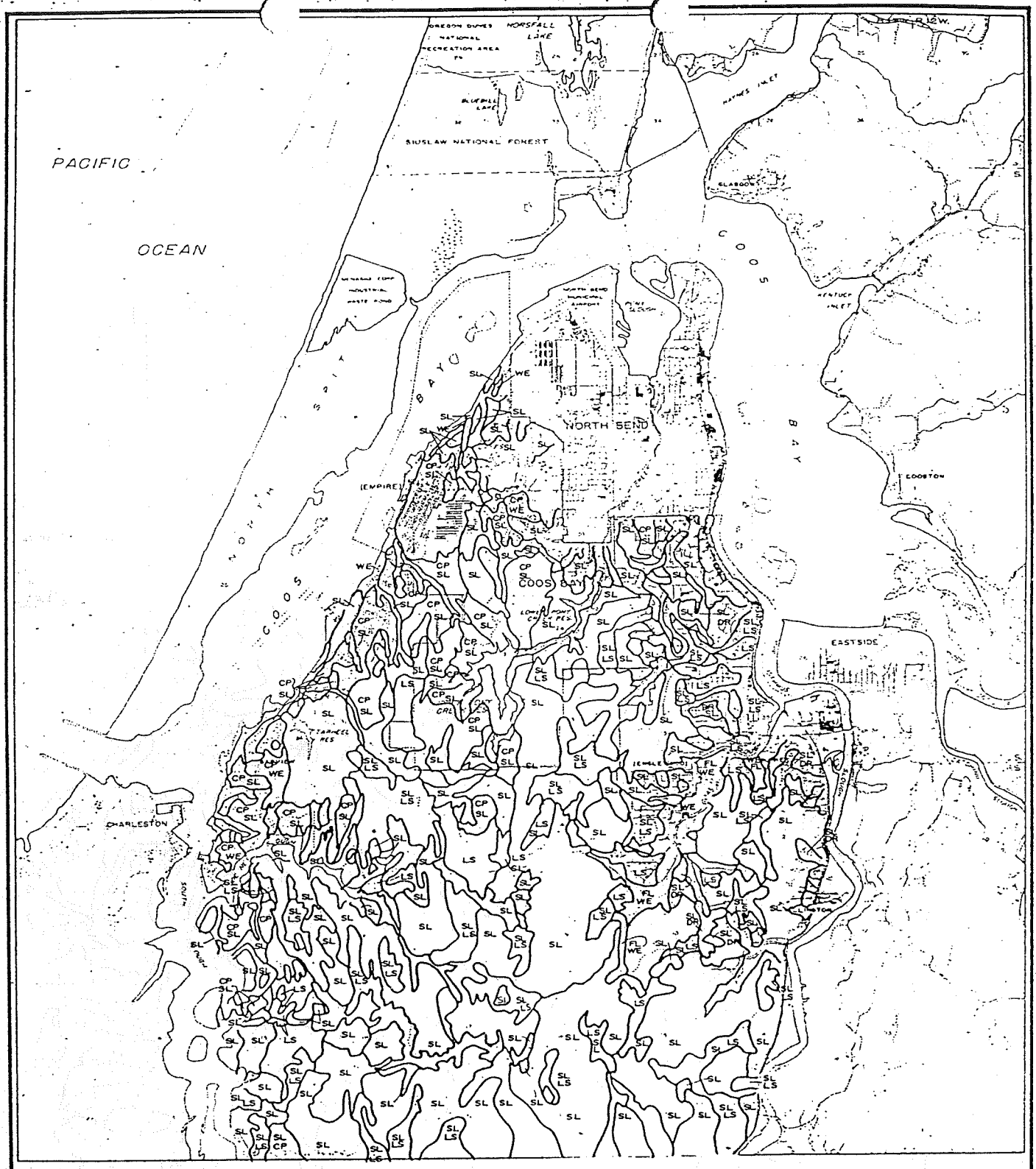
- TIDE FLATS
- MARSH AREAS
- TREE COVERED
- OPEN AREAS
- SAND
- S — SPOILS AREAS

SCALE

SOURCE: COOS BAY ESTUARINE STUDY, OREGON


PACIFIC
OCEAN
OREGON DUNES NATIONAL RECREATION AREA
HORSFALL LAKE
SIUSLAW NATIONAL FOREST
HAINES INLET
NORTH SPIT
COOS BAY
BAYOCEAN
NORTH BEND
EMPIRE
COOSTON
EASTSIDE
CHARLESTON
MAP 3.3-4
SOIL CHARACTERISTICS SUITABLE FOR DWELLINGS WITH BASEMENTS
KEY:
— SEVERE
— MODERATE
— SLIGHT
SCALE
N
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 3.3-5
SOIL CHARACTERISTICS SUITABLE FOR DWELLINGS WITH BASEMENTS
KEY:
-SLIGHT
-MODERATE
-SEVERE
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
N
PRODUCED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

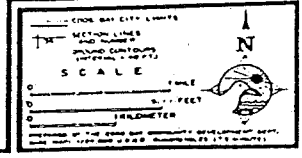


MAP 3.3-6

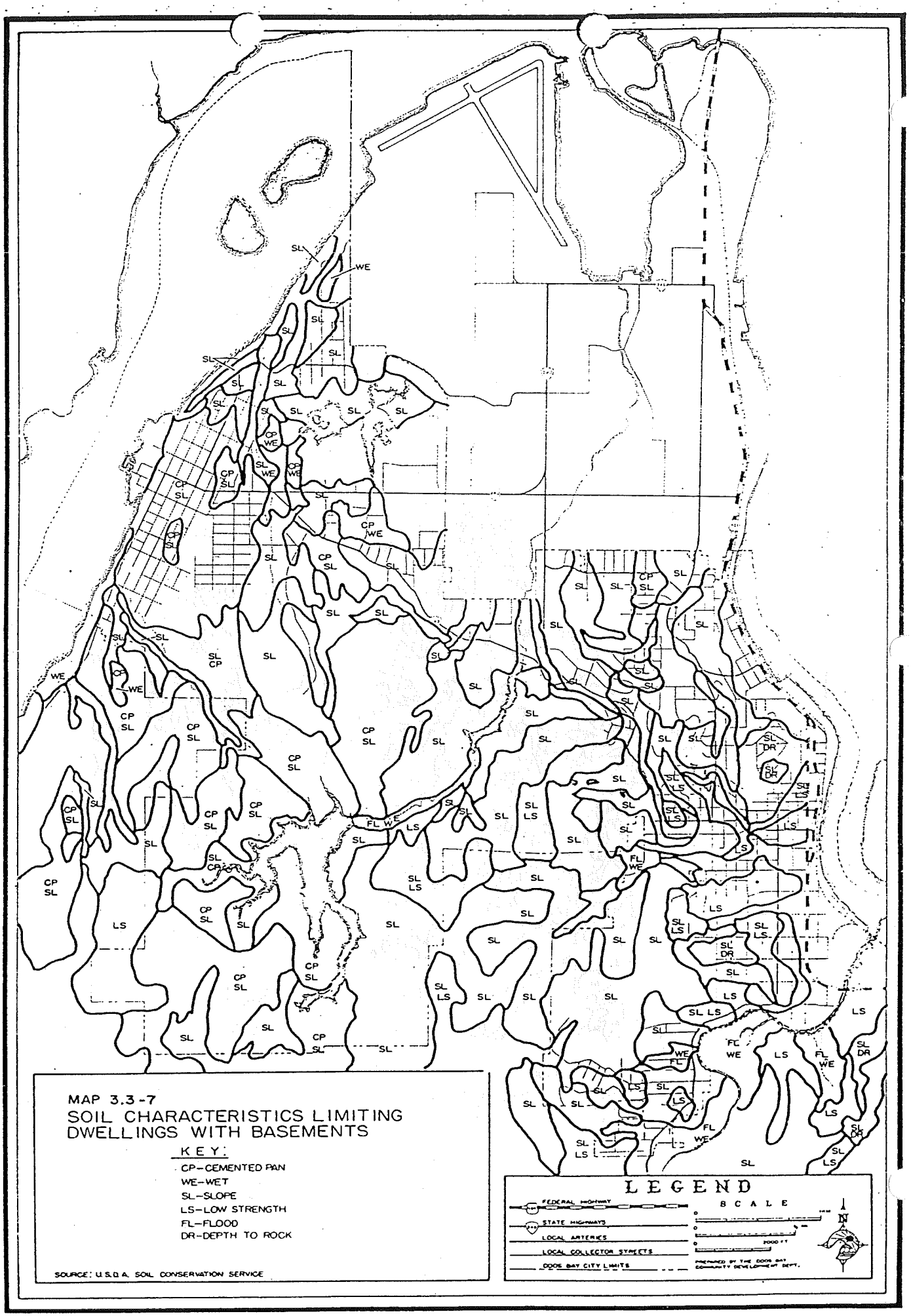
SOIL CHARACTERISTICS LIMITING DWELLINGS WITH BASEMENTS

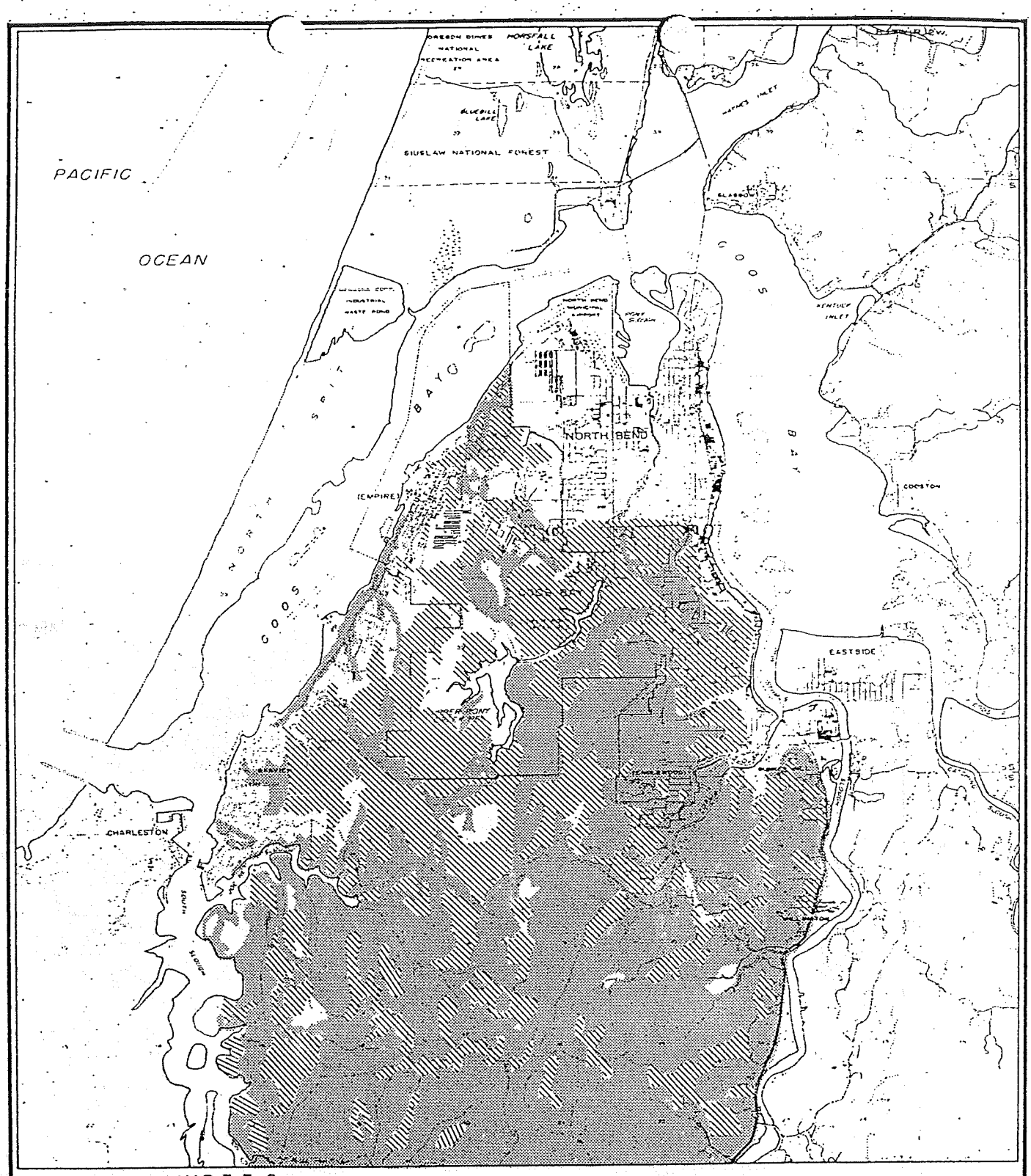
KEY:

CP—CEMENTED PAN
WE—WET
SL—SLOPE
LS—LOW STRENGTH
FL—FLOOD
DR—DEPTH TO ROCK



SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 3.3-7
SOIL CHARACTERISTICS LIMITING DWELLINGS WITH BASEMENTS
KEY:
CP-CEMENTED PAN
WE-WET
SL-SLOPE
LS-LOW STRENGTH
FL-FLOOD
DR-DEPTH TO ROCK
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
DOOS BAY CITY LIMITS
SCALE
N



MAP 3.3-8

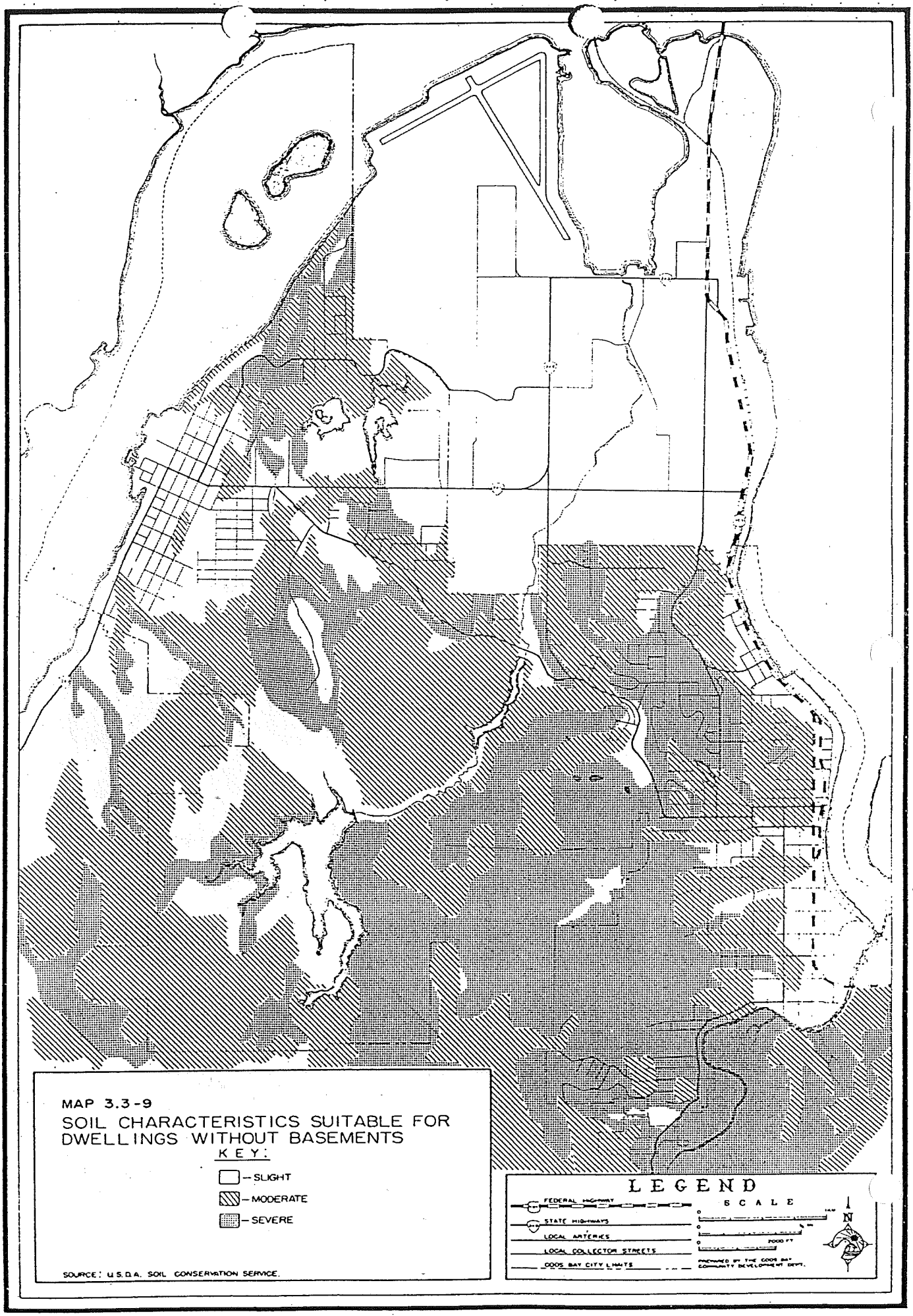
SOIL CHARACTERISTICS SUITABLE FOR DWELLINGS WITHOUT BASEMENTS

KEY:

- — SLIGHT
- — MODERATE
- — SEVERE

SCALE

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 3.3-9
SOIL CHARACTERISTICS SUITABLE FOR DWELLINGS WITHOUT BASEMENTS
KEY:
– SLIGHT
– MODERATE
– SEVERE
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE.
LEGEND
SCALE
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.
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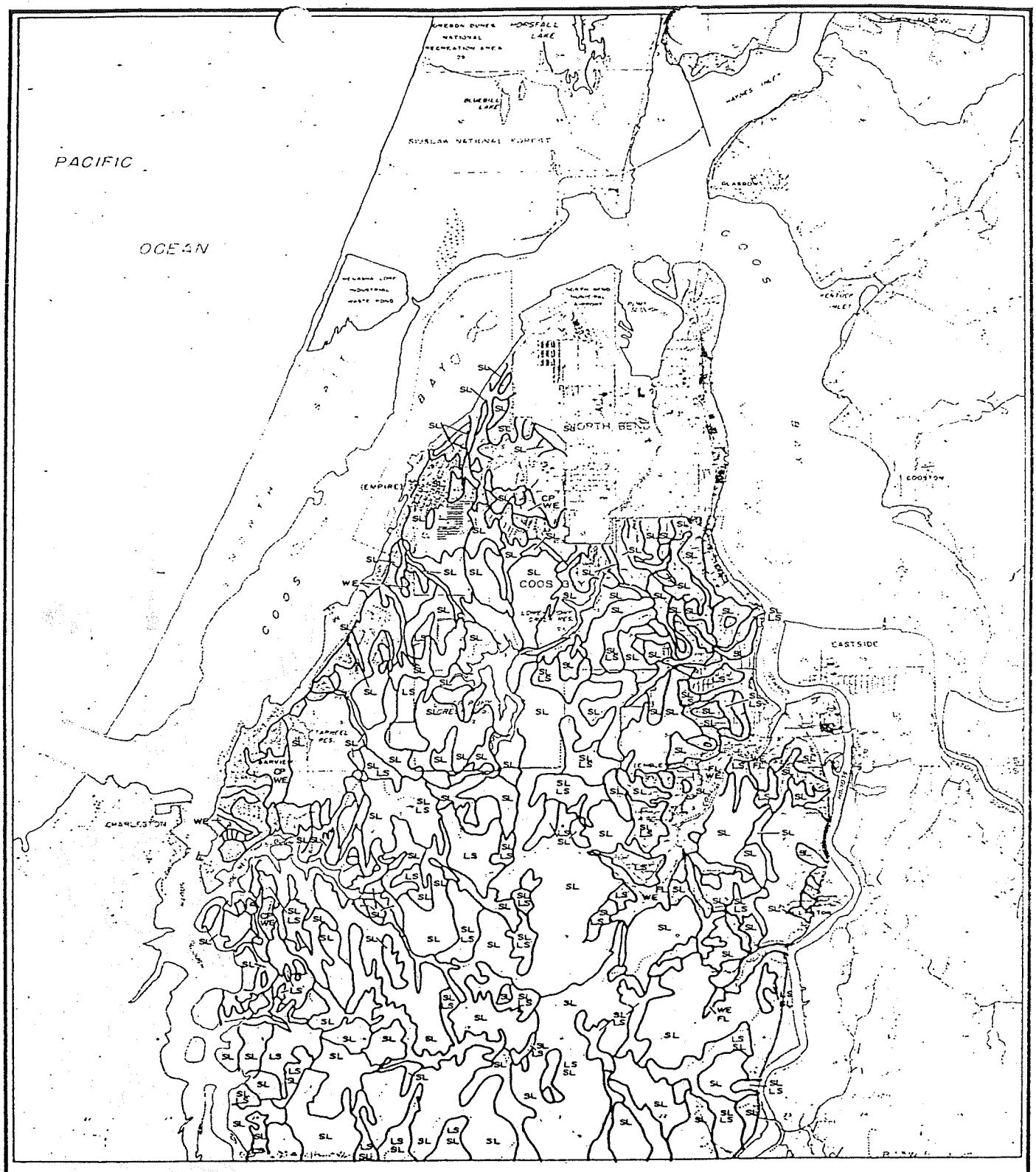


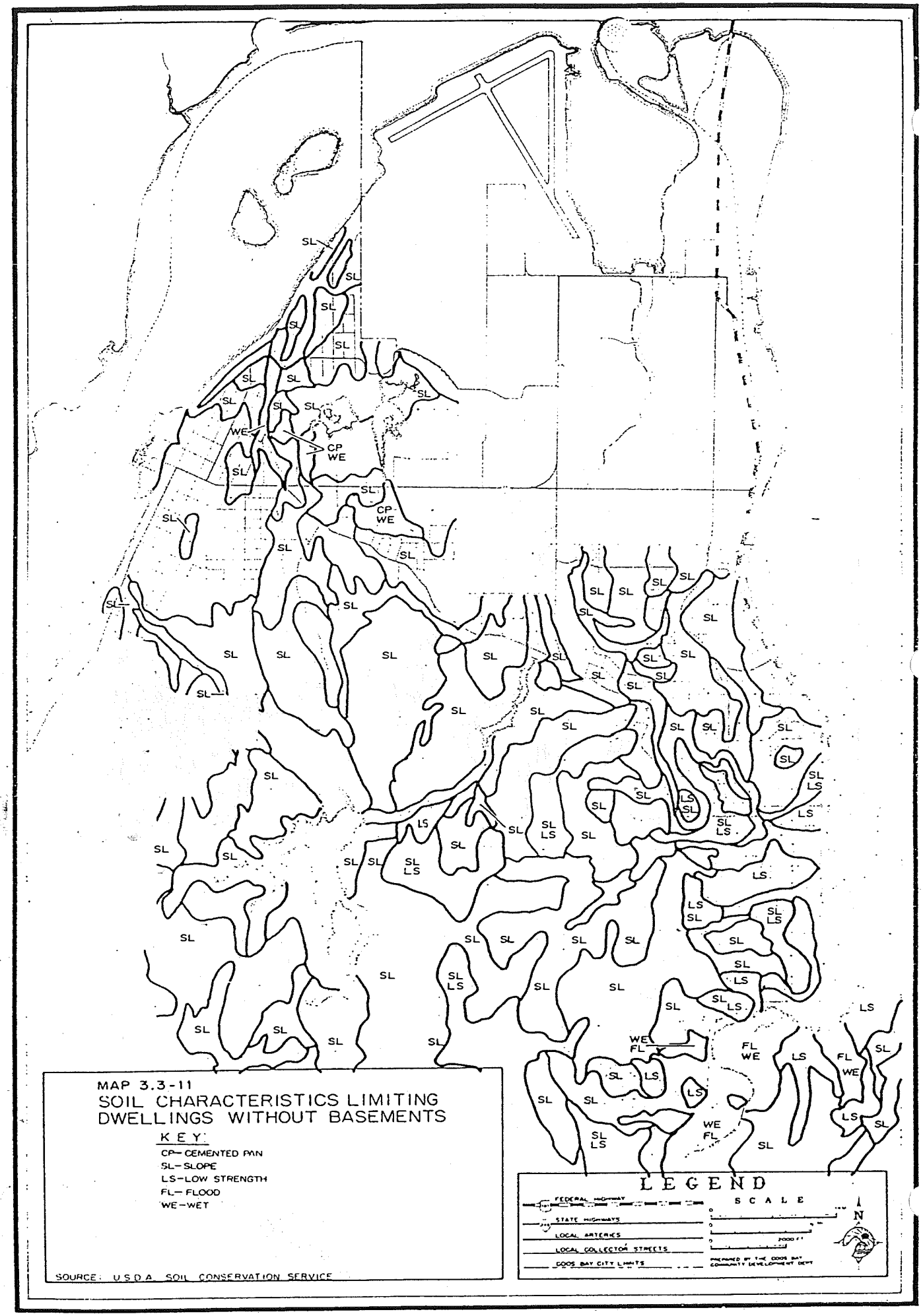
MAP 3.3-10

SOIL CHARACTERISTICS LIMITING DWELLINGS WITHOUT BASEMENTS

KEY:

CP-CEMENTED PAN
WE-WET
SL-SLOPE
LS-LOW STRENGTH
FL-FLOOD

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 3.3-11
SOIL CHARACTERISTICS LIMITING DWELLINGS WITHOUT BASEMENTS
KEY:
CP- CEMENTED PAN
SL- SLOPE
LS- LOW STRENGTH
FL- FLOOD
WE- WET
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
SCALE
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
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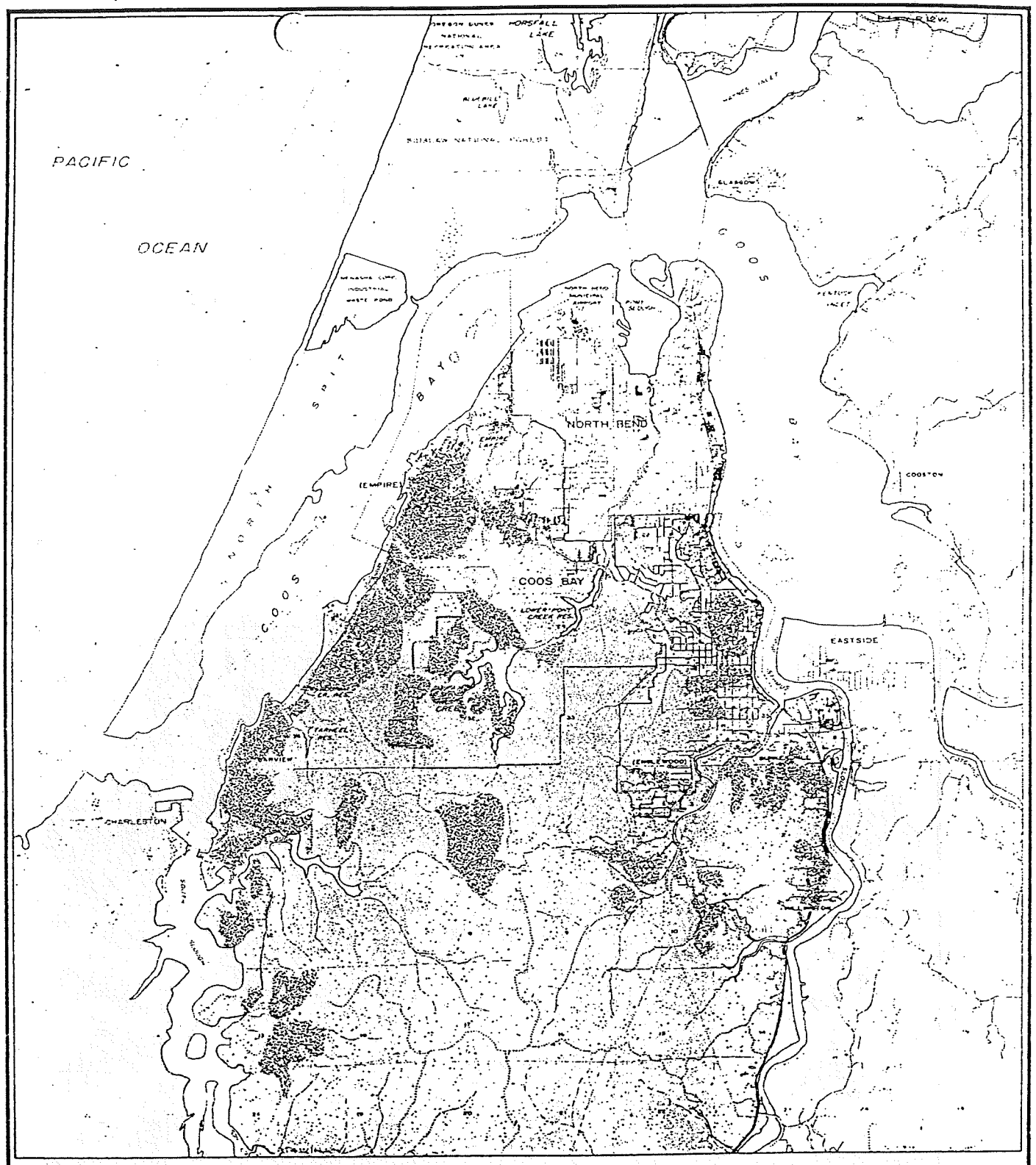


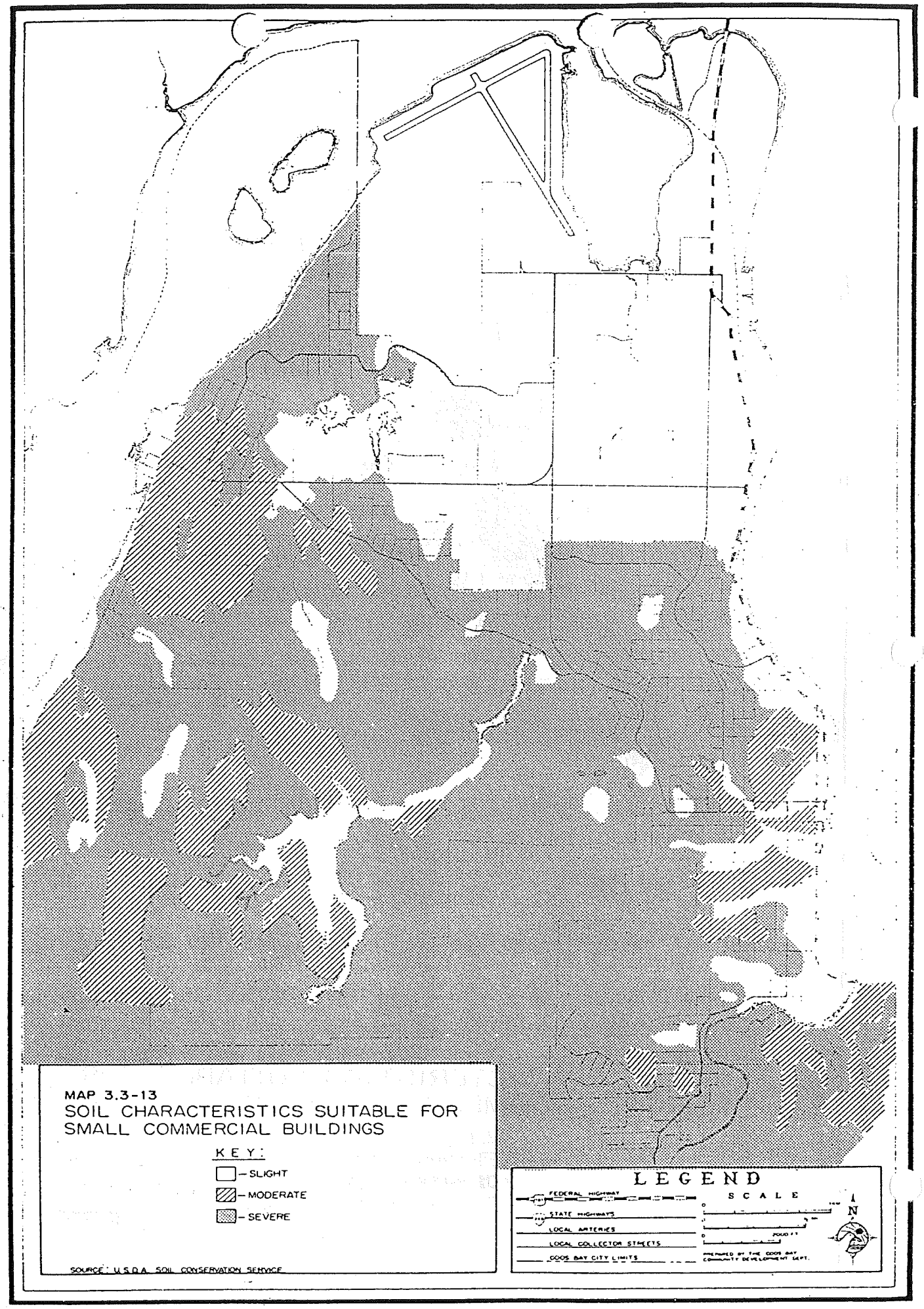
MAP 3.3-12

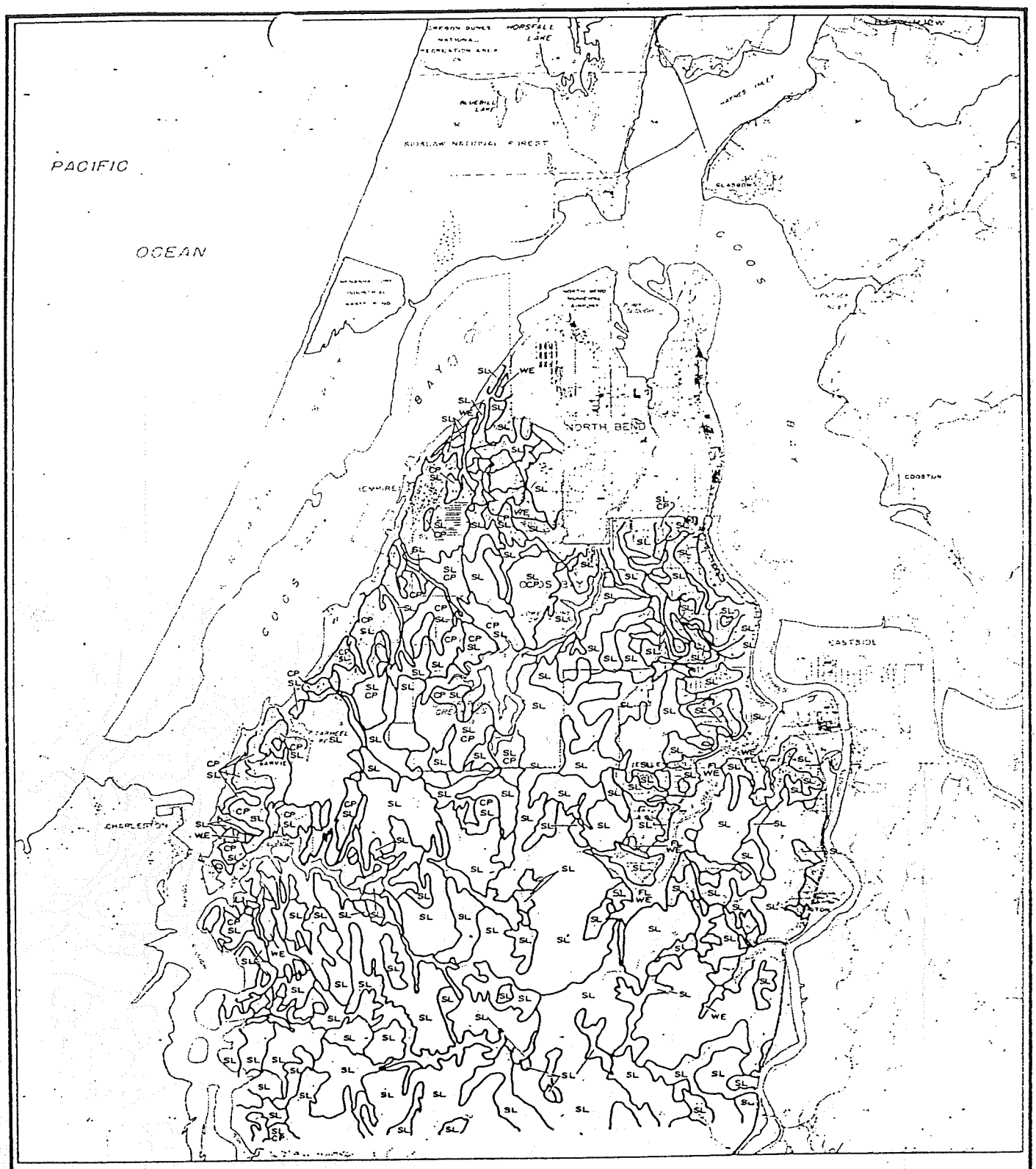
SOIL CHARACTERISTICS SUITABLE FOR SMALL COMMERCIAL BUILDINGS

KEY:

- SEVERE SOIL LIMITATION
- MODERATE SOIL LIMITATION
- SLIGHT SOIL LIMITATION

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 3.3-13
SOIL CHARACTERISTICS SUITABLE FOR SMALL COMMERCIAL BUILDINGS
KEY:
- SLIGHT
- MODERATE
- SEVERE
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
N



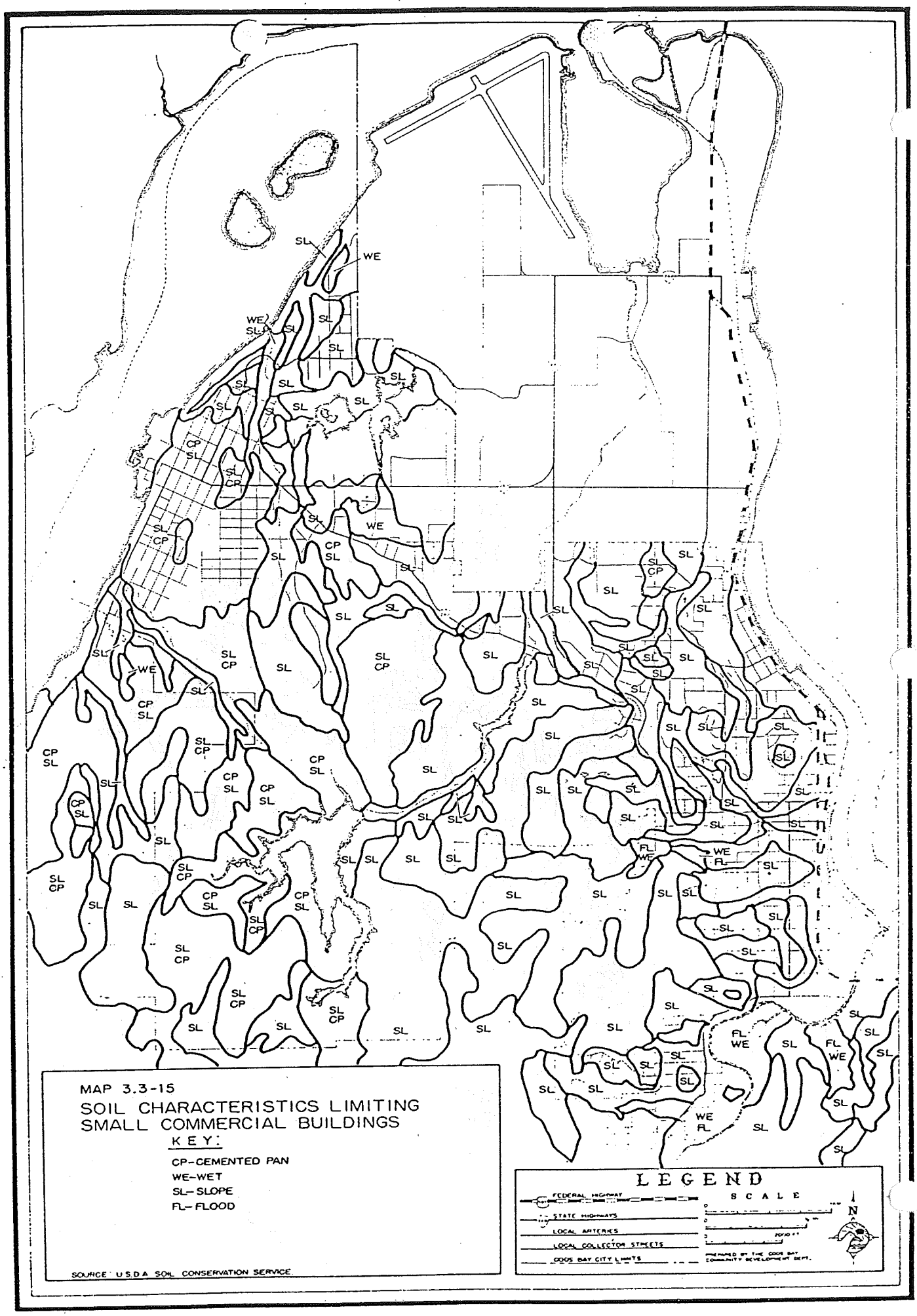
MAP 3.3-14

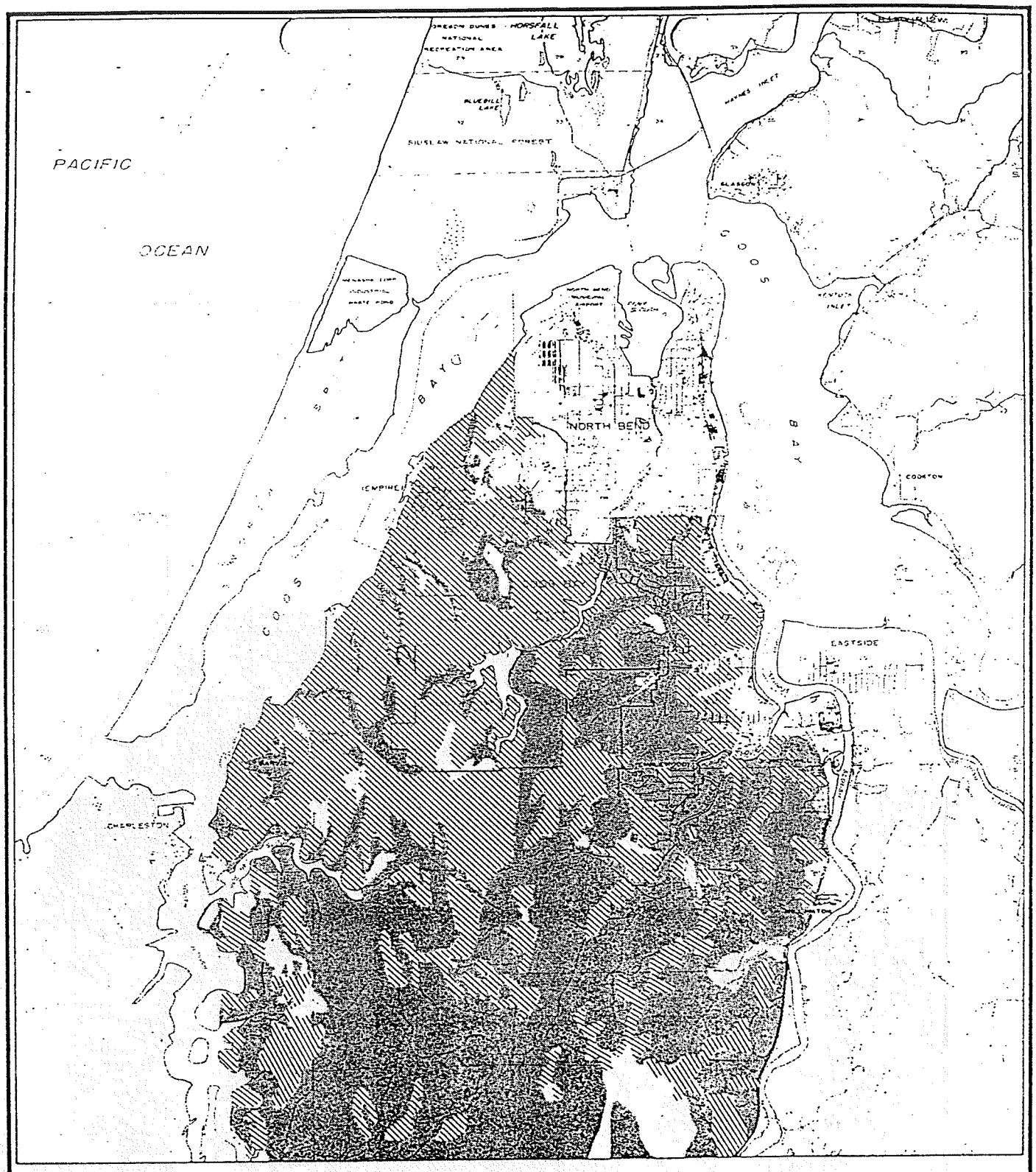
SOIL CHARACTERISTICS LIMITING SMALL COMMERCIAL BUILDINGS

KEY:

CP-CEMENTED PAN
WE-WET
SL-SLOPE
FL-FLOOD

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 3.3-15
SOIL CHARACTERISTICS LIMITING
SMALL COMMERCIAL BUILDINGS
KEY:
CP-CEMENTED PAN
WE-WET
SL-SLOPE
FL-FLOOD
SOURCE U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
N



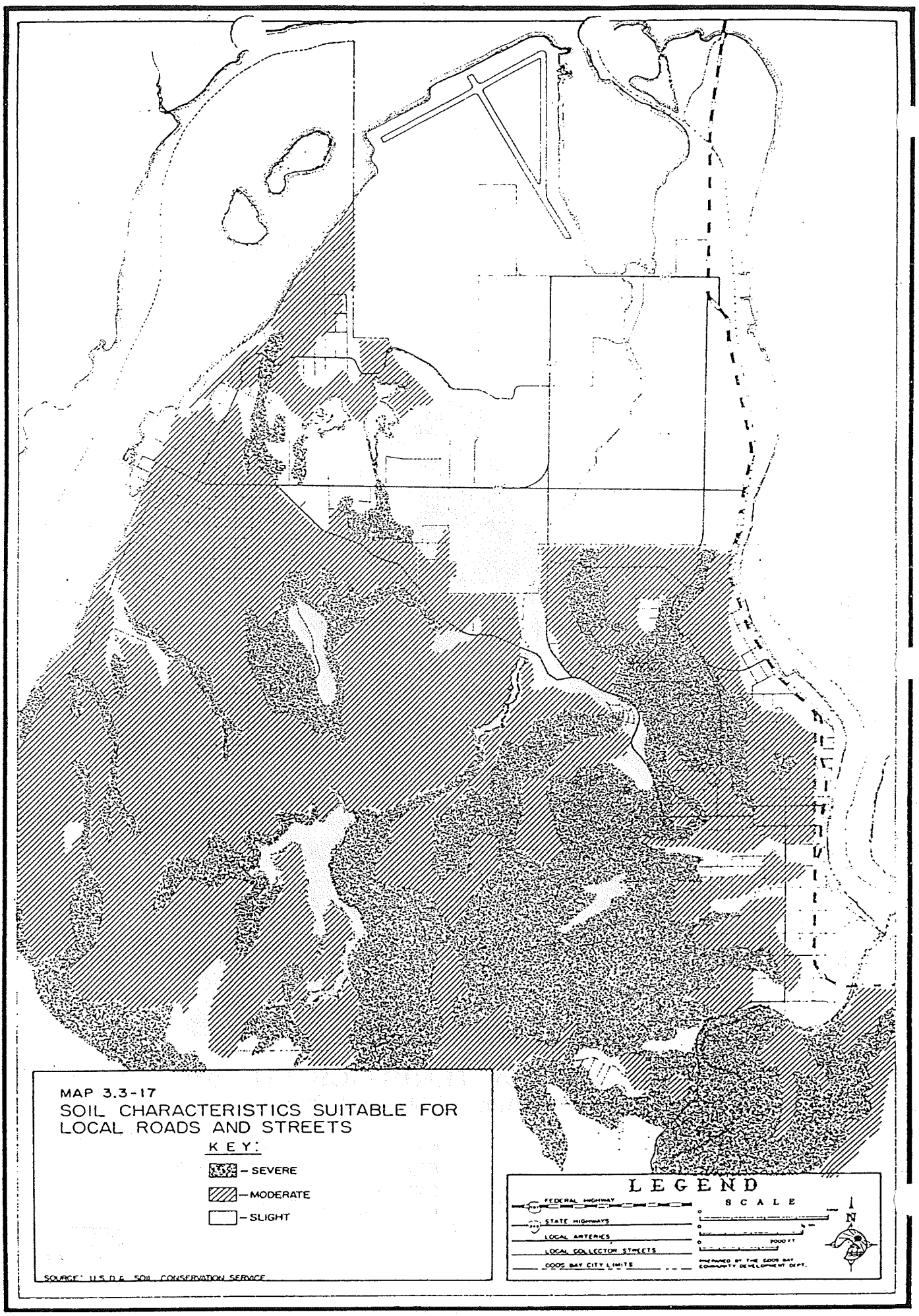
MAP 3.3-16

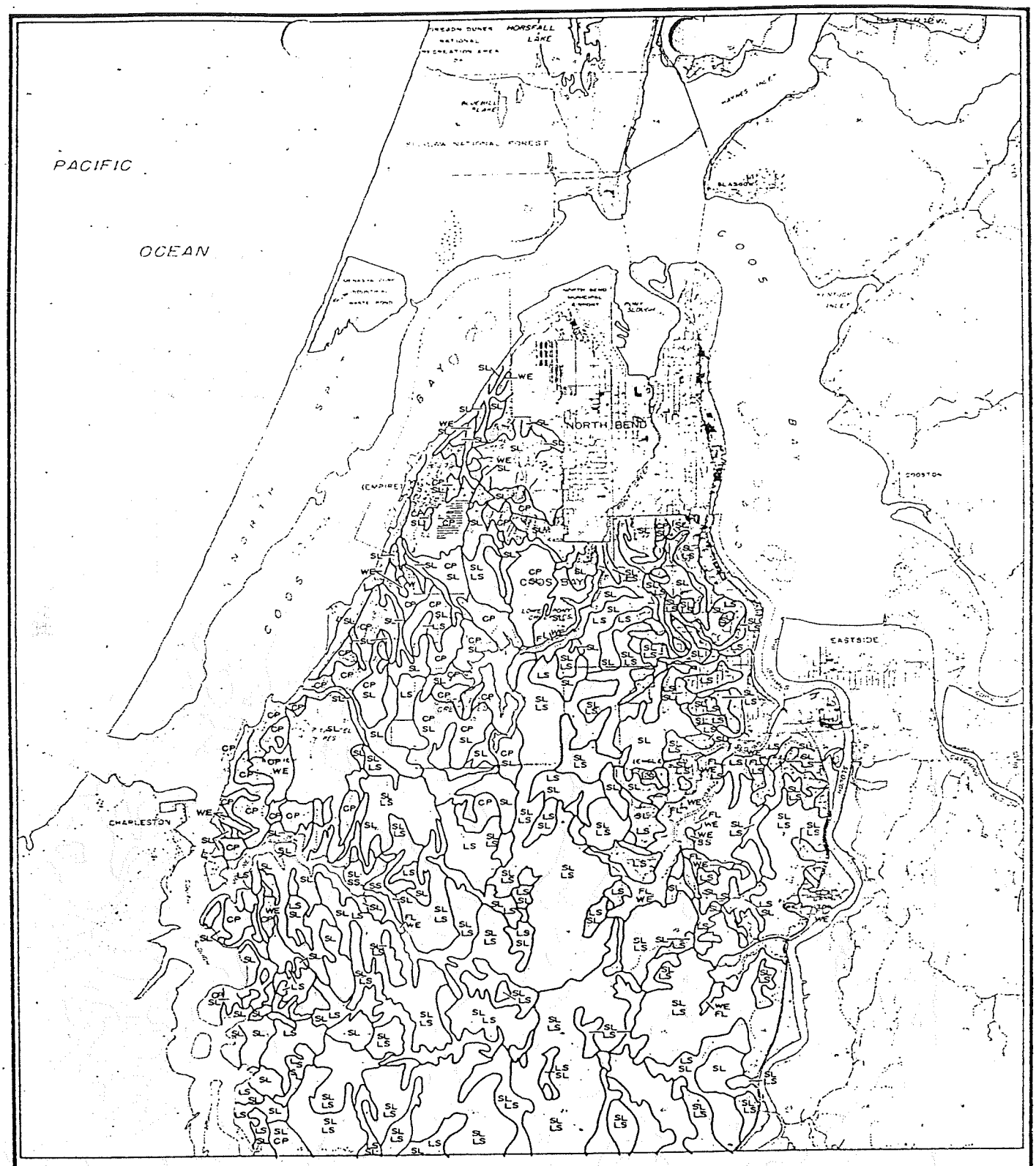
SOIL CHARACTERISTICS SUITABLE FOR LOCAL ROADS AND STREETS

KEY:

- SEVERE
- MODERATE
- SLIGHT

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE.


MAP 3.3-17
SOIL CHARACTERISTICS SUITABLE FOR LOCAL ROADS AND STREETS
KEY:
- SEVERE
- MODERATE
- SLIGHT
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
N



MAP 3.3-18

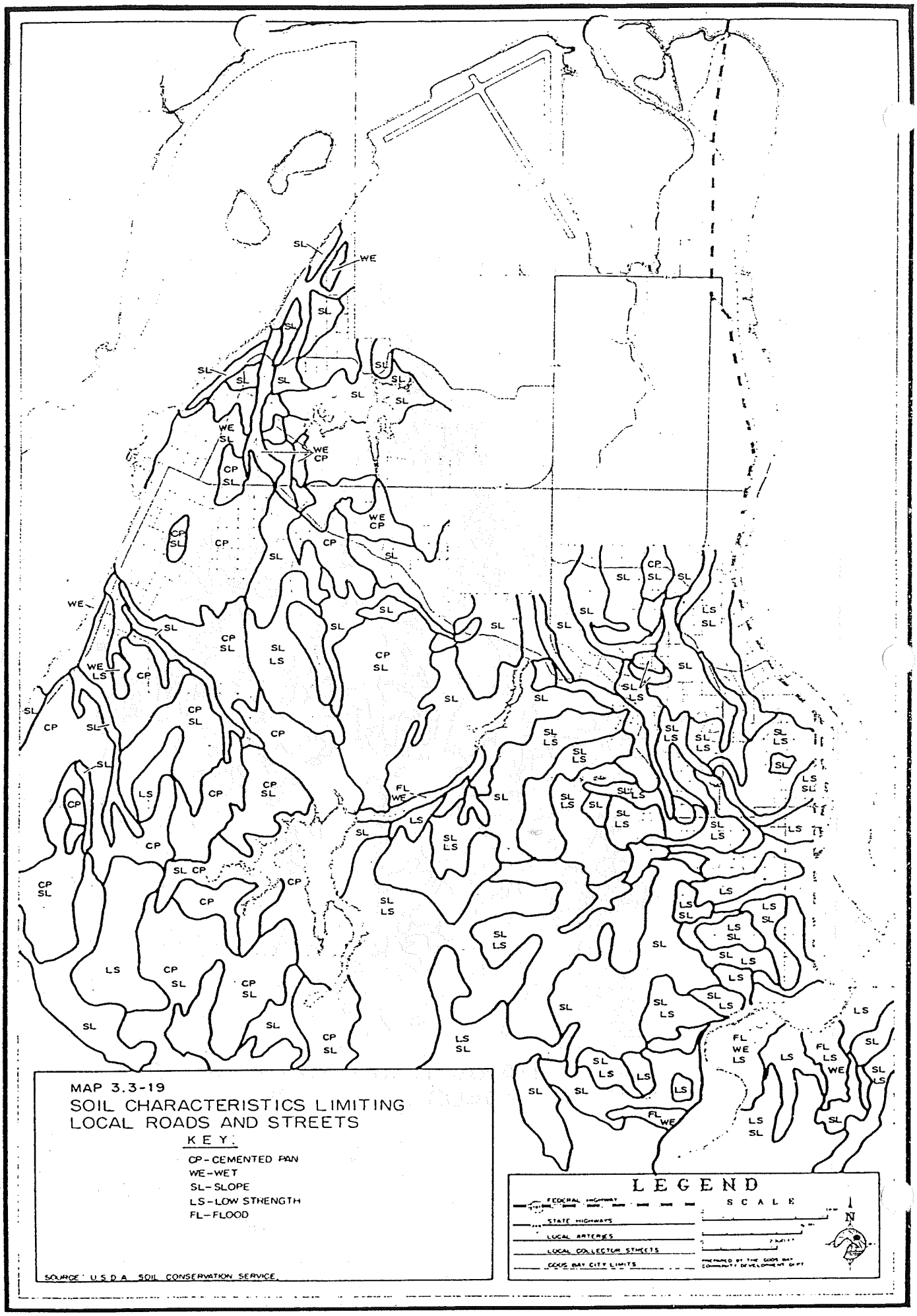
SOIL CHARACTERISTICS LIMITING LOCAL ROADS AND STREETS

KEY:

- CP – CEMENTED PAN
- WE – WET
- SL – SLOPE
- LS – LOW STRENGTH
- FL – FLOOD
- SS – SHRINK SWELL

SCALE

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 3.3-19
SOIL CHARACTERISTICS LIMITING
LOCAL ROADS AND STREETS
KEY:
CP-CEMENTED PAN
WE-WET
SL-SLOPE
LS-LOW STRENGTH
FL-FLOOD
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE.
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
N

3.4

Beaches and Dunes

Introduction

Beaches and dunes are significant natural features of the coastal area. Coos Bay is located in the Coos Bay dune sheet, as part of a "massive, complex, and heterogeneous dune formation" created on a large coastal terrace 54 miles long. (U.S. Department of Agriculture, Soil Conservation Service [USDA] [SCS] 175:71) Dune and beach formations are shown on Map 3.4-1, predominated by a coastal terrace with isolated older stabilized dunes and younger stabilized dunes. A small beach occurs at the Barview Wayside outside of the city limits. The eastern area is classified as a mountain escarpment which forms the transitional area from dune or interdune areas to the adjacent highlands. (USDA, SCS 1975:66)

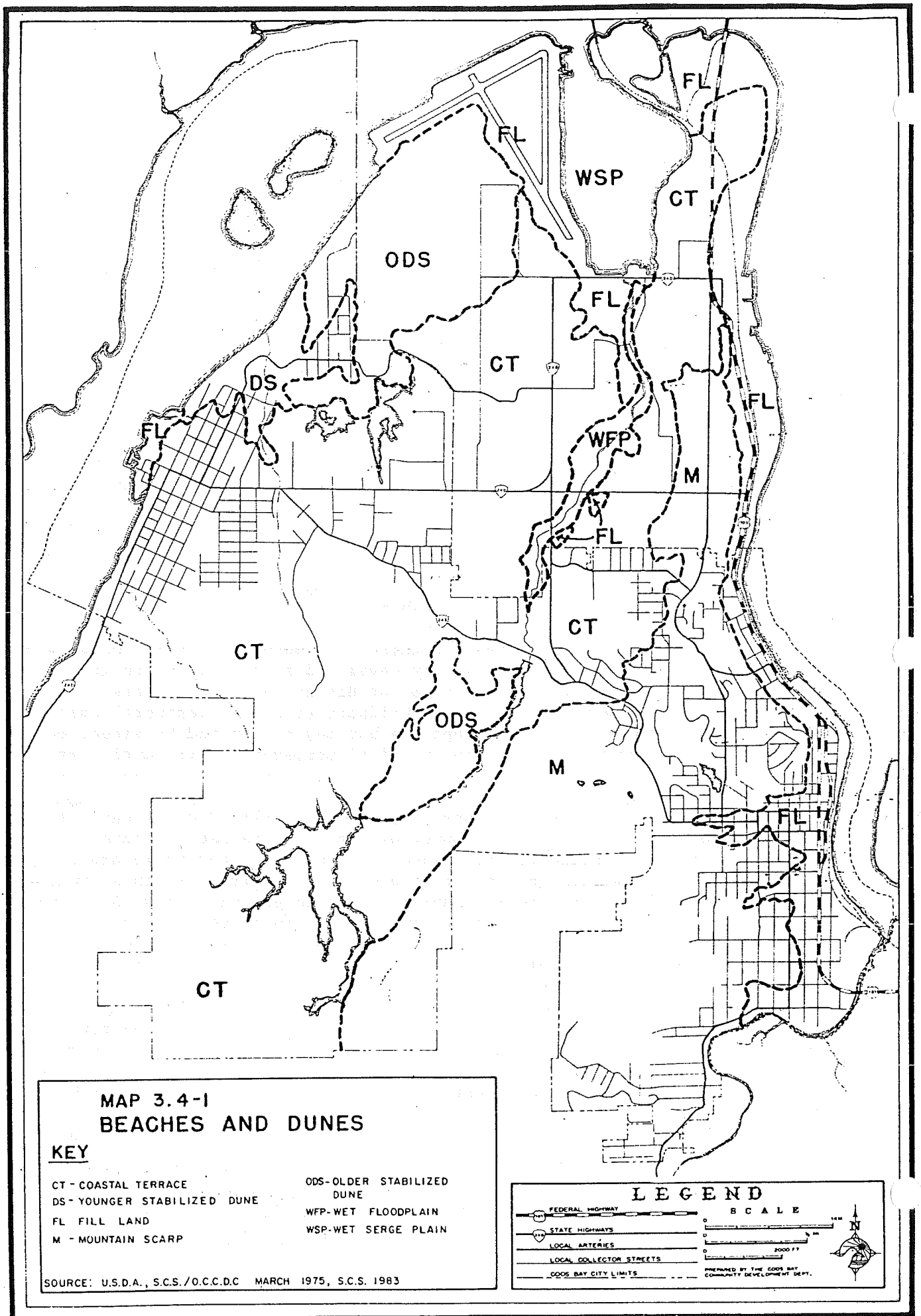
Younger Stabilized Dunes

According to the SCS report, these are youthful, cross-bedded, wind-stable dune landforms that have weakly developed sandy soils with little or no development of cemented nodules, lenses or Bir horizons. They are distinguished by the weakly developed Waldport (formerly Westport) soils. Development in these areas is acceptable but may be limited by slope, depth of the water table, and horizontal and vertical permeability if septic systems are used.

The subsurface stratigraphy of younger stabilized dunes can affect the direction of water drainage and hamper or increase the rate of percolation when iron bands are present. Slope and depth of the water table are other contributing factors to the subsurface drainage capacity. If this drainage is altered and reduces moisture in stable areas, the growth of low shrubs might be affected. Excavation and vegetation removals in these dune areas need to be well managed to prevent exposure of open sand to severe wind erosion. These areas need to be replanted to grasses or types of shrubs that can survive the soil conditions.

There is one area classified as a younger stabilized dune form, an area generally north and west of Empire Lakes. Much of this area is already developed and is zoned for single-family/duplex residential or restricted waterfront residential development. The latter zoning designation requires plan review before the Planning Commission. Development which requires removal of the vegetative cover, excavation, grading, and fill have the potential of creating an erosion hazard. These activities, however, can be monitored and regulated so that no hazards to life, or public and private property occurs.

Amended per Resolution 83-11



MAP 3.4-1
BEACHES AND DUNES

KEY

CT - COASTAL TERRACE
DS - YOUNGER STABILIZED DUNE
FL FILL LAND
M - MOUNTAIN SCARP
ODS - OLDER STABILIZED DUNE
WFP - WET FLOODPLAIN
WSP - WET SERGE PLAIN

SOURCE: U.S.D.A., S.C.S./O.C.C.D.C MARCH 1975, S.C.S. 1983

LEGEND

FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS

SCALE

PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

Amended per Resolution 83-11

Older Stabilized Dunes

These dunes are characterized by Netarts soils which are formed in wind blown sand. They have a weakly cemented subsoil and a loose, sandy substratum. If the surface soil and subsoil are removed, the substratum is subject to severe wind erosion. (J. Haagen, SCS, March 1983)

Older stabilized dunes are found in a small area in the northwest portion of Coos Bay and directly north of Empire Lakes. This area is either part of Empire Lakes Park or is substantially developed residentially. A large area west of Lower Pony Creek reservoir is also in this category, much of which falls within the watershed. Deep surface disturbances must be done with care and followed by adequate stabilization.

Coastal Terraces

Coastal terraces mark the landward limit of marine deposits and are composed of Bandon, Bullards and Blacklock soils. They have strongly cemented subsoils not subject to wind erosion. Oxidation and iron banding is more significant and the slope, depth of water table, and horizontal and vertical permeability may limit subsurface flow. These soils can sustain more surface disturbance, unless excavations exceed the depth of oxidized and cemented horizons and reach layers of open sand. Most of the western and central areas of Coos Bay fall into this category.

Development and Erosion Protection

Development in dune areas is regulated in several ways. Appendix Chapter 70 of the Uniform Building Code specifies erosion control for embankments and for excavation and grading of property. Moreover, problems of exposed or destabilized soils throughout the city which poses a problem to public or private property or human life are subject to Nuisance Ordinance 2034. In order to prevent problems from occurring in advance of any planned development or property grading, the city should add provisions to the land clearing section of the Land Development Ordinance covering areas of both older or younger stabilized dunes.

Approval of any permits or enforcement of these ordinances should consider temporary and permanent stabilization programs, maintenance of existing vegetation, and methods of protecting surrounding land from adverse effects. Stabilization methods are discussed in the SCS Beaches and Dunes of the Oregon Coast.

In summary, temporary control methods can include brush matting along with seeding of beachgrass or shrubs, or wire netting, although each has disadvantages. Planting of certain grasses (European and American beachgrass) acts as an initial or intermediate stabilizer. However, mixing these plants with legumes such as hairy vetch, common ryegrass, purple beachpea, Clatsop red fescue, and tail fescue, has been successful in providing permanent control.

Amended per Resolution 83-11

Groundwater

There is little data available on the groundwater capacity for any portion of the city (See Chapter 3.7, Water Resources), although there is evidence of high groundwater in the Empire area (discussed in more detail in Chapter 4.3, Natural Disasters and Hazards, p. 4-32).

Groundwater drawdown is not identified as a concern for several reasons.

1. Almost all existing, developed properties are now connected to the municipal water supply, even if they had been served by well water at one time.

2. New commercial and industrial development and residential subdivisions will be required to connect to the municipal water system.

3. Any continued use of well water is intended to supplement the municipal system for lawn and garden irrigation in the summer. This usage would not pose a significant threat to the groundwater supply.

3.5
Wetlands and Tidal Marshes

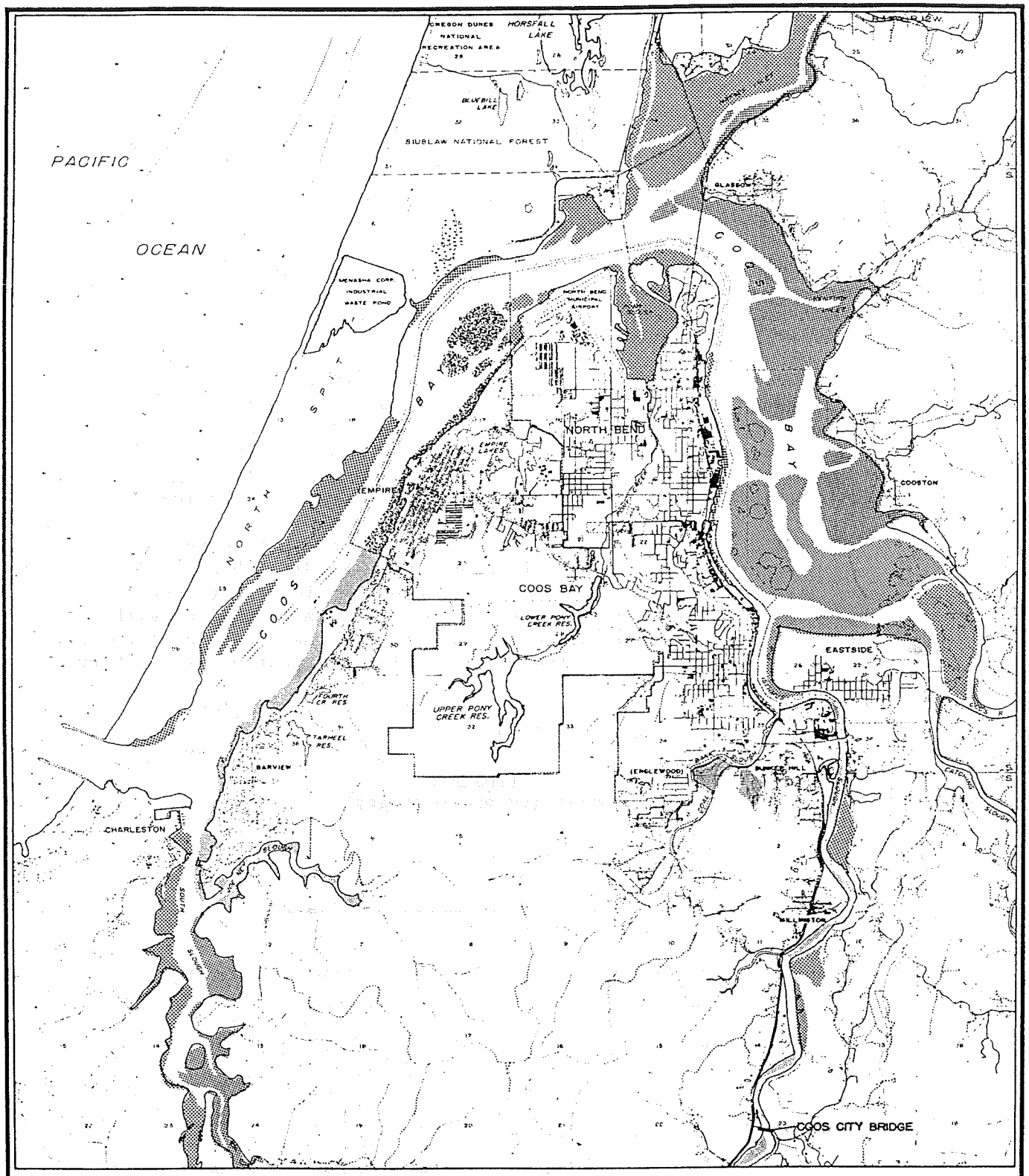
Wetlands and tidal marshes will be treated extensively as part of the estuarine and coastal shoreland goal inventories of the estuary management plan, therefore, a complete inventory will not be undertaken in this report. However, a summary of wetlands and tidal marshes of the planning are and their characteristics is presented to further depict the city's physical environs.

Tideland mapping for the Coos Bay estuary has been done by the Division of State Lands (DSL) and is represented by Map 3.5-2. It is estimated that the estuary contains 4,569 acres of tideland (Gaumer et al. 1973:6), with approximately 642.87 acres of this total contained within the planning area. By use of a mechanical planimeter, the amount of tidelands within the city were extracted from the planning area estimates as shown in Table 3.5-1.

TABLE 3.5-1

TIDELAND
COOS BAY PLANNING AREA

Location	Amount in Acres
Within Incorporated Limits	255.69
Outside Incorporated Limits	387.18
TOTAL Planning Area	642.87

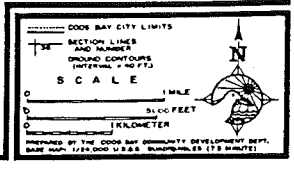


MAP 3.5-2

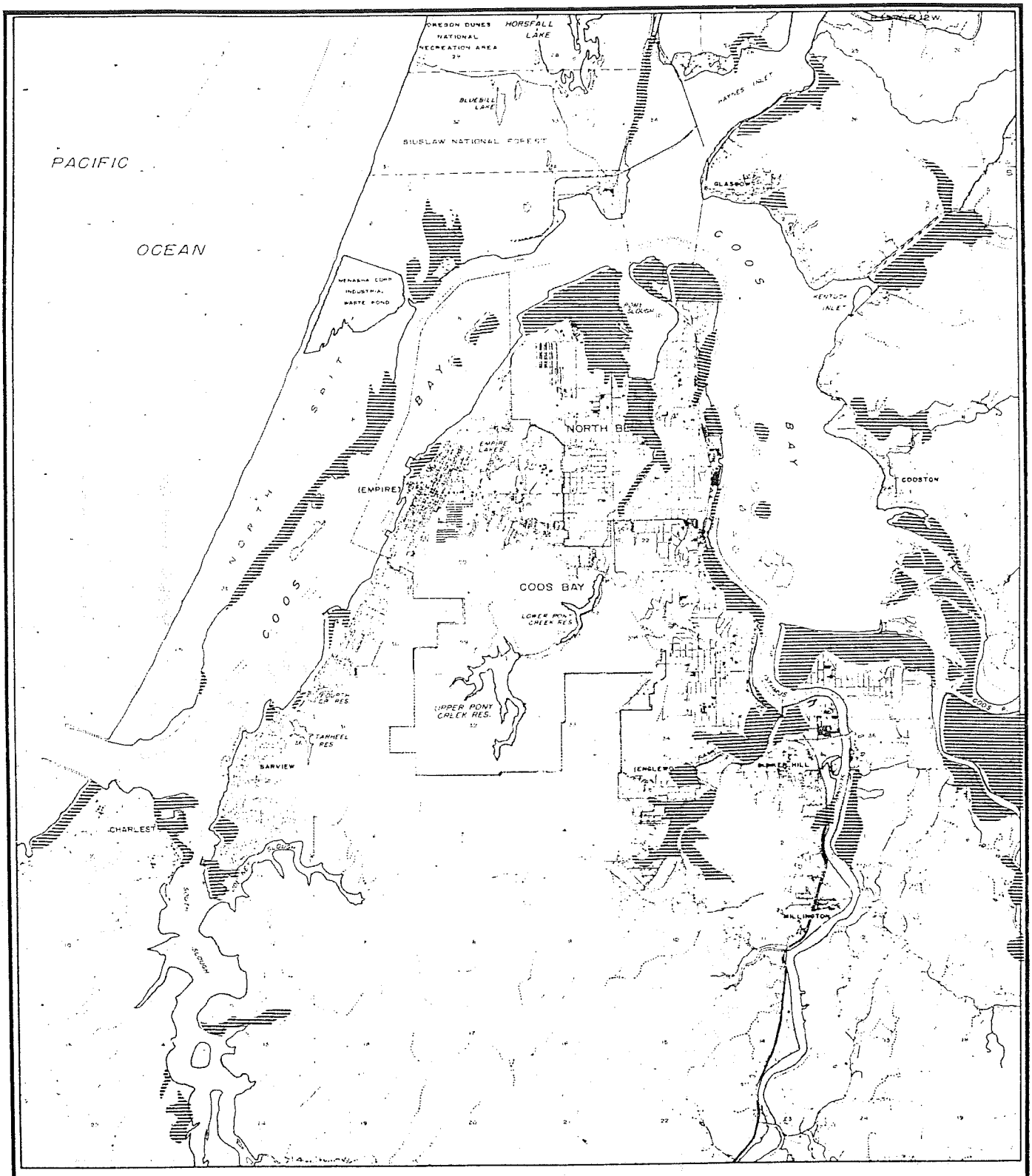
TIDELANDS

KEY:

- WITHIN COOS BAY CITY LIMITS
- WITHIN PLANNING AREA
- OTHER TIDELANDS



SOURCE: STATE OF OREGON DIVISION OF LANDS.



MAP 3.5-3

TIDELANDS CHANGE: 1920-1970

KEY:

▨ — LOST WETLANDS THROUGH FILL, DIKES DRAINING, OR ACCRETION

COOS BAY CITY LIMITS
SECTION LINES AND NUMBERS
GROUND CONTOURS (INTERVAL = 40 FT.)
SCALE
1 MILE
5,000 FEET
1 KILOMETER
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.
BASE MAP: 1/24,000 U.S.G.S. QUADRANGLES (7½ MINUTE)

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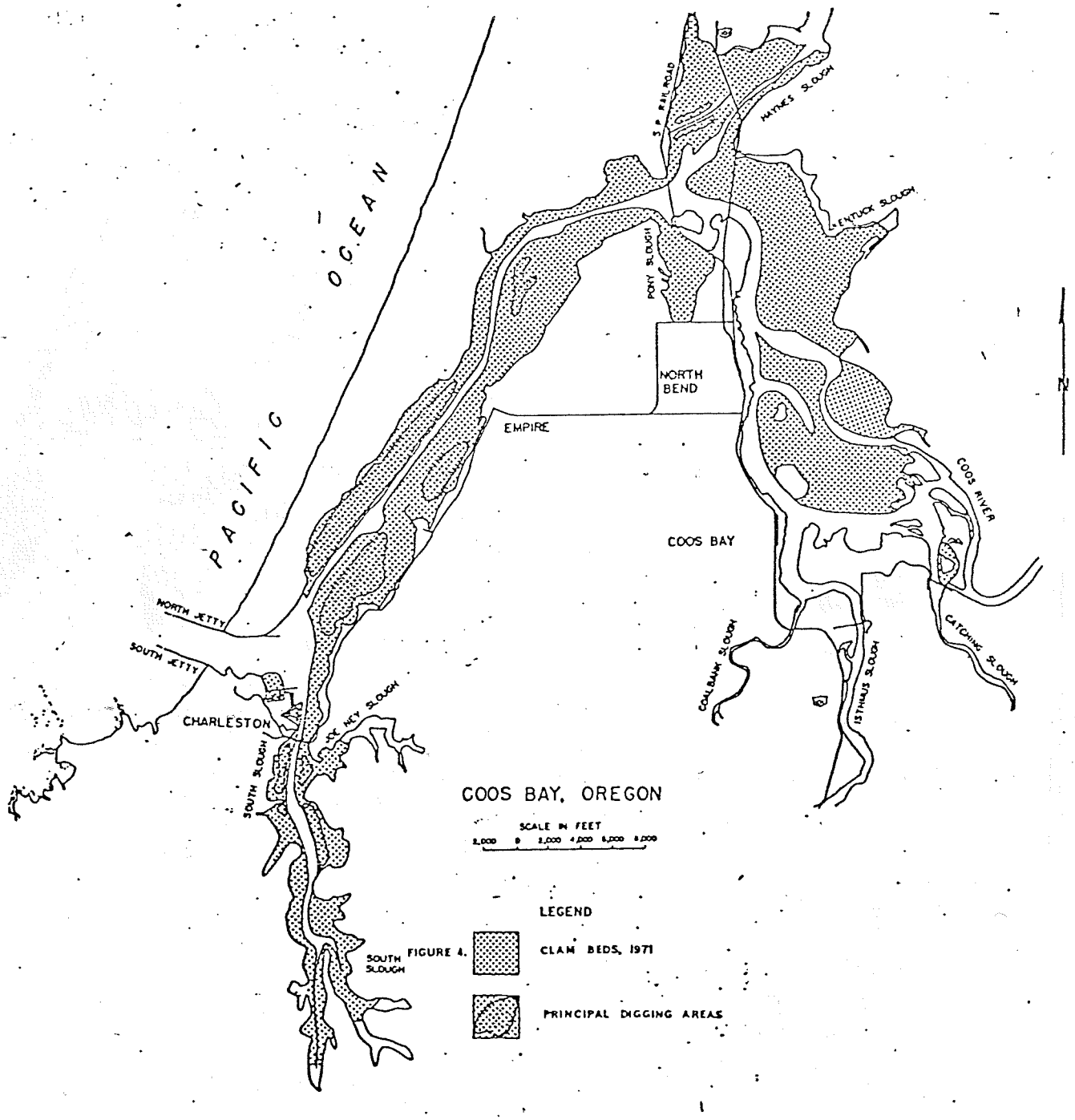
SOURCE: U.S. DEPARTMENT OF INTERIOR

Map 3.5-3(a)

Clam Beds, Coos Bay, Oregon



Source : Coos Bay Estuary 1971
Coos Bay Resource Use Study

It is important to note that these figures are derived from February 1973 data. (Oregon Division of State Lands 1973) It is highly likely that changes have taken place which alter these figures, e.g., increased from deposition and accretion of sediments in the bay, and decreases from filling and diking. For example, alterations to the estuary between 1920 and 1970 were significant; approximately 3500 acres had been removed from the estuarine system. (U.S. Department of the Interior 1971:96-97) Map 3.5-3 displays the tidelands lost during this 50 year period. Therefore, it is reasonable to assume that some degree of change has taken place in the five years (1973-1978) since the DSL mapping was completed.

The Coos Bay estuary is the largest estuary on the Oregon Coast. The estuary covers approximately 10,000 acres and drains an area covering roughly 605 square miles. (Oregon Coastal Conservation and Development Commission, 1975) The estuary is an integral part of the City's physical setting. A major portion of Coos Bay's total area consists of estuarine waters and related wetlands. Even the land portion of the City is bordered from almost every direction by the bay or tributaries including Coos River, Isthmus Slough, and Catching Slough.

Coos Bay Estuary and its watershed support several varieties of salmon and steelhead trout in significant quantities. A number of clam beds are found in some of the shallow portions of the estuary within the Coos Bay city limits. (Map 3.5-3a) A number of salt marshes are located within the City limits along the eastern margins of the estuary. Some marshy areas immediately north of the developed portion of the Eastside area have been diked and drained for use as pasture to support livestock grazing. The marshes in the area north of the Marshfield Channel also serve as feeding and resting areas for large numbers of migratory waterfowl as do other marsh areas located throughout the bay. A complete list of important estuarine wildlife resources has been developed by the Department of Fish and Wildlife and can be found as Appendix A of the Supplement.

Generally speaking, there are no major wetlands (with the exception of South Slough) in the Coos Bay estuary which do not bear the imprint of man's activities. (Akins and Jefferson 1973:122-125) Considerable wetland areas have been lost over the past to diking and draining when these lands were converted to agricultural uses; additionally, wetlands have been used as disposal sites for dredge spoils collected during channel maintenance. A discussion of the general quality and a description of the dominate marsh vegetation found in the Coos Bay planning area are presented below and shown on Map 3.5-4.

Coalbank Slough.

This slough area can be best described by the following passage:

> Coalbank Slough is visably altered due to extensive diking and restricted artificial connecting to the estuary (by means of a four foot culvert) which impairs and reduces needed circulation Leakage into the slough of septic tank effluent is reported. Some remnants of tidal marsh vegetation remain of which Lyngby's sedge (Carex lyngbyei) and tufted hairgrass (Deschampsia caespitosa) are dominant. (Hoffnagle et al. 1976:21-23)

Isthmus Slough

Although Isthmus Slough is not contained within the planning area as such, recognition of its wetland resources is necessary to avoid any potential negative impacts which might result from adjoining future land uses. While extensive filling and diking have occurred from the mouth of the slough to the southern limit of the study area (near the Coos City Bridge), widespread tidal marsh areas still remain in Isthmus Slough. Dominant vegetation types include Lyngby's sedge (Carex lyngbyei), tufted hairgrass (Deschampsia caespitosa), salt grass (Distichlis spicata), and pickleweed (Salicornia virginica). (Akins and Jefferson 1973:34-37, 121) The effects log storage in the slough on the water quality and biotic balance have been studied recently and have shown to be detrimental to biotic communities. (Jackson 1974; Zegers 1978) (See also section 4.4, Water Quality.)

Shinglehouse Slough.

Tidal marsh areas within Shinglehouse Slough are characterized by sedge of the genus Carex. (Akins and Jefferson 1973:121) Its use as a solid waste disposal site has greatly affected water quality and aquatic life. (U.S. Department of the Interior 1971:44-47)

Coos River and Catching Slough

Coos River and Catching Slough are characterized by extensive diked marsh. Coos River and Catching Slough are located adjacent to the Eastside area and coverage together as tributaries to Coos Bay.

South Slough

No attempt is made to include an inventory of South Slough which delimits the western boundary of the planning area. It is the least impacted wetland area in the Coos Bay estuary, has been designated as a national estuarine sanctuary by the federal government, and will be treated within the multi-jurisdictional estuary plan.

Joe Ney Slough.

Joe Ney Slough which is essentially an arm of South Slough, contains marsh areas vegetated primarily with sedge (Carex lyngbyei), tufted hairgrass (Deschampsia caespitosa), salt grass (Distichlis spicata), pickleweed (Salicornia virginica), bent grass (Agrostis alba), and Pacific silverweed (Potentilla pacifica).

Pacific oysters have been grown commercially in Joe Ney Slough for a period of approximately 30 years under strict health and sanitation regulations. A solid waste disposal site is located in the general vicinity of Joe Ney where distinct problems with erosion and drainage due to soil conditions exist. However, this site is to be closed within two years.

Barview/Coos Bay Waterfront.

Wetlands occur along the eastern edge of the lower bay north from Barview to the northern limit of the corporate boundary of the City of Coos Bay. Much of the tidal marsh vegetation found in these areas is similar to that found in Joe Ney Slough. The City of Coos Bay sewage treatment plant outfall is located in the Empire district just north of the southern city limits. Outfall placement and waste discharge extends well into the channel and eliminates potential wetland degradation.

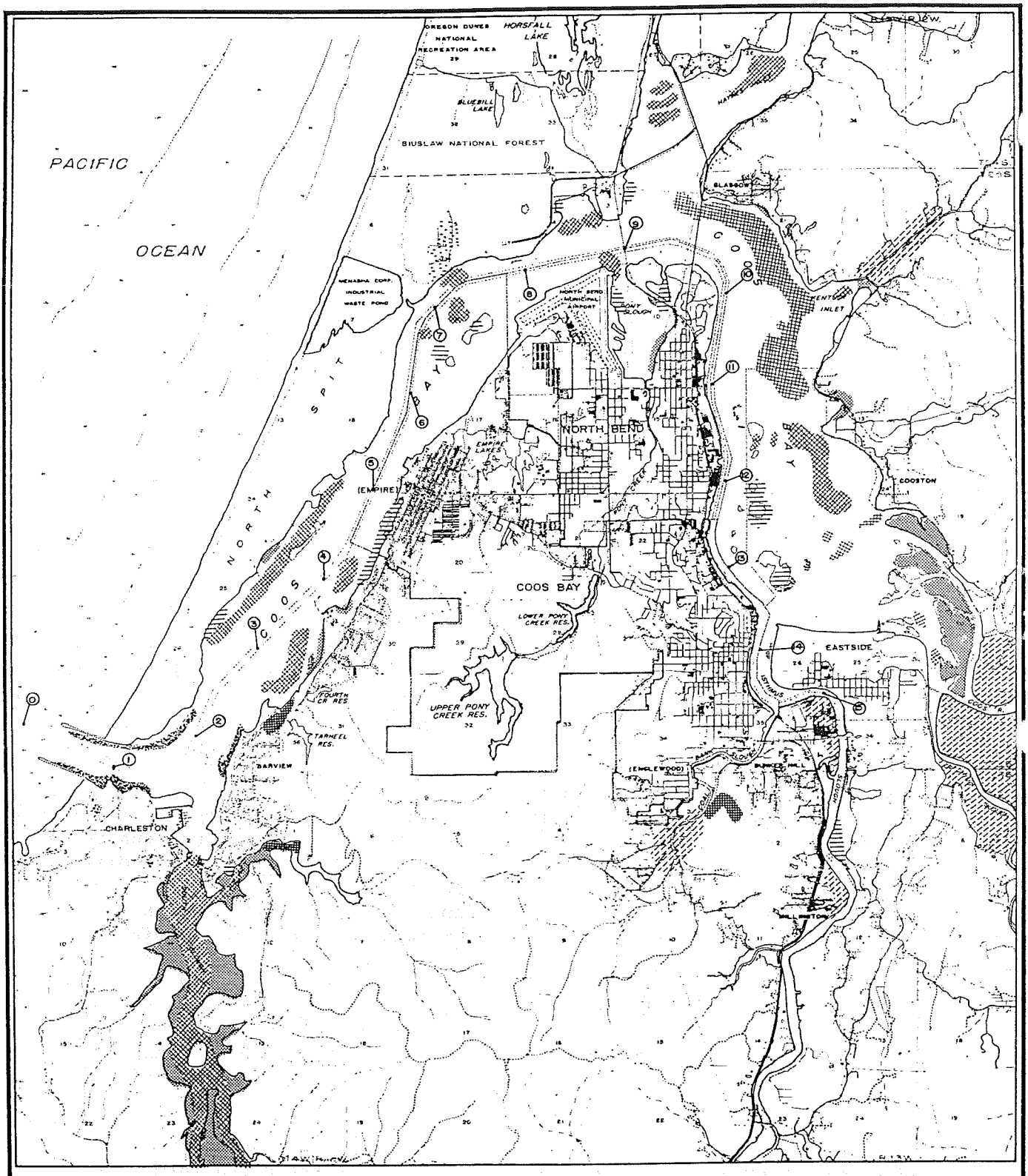
The western boundary of the planning area in the upper bay is virtually devoid of wetland areas because of channelization and dock structure.

Shorelands-Eastside Area

By virtue of Eastside's location on the Coos Bay estuary, shorelands comprise an integral part of the area's geographic setting. The peninsula which contains nearly all of Eastside's land area is bordered on three sides by the bay and three of its tributaries--Catching Slough, Coos River, and Isthmus Slough. A portion of the City limits follow the Isthmus Slough. Since the east boundary of the City from north of Pierce Point south to Bull Island follows the east shoreline of the bay, a significant amount of shore area is immediately adjacent to the City. Finally, the banks of Coos River, the Willanch Inlet and Ross Slough are relatively close to the Eastside area although they do not lie within the Coos Bay City limits.

Flood plains, marshes, tide flats, and fill lands are the predominant types of shorelands in and near the Eastside area. On the main peninsula of Eastside, tidal flats comprise the outer shorelands from a point approximately west of Bessee Street around the peninsula to a point about one quarter mile north of the Coos River Highway bridge over Catching Slough. Immediately inland from the tidal flats lies a large area of fill material obtained from dredging operations in the Coos Bay channel. Dredging of the channel first began in 1934. This fill area extends inland to a terrace on which the presently developed portion of Eastside is located. The fill area runs eastward to a point roughly in line with Ninth Avenue. Beyond this point a tidal marsh lies immediately inland from the tidal flats on the shore. This area has been diked and drained and is now used for limited grazing. Fairly narrow strips of tidal flats make up most of the shorelands along the Isthmus and Catching Sloughs to the south of the Eastside area. Shorelands adjacent to the east limits of the Eastside area vary between mountainous terrain north of Pierce Point and south of Crawford Point to flat flood plains which cover Pierce and Crawford Points and extend inland along the Willanch Slough. Other flood plain areas are along Crawford Point and on the delta formed by the Coos River and the Catching Slough.

Bull Island and several smaller islands in the eastern portion of Coos Bay lie within the Eastside area. These islands are primarily composed of marshland. In the western portion of the bar are located three islands composed mainly of fill material from dredging operations.



MAP 3.5-4

SALT MARSH VEGETATION

KEY:

- EELGRASS MARSH
- LOW MARSH
- HIGH MARSH
- SEDGE MARSH
- DIKED MARSH
- ALGAE
- ② DENOTES RIVER MILEPOINT

SOURCE: U.S. ARMY CORPS OF ENGINEERS, U.S. DEPARTMENT OF INTERIOR

3.6

Flora and Fauna

Introduction

Habitat inventory for estuarine and shoreland areas will be completed as part of the estuary management plan. Literature compiling a complete inventory of non-estuarine fish and wildlife present in the Coos Bay planning area is wanting. However, a general discussion of the characteristics of freshwater and upland habitats of the Oregon coastal zone should adequately depict the kinds of resources to be found here. (Map 3.6-1)

A study of fish and wildlife resources of the Oregon coastal zone (Thompson and Snow 1974:55-90) has been used as a primary source for this report. Non-estuarine habitat types which would occur in the planning area are freshwater areas associated with ponds, reservoirs, streams, and lakes not affected by tidal influence, and uplands consisting of marshes, meadows, stands of conifers and hardwoods, and urban industrial land uses.

Aquatic Habitats

There are approximately thirty tributary streams in the Coos Bay drainage basin. Of these, the Coos River is the largest and is also the closest to Coos Bay. Both the Coos River and the Millicoma River (which joins Coos River about five miles inland from Coos Bay) originate in the northeastern portions of Coos County.

There are several lakes within twenty miles of Coos Bay. Horsefall and Saunders Lakes, plus other smaller lakes, are located west of U.S. 101 north of the Bay area. The Tenmile Lakes and Eel Lake are located at the north edge of Coos County and represent one of the larger concentrations of lakes on the Oregon Coast.

Freshwater streams provide rearing and spawning grounds for salmon and steelhead, and support trout, other game fish, waterfowl, furbearing mammals, and amphibians. These environments in the Coos Bay planning area include Upper and Lower Pony Creek Reservoirs, Tarheel Reservoir, Fourth Creek Reservoir, Empire Lakes and Mingus Park Lake. Both Pony Creek Reservoirs are contained within the Coos Bay/North Bend Water Board boundaries and are, therefore, not open for public use. They are reported to support cutthroat trout (Upper and Lower), large-mouth bass, brown catfish (Lower only), and bullheads (Upper only). These populations had been substantially depleted in the droughts of 1965 and 1976-77 when reservoir levels dropped appreciably.

Tarheel and Fourth Creek Reservoirs, also private, support fish populations. Information on the established species is unknown; however, the Oregon Department of Fish and Wildlife planted excess trout stock in both lakes in 1978. Empire Lakes are annually stocked by the Oregon Department of Fish and Wildlife. The stocking schedule regularly includes both "catchable" (8"-10") juvenile rainbow trout. Fish stocked in 1975 included 5,000 "catchable" rainbow trout, 140,000 juvenile rainbow trout, and 1,300 black crappie. Although increased summer water temperatures pose a potential environmental hazard, the mortality rate of the planted stock is low because of the favorable physical and chemical habitat characteristics. (Bender 1978) Due to shallowness, low dissolved oxygen content and warm temperatures, Mingus Lake does not support game fish population; however, catfish do occur in sparse numbers.

Vegetation bordering these water areas include shorepine and spruce, also alder, Douglas fir, and cedar. Salmonberry, rhododendron, huckleberry, and thimbleberry embody a dense understory.

Upland Habitats

The terrestial environment not directly associated with freshwater areas form the upland habitats. Animal life in this diverse area include deer, elk, furbearers such as beaver, muskrat, mink, otter, weasel and raccoons, rodents, and birds. The abundance and diversity of habitats available to both migratory and resident birds and waterfowl contribute to an estimated 250 species found throughout the area. (U.S. Department of the Interior 1971:28) The undisturbed, interspersed habitats in the urbanized areas contain numerous non-game birds and small mammals.

Natural and Wilderness Areas

Only two natural areas, included in the Oregon Natural Heritage Program Inventory, exist in the planning area. These are a wintering site for black brandt and other waterfowl at Barview, and Fossil Point, which is a major invertebrate fossil location. No recognized natural areas are located in the city, nor are there any designated wilderness tracts in the area.

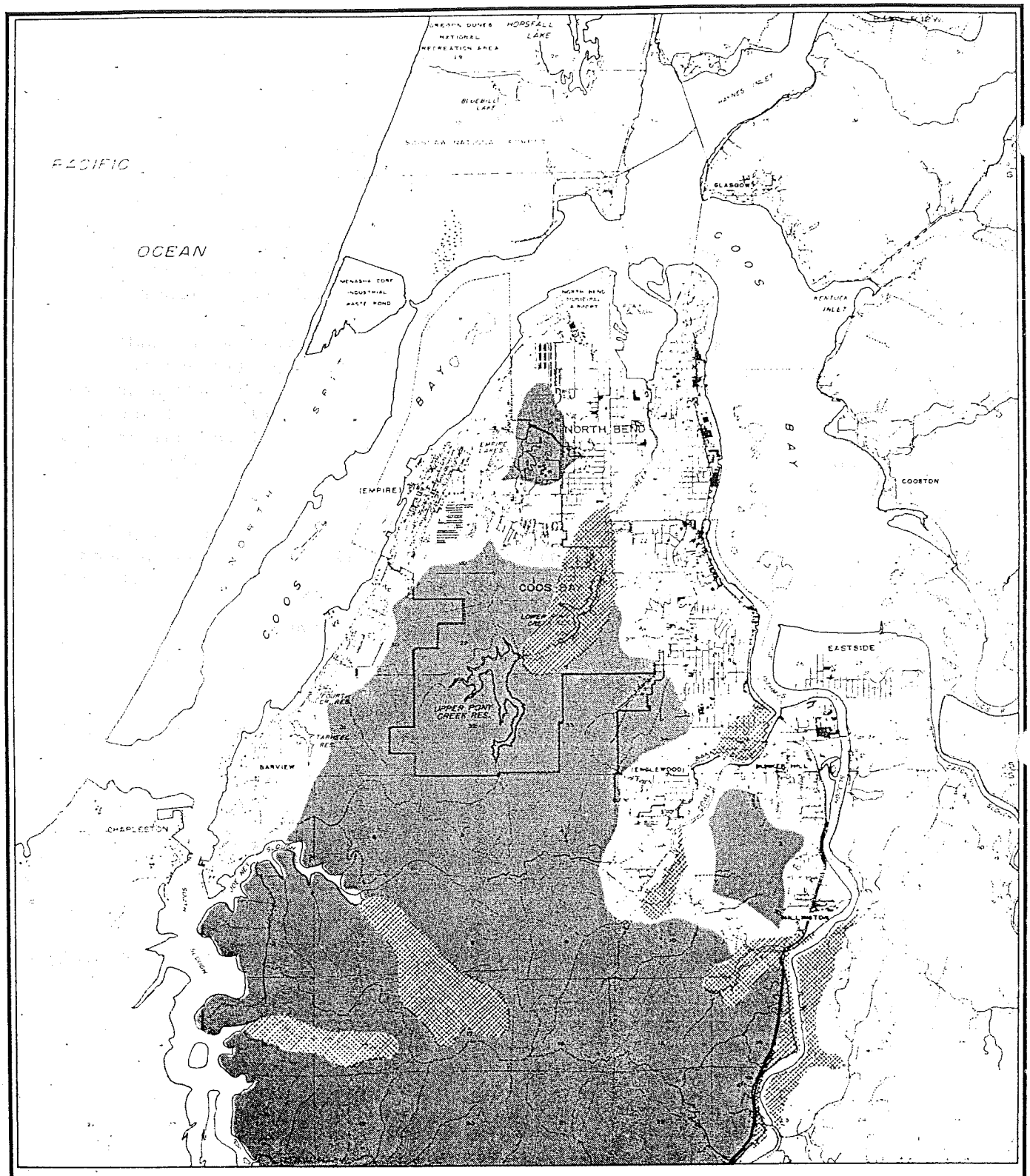
Significant Habitats

The area surrounding Empire Lakes and the Pony Creek Reservoirs are considered to be significant habitats. (Appendix J, Correspondence, Bender, February 14, 1983). Each has high wildlife value, especially for waterfowl in the Pony Creek complex, and fishery value, particularly Empire Lakes. The dense vegetation usually surrounding these bodies of water provides food and cover for wildlife and fish and protects the quality and quantity of the water supply. This vegetation strip also provides an attractive border, and serves to separate upland activities. This riparian vegetation should be protected, normally, by leaving at least 50 feet of horizontal distance or the extend of the vegetation undisturbed, except in carefully studied areas.

These two identified areas are under public ownership. Empire Lakes form the boundary between a large city park and the community college campus. They constitute natural and scenic attractions and have a high recreation value for boating, fishing, hiking, and scenic enjoyment. The recreation value of the Empire Lakes, in particular, should be preserved with careful planning of public access and scenic enjoyment. Habitat management specialists recognize this value. "Waters of recreational significance should be provided with public access through these riparian areas. Because streams and lakes are attractive areas for recreation and development, and of great social value, they should be given high priority for public use in land use plans." (Thompson and Snow 1974:68) The land development ordinance can establish the standards for encroaching into this riparian zone where recreational activity is important. However, because of the adjacent land uses and value placed on them, no major conflicting uses or threatening development is expected.

The Pony Creek reservoirs constitute this area's water supply and are protected by the water management practices of the Coos Bay-North Bend Water Board. (See also Chapter 5.5) Any development around either of these bodies of water is subject to Site Plan and Architectural Review and the land clearing requirements of the Land Development Ordinance.

Amended per Resolution 83-11



MAP 3.6-1

VEGETATION FORMATION

KEY:

- — RIPARIAN FOREST
- — UPLAND FOREST

COOS BAY CITY LIMITS
SECTION LINES AND NUMBER
GRADED CONTOURS (INTERVAL = 40 FT.)

SCALE
1 MILE
FEET
1 KILOMETER

N

PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.
BASE MAP: 1:24,000 U.S.G.S. QUADRANGLES (7½ MINUTE)

SOURCE: U.S. ARMY CORPS OF ENGINEERS

3.7
Water and Visual Resources

Discounting the estuarine system, the Coos Bay planning area possesses several inland bodies of water whose ownership, location, size, use, and quality are displayed in Table 5.7-1.

Domestic Water Supply.

The Pony Creek reservoirs constitute the significant watershed for populated areas clustered around the bay. This watershed area is located in the upper mid-portion of the planning area and lies, for the most part, within the corporate limits of the City of Coos Bay. Although minor portions of the watershed remain in private ownership, the greater part of the 3.69 square mile drainage basin is under public ownership as shown in Table 5.7-2.

TABLE 5.7-2

WATERSHED
Coos Bay Planning Area

OWNERSHIP	APPROXIMATE ACREAGE
City of Coos Bay	1072[a]
Coos Bay/North Bend Water Board	951[a]
Coos Bay/North Bend Water Board	340
TOTAL	2363

[a]Within Coos Bay corporate limits.

TABLE 3.7-1
WATER AREAS
Coos Bay Planning Area

Name	Ownership	Location	Approximate Surface Area	Cultural Use	Water Quality
Tarheel Reservoir	Coos Head Timber Co.	Sec. 36, T25S, T25S, R14W	18.37 A	Water storage (industrial) use in past) Municipal water augmentation when needed	Good (supports fish)
Fourth Creek Reservoir	Coos Head Timber Co.	NW 1/4, Sec. 31 T25S, R13W	9.18 A	Water storage (industrial use in past) Municipal water augmentation when needed	Good (supports fish)
Empire Lakes	City of Coos Bay	SE 1/4, Sec. 17 SW 1/4, Sec. 16 T26S, R13W	51.06 A	Pleasure boating, park fishing, swimming	Good (temperature and dissolved oxygen support trout) Body contact allowed
Upper Pony Creek Reservoir	Coos Bay/ North Bend Water Board	SE 1/4, Sec. 29 E 1/2, Sec. 32 T26S, R13W	136.00 A	Municipal water storage	Prior to treatment Good (sufficient dissolved oxygen to support trout) some algae and turbidity
Lower Pony Creek Reservoir	Coos Bay/ North Bend Water Board	E 1/2, Sec. 28 T26S, R13W	34.00 A	Municipal water storage	Prior to treatment Good (sufficient dissolved oxygen to support trout), some algae and turbidity
Mingus Lake	City of Coos Bay	10th St. between Commercial and Cedar Avenues	4.16 A	Pleasure boating, sport fishing (catfish)	Body contact not recommended, High algae content

Despite two separate public land ownerships (City of Coos Bay and Coos Bay/North Bend Water Board) in the watershed, it is managed as one unit to protect this water source from future misuse and degradation. Although minor problems associated with taste and discoloration have been experienced, the Water Board management has enacted policies restricting public access and maintaining high water quality standards through a carefully managed timber harvest program. This timber management plan, devised for the Water Board by the Weyerhaeuser Company, includes a replanting program to minimize sedimentation and potential water quality degradation. Furthermore, the plan specifies that brush control of unwanted broadleaf species will be limited to mechanical means; thus, the potential threat to public health from chemical control (herbicides) is eliminated. (Coos Bay/North Bend Water Board n.d.)

Tarheel and Fourth Creek Reservoirs supplied water requirements for the operation of the Coos Head Timber Company pulp mill until the mill closed in 1971. (Smith 1978) Since that time these water sources were utilized by the Water Board to add four hundred million gallons to the dwindling municipal supplies during the 1976-1977 drought. The reservoirs serve as water storage areas with no specific use at present.

Other Water Uses.

Mingus Park Lake and the Empire Lake are located in City of Coos Bay public parks. The uses of these lakes are park-related activities as shown in Table 5.7-1.

Groundwater

Specific groundwater data are not available for the Coos Bay planning area. However, general groundwater distribution can be gleaned from analysis of associated formations. As shown on Map 3.7-1 medium to low yield well fields can be anticipated from the alluvium and terrace deposits largely occurring along the bay fringe. The middle portion of the planning area where shales and sandstones of the Bastendorff, Coaledo and Empire formations are encountered are predicted to produce low yield wells of less than five (5) gallons per minute. The groundwater distribution for the latter area has been found to be sporadic. (Beaulieu and Hughes 1975:52-55)

Water quality from these underground resources varies according to subsurface soil properties and surface contamination sources. Groundwater contamination sources in the planning area include septic tanks, agricultural runoff, and sanitary land fills. For instance, improper design or location or system failure can cause bacterial contamination from septic tank effluent. In periods of heavy rainfall when soils become saturated, the possibility of septic tank effluent entering groundwater reserves and thence domestic well water supplies, if wells have been improperly sealed, presents a serious hazard to health. Infectious hepatitus outbreaks under these conditions have been reported in the Charleston area. (Beaulieu and Hughes 1975:57-58) Although Charleston is not within the Coos Bay planning area, the risk potential exists in unsewered sections of the planning area where residences are also not served with city water.

Agricultural runoff poses another health risk when nitrates from fertilizers enter the water table or find their way into domestic well water through uncapped or unsealed well openings. This specific pollution source seems unlikely in the Coos Bay planning area due to a lack of intensive agricultural activities; however, the use of pesticides and herbicides in timber management of forest lands could conceivably have similar deleterious effects on groundwater resources should these chemical pollutants enter domestic water systems (wells, municipal watersheds, or storage facilities)

Leachates from sanitary landfills which are inappropriately sited, inadequately sealed, with highly permeable soils, or with high water tables, are potential sources of groundwater pollution. The relative remoteness of the Joe Ney and Shinglehouse landfill sites from populated areas reduces the risk of domestic well water contamination but does not eliminate the possibility of groundwater degradation from toxic or noxious leachate sources in leakage were to occur. These landfill sites are scheduled to close and are discussed further in Chapter 4.2, Land Quality. Effects from these or other sources of groundwater pollution may exist in areas not served by the Coos Bay/North Bend municipal watershed but dependent upon wells for domestic water. Generally all of the incorporated portions of the planning area are served with City water; although, there may be isolated use of well water but neither local nor state records contain this information. Areas outside the incorporated limits of the city but within the planning area, which are unserved by the municipal system include: (Heckard 1978)

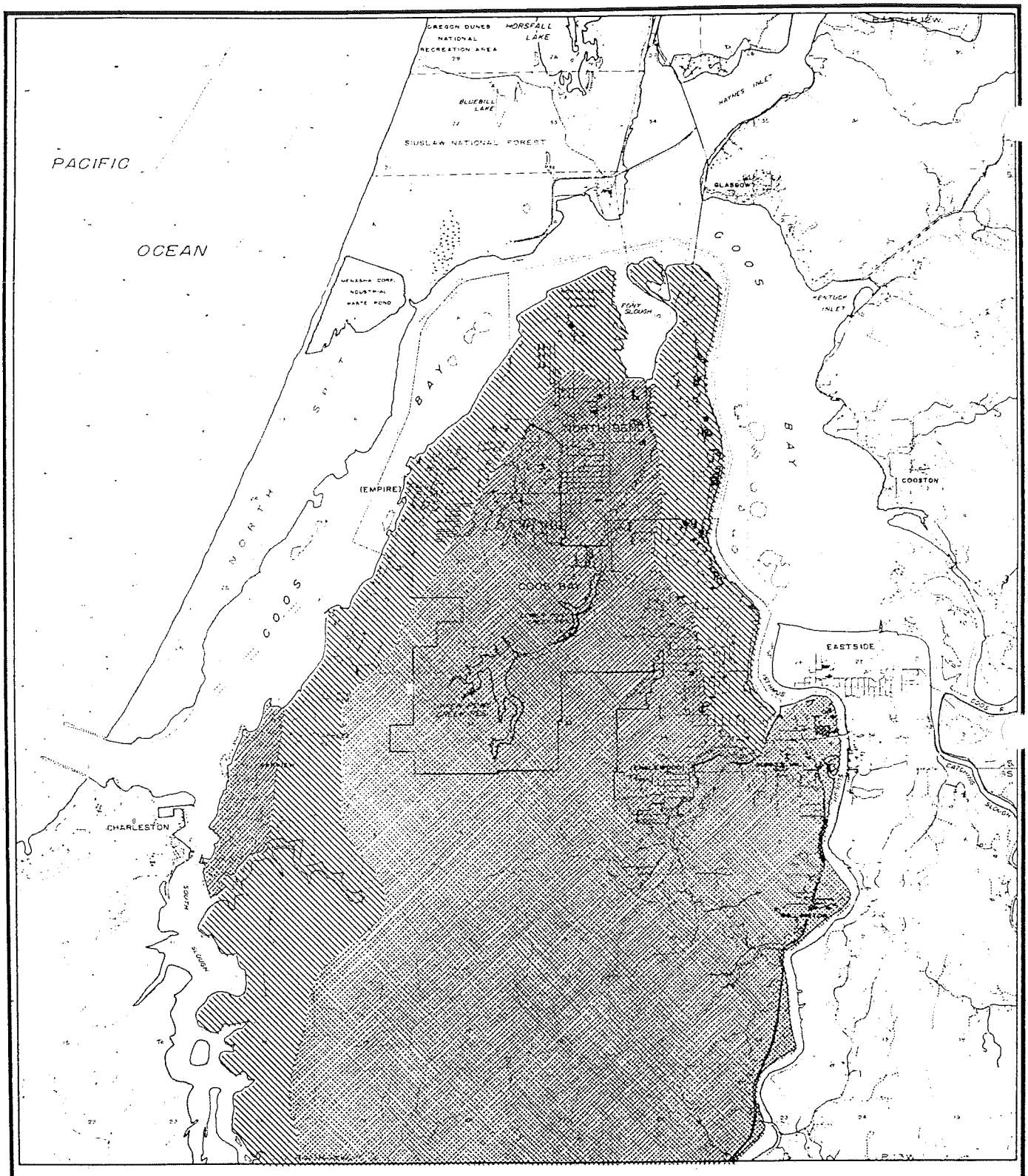
Barview/Charleston area (70% municipal system coverage)
South of Joe Ney Slough, (SE 1/4 Sec 1, N 1/2 Sec 12, T26S, R 14W).
South of Millington (SE 1/4 Sec 11; Sec 14, W 1/2, Sec 23, T26S, R 13W).
Blossom Gulch area (NW 1/4 Sec 34, T26S, R 13W).
South and west of Englewood area (NW 1/4 Sec 3, T26S, R 13W)

Visual Resources

Visual resources might best be defined as elements which land scenic appeal to the landscape of an area. Visual resources most generally consist of natural features or occurrences such as landforms (beaches, mountains, dunes, etc.), vegetation and bodies of water. This section identifies the primary visual resources present in and near Coos Bay. Such identification will hopefully facilitate planning decisions which will encourage orderly urban growth, while at the same time preserving these visual resources to the extent possible and maximizing their benefits to the area's residents and visitors.

The Coos Bay Estuary is clearly Coos Bay's largest and most prominent visual resource. Much of the City's total area consists of estuarine waters and related marshes and tidal flats. Coos River, Isthmus Slough, and Catching Slough are all tributaries of the estuary and flow adjacent to the City limits in many places. Timbered hillsides rise abruptly east of the City on the east shores of the bay, providing an attractive backdrop from many vantage points in Coos Bay and the nearby City of North Bend.

Farther away from Coos Bay lies the Pacific Ocean together with all of the dunes, beaches, headlands and other visual resources associated with the ocean. North of the Bay Area are located the Tenmile Lakes, Eel Lake, and a number of smaller freshwater lakes.

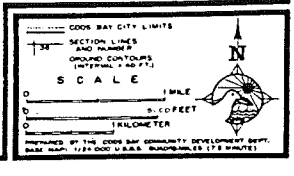


MAP 3.7-1

GROUND WATER RESOURCES

KEY:

- ▨ — ALLUVIUM AND TERRACE DEPOSITS
- ▨ — SEDIMENTARY ROCK, VOLCANIC FLOW ROCK, INTRUSIVE ROCK AND METAMORPHIC ROCK



SOURCE: OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

3.8
Agricultural Lands

Introduction

The Statewide Planning Goals and Guidelines are aimed toward preserving and maintaining agricultural lands for farm, forest, or open space uses. This protecting of commercially viable agricultural land must be achieved by distinct-separating rural, agricultural lands from urban or urbanizable land.

> Lands within lawfully established city boundaries shall be considered to be urban or urbanizable land, as defined in the LCDC Goals, OAR 660-10-060. The requirements of Goal #3 (agricultural lands) and those portions of Goal #14 (urbanization) and OAR 660-10-060 regarding conversion of agricultural or rural lands to urbanizable lands do not apply within city boundaries. (Kvarsten 1978)

Based upon this earlier LCDC opinion and a subsequent Goal 14 Urbanization amendment (September 5, 1980) intended to relieve cities of the burden of applying the Agricultural lands goals within incorporated areas, only those lands lying <u>outside</u> Coos Bay's incorporated limits and within the general planning area were analyzed for agricultural potential.

The general planning area was analyzed for appropriate agricultural uses by determining the soil's suitability. The U.S. Soil Conservation Service (SCS) has devised a classification system based upon soil types and characteristics and have diagnosed each soil's capabilities for land use. Agricultural uses are determined by such categories as soil class, subclass, and slope.

Agriculture may be defined as the cultivation of the soil for the purpose of harvesting crops, raising livestock or producing any other useful commodity.[1] It is essential that the planning process take steps to preserve and maintain agricultural lands for other reasons in addition to the role of agriculture in providing food for human consumption. First, agricultural lands exist in limited amounts because not all areas contain the proper soil, drainage and other capabilities necessary for cultivation. Second, a number of other uses compete with agriculture for those lands that are suited to cultivation. Finally, since conversion of land from other uses to agricultural use is often difficult, it is perhaps most sensible to identify and promote the retention of prime agricultural lands before they are converted to other uses. By identifying agricultural lands in and adjacent to Coos Bay the planning process can function so as to encourage development that will preserve these lands for use for which they are uniquely suited.

Soil Suitability Categories

Soil Class

The general soil class classifications that determine agriculture use are as follows:

1. Class I soils have few limitations that restrict their use.

2. Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

3. Class III soils have severe limitations that reduce the choice of plants and require special conservation practices or both.

4. Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both. (U.S. Soils Conservation Service n.d.)

Soil Subclasses

The SCS further qualifies soil capability classes by creating subclasses which are soil groups within single classes. This refinement enables more accurate interpretation of the soil's capability for agricultural use. These subclasses are designated by appending small-case letters to the Roman numeral soil class designations such as "IIw." Listed below are capability subclass definitions:

1. e--the main limitation is risk of erosion unless close-growing plant cover is maintained.

2. w--water in or on the soil interferes with plant growth or cultivation.

3. s--the soil is shallow, drouthy, or stony.

4. c--climate is too cold, dry, or cloudy for production of many crops.

Slope

1. 0-7% slope: Primary requirements needed for cultivation.

2. 7-12% slope: Secondary requirements for cultivation needed.

3. 12-20% slope: Maximum requirements for cultivation needed and recommended for forage use.

4. Over 20% slope: Not recommended for cultivation.

(Wilson 1978)

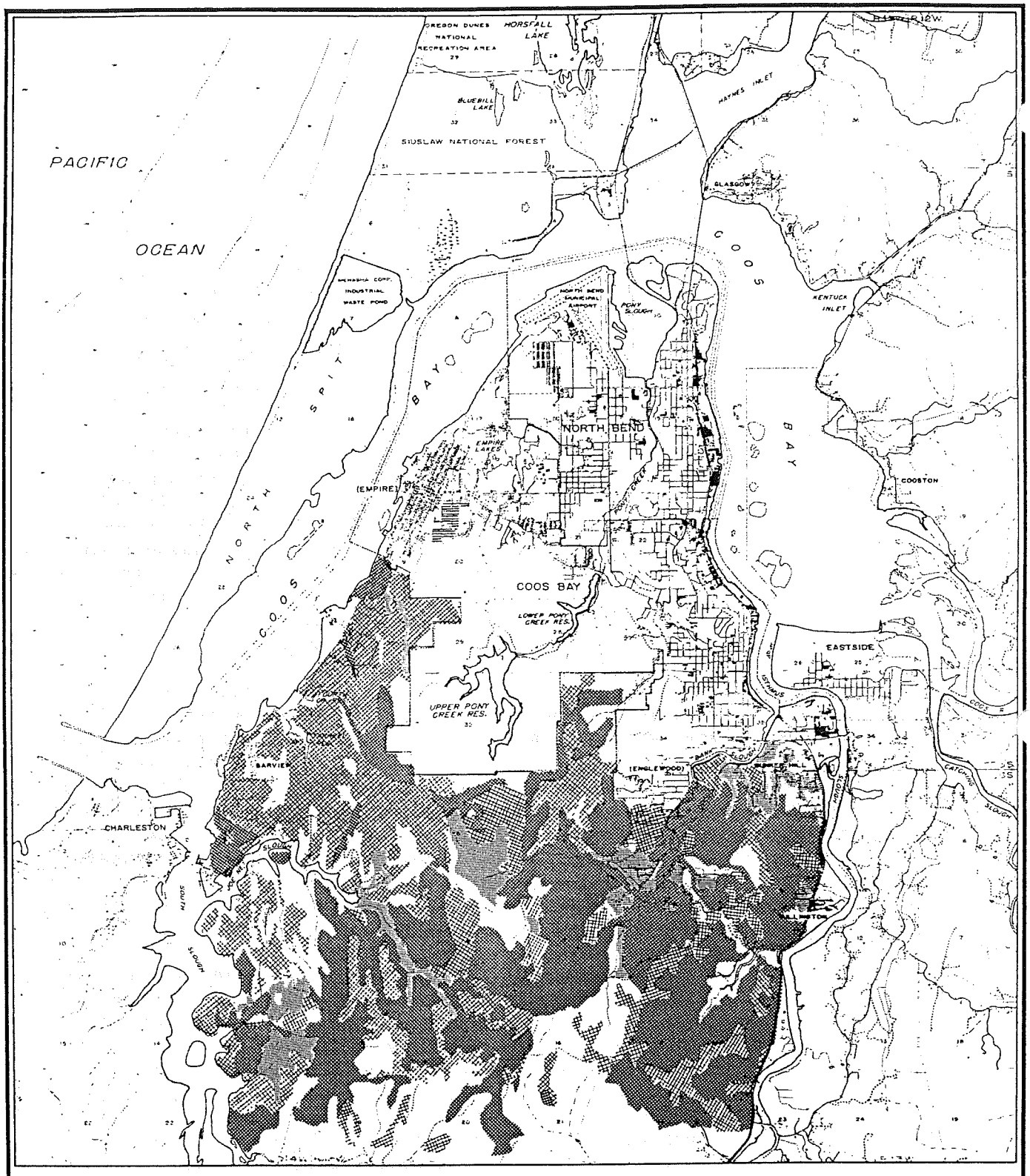
Agricultural Suitability, Coos Bay Planning Area

The agricultural lands inventory for the Coos Bay planning area was conducted by (1) utilizing soil class and subclass information extracted from the SCS data (SCS n.d.), (2) overlaying SCS slope data on the mapped Class I, II, III and IV soils (Map 3.8-1) and (3) verifying "paper conclusions" concerning agricultural suitability by field checking.

Map 3.8-1 illustrates the location and distribution of agricultural soils in the Coos Bay planning area with the exception of those lands surrounding the Eastside area. Class I soils do not occur in the planning area while Class IV soils are predominant. Class III soils, although distributed throughout the area, are located primarily in the northwestern portion of the study area in that section of the Coos Bay region known generally as Barview (south of Empire) and the Eastside area (soils are not shown for the Eastside area). Class II soils, which occur less frequently than either Class III or IV soils, are spatially arranged throughout the mid-portion of the study area. No attempt was made to quantify soil class amounts because recognition of associated physical constraints such as slope and terrain, discussed below, renders the land only marginally suitable for agricultural uses except in only several isolated cases.

As aforementioned, SCS agricultural soil classes (e.g., Class I, II, III, and IV) are qualified by the addition of subclasses to denote major limitations associated with each soil class. About 63% of the soil classes found in the Coos Bay planning area (i.e., classes II-IV) are limited because of their propensity for erosion damage (i.e., subclass "e"). (Map 3.8-2) This erosion potential is evidenced by superimposing slope data on the soil class map. (Map 3.3-2) Slopes in the planning area range from 5% to 30%, except for certain low-lying sections located near the eastern and western perimeters of the study area (Coalbank Slough and Barview). Excessive slope accounts, in part, for the lack of agricultural activity in the general planning area.

However, in those minor portions of the study area where slope is not the limiting factor, other subclass limitations become the major impediments to agricultural activities. In the Eastside and Barview areas as well as south of Empire where Class III soils are prevalent, the sandy soils of the Bandon and Bullard soil series constitute the major constraint. Notice in Map 3.8-2, that "s" (shallow, drouthy, stony) accompanies the majority of the soil class mapping unit designations. In the Coalbank Slough area, where limited farming activities such as "backyard" livestock and horse pasturage are evident, subclass designations of "c" (climatic limitations) and "w" (surface or high ground water factors) make up the majority of agricultural suitability constraints.



MAP 3.8-1

SOIL CHARACTERISTICS SUITABLE FOR AGRICULTURAL PRODUCTION

KEY:

CAPABILITY CLASS

- CLASS I
- CLASS II
- CLASS III
- CLASS IV

COOS BAY CITY LIMITS
SECTION LINES AND NUMBER
GROUND CONTOURS (INTERVAL = 40 FT.)
SCALE
1 MILE
5000 FEET
1 KILOMETER
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE

Eastside Area

Agricultural lands in an around Eastside are located along various sloughs, creeks, or the Coos Bay estuary itself. These lands are predominantly Class III, using the Soil Capability Classification System established by the U.S. Soil Conservation Service. The dominant limitation of these lands is wetness or frequent inundation from overflow.[2] Class III lands may be described as having moderate potential and suitability as agricultural land, and their value as an agricultural resource should be considered as opposed to other potential and impending uses. While these lands have a limited preservation priority, they have a fair production potential, if soil and/or water conditions are improved and competitive uses are controlled.[1]

Agricultural land in the Eastside area is typical of coastal agricultural land and varies in certain respects from that found in Oregon's inland valleys. Like those in the valleys, coastal agricultural lands generally contain rich topsoil and are quite fertile. However, drainage problems (intensified by tidal action) increased rainfall, and cooler temperatures induced by coastal fog and winds all contribute to a shorter growing season on the coast then is possible in the valleys. As a result, coastal agricultural lands tend to be better suited for grazing as opposed to production of crops.

Agricultural land in Eastside is limited to a relatively small area north of the Coos River Highway and west of the mouth of the Coos River. This land has been used for grazing of varying number of cattle in past years.

Nearly all of the agricultural land in the Eastside area lies outside the city limits. The valley drained by the Willanch Slough and shore areas near Crawford Point all contain considerable amounts of agricultural land. Another large concentration of agricultural land lies directly across Catching Slough from the main part of Eastside. This area extends inland along the south bank of the Coos River and is bordered on the west by Catching Slough. Finally, the peninsula formed by Isthmus and Catching Sloughs contains limited agricultural areas south of the Eastside city limits. These areas lie along the banks of Isthmus and Catching Sloughs, and along Ross Slough, which is a tributary of Catching Slough.

Conclusions

Summary conclusions to be drawn from the inventory and analysis of agricultural lands in the planning area are:

1. Class II, III, and IV soils comprise the soils in the Coos Bay planning area. Class I soils are not found in this area.

2. Erosion potential constitutes the predominate limitation to agricultural capability in that over 63% of all soil classes (Class II-IV) in the planning area are subject to erosion (subclass "e")

3. Slope data confirms the erosion potential of the soils in the planning area. Slopes of 5% to 30% are characteristics of the area.

4. Class II and Class III soils which occur in the Coalbank Slough and Barview areas, respectively, are limited mainly by subclasses "s," "c," and "w."

5. Agricultural activities do not exist in the planning area except for a relatively small area north of the Coos River Highway and west of the Coos River in addition to minimal "backyard" farming activities in the Coalbank Slough area.

Forest Lands

Introduction

Statewide Planning Goals and Guidelines require the conservation and protection of forest lands for commercial production or other forest uses.

> Lands suitable for forest uses shall be inventoried and designed as forest lands. Existing forest land uses shall be protected unless proposed changes are in conformance with the comprehensive plan. (LCDC 1977:Goal 4)

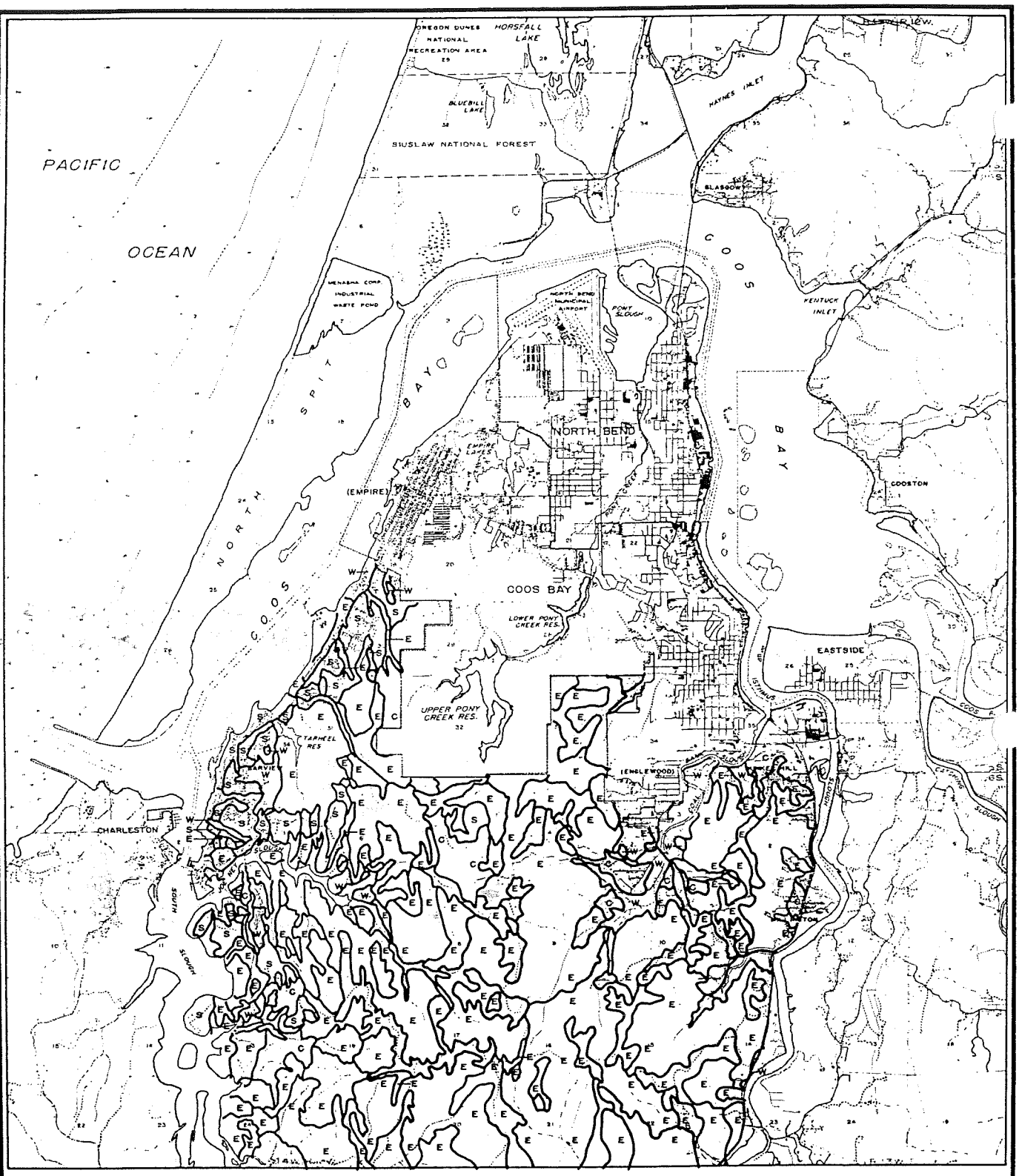
It has been suggested that mapping and determination of appropriate forest lands can be derived from the U.S. Forest Service manual, Field Instructions for Integrated Forest Survey and Timber Management Inventories - Oregon, Washington and California, 1974. While excerpts from this document provided by the Oregon Forestry Department office is helpful in conceptually clarifying site class and site index, it does not contain site specific class or inventory data. It, therefore, is necessary to utilize woodland suitability data taken from the Soil Conservation Service, Soils Interpretations for Oregon in order to determine forest site classes and subclasses for all lands within the incorporated and planning areas.

The Oregon Forest Practices Act defines forest land as land for which a primary use is the growing and harvesting of forest tree species. (Oregon Coastal Conservation and Development Commission, 1975) In addition to providing the natural resource base for Coos County's leading industry, forest lands are also valuable from the standpoint of soil stabilization and watershed protection, preservation of fish and wildlife habitats, creation of outdoor recreational opportunities, provision of livestock, grazing areas, rock and gravel production, maintenance of our water quality, and general enhancement of the quality of life. In the process of planning for the Eastside area, it is essential that nearby forest land be identified in order that future urban growth and development may occur with minimum adverse impact on this important natural resource.

Soil Suitability Categories

Soil Class

Forest or woodland suitability is based on a classification of soils (I-5) similar to the system described under Agricultural Lands. However, the ability of the soil to support forest production is determined by estimating the average total height of the dominant or codominant species after 100 years of growth. In the Oregon coastal region, this dominant species is Douglas fir. The five soil site classes and the respective anticipated tree heights in a stand of Douglas fir are found in Table 3.8-1.



MAP 3.8-2

SOIL CHARACTERISTICS LIMITING AGRICULTURAL PRODUCTION

KEY:

C-CLIMATE
E-EROSION
W-WATER
S-SHALLOW

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE

Table 3.8-1

WOODLAND PRODUCTIVITY FOR DOUGLAS FIR
PER SOIL SITE CLASS

Site Class	Douglas Fir Age	Tree Height
1	100	186 feet or more
2	100	156-185 feet
3	100	126-155 feet
4	100	96-125 feet
5	100	95 feet or less

Source: U.S. Soil Conservation Service

Subclass

Subclass designations are used to qualify these classes and indicate selected soil properties associated with moderate or severe hazards or limitations in woodland use or management. However, unlike agricultural soil subclasses, woodland suitability subclass designations are assigned priority ranking. That is to say "x" (stoniness or rockiness) is the most severe limitation while "o" represents slight or no limitations. The following subclass designations, which are listed in decreasing order of limiting woodland use or management, occur in the Coos Bay planning area:

1. "w" - excessive wetness
2. "d" - restricted rooting depth
3. "c" - clayey soils
4. "r" - relief or slope steepness
5. "o" - slight or no limitations

(SCS, n.d.)

Woodland Suitability, Coos Bay Planning Area

Map 3.8-3 illustrates the ariel distribution of forest classes in the planning area. Site class 2 lands are clearly predominate with lesser amounts of site class 3 lands present. Site class 4 soils are present in only limited amounts. According to the SCS woodland suitability data, no site class I soils, which are the most productive, are found in the planning area.

Of the five subclass categories found in the total planning area, subclass "r" (relief or slope steepness) occurs approximately 43% of the time; relief or slope steepness is considered to be a low priority limiting factor in woodland use or management. Excessive wetness (w), which constitutes a much more severe limiting factor than relief or slope steepness and follows "r" in frequency of occurrence in the planning area, modifies only 25% of the forest site classes in question. Therefore, the conclusion can be drawn that soils in the study area and particularly those in the unincorporated portion are clearly suitable for forest use with few severe limitations (in this case, the most severe being wetness). (Map 3.8-4)

Existing Forest Lands

The suitability of the soils in the planning area is substantially by past and present logging activities. Lumbering was a primary enterprise in the Coos Bay area as early as the mid 1850's with sawmills operating in numerous locations around the estuary. (Peterson and Powers 1952:425-437). Although the exact sources of timber to support these operations are not identified, a local source reports that the planning area was cut over for the first time in the late 1800's. The last relogging, according to this same source, occurred in the 1940's and 1950's (Eckfield 1978)

Logging within the unincorporated portion of the planning area is taking place at the present time on private land owned by Menasha Corporation, Coos Head Timber Company, and Georgia Pacific Corporation as marketable species are removed, cleared acreages are being replanted with Douglas fir. Such replanting programs represent major efforts on the parts of all three companies.

Minor forest landholdings also exist in the unincorporated portion of the planning area. The Coos Bay-North Bend Water Board recently acquired approximately 300 acres of privately-owned land for inclusion into the watershed property and is contemplating acquisition of additional private land which lies within the watershed boundary. Other private holdings are not in timber production and are not significant in terms of potential timber harvest and productivity.

With regard to forest lands which lie within the City's corporate boundaries, the most significant are those holding of the Coos Bay-North Bend Water Board. These holdings lie in the Pony Creek watershed and within the Board's jurisdiction. These lands are owned either singly by the City of Coos Bay or jointly by the cities of Coos Bay and North Bend. A timber harvest and management plan for those lands was prepared and adopted in August, 1977.

Briefly, the objectives of this long range plan are two-fold: (1) to operate the property as a municipal water supply by maximizing water production, maximizing water quality, and excluding access to the public; and, (2) to manage the property for income production through an intensive timber management program in harmony with the first objective. (Coos Bay-North Bend Water Board n.d.) Primary emphasis during the first 10-year period is on conversion of hardwood stands and brush fields to conifer stands.

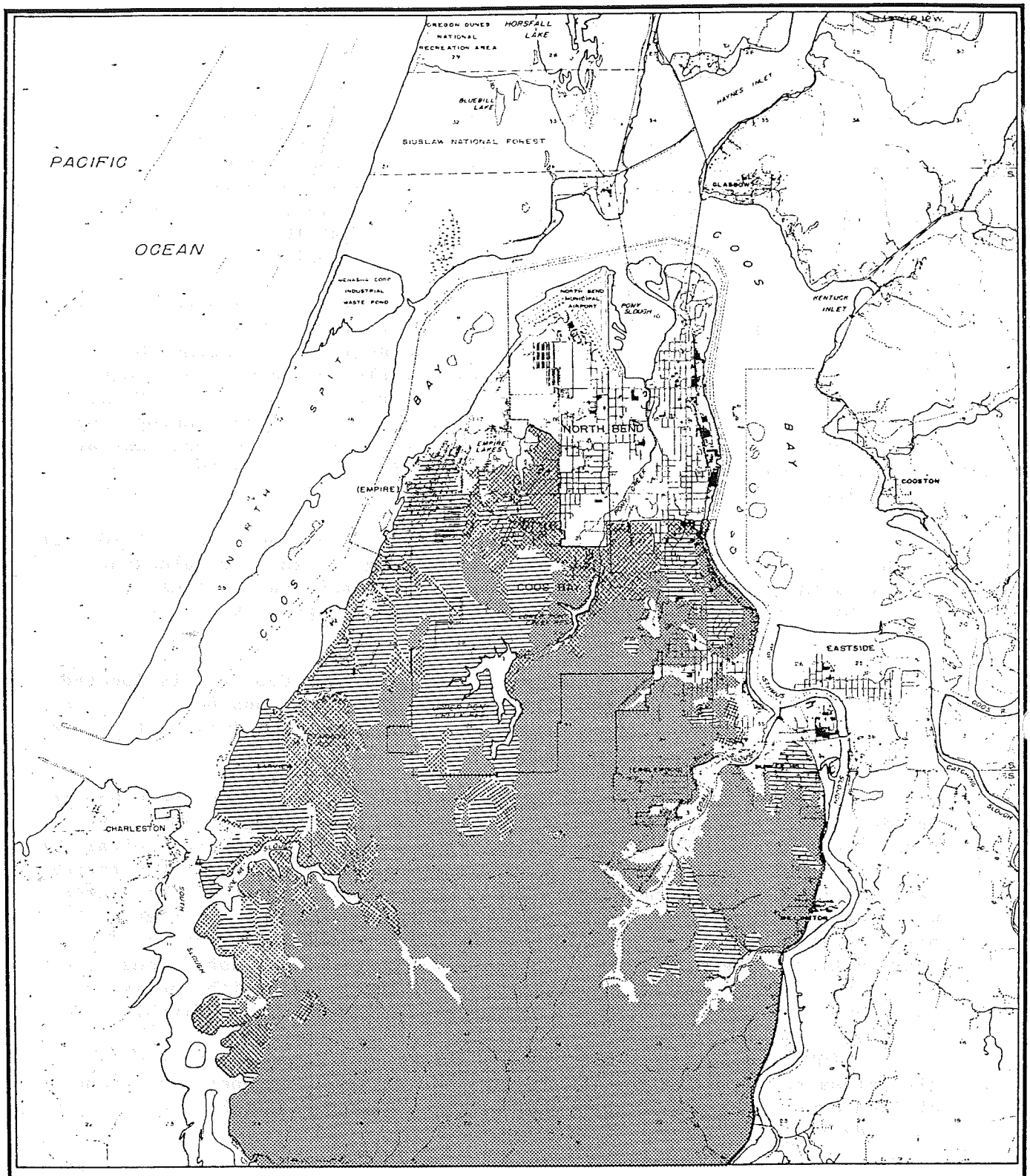
There are some relatively large forested lands within the Eastside area. One of these areas is bounded roughly by Ninth and Fourteenth Avenues, "F" Street and the south city limits. This area is characterized by rugged hillsides and development to date has been mostly on the northern edge of the area along short extension streets and courts running south from "F" street. Another large forested area extends south along a ridgeline running roughly east of the ends of Bay View and Cedar Drives. This area slopes eastward towards Catching Slough, and development is limited to less than a half dozen homes along Ross Slough Road.

There are fairly extensive forested areas south of the Eastside area on the penninsula formed by Isthmus and Catching Sloughs. Development in this area is limited primarily to homes located along and near Isthmus Heights Road, which runs east from Olive Barber Road and loops northward to the city limits at Fifteenth Avenue.

The largest concentration of forest land near Coos Bay is located outside the city limits inland from the east shores of Coos Bay. These areas rise abruptly from the flat shoreline and continue eastward as part of the foothills of the Coast Mountain Range.

Isolated pockets of undeveloped forest land remain in the urbanized portion of the planning area; these occur on or near Telegraph Hill, Mingus Park, Ocean Boulevard (near 19th Street), Radar Hill, Bay Area Hospital, and the Empire Lakes/Southwestern Oregon Community College area. Soils there are rated as site class 2 and 3 soils for the most part. Although these areas were logged off many years ago, only limited logging activities have taken place recently and these have been primarily for clearing prior to construction. The paucity and dispersion of hardwood and coniferous tree stands in these incorporated portions of the study area (with the exception of the Pony Creek watershed), makes commercial harvesting, unprofitable.

In order to assess the present and potential productivity of forest site class soils in the total Coos Bay planning area, a generalized tabulation of land ownerships and current forest types is useful. Table 3.8-2 summarizes these data.



MAP 3.8-3

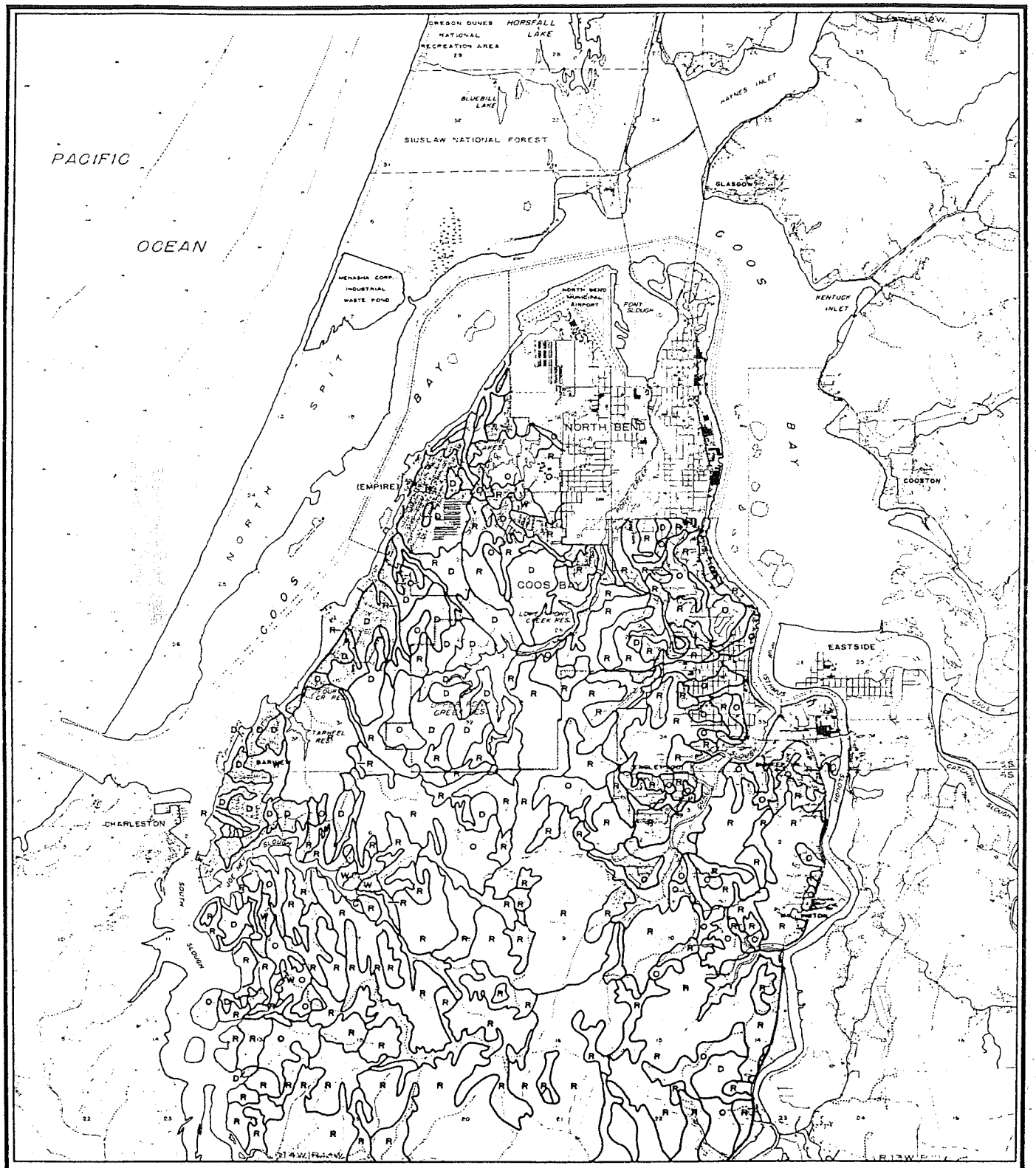
SOIL CHARACTERISTICS SUITABLE FOR FOREST PRODUCTION

KEY:

- SITE CLASS 2
- SITE CLASS 3
- SITE CLASS 4

COOS BAY CITY LIMITS
SECTION LINES AND NUMBER
GROUND CONTOURS (INTERVAL = 100 FT.)
SCALE
1 MILE
5000 FEET
1 KILOMETER
N

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE



MAP 3.8-4

SOIL CHARACTERISTICS LIMITING FOREST PRODUCTION

KEY:

CAPABILITY SUBCLASS

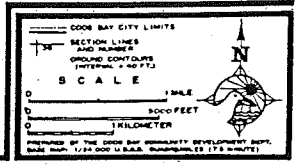
R—RELIEF OR SLOPE STEEPNESS

D—RESTRICTED ROOTING DEPTH

O—SLIGHT OR NO LIMITATIONS

W—EXCESSIVE WETNESS

C—CLAYEY SOILS



SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE

Table 3.8-2

TENURE OF FOREST LANDS IN COOS BAY PLANNING AREA

Coos Bay Planning Area 1978 Forest Land Industry

Ownership	Acreage[a]	Forest Type
Menasha[b]	6200	Conifer, immature and mature
Menasha[b]	3750	Hardwood, immature and mature
Menasha[b]	920	Misc. (non-forest, nonproductive, or scarification)
Coos Head Timber	1480	Conifer and some alder
Georgia Pacific	975	Conifer and some alder
Coos Bay-North Bend Water Board[c]	1635	Conifer and some alder

[a]Approximate

[b]January 1977 data

[c]January 1976 data

SOURCES: Menasha Corporation, Coos Head Timber Company, Georgia Pacific Corporation, and Coos Bay-North Bend Water Board

Conclusions

The following summary conclusions can be made from the forest land inventory data and subsequent analysis of these data:

1. No site class I soils are found in either the unincorporated or incorporated portions of the Coos Bay planning area.

2. Site class 2 soils predominate in the unincorporated portion of the planning area. Site class 4 soils occur with the second highest frequency primarily in the Barview area; site class 3 is the least frequent and occurs exclusively in the Barview area.

3. Site class 2 and 3 soils are approximately equal in frequency of occurrence in the incorporated portion of the study area; site class 3 soils predominate in the western half of the study area while site class 2 soils are more prevalent in the eastern half.

4. Subclass "r" (relief or slope steepness) is affixed to 43% of the site classes; this subclass is considered to be a low priority limiting factor in woodland use or management. Excessive wetness ("w") which is a much more severe limiting factor than "r," occurs in 25% of the site class units. Consequently, soils in the planning area, and especially those lying within the unincorporated portion, have few serious limitations to their suitability for woodland use.

5. Harvest and reforestation programs currently are being implemented by the four major landowners in the planning area. Menasha Corporation, Georgia Pacific Corporation, and Coos Head Timber Company, in the unincorporated portion of the planning area, maintain ongoing logging and replanting programs. The Coos Bay-North Bend Water Board is now operating a recently adopted timber harvest and reforestation program in the Pony Creek watershed within the city's corporate boundaries.

6. Other minor tree stands occur in the urbanized incorporated portion of the planning area but are not of sufficient quantity of quality to be commercially harvested.

3.9
Mineral and Aggregate Resources

Mineral and aggregate (sand and gravel) resource areas in the Coos Bay region are identified in Map 4.3-8. Mining of medium to low grade coal in the Coos Bay Basin dates back to 1854 when coal was discovered in the coal-bearing Coaledo formation near Empire. Production peaked in 1904 by which time some 111,500 tons of coal had been mined from the basin. (Baldwin et al. 1973:73-74). This production tonnage, however, is for the total basin and includes many mines outside the Coos Bay planning area. Discovery of oil in California and advances in petroleum technology caused production of Coos Bay coal to slump dramatically. Demand created during World War II reactivated the mines, but only for a short period of time.

Estimates of the remaining reserves in the Coos Bay Coal Basin range from 51.36 million tons to 3.7 million tons. (Baldwin et al. 1973:73) An earlier publication of the Oregon Department of Geology and Mineral Industries reports remaining reserves of usable coal in the basin to be about 60 million tons. (Beaulieu and Hughes 1975:50-52) But again, these estimates are for the total basin which includes the Beaver Slough and Riverton regions located some distance south of the planning area where twenty-two mines were in production.

No estimates have been established for coal reserves in just the Coos Bay planning area. Although oil price increases have ignited new interest in the Coos Bay basin coal as a recoverable energy source, it is the opinion of a local source that the quantity and quality of remaining coal reserves are so marginal as to be economically unfeasible for recovery. (Sprouse 1978) The Libby (Newport) Mine, located to the south and west of Englewood, was one of the more active and productive mines during the period 1856-1922; however, there are no plans to reopen it. (Elfving 1978) It seems reasonable, therefore, to assume that until new technology for recovery of marginal reserves in the Coos Bay planning area will not be of commercial significance. Furthermore, any advances in the economic recovery might be offset by meeting federal and state air and water pollution standards.

The mineral resource map of the Coos Bay planning area, Map 4.3-8, denotes only one aggregate source, a sand pit along Ocean Boulevard near Empire. The pit has not been in operation for some time, and other more readily accessible and economically recoverable sand sources exist in the Coos Bay region. (JBS Construction 1978)

The inventory of mineral and aggregate resources indicates the following conclusions:

1. Remaining coal deposits may be economically and feasibly removed given present technology, although interest is focused on resources outside of the planning area.

2. There are no significant sand or gravel (aggregate) resources; such deposits that do exist are more suitable for urban development.

City of Coos Bay
Comprehensive Plan 2000

Volume II – Plan Inventories

ECOLOGY

CHAPTER 4

4.1
Air Quality

Introduction

The Oregon Department of Environmental Quality (DEQ) is the agency responsible for monitoring air quality and enforcing both federal and state air quality standards throughout Oregon. The agency's Air Quality Surveillance Network collects data for a number of pollutants as well as other pertinent meteorological information. Of the five major pollutants covered in the standards (total suspended particulates, sulfur dioxide, carbon monoxide, photo-chemical oxidants, and oxides of nitrogen and hydrocarbon), only total suspended particulates (TSP) is sampled and monitored in the Coos Bay planning area according to the DEQ Air Quality Control Division. The low level of emissions for the remaining four pollutants and the natural ventilation provided by local wind characteristics eliminate the need for more comprehensive sampling programs. (John Kowalczyk 1978)

Impact

Table 4.1-1 summarizes total suspended particulates (TSP) standards of measurement. (Oregon Department of Environmental Quality 1976a:9-13) The federal standards are divided into primary standards which are intended to protect public health, and secondary standards intended to protect the public welfare from effects such as limited visibility, soiling, nuisance, and other forms of damage. The objectives of the Oregon standards is to meet the more stringent of the federal standards.

Suspended particulates are solid and liquid particles of soot, dust, aerosals and fumes of microscopic size, and the sources of which are combustion, car exhausts, industrial processes, fugitive dust, field and slash burning, and natural agents, such as ocean spray and wind-created dust. Particulate matter aggravates lung and heart disease as well as causing damage to property.

Affected Planning Area

Sampling for total suspended particulates (TSP) is accomplished by use of high-volume sampler at the sampling station located at the old Coos Bay City Hall (4th and Central). A summary of TSP sampling results is presented in Table 4.1-2 (Oregon, Department of Environmental Quality 1977:App.1A) Figure 4.1-1 illustrates these data graphically.

Table 4.1-1

Coos Bay Planning Area
Air Quality Standards

Pollutant	Averaging Time	Federal Standards Primary (Health)	Federal Standards Secondary (Welfare)	State of Oregon Standards
Total Suspended Particulates (TSP)	Annual Geometric Mean[b]	75 ug/m^3[a]	60ug/m^3	60 ug/m^3
	24 hours	260 ug/m^3	150 ug/m^3	150 ug/m^3[c]
	Monthly	---	---	100 ug/m^3[d]

[a]Micrograms per cubic meter

[b]Geometric Mean: nth root of the product in an array of numbers.

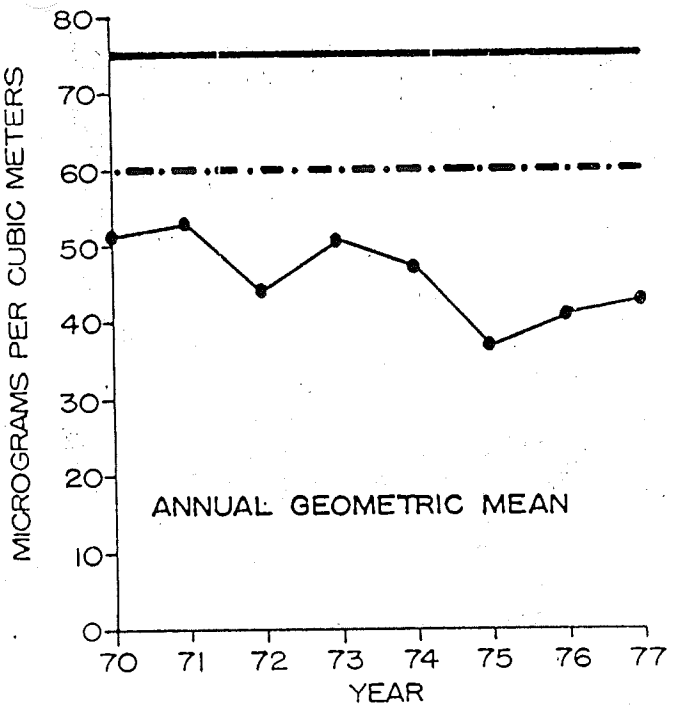
[c]Not to be exceeded more than once per year.

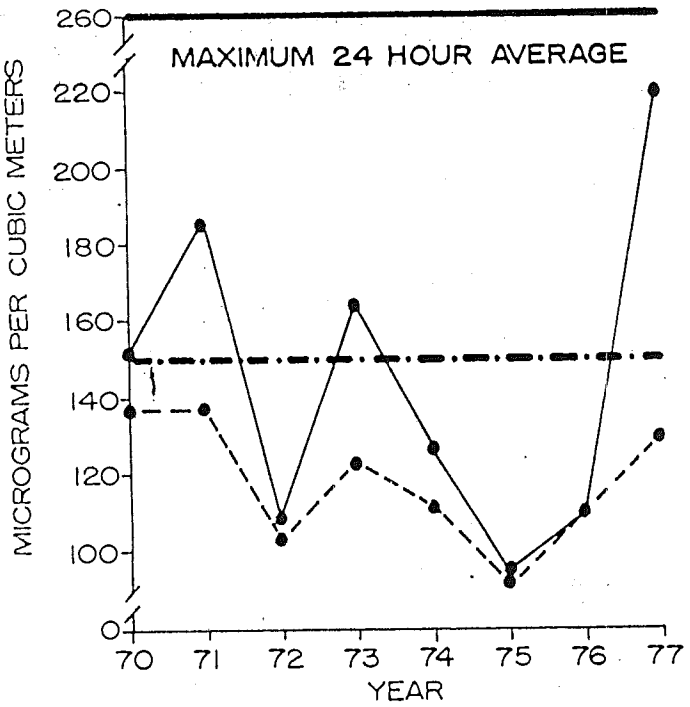
[d]Twenty-four hour average not more than 15% of the time.

Referring to Table 4.1-1 on air quality standards, it should be noted that on no occasion did the suspended particulate matter exceed the federal or state annual geometric mean standards. Furthermore, on only four days during the eight year sampling period were the 24-hour federal secondary (150 ug/m^3 or state standards (150 ug/m^3) exceeded. Thus, despite the numerous sources of particulate matter in the planning area, ambient air quality meets federal and state standards.

Major sources of particulates in the Coos Bay area, according to the local DEQ office, are mill hogged fuel boilers, open slash and backyard burning, unpaved roads, and building demolition. (Davidson 1978) Site specific sources of suspended particulates within or adjacent to the Coos Bay planning area and under variance permits with compliance schedules include the following:

1. Cape Arago Lumber Company
2. Coos Head Timber Company
3. Georgia-Pacific Corporation
4. Grunwaldt Wood Products
5. Menasha Corporation
6. Weyerhaeuser Company





TOTAL SUSPENDED PARTICULATE ANNUAL GEOMETRIC MEAN
SAMPLE ——
STANDARDS: PRIMARY FEDERAL (75 MICROGRAMS PER CUBIC METERS) ——
SECONDARY FEDERAL (60 $\mu G/M^3$) – – – –
STATE OF OREGON (60 $\mu G/M^3$) • • • • •

SAMPLE: TOTAL SUSPENDED PARTICULATE MAXIMUM 24 HOUR AVERAGE ——
TOTAL SUSPENDED PARTICULATE SECOND HIGHEST 24 HOUR AVERAGE – – – – – –
STANDARDS: PRIMARY FEDERAL (260 $\mu G/M^3$) ——
SECONDARY FEDERAL (150 $\mu G/M^3$) – – – –
STATE OF OREGON (150 $\mu G/M^3$) *• • • • •

*NOT TO BE EXCEEDED MORE THAN ONCE PER YEAR AS DETERMINED BY THE SECOND HIGHEST VALUE RECORDED IN THE SAME CALENDAR YEAR.

FIGURE 4.1-1

TOTAL SUSPENDED PARTICULATES

SOURCE: OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

According to the local DEQ office, all sources are meeting their compliance schedules with the exception of Weyerhaeuser which is appealing the DEQ directive. (Davidson 1978)

Table 4.1-2

Coos Bay Planning Area
Total Suspended Particulates (ug/m^3)[a]

Year	Number of Samples	Days Greater Than 150	Days Greater Than 260	Ambient Air Quality[b] 24 Hour Averages: Annual Geometric Mean	Maximum	Second Highest
1970	89	1	0	51.7	152	137
1971	49	1	0	53.6	185	137
1972	81	0	0	44.9	108	103
1973	56	1	0	50.4	164	123
1974	52	0	0	47.9	127	111
1975	59	0	0	37.1	95	93
1976	54	0	0	40.6	110	110
1977	56	1	0	43.0	220	130

[a]Micrograms per cubic meter.

[b]A measure of the condition by the air in a specific locale.

Conclusion

Air pollution is not a current problem in the Coos Bay area. Emissions present in the area are controlled by state regulations and have not registered significantly on the monitoring equipment.

Air quality in and around Eastside is generally good, and although there are some sources of air pollution, there does not appear to be any serious problems. Automobile exhausts and mill smoke and dust are probably the most readily identifiable pollutants. However, coastal winds in the area tend to disperse most of these discharges. Also, pollution from wood products manufacturing plants has been substantially reduced through the cooperation of the industry in following guidelines established by the Oregon Department of Environmental Quality. Wigwam burners have been dismantled, and the waste products formerly burned in them are now disposed of in non-polluting ways.

Unfortunately, the same prevailing winds that help disperse most of the air pollution in the Bay Area occasionally create pollution for some residents in Eastside. Winds from the northwest frequently blow dust from the fill areas into the residential areas on the west side of town during the dry weather. The Port of Coos Bay, which owns many of these fill areas intends to plant grass there so as to stabilize the loose fill material and reduce the dust factor during windy weather.

4.2
Land Quality

Introduction

Land quality can be impaired through the improper disposition of human wastes through solid waste disposal in landfills and through septic system treatment of sanitary wastes. Both practices exist within or near the general planning area, and, therefore, must be controlled within certain parameters. These parameters involve geological land characteristics and state-authorized disposal techniques.

Septic Sewage-Systems

Site-specific problem area:

Septic system feasibility is determined by the soil's capacity to absorb and purify effluent. The U.S. Soil Conservation Service rates soil capabilities as slight, moderate, or severe depending upon "permeability, depth to a seasonal water table, flooding, slope, depth to bedrock or hardpan, stoniness, and rockiness." (Oregon Soil Conservation Service n.d.:3.1)

An analysis of the soils ratings reveal that much of the area within the planning unit is severely limited for use as septic tank absorption fields. The soils of the Coos Bay Templeton, Coos Bay, and Dement series are silt loam often over silty clay loam soils characterized by slow permeability and severe slopes (7-30%). The Coos Bay commercial district and the undeveloped area south of the city limits are categorized as severe (Map 4.2-1).

The flat shoreline terraces in the Empire and Barview areas are rated moderate to slight due to the Bullards and Bandon soil series present there. These soils generally are sandy loam with slopes ranging from 0-7% (Map 4.2-1 and 4.2-2). Several areas also in the Bandon and Bullards soil series are not conducive to septic tank absorption due to slope features. These are ranked severe where slopes exceed 7% and, in the case of the Bandon series, where the soils overlay impermeable, cemented pan; thereby reducing percolation. Such areas are the western and southern slopes around the upper and lower Pony Creek reservoirs, the entire area around the Tarheel Reservoir, and various sloping areas north of the Coos Bay business district, such as Telegraph Hill.

Current Standards:

The City of Coos Bay has accepted a general policy not to promote septic limits because of their unacceptable failure rates and resulting effects on land quality. However, septic systems do exist in unsewered areas within the city limits, and new septic systems are allowed subject to DEQ regulations and the provisions of Coos Bay Ordinance 2633 as amended by Ordinance 2659, when the dwelling is beyond 50 feet of an existing sewer line. When a new septic system is necessary, final approval and quality control are made by the Department of Environmental Quality. Nevertheless, issuance of DEQ permits requires the property owner to waive any rights to object to future sewer hook-ups. (Appendix C)

According to the Coos Bay Public Works Director, the number of septic systems are being reduced as funds permit to extend sewer lines and as requests are made by the property owners (Schwarm 1978b).

Solid Waste

The disposal of solid waste has been under scrutiny by Coos County since 1975. In December of that year the Coos-Curry Solid Waste Planning Council published the Solid Waste Management Plan, 1975-1995 which gathered contemporary and projected data on waste disposition in both counties. Management procedures were also discussed. In 1976, the federal government approved the Resource Conservation and Recovery Act (PL 94-580) which designated Coos County as a solid waste planning area within the state and as the local planning and implementing agency. Consequently, Coos County set out to establish its own plan which was adopted in December 1978. This plan cites existing disposal conditions and proposes an interim program for 1978-1984, and a final program for 1984-1994. (Coos County 1978) The 1978 plan also adopts and incorporates any provisions of the joint Coos-Curry Solid Waste Management Program, 1975-1995 not in conflict with its stipulations.

The City of Coos Bay recognizes that the county is charged by law with responsibility for solid waste management but will address the general findings of the adopted plan as it may relate to areas surrounding the corporate limits and possible urban growth boundary and related aspects, such as transportation and costs.

Federal standards require that all sites meet criteria as a sanitary landfill or instead be closed within five years after the time the landfill is classified as an open dump. All open dumps are prohibited beyond this five-year period.

These criteria relating to sanitary landfills are:

1. Location a minimum 1/4 mile from nearest existing community.
2. Leachate minimized and/or collected.
3. Disposal of waste above high groundwater table.
4. Adequate drainage control away from site.
5. Flood control by erection of dikes.
6. Soil cover minimizing percolation.

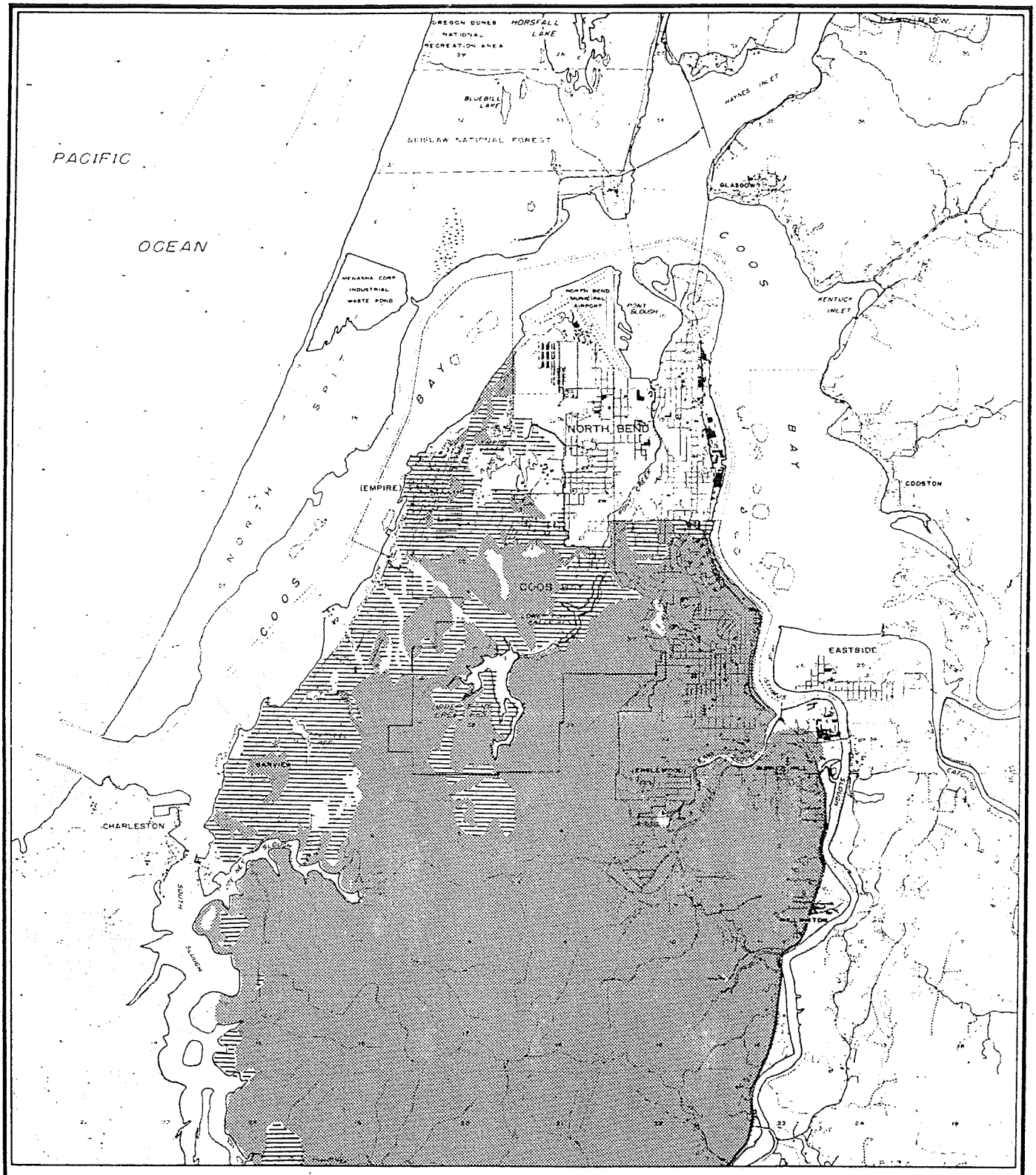
All sites classified as sanitary landfills, must compact waste and cover it with a soil cover daily. Most sites now operating are modified landfills where the compaction and soil cover process occurs about twice a week.

Present Sites.

The principal solid waste site presently serving the Coos Bay area is the Joe Ney site located approximately two miles southeast of Charleston. It is in the S1/2 of the NW1/4 of Section 18, T. 26 S., R. 13 W. This landfill is owned and operated by the county as a trench modified landfill; but is slated to be closed in two years. Requirements for frequent soil cover (criterion for sanitary landfill) and monitoring groundwater quality is too costly to the county (Coos County 1978:4). Further expansion of the site would also be costly to meet requirements of slope stability and clean drainage. In addition, there are general environmental hazards associated with the site location (siltation of Joe Ney and Days Creeks, among others).

The other closest site is the Bandon disposal site operated by Coos County. It is located approximately six and one-half miles north-northeast of Bandon and one-half mile east of the Seven Devils Road in the W1/2 of the NW 1/4 of Section 27, T. 27 S., R. 14 W. It sues a volume reduction unit to burn municipal solid waste and a pit incinerator to burn non-putrescible (non-decomposable) bulky material. Residues from these incinerators are disposed in a trench (modified landfill). This site has fewer economic and environmental disadvantages and will continue to operate as the regional diposal site.

A disposal landfill exists at the Shinglehouse Slough site located two and one-half miles south of downtown Coos Bay approximately one-half mile west of Highway 101 in the W1/2 of the NW 1/4 of Section 14 and the E1/2 of the NE 1/4 of Section 15, T. 26 S., R. 13 W. This operation was closed August 31, 1978 due to the expense needed to upgrade disposal practices.



MAP 4.2-1

SEPTIC TANK ABSORPTION FIELD CAPABILITY

KEY:

- SLIGHT
- MODERATE
- SEVERE

COOS BAY CITY LIMITS

SECTION LINES AND NUMBERS

GROUND CONTOURS (INTERVAL = 40 FT.)

SCALE

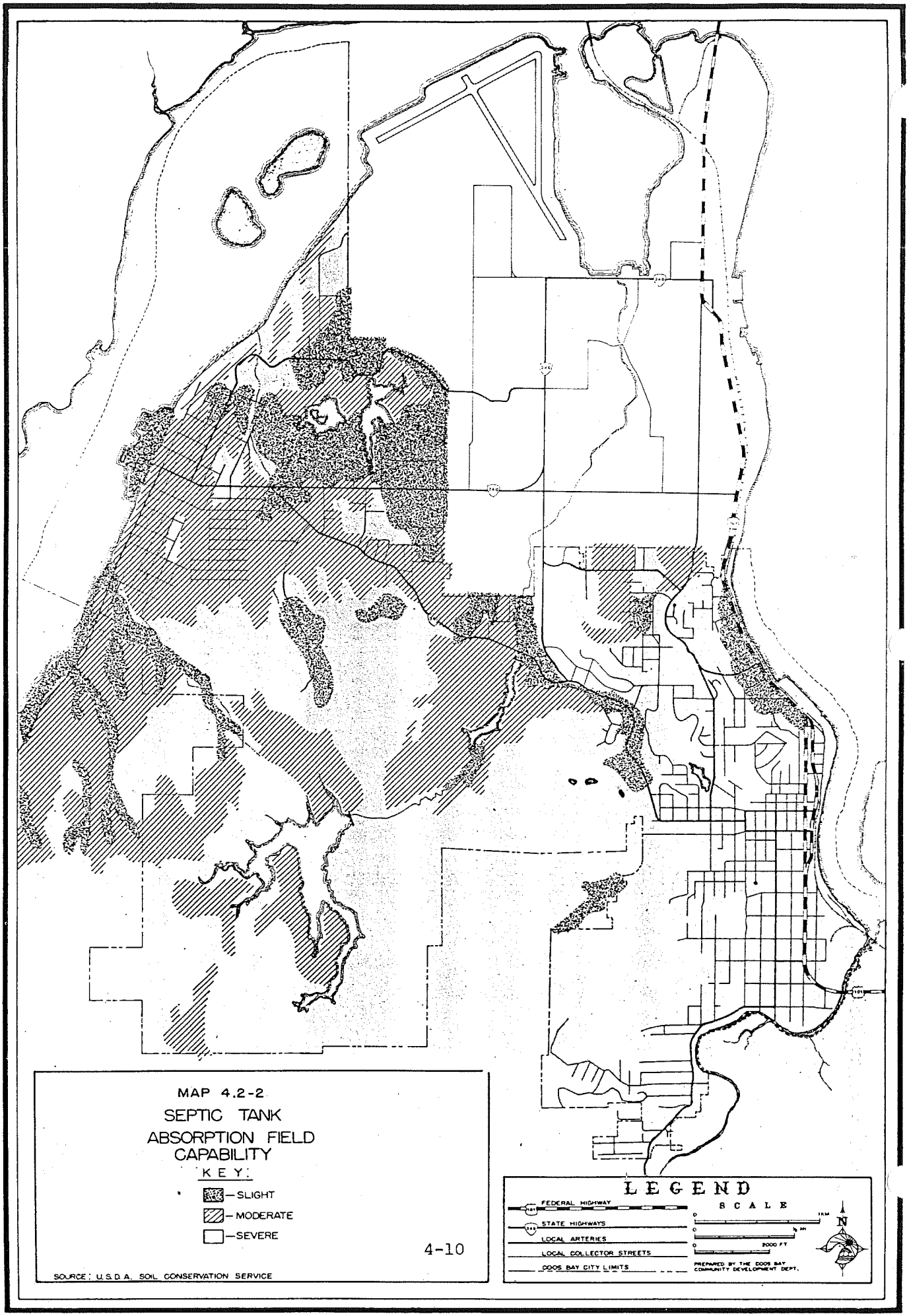
1 MILE

5140 FEET

1 KILOMETER

PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT. BASE MAPS: 1/24,000 U.S.G.S. QUADRANGLES (7½ MINUTE)

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 4.2-2
SEPTIC TANK
ABSORPTION FIELD
CAPABILITY
KEY:
—SLIGHT
—MODERATE
—SEVERE
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
1KM
2000 FT
N
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

A privately-owned site is located just beyond the southeastern city limits west of Idaho Drive in the Englewood neighborhood in the county. This site is now operating under conditional permit from the DEQ and is sanctioned by the County. According to the City's Public Works Department, this is the only site now accepting the disposal of land-clearing and building material waste. Continuation of the site is under investigation by the DEQ due to complaints by area residents about access to the site over Pennsylvania Avenue. Trucks destined to the site must travel through this residential area.

Interim Program.

The county is aiming for one regional waste disposal site served by private collestion franchises. Volume reduction units will be used until and if energy recovery becomes economically and technically feasible, or until ash residue disposal is prohibited due to its heavy metal content (Coos County 1978:14). The county plans to continue the Bandon site and improve its capabilities. The Joe Ney site will remain operable until the county approves an alternative within its remaining two year lifetime (Coos County 1978:10). The county has adopted a franchise and nuisance abatement ordinance to effectively handle waste collection and disposal. The county has also accepted the policy of investigating and promoting resource recovery to enhance land quality, energy conservation, and recycling.

Final Program.

The county is looking toward resource and energy recovery as a long-range disposal plan, also to select a long-term disposal facility for waste not used by resource recovery techniques. A hazardous waste collection facility is also planned to minimize transportation costs and maximize convenience. The only approved hazardous waste disposal site is in Arlington, Oregon.

Conclusion.

The county solid waste management plan explained above has certain ramifications for the City of Coos Bay and surrounding unincorporated areas. Although, solid waste disposal management is under the jurisdiction of the county, the city has an interest in future site selection. The city, therefore, would express a need for a site which:

1. Has an adequate location for convenience, transportation and fuel costs;

> Use of the Bandon Disposal Site as a regional landfill [sic] will increase waste transportation [sic] costs for many County residents (Coos Bay-North Bend, Myrtle Point, Powers, and Remote). The increased transportation costs may be offset somewhat by operating one regional disposal site instead of several small sites. (Coos County 1978:4)

2. Is environmentally safe.

3. Is adequate for disposal of land clearing and building materials (stumps, brush, gravel, etc.)

4. Within the Eastside area, probably the most significant sources of adverse impact on land quality has been the large-scale clearance of land in preparation for new development. In some cases, land clearance has involved complete removal of trees and other vegetative covering. Given the hilly nature of much of the land in Eastside, plus the relatively wet weather which occurs during much of the year, wholesale land clearance tends to increase the potential for slides and erosion. On the other hand, selective clearance of construction sites may serve to enhance the visual appeal of the completed project, and will benefit the land by retaining at least part of its natural vegetation.

4.3
Areas Subject to Natural Disasters and Hazards

Introduction

Land development or human activities in areas known to be subject to natural disasters and hazards can result in loss of life and property. Wise land use planning accounts for such natural occurrences by inventorying hazardous areas. These potential disasters may be due to weather conditions or to geological and topographical characteristics of the land. When disasters occur naturally, like flooding, earthquakes, and landslides, man can only plan to minimize the resulting impacts and live cautiously within these natural parameters. Yet, where soil characteristics and topography are known to be potentially hazardous, man can create a distinct problem by imprudent development and construction practices. Therefore, he must know where such conditions exist.

Flooding

Flooding along the Oregon coast is a significant hazard with the greatest potential for causing damage to life and property. The flooding in this area stems from three causes: stream flooding, ocean flooding, and tsunamis.

Stream Flooding

Cause

Stream flooding occurs when increased water flows cause the water to rise over its normal channel and spill onto adjacent lands. In this area, stream flooding is caused by heavy seasonal rains complicated by accelerated runoff over impermeable soils (e.g., Coos Bay, Coos Bay Templeton, and Dement series) and down steep sloping terrain.

General Affected Area

The U.S. Department of Housing and Urban Development, Federal Insurance Administration considers the following areas critical for stream flooding. (City of Coos Bay, Oregon, Flood Hazard Boundary Map 1977) (Map 4.3-1, 4.3-2.)

1. Blossom Gulch extending from the Pony Creek watershed to the Coos Bay urban core.

2. The area surrounding the Pony Creek reservoir and Pony Creek.

3. The area bordering Empire Lakes extending down Chickses Creek.

Ocean Flooding

Cause

Ocean flooding results from the combination of high tides and periodic storm surges. It usually occurs here during the winter months with their attendance high precipitation and during high spring tides when accompanied by seasonal storms. Such a combination may increase high tides up to 14.5 feet above the mean sea level of 4.1 feet.

General Affected Area

In the planning unit, low lying, unprotected areas along the bay are susceptible to ocean flooding; particularly:

1. Empire/Barview districts.

2. U.S. Highway 101 north of the downtown core to the city limits.

3. City urban core.

4. Low lying areas along Isthmus Coalbank and Catching Sloughs.

Tsunamis

Cause

Tsunamis are extremely high waves generated by the seismic vibrations of an earthquake occurring at sea (usually greater than 7.5 on the Richter scale). The height of a tsunami is determined by the combination of several factors. First of these is the magnitude of the earthquake. Second, the waves generated by the shock pile upon themselves and heighten as they approach the shallower sea depths near land. The height created by all these factors may diminish however, over the distance the waves travel from the epicenter of the earthquake.

When these waves reach land, continental elevation determines the run-up, which is how high and far the waves will travel over the land. The run-up factor is most critical in assessing potential damage. Run-up may vary from 1 to 2 times the tsunamis height and is measured by combining the wave height and the prevailing tide lever, e.g., a tsunami of 9 feet and a tide of 7 feet will cause a run-up to reach an elevation of 16 feet above mean lower low water. Along the coastline the vertical cliffs will absorb much of the wave impact and the run-up at these headlands is calculated as the height of the tsunami as it breaks nearshore. Of course, the run-up at the nearby ocean beaches and coves will be greater. As the flooding continues through the estuary, the run-up, measured relative to wave height in the estuary rather than along the coast will have a greater or lesser effect depending upon the area's distance from the coastline. This distance effectively dissipates the height of the waves but the impact on land may be disproportionately higher due to the extensive low-lying areas surrounding the estuaries.

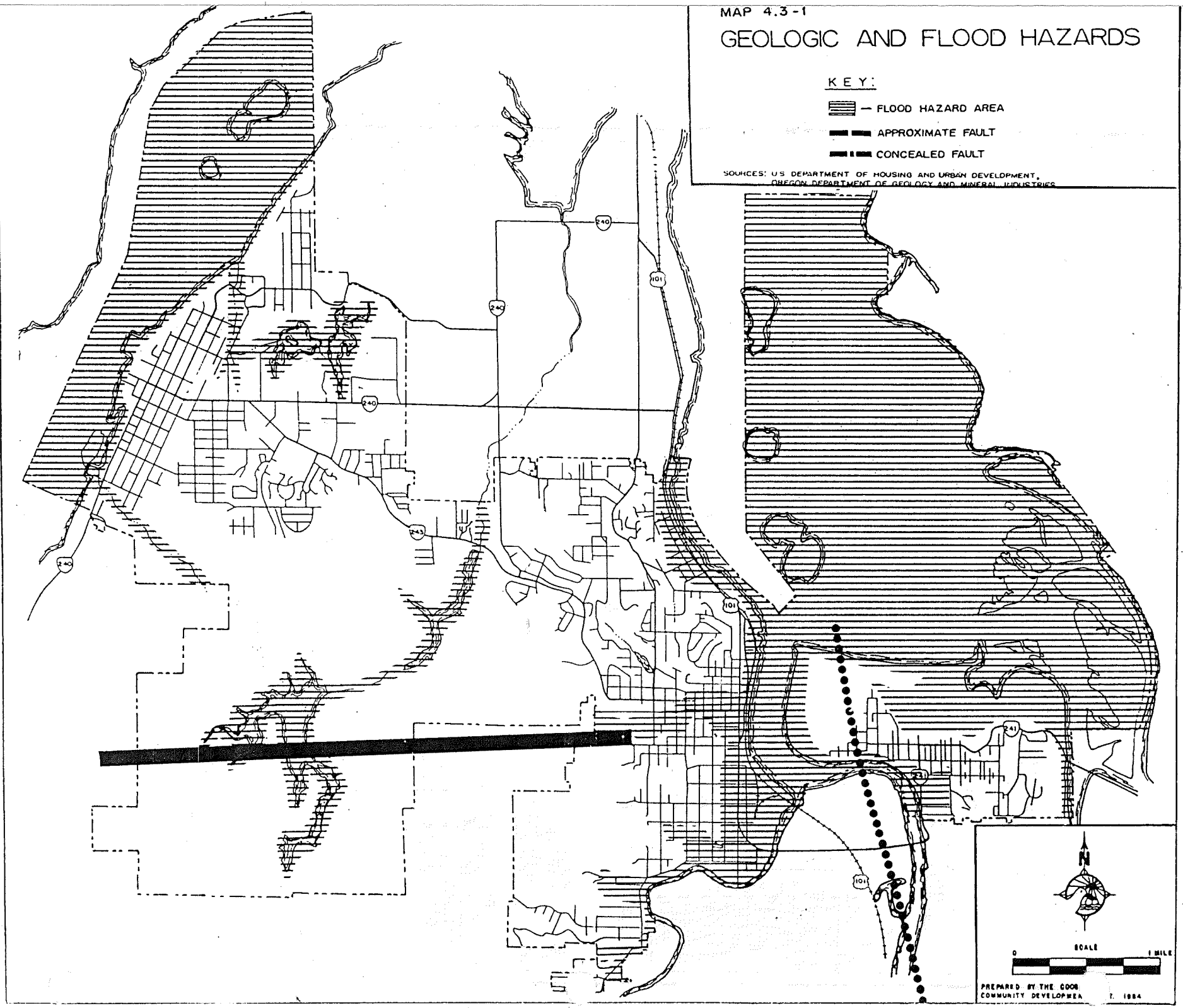
MAP 4.3-1

GEOLOGIC AND FLOOD HAZARDS

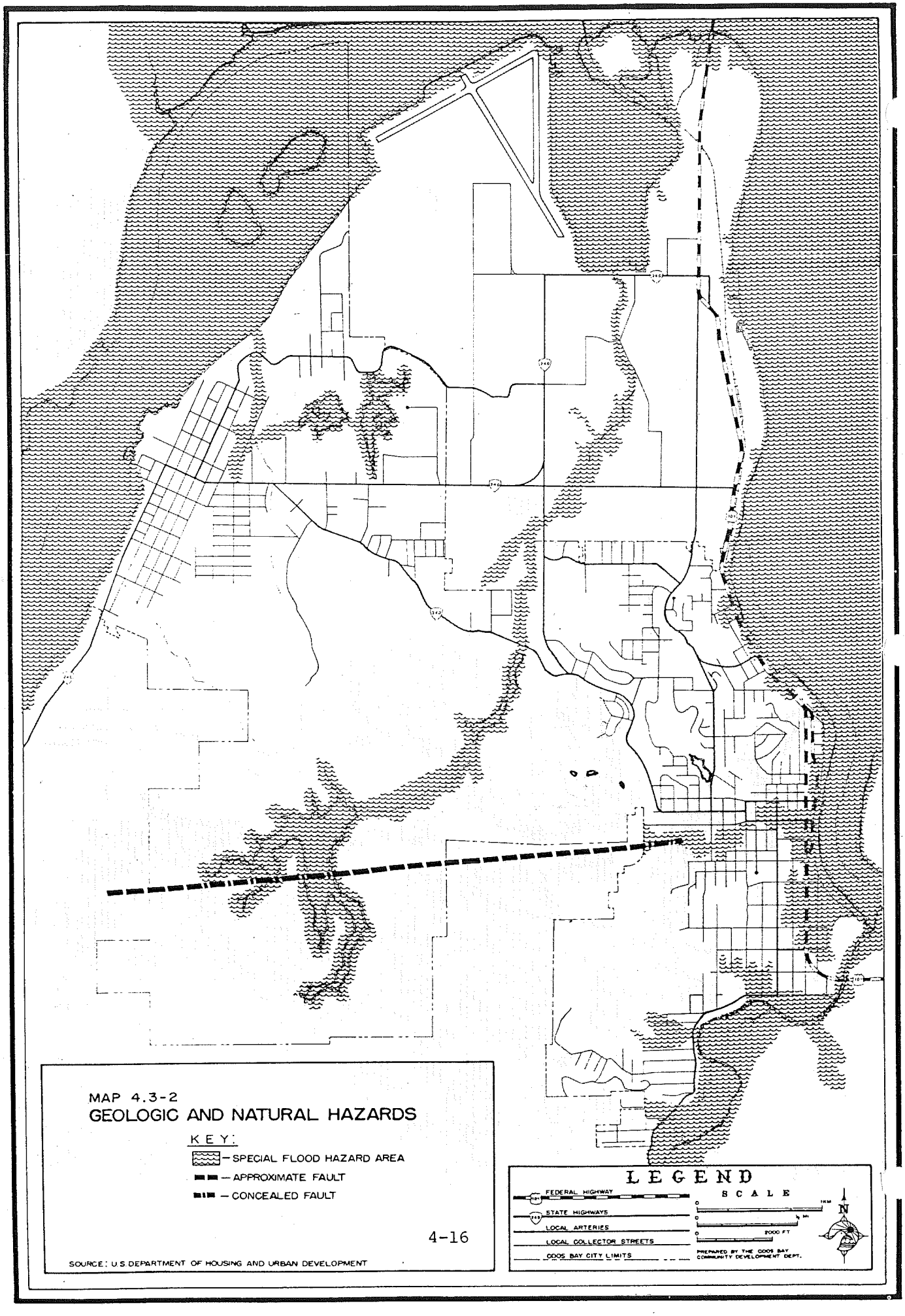
KEY:

- FLOOD HAZARD AREA
- APPROXIMATE FAULT
- CONCEALED FAULT

SOURCES: U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES



PREPARED BY THE COOS COMMUNITY DEVELOPMENT 1984


MAP 4.3-2
GEOLOGIC AND NATURAL HAZARDS
KEY:
— SPECIAL FLOOD HAZARD AREA
— APPROXIMATE FAULT
— CONCEALED FAULT
SOURCE: U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
1KM
2000 FT
N
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

General Affected Area

In 1964, the Good Friday Alaska earthquake generated a tsunami which hit the entire Oregon coast and produced wave heights 5 to 10 feet above mean high water measuring 7.1 to 7.5 feet, hence creating a maximum run-up of 17 feet in the planning area. (Fig. 4.3-1). Damage was incurred at Charleston; however, due to the length of the Coos Bay estuary, no damage was noted within this planning unit (Beaulieu and Hughes 1975:77).

General Impacts of Flooding

Potential damage from these three kinds of flooding are:

1. Loss of life or injury.
2. Erosion of streambanks and siltation of stream and estuary.
3. Downstream flooding of low lying areas.
4. Destruction of boats and moorages.
5. Flooding and damage or destruction of buildings and property.
6. Pollution and disruption of water supplies.
7. Agricultural damage to cropland and loss of livestock.

Conclusions

The National Flood Insurance Program was established under the Housing and Urban Development Act of 1968 and the Flood Disaster Protection Act of 1973. The program provides for flood insurance at subsidized rates to residents in floodprone areas and requires management practices for protection against future flooding. It defines flood hazard that lie within a base flood or "100 year flood," that which has a one percent chance of being equaled or exceeded in any given year. (University of Oregon, BGRS 1978:10) The flood hazard area or floodplain is the entire area affected by a flood. It includes the area which accommodates the main passage of floodwaters (floodway), and the area adjacent to the floodway which may be susceptible to inundation but is not principally utilized for the passage of water (floodway fringe). The base date collected by HUD are mapped and visually outline the floodplain area (Map 4.3-1, 4.3-2) for planning and insurance purposes. Refinements of this flood hazard boundary map will result in flood insurance rate map which denotes specific flood elevations and is expected to be completed for Coos Bay shortly.

To benefit from the subsidized insurance rates, residents must live in an area which has complied with program management regulations. Usually a flood prone area adopts by resolution construction restrictions which minimize flood damage. In 1974 the City of Coos Bay passed Resolutions 74-3, 74-4, and 74-5 stating its intent to comply with Federal Insurance Administration requirements and outlining the specific building requirements (Appendix B)

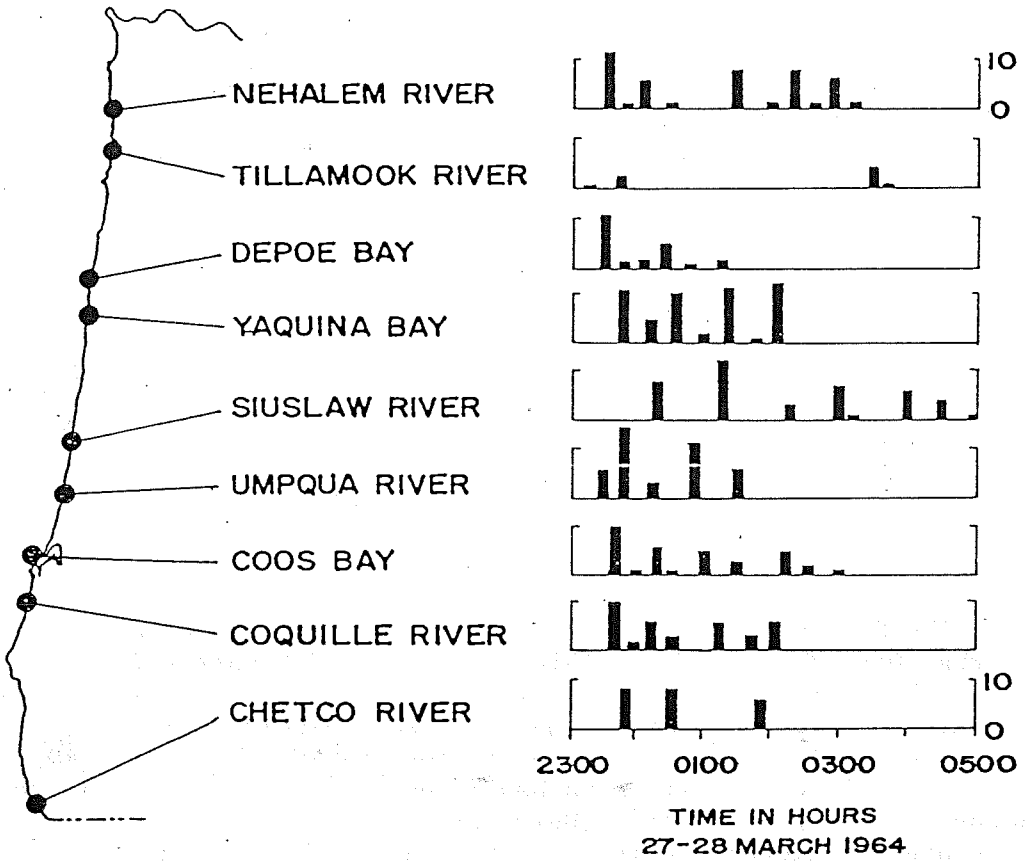


FIG. 4.3-1

WAVE HEIGHT ABOVE MEAN HIGHWATER (1974 TSUNAMI)

SOURCE: BEAULIEU, 1976:76, FROM SCHATZ, CURL, AND BURT, 1964.

Generally, building construction within the floodplain in Coos Bay requires an engineered foundation and the lowest floor to be erected equal to 12 feet above mean low water (4.1 feet).

In addition, the City of Coos Bay recognizes the Land Conservation and Development Commission policy statements regarding specific flood hazard regulations that are listed below. (OCCDC 1974b:8,10)

State and local government shall adopt and enforce the following specific regulations for known and designated flood hazard areas within the coastal zone.

1. Developments housing restrained or incapacitated persons (hospitals, rest homes and jails) and emergency service structures (police and fire stations) shall be prohibited in floodplains. (FM III-2)

2. Residential structures shall be prohibited in floodways and other structures and fills shall be permitted in floodways only if measures are taken to insure that there will be no increase in flood level due to the development.

3. Structural developments shall be permitted in flood fringe areas only if designed to provide floor elevations or flood proofing to a height above that of the 100-year flood.

4. The coastal high hazard area shall be identified, and no land below the level of the 100-year flood in this area may be developed unless the new construction or substantial improvement:

   (a) is located landward of the reach of the mean high tide;

   (b) is elevated on adequately anchored piles or columns to a lowest floor level at or above the 100-year flood level and securely anchored to such piles or columns; and

   (c) has no basement and has the space below the lowest floor free of obstructions so that the impact of abnormally high tides or wind-drive water is minimized. (New Policy - National Flood Insurance Program).

LCDC recommended the following actions:

Wherever practicable and economically feasible, Federal, state and local government should provide for:

1. The removal from floodways of natural or man-caused obstructions which threaten increased flood damage (FM III-9);

2. The approval of design for all developments constructed in floodplains, to assure the least adverse hydraulic effect considering expected regional flood levels and debris leads (FM III-6); and

3. The application of floodproofing measures to existing facilities in order to reduce flood damage potential (New Recommended Action - ADI/BRG/WRB).

Cities and counties in the coastal zone having flooding or mudslide hazards within their jurisdictions should become eligible for the National Flood Insurance Program. (OCCDC 1974b)

Earthquakes

Cause

Earthquakes are caused by a sudden release of energy along a geologic fault which results in tremors on the earth's surface. The severity of the earth's movement range from slight trembling to the destruction of buildings and structures. The displacement occurring along the fault is the focus of the earthquake and the geographic location above the focus on the surface is the epicenter. The most severe vibrations occur at the epicenter and decreasingly severe tremblings radiate out from the epicenter like waves. The impact of an earthquake on the surface depends upon distance from the epicenter, magnitude of the quake itself, subsurface characteristics which determine ground response, and man-made objects. There is no control over the location and magnitude of a specific earthquake. However, understanding the geological nature of an area and knowing the distance from quake-active areas, one can properly plan construction on the land.

Earthquakes are measured by two classification systems. The Mercalli Intensity Scale measures the severity of a quake by visible observations of its results; no equipment is necessary for measurement. The other is the Richter scale which uses recordings from seismometers rooted in bedrock. Earthquakes in the Oregon area have been measured on the Mercalli Intensity Scale (Table 4.3-1).

Affected area

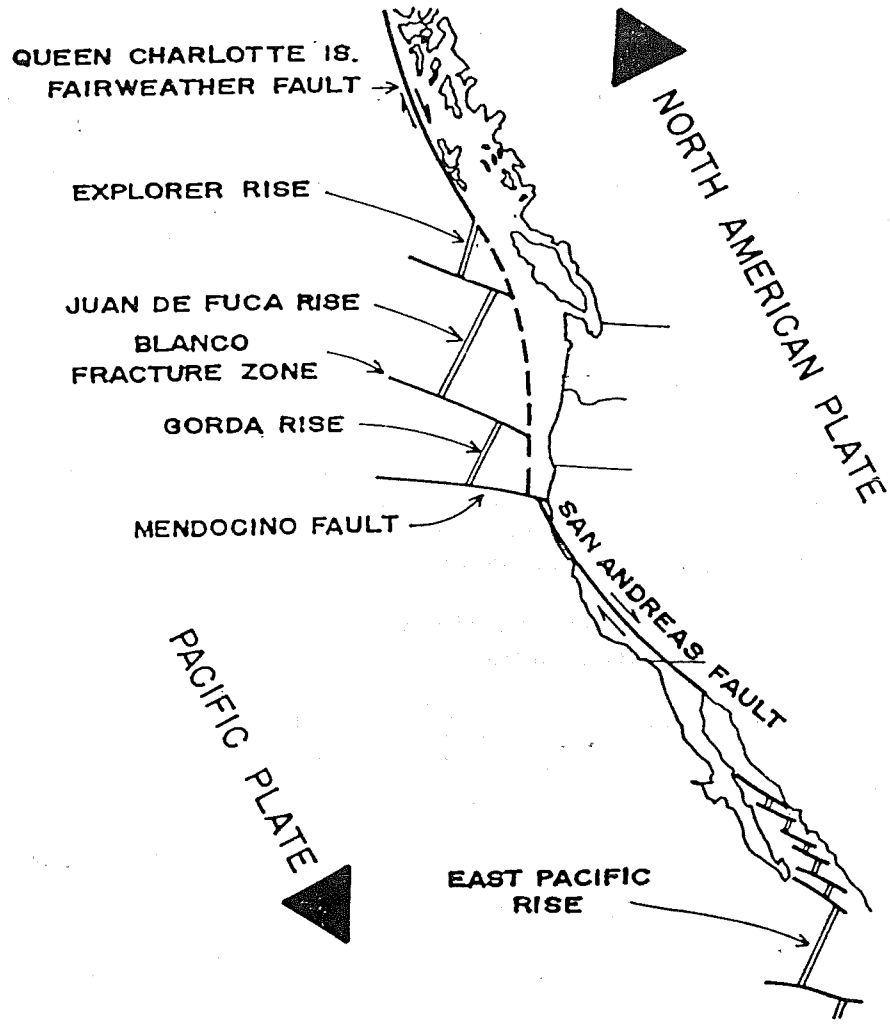
There is a known fault line running in a general east-west direction within the planning area. It is in the vicinity west of Barview and runs through the upper Pony reservoir and down Blossom Slough in Sections 31 through 34 of T. 25., R. 13 W. However, no activity has been recorded along this fault line and, "no mapped faults along the Oregon coast are known to be active." (Beaulieu et al. 1974:41). "No epicenters have been recorded in western Douglas or Coos Counties for over 100 years." (Beaulieu and Hughes 1975:110). However, the earthquake potential is considered moderate to severe in the southern parts of Coos County and the Coos Bay area. Map 4.3-3 depicts the locations of major subsurface structures along the Pacific Coast. Seismic activity from any of these structures can and have affected the Coos Bay

TABLE 4.3-1

SCALE OF EARTHQUAKE INTENSITIES

Mercalli Intensity	Description of effects	Equivalent Richter magnitude
I	Instrumental: detected only by seismographs	
II	Feeble: noticed only by sensitive people	3.5
III	Slight: like the vibrations from a passing truck; felt by people at rest, especially on upper floors	to 4.2
IV	Moderate: felt by people walking; swaying of loose objects, including standing vehicles	4.3
V	Rather Strong: felt generally, most sleepers awakened and bells ring	to 4.8
VI	Strong: trees sway and all suspended objects swing; damage by overturning and falling of loose objects	4.9 to 5.4
VII	Very Strong: general alarm; walls crack; plaster falls	5.5 to 6.1
VIII	Destructive: car drivers seriously disturbed, masonry fissured, chimneys fall; poorly constructed buildings damaged	6.2 to
IX	Ruinous: some houses collapse where ground begins to crack, and pipes break open	6.9
X	Disastrous: ground cracks badly; many buildings destroyed; railroad lines bent; landslides on steep slopes	7.0 to 7.3
XI	Very Disastrous: few buildings remain standing; bridges destroyed; all services disrupted; large landslides and floods	7.4 to 8.1
XII	Catastrophic: total destruction; objects thrown into the air; ground rises and falls in waves	Max recorded 8.9

Source: Beaulieu et al. 1974:III.



MAP 4.3-3

MAJOR STRUCTURES OFF THE COAST OF WESTERN NORTH AMERICA

SOURCE: BEAULIEU ET AL. 1974:41

Valid 2/99

area. Slight to moderate vibrations attenuating from various epicenters have reached Coos County on several occasions. Quakes along the Mendocino Escarpment "have affected the southern and central Oregon coast. In addition, large quakes in the Puget Sound area have been felt with moderate intensities in the study area." (Beaulieu and Hughes 1975:110). In 1922, a quake originating along the Mendocino Escarpment at an intensity of Mercalli V was felt in the Coos Bay area. Although quakes do not always attenuate in the same direction and manner, based on past history it is predicted that the maximum possible effects of a quake along the Mendocino Escarpment could be felt in this area at an intensity of Mercalli VII (Table 4.3-1). (Beaulieu et 1974:111). A quake of Mercalli VII would be considered very strong and would visibly crack walls and plaster; this is a Richter equivalent of 5.5 to 6.1. This prediction is tentative due to the limited historical record, the fact that quakes attenuate differently, and ground conditions at the time of the quake. However, the history of quake vibrations in this area (Table 4.3-2) indicates that earthquakes are possible natural hazards for the planning area.

General Impact

The structural impact of a particular earthquake depends upon the intensity as it travels from the epicenter and also on the geology of the surface. Structures, suitable constructed, can better withstand tremors than those structures poorly constructed or those situated on slopes or on unstable soils. The constraints of slope and soil may pose a potential problem for the planning unit.

The ground response after an earthquake varies depending upon the bedrock, soil, slope, and subsurface water content.

Areas of Particular Concern

Much of the upland areas of sloping terrain composed of granular sandy loam in conjunction with the frequent winter rains could develop earthslides. Another area of concern, are the unstable soils (alluvium, sand, tidal flats) which amplify wave intensity and upon water saturation undergo liquefaction (loss of strength as soils respond like a fluid rather than a solid). "In the lowlands, loss of structural support through liquefaction may occur in areas of fill, alluvium, tidal flats, marsh, and sand. Of particular concern are the urban areas of Coos Bay, North Bend, and Reedsport lying on fill material over estuarine sediments." (Beaulieu and Hughes 1975:113).

Conclusions

Because of the location of the downtown Coos Bay district on fill material, particular care should be given to the construction of new buildings and subsurface utility lines. "With increasing urbanization, the trend will be towards construction of higher buildings in the core areas of the major communities and of industrial facilities on spoil areas in the estuaries. Proper design of larger new structures is especially critical in the Coos Bay,

TABLE 4.3-2
SUMMARY OF EARTHQUAKE DATA FOR COOS AND DOUGLAS COUNTIES, OREGON

Date	Magnitude and Intensity	Location	Local Impact	Comments
1873 (Nov. 22)	Uncertain	Uncertain	Not available	VIII in Port Orford (Curry County) where chimneys were toppled. Incomplete records on location of epicenter.
1922 (Jan. 31)	7.6, 7.3 I-X (calculated)	150-200 miles off coast of Cape Mendocino on Mendocino	V in Coos Bay where sleepers were awakened, furniture creaked, buildings swayed, and rumbling was heard. No damage.	In view of more recent construction in less favorable areas, observed intensity of such a quake today would probably be higher locally.
1923 (Jan. 22)	7.2 I=X (calculated)	40 miles off Cape Mendocino on Mendocino Escarpment	Not observed in Coos Bay-North Bend area. Intensity VI at Eureka is the highest onshore intensity on record.	Microfilmed copies of Coos Bay Times have no mention of local shocks, although notation is made of slight tremors near Sacramento.
1938 (May 28)	I=V or less	Short distance off the coast of Douglas County	IV in North Bend, trees and brush sway at Gardiner, felt throughout much of study area; not observed in other parts.	Coverage in local newspapers was minimal, suggesting that Intensity IV observations were localized to regions, persons, or structures of high sensitivity.
1954 (Dec. 21)	6.6 I-VIII	Between Eureka and Arcata onshore (Calif.)	IV in parts of Coos Bay	VI at Brookings. Attentuation is less than that for quakes at sea owing possibly to a deeper focus or to structural setting.
Future	8.0 determined graphically I=XI, XII (calculated)	Mendocino Escarpment nearshore is assumed	VII assuming attentuation similar to that of the 1922 quake. Local impact will vary with ground conditions (Table 32).	Rough estimates only. Available attentuation curves (Couch and Deacon, 1972) postulate greater impacts, but may not be applicable (see text). Historic onshore quakes have less attentuation, but are of lower magnitude.

Source: Beaulieu and Hughes 1975:112

North Bend, and Reedsport areas." (Beaulieu and Hughes 1975:114). Buildings within the planning unit are regulated according to provisions of the Oregon Uniform Building Code, Chapter 23, Section 12 regarding earthquake hazards. However, Beaulieu, et al, believe the Uniform Building Codes do not consider ground response in its specifications and recommends the need for more local study. (Table 4.3-3)

Beaulieu also recommends that formulation of hazard zones and codes be directed towards:

1. Promoting construction design capable of withstanding potential earthquake activity.

2. Directing the location of critical structures to solid or firm bedrock.

3. Assuring the safety of individuals in structures of high occupancy (office buildings and schools).

4. Assuring the continued operation of critical structures such as hospitals in the event of an earthquake. (Beaulieu and Hughes 1975:114).

Erosion and Mass Movement

Cause

There are three types of erosion: streambank erosion, scouring by flash flooding, and slope erosion. Streambank erosion and scouring occur during periods of high water velocity. For instance, flash flooding will remove surrounding vegetation, scatter debris along stream borders, and create steep stream gradients as it gouges banks and stream bottoms. Streambank erosion undermines banks, as typified in meanders which cause banklines to cave in, and it also occurs in frequent association with flooding.

Slope erosion is more regional in scope and occurs in areas where the degree of slope is high, in conjunction with soil disturbance. Soil is the prime factor in slope erosion. Fine sandy soils that are easily carried by runoff are the most susceptible. This situation can be aggravated by low permeability of the soils beneath, e.g., cemented pan, that do not permit runoff to escape elsewhere. Naturally, slope erosion becomes a particular problem during intense rainfall.

Vegatative cover will inhibit slope erosion in areas of high soil/slope hazard potential. However, alterations in the natural setting by man's land use practices can create a problem where none existed previously. "Aspects of land use which influence slope erosion include removal of vegetation, soil disturbance, alteration of slopes, modification of drainage patterns, and conservation practices." (Beaulieu and Hughes 1975:87).

Mass Movement

Any downslope movement of rock or soil in response to gravity is covered by this category, including landslide, earthflow, slumping and soil creep. Slides and earthflow may be initiated by excavation for construction or road-building, by improper placing of fill for road construction sites, by blasting or earthquakes, by removal of material at the base of a slope by stream erosion, by removal of trees, and by increased water content caused by seasonal precipitation or disrupted drainage patterns. Contributing factors include steepness of slope, types of soil and type and bedding characteristics of underlying rock.

Hazards associated with rapid movement are obvious. Slow rates of movement (a few inches to several feet per year) also pose problems. They are particularly troublesome because the effects may not appear until after construction is completed. Effects include warping of roads and streets, cracking of foundations and displace of water lines and sewer connection.

Because of the nature of soils that form over shales and siltstone, slow earthflows are common on the Bastendorff Formation which underlines much of the upland portions of the City. Permeability is low and potential for slope failures in artificial cuts is high.

Rapid earthflow and slides are more common than slow earthflow on the steeper slopes that tend to form in areas underlain by the sandstones of the Coaledo Formation. The steepness of slopes in this area tends to limit development potential.

A study and assessment of local geologic hazards may be found in Environmental Geology of Western Coos and Douglas Counties (Oregon Department of Geology and Mineral Industries Bulletin 87, 1975) by John Beaulieu and Paul Hughes. The geologic hazards map (Map 4.3-2(a)) is adopted for the Eastside area from a map included with this publication.

TABLE 4.3-3

IMPACT AND RECOMMENDATIONS FOR EARTHQUAKE OF INTENSITY VII,
COOS AND DOUGLAS COUNTIES, OREGON

Setting	Description	Impact	Recommendations
Firm Ground	Type of ground for which official Intensity observations are accepted. Not specifically defined, but firmer than saturated fill, and less firm than solid bedrock. Includes flat, well-drained soils and gravels, etc.	VII-negligible damage in buildings of good design and construction. Considerable damage in poorly built or designed structures. Slight to moderage damage in ordinary buildings.	Authorize a seismic ground response study if large structures are anticipated or if urbanization begins to spread farther into the saturated tidal and coastal areas. Require that earthquake accelerations be incorporated into the designs or large or high-risk structures. Generally small wood frame structures of three or less stories are very stable whereas structures of greater heights with unreinforced concrete or masonry are more susceptible to damage.
Solid Ground	Not specifically defined but includes basaltic bedrock and firm, hard, well-indurated strata such as thick sandstone sections. Also presupposes gentle slopes or flat ground.	VI or less--furniture is moved, loose plaster falls; some chimneys are damaged.	
Unstable Ground	Not specifically defined but no doubt includes granular soils, saturated ground, and soil on steep slopes subject to sliding.	VII or greater--damage slight to considerable even in specially designed structures. Great damage to collapse in poorly designed structures. Some well-built wooden structures destroyed with I = X or greater.	Zoning, if desired, should proceed toward the goals of proper location of structures out of high-risk areas the proper construction of structures, and the minimizing of risk to the populace. Thus, greatest restrictions should be placed on large structures of high occupancy and critical need, such as multistory schools, hospitals, and office buildings.

Source: Beaulieu et al. 1974:111

General Affected Area

Streambank erosion and scouring are not particular problems within the planning area, except within the 100-year floodplain when considered under flooding hazards. Recognized areas of excessive streambank erosion are in certain areas of Coos River, well outside the planning unit (Beaulieu and Hughes 1975:91).

Slope erosion, on the other hand, poses a potential problem in the southern and northern reaches of the planning unit and in areas surrounding the urban core. The soil composition in these areas is crucial in determining erosion hazard. As shown in Map 4.3-4, areas in the vicinity of Empire Lakes are of the Netarts and Westport soil series. Both are fine, loamy sands overlying sand dunes some with sloping terrain which are two prime factors contributing to soil erosion. On the other hand, draining is excellent for Netarts and Westport soils due to the permeability through the granular sand, producing a slow runoff. However, soil disturbance and removal of vegetation in these areas creates prime conditions for wind and water erosion.

Areas surrounding the urban core and parts to the south (Map 4.3-4) are composed of soils in the Coos Bay series. This series is silt loam over silty clay loam soil and is usually well-drained. However, the particular units occurring in these areas exhibit slopes ranging from 12 to 50%, making for rapid runoff and severe erosion potential. Again, surface disturbances and vegetation removal creates the most undesirable situation.

Impact

Erosion is a naturally-occurring process but can be intensified by land use practices. Accelerated erosion reduced the productivity of the land by removing topsoil, thus losing nutrients and chemicals. It silts in streams and the estuary altering habitat areas and stream flow. It can be a nuisance to may by clogging drainages thus creating sewer/storm infiltration problems. Erosion due to flash flooding is just one of many problems associated with flooding hazard and is discussed in more detail in that section of this inventory.

Conclusions

The Department of Geology and Mineral Industries recommends that the effects of streambank erosion and scouring due to flash flooding can be reduced by prohibiting construction along streambanks, particularly on the outer bends of meanders. This restriction is consistent with floodplain management and is wise to follow for smaller streams as well. The resulting siltation from such erosion can be minimized by removing logjams and snags in stream channels and by periodic dredging.

Slope erosion in high hazard areas can be minimized by proper construction practices -- to disturb as little of the surface as possible and to provide for adequate drainage to handle runoff.

The Oregon Uniform Building Code, 1976 (Sections 7012 and 7013), adopted by the city, provides for adequate drainage and erosion control practices. Activities other than construction in areas of high erosion hazard should be investigated and controlled. For example, the solid waste disposal site near Joe Ney Slough possesses significant erosion and drainage problems. This situation has been recognized by the County and is being rectified. (See section 4.2, Land Quality).

High Ground and Ponding

Cause

High groundwater is a natural hazard when it has an adverse impact on man's activities. This usually occurs when groundwater levels are within 6 feet of the surface.

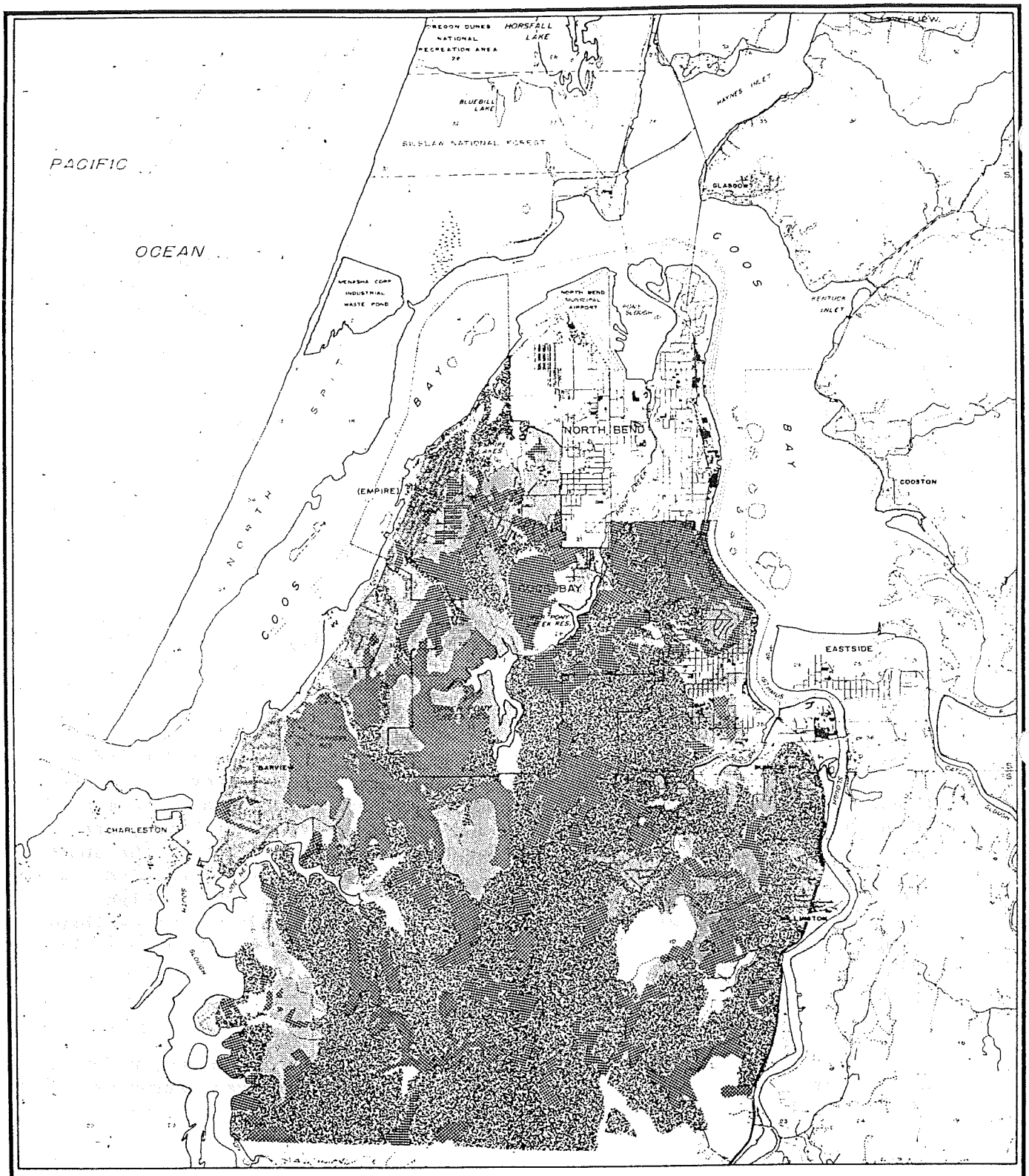
Ponding is the accumulation of runoff or rainwater due to low sloping terrain topographic restrictions, and low permeability of the soil or bedrock. (Beaulieu and Hughes 1975:59).

General Affected Areas

This problem of high groundwater is common on lowland and terrace landforms, especially floodplains and fluvial terraces. However, the overall groundwater resources within the planning unit are considered to be minor. "Groundwater supplies according to the State Water Resources Board, are considered to be of poor quantity and quality throughout most of the South Coast Basin, although relatively large supplies do occur in specified limited areas." (Stevens et al. 1974b:11-41) Those areas which exhibit high groundwater problems within the planning unit are the environs of Coalbank Slough (Chitwood series), Joe Ney Slough (Langlois series), and Empire Lakes (Blacklock). Maps 4.3-5, 4.3-6.

Impact

High groundwater and ponding causes flooding of basements, underpasses, and subsurface facilities; the flotation or damage of buoyant structures; and differential settling of structures. (Beaulieu and Hughes 1975:79).



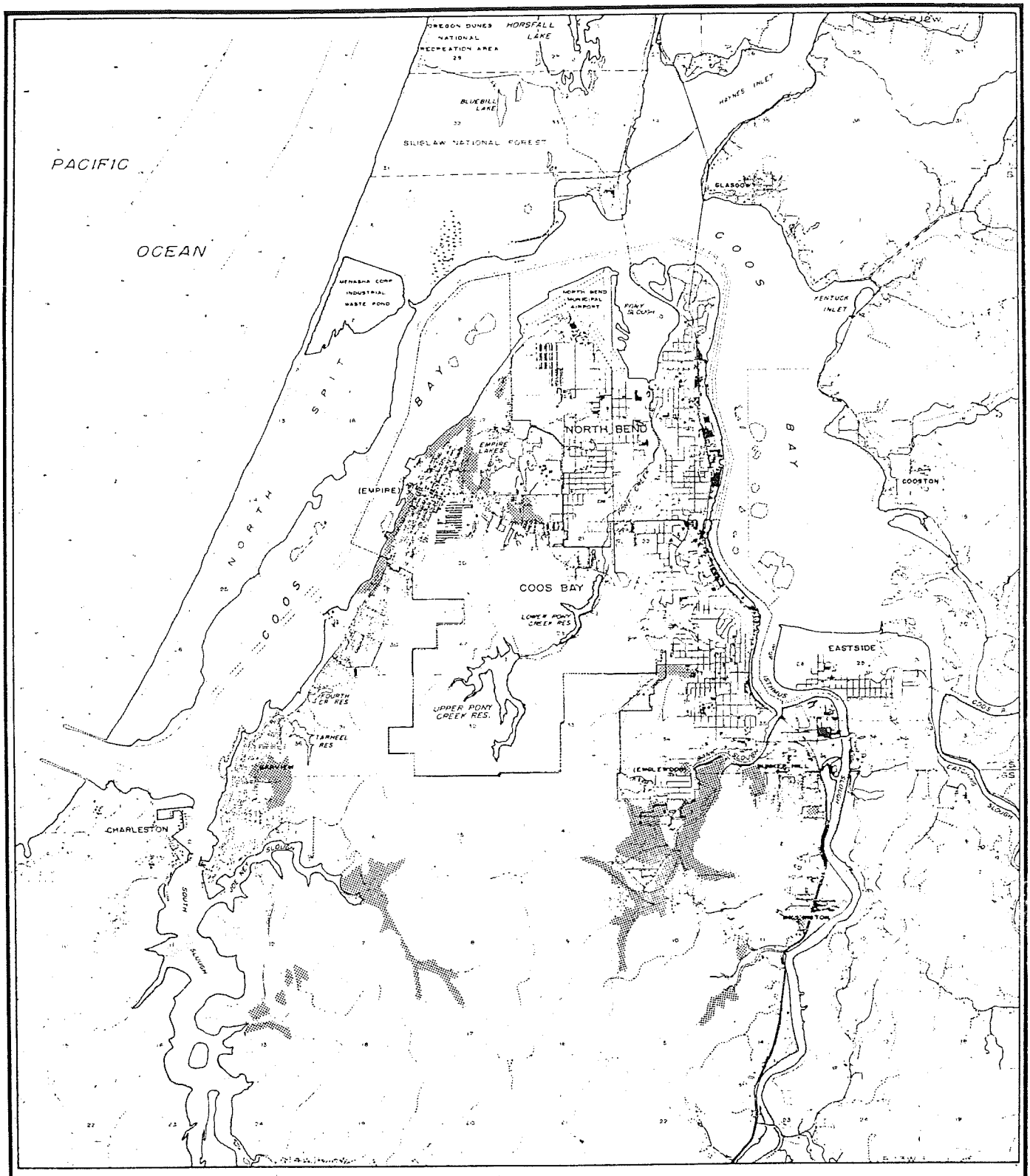
MAP 4.3-4

EROSION HAZARD

KEY:

- SEVERE EROSION HAZARD
- MODERATE EROSION HAZARD
- SLIGHT EROSION HAZARD

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE



MAP 4.3-5

HIGH WATER TABLE

KEY:

- 0-3 FEET
- >6 FEET

DEPTH FROM SURFACE

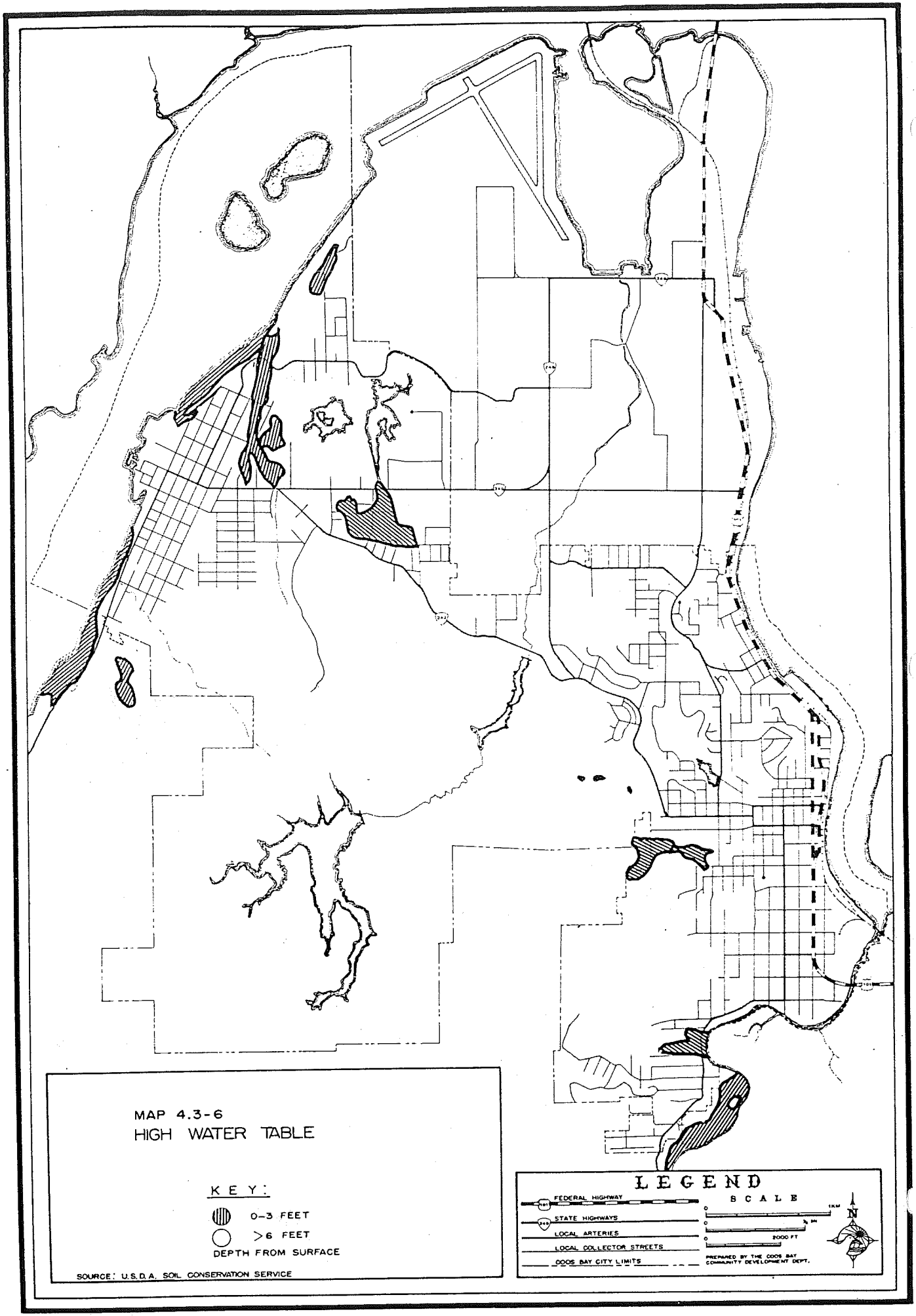
COOS BAY CITY LIMITS
SECTION LINES AND NUMBERS
GROUND CONTOURS (INTERVAL = 40 FT.)

SCALE
1 MILE
5000 FEET
1 KILOMETER

N

PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.
BASE MAP: 1/24,000 U.S.G.S. BLACKMAN HILLS (7½ MINUTE)

SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE


MAP 4.3-6
HIGH WATER TABLE
KEY:
0-3 FEET
>6 FEET
DEPTH FROM SURFACE
SOURCE: U.S.D.A. SOIL CONSERVATION SERVICE
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
1 MI
½ MI
2000 FT
N
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

Conclusions

High groundwater is a factor when locating homes with basements. Maps 4.5-5 and 4.5-6 show areas unsuitable for house with basements as moderate to severe surrounding Coalbank and Isthmus Sloughs and Empire Lakes. It is also undesirable to locate mobile homes in areas with high groundwater.

Windthrow Hazard

Cause

Windthrow hazard is the natural blow down rate of large, old-growth trees usually 8 to 10 feet in diameter. This hazard usually occurs during high wind storms and wet soil conditions and affects trees with shallow root systems in loosely compacted soils.

General Affected Area

Much of the planning unit has a windthrow hazard of moderate to slight. Although the soils in this area might be conducive to the hazard, the timbered area has reproduced with no trees large enough to have windthrow characteristics. (Sprouse 1978) Select areas surrounding Joe Ney Slough, where the soils are particularly of fine and silty loam (Chitwood series) and produce root systems to a maximum depth of 20 to 30 inches, have potential for severe windthrow hazard. (Map 4.3-7) The same can be said for the areas in the northern planning unit near Empire where the soils are sandy loam (Westport series) and have root systems about 16 inches thick.

Impact

The toppling of trees due to windthrow can cause damage to human life and property. It also contributes to erosion by the disturbance of the topsoil.

Conclusions

The possibility of windthrow hazard should be considered in areas with this potential especially for construction site preparation requirements. Extensive tree removal may decrease the existing windbreak.

Abandoned Mines

Cause

Vast reserves of coal underlie much of the Coos Bay area (see section 3.9, Mineral Resources). Coal beds within the planning area occur in

the upper and middle members of the Coaledo formation which consist of sandstones in the upper member and acidic shale in the middle. "The principal coal beds occur in the upper and lower sandstone members of the Coaledo formation." (Allen and Baldwin 1944:1)

Coal mining became a major industry after the discovery of the mineral in Empire in 1854. Shipments to markets in San Francisco began in 1855 and reached a peak in the early 19th century when production reached over 100,000 tons per year. Coal production fluctuated considerably after this time, doomed by the increasing use of heating oil, and effectively ended after World War II. Yet, during this short 90-year period, an estimated 3,000,000 tons of coal were produced. (Allen and Baldwin 1944:51; Baldwin and Beaulieu 1973:73; Beckham 1973:18)

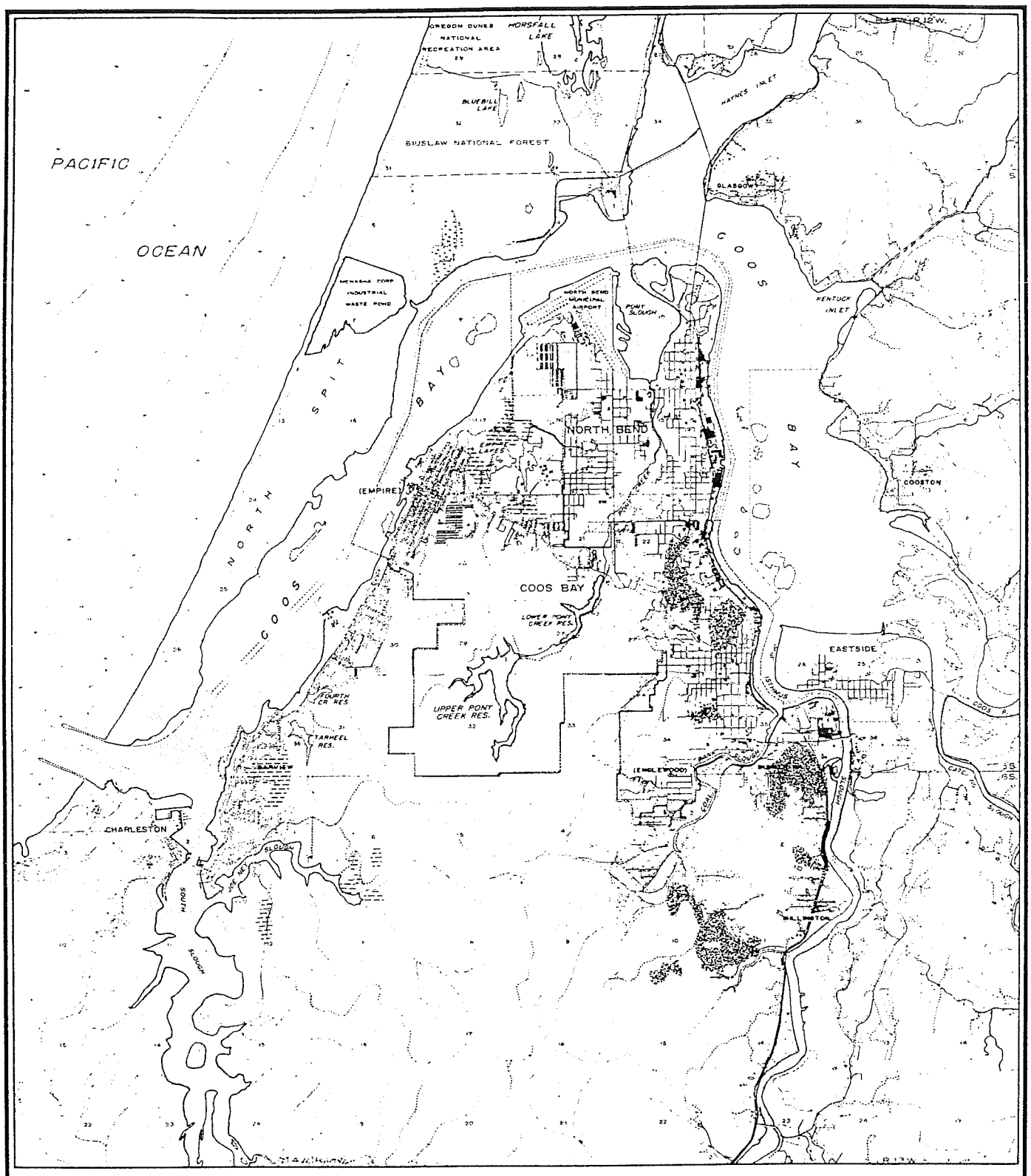
General Affected Area

The mining operations were fairly extensive in the areas immediately south of Coos Bay with some minor investigations in the western portion of the area. Mining techniques of the day called for the shrinking of shafts and the excavation of numerous tunnels connected to the surface by a single-gauge rail system. The mineral was hoisted from the mine, transferred to bunkers and loaded to rail cars, or in some cases, directly onto sailing vessels.

The principal mines in the planning area operated in the Englewood/Libby vicinity and were the most productive. "The largest production in the Coos Bay district has been from the Newport basin, which includes the Eastport, the Newport or Libby, and the Englewood mines." (Allen and Baldwin 1944:51) All generalized mine locations are shown in Map 4.3-8. Prospects for coal in the area occurred at the Empire and Vey prospects.

Impact and Conclusion

As the industry waned, mines were closed and simply abandoned. Over time, the physical remnants of these mines disappeared, "...few if any traces of the operations remain today. Heavy rainfall and equally dense vegetative cover have combined to effectively obscure the portals and spoil banks." (Baldwin and Beaulieu 1973:73) However, a serious consequence of this abandonment was the unfilled shafts and tunnels, their entrances and, therefore, exact locations thus obscured. These underground passages honeycomb extensive areas and undermine the stability of the upper surface. They can be hazardous to construction through surface subsidence and by underground fires burning the remaining deposits. The abandoned mines in the planning area are important considerations as most occur in areas of possible, future expansion.



MAP 4.3-7

WINDTHROW HAZARD

KEY:

- —SEVERE
- —MODERATE
- —SLIGHT

COOS BAY CITY LIMITS

SECTION LINES AND NUMBER

GROUND CONTOURS (INTERVAL = 40 FT.)

SCALE

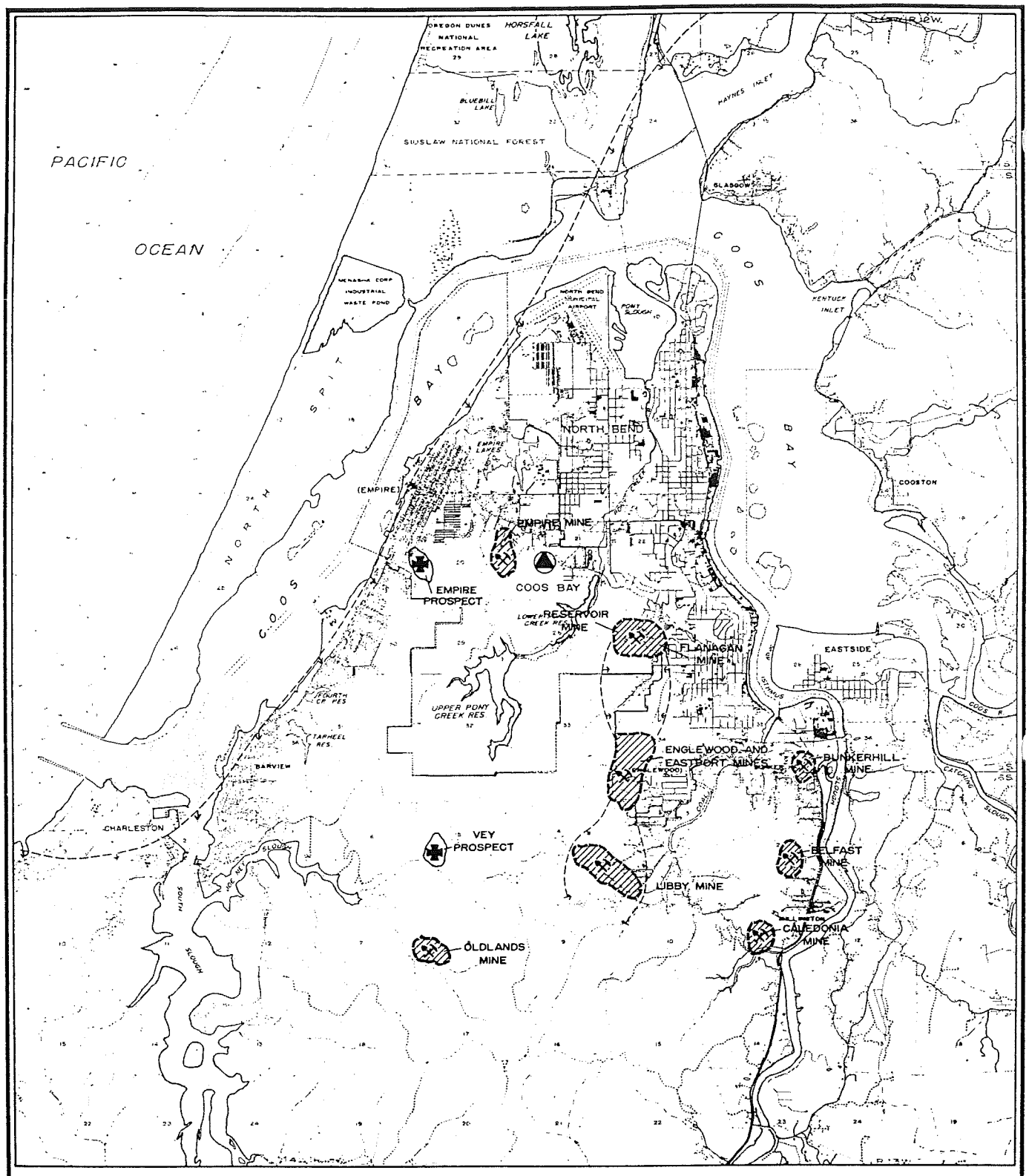
1 MILE

5,000 FEET

1 KILOMETER

PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT. BASE MAP: 1/24,000 U.S.G.S. QUADRANGLES (7.5 MINUTE)

SOURCE: U. S. D. A. SOIL CONSERVATION SERVICE

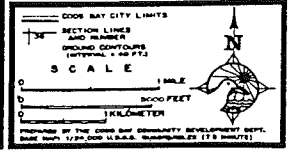


MAP 4.3-8

MINERAL RESOURCES

KEY:

- — SAND AND GRAVEL PITS (INOPERATIVE)
- — COAL MINES
- — COAL PROSPECTS
- ---- — COAL BASINS, COOS BAY



SOURCE: STATE OF OREGON, DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

4.4
Water Quality

With the continued growth of the Bay Area has come the increased need to achieve and maintain high water quality in order to ensure adequate supplies of drinking water and to protect fish and other acquatic life. This subsection discusses the main factors affecting water quality in the Eastside area. These problems have been identified during the preparation of a regional Water Resource Management Plan by the Coos-Curry Council of Governments.

Water quality in Coos Bay itself has been found to be adversely affected by high coliform, color, turbidity and temperature levels, and by low levels of dissolved oxygen. Sediment and temperature levels have limited water quality in Catching Slough, although dissolved oxygen levels are adequate there. Isthmus Slough has experienced problems in terms of high temperature and sediment levels, and low levels of dissolved oxygen. Water Quality in the Coos River has been generally good save for some problem with high temperature during periods of low streamflow during summer months (Coos-Curry Council of Governments, 1974).

The water quality problems identified above stem from a variety of causes. Problems of high temperature levels are mostly the result of low summer streamflow on the tributary sloughs and streams of the estuary, and incomplete mixing of these tributary waters with the cooler waters of the estuary proper. Problems of color, turbidity, coliform and low dissolved oxygen levels have generally been caused by inadequately treated municipal and industrial waste discharges (Coos-Curry Council of Governments, 1974).

The State of Oregon has been divided into many river basin units for the purpose of studying water resources (OAR 340-31-322). This planning area is within the South Coast Basin, (unit #14), Coos sub basin #3. As defined in Stevens,

> The Coos (sub) basin contains that area tributary to the Pacific Ocean running from just north of Clear Lake to a point approximately five miles south of Cape Arago and lies totally west of the Coast Range. The major water bodies within the sub basin include Coos Bay, South Slough and numerous sand dune lakes along the coast, of which North Tenmile and Tenmile Lakes are the largest. The major fresh-water streams are the Coos and Millicoma Rivers. (Stevens et al. 1974b:28)

Fresh and marine water quality within the planning area is affected by solid and liquid waste released directly into the Coos Bay and its tributaries. The Oregon Department of Environmental Quality (DEQ) has implemented a policy of pollution prevention and quality improvement throughout the state. These policies are effected by testing overall water quality and fixed effluent for specific water standards. The sources of possible pollutant problems are separated by the DEQ into point and non-point categories. Point sources of discharge usually emanate from a pipe or outlet whereby the quality of the effluent can be analyzed. Nonpoint sources, either natural or man-induced, are numerous and difficult to monitor on a site-specific basis, and control over their sources is not adequately investigated to date. Hence, for nonpoint pollution, the Department of Environmental Quality must investigate stream and water quality problems rather than the composition of a specific discharge. In this way, general geographic areas or poor water and stream quality can be identified for further study.

Point Sources

All point sources may release waste effluent directly into a watercourse if the effluent contains no contaminate above specified quantitative standards. These standards are enumerated in Table 4.4-1, Analysis A. The list notes all possible parameters applied only as appropriate to each industry or facility. Each point source must meet these standards to receive from the DEQ a permit to operate. Otherwise, a program to improve inadequate controls is recommended. Those types of point sources germain to the planning area are listed below and specifically discussed in the upcoming sections of this inventory.

TABLE 4.4-1

STANDARDS USED BY

THE DEPARTMENT OF ENVIRONMENTAL QUALITY
FOR BASIC DATA (ANALYSIS "A") AND
SANITARY WATER QUALITY (ANALYSIS "B")

SOUTH COAST BASIN

Analysis "A"

1. Water Temperature, °C
2. Stream Flow, CFS
3. Turbidity, JTU
4. Color, Pt-Co Units
5. Field Conductivity, Micromho/cm
6. Conductivity at 25 °C, Micromho/cm
7. Dissolved Oxygen, mg/l
8. D.O., Saturation Percent
9. BOD, 5-Day, mg/l
10. pH STD Units and Field pH
11. Total Alkalinity, as $CaCo_3$, mg/l (field and laboratory)
12. Residue, Total
13. Residue, Total Nonfilterable
14. NH_3-N, Total
15. NO_3-N, Total
16. Kjeldahl N
17. Ortho-PO_4, as PO
18. Total PO_4, as PO_4
19. Total Hardness, as $CaCO_2$
20. Sodium, mg/l
21. Potassium, mg/l
22. Chloride, mg/l
23. Sulfate, mg/l
24. Total Coliform Organisms, MPN
25. Fecal Coliform Organisms, MPN

Analysis "B"

1. Water Temperature, °C
2. Stream Flow, CFS
3. Field Conductivity, Micromho/cm
4. Dissolved Oxygen, mg/l
5. D.O., Saturation Percent
6. BOD, 5-day, mg/l
7. Field pH
8. Total Coliform Organisms, MPN
9. Fecal Coliform Organisms, MPN

Source: Oregon. Department of Environmental Quality 1976b:Table(13)

1. Industries

2. Sewage treatment plants

3. Water treatment plants

4. Dredge spoil disposal sites

5. Solid waste disposal sites

6. Log storage operations

Point sources within the planning area presently functioning with permits are listed in Table 4.4-2 and are discussed below.

Industrial Waste

The type of polluting discharge from industrial wastes differs depending upon the industry. Naturally, the type of control varies.

Fish Processing Industries

Within the planning area there are six fish-related industries needing to dispose of cooling water, and product wash and cleaning waters. These discharges, made into the South Slough and the bay, must be regulated to control bacteria levels, fish oil and grease, suspended solids, and biochemical oxygen demand (BOD). According to the DEQ office, these industries comply with present standards.

Oil Companies

Two oil companies dispose of site drainage water and tank draw water directly into the Coos Bay estuary. These wastes are restricted by oil and grease controls, and are presently complying with standards.

Lumber Companies

Possible waste from these companies are cooling water and drainage water. Georgia-Pacific also produces plywood glue waste water; however, this is recirculated and not discharged. The discharges are regulated for temperature, biochemical oxygen demand (BOD), suspended solids, oil and grease. (Georgia-Pacific Corporation and the Al Pierce Company comply with standards.)

Packing Plants

There is one packing plant operating within the planning area under permit. Treated wastewater and uncontaminated cooling water is discharged into Shinglehouse Slough regulated for biochemical oxygen demand (BOD), suspended solids, oil and grease, and coliform bacteria. The plant complies with standards.

TABLE 4.4-2

POINT SOURCE WASTE DISCHARGES
IN THE COOS BAY PLANNING AREA

SOURCE	LOCATION
FISH PROCESSING	
Hallmark Fisheries	Charleston
Union Fisherman's Corp.	Charleston
Peterson Seafoods	Charleston
Point Adams Packing	Charleston
Qualman Oyster Farms	Charleston
Eureka Fisheries	Charleston
OIL COMPANIES	
Standard Oil	City of Coos Bay
Texaco	City of Coos Bay
LUMBER COMPANIES	
Georgia Pacific	Bunker Hill
Al Pierce Lumber	Sumner
PACKING COMPANIES	
Coos Bay Packing	Shinglehouse Slough

Sewer Systems

The City of Coos Bay operates two sewage treatment stations -- Coos Bay #1, located two blocks west of Highway 101 between Koosbay Boulevard and Ivy Avenue, and Coos Bay #2, located west of Highway 240 off Fulton Avenue in Empire. Coos Bay #1 serves the Coos Bay (Marshfield) area including the unincorporated areas of Bunker Hill and the City of Eastside; Coos Bay #2 services the Empire district and receives inflow from the new Charleston sewage interceptor trunk line. The technical information regarding present and future carrying capacities and types of systems is addressed in this volume in section 5.5, "Public Facilities and Services." Both sites are regulated by the Department of Environmental Quality and only the Coos Bay #1 station has experienced some problems with compliance.

This plant does not meet DEQ permit requirements periodically during the winter montbs when the effluent is below standards for biochemical oxygen demand (BOD) and suspended solids (SS). Several factors are responsible for this problem. The system was designed originally to process the combined flow of sewage waste and storm water waste; a practice which is no longer acceptable. The separation of these lines is not yet completed. Also, the age of the collection system contributes to the infiltration of storm waters even where separation has been achieved. During the winter months, heavy rains and extreme high tides increase the sewage inflow beyond the capacity of the treatment system.

The city has received some grant funds to separate the storm/sewer inflow systems and improve the existing collection system. However, not all of the system is repaired. Presently, the city is negotiating with the DEQ, the City of Eastside and Bunker Hill to proceed with a facilities plan (discussed under Goal 11) which would address and solve these problems. The CB #2 station is meeting the DEQ standards. Although infiltration of storm water occurs, it is within established limits.

Water Treatment Plants

Water pollution sources from water treatment plants come from the discharge of backwash used to clean filters and equipment. This discharge may contain inert suspended solids and chemical residues from the purification process (Stevens et al. 1974b:II-89).

The Coos Bay/North Bend Water Board has the only water treatment plant operating within the planning area. Previously, its effluent was treated to meet DEQ standards and then discharged into Blossom Gulch Slough and Pony Slough. However, the plant has since changed its process and the backwash waste is now recirculated. Therefore, the water treatment activities do not adversely impact water quality.

Dredging Operations

The threat to water quality from dredge disposal activities stems from the spoils themselves and the practice of disposal filling. Filling of wet lands precipitates higher water temperatures and increases the suspension of solids, thereby smothering organic communities. Eventually, the spoil sites can erode and the runoff resuspends organic matter which utilizes large amounts of oxygen, increases turbidity and toxic sulfide levels lethal to fish and other organisms, smothers benthic zones by resedimentation of suspended matter, and changes water circulation patterns due to reduction of tideland acreage. (U.S. Department of the Army 1976:4-1-4-7; Stevens et al. 1974a; 1974:b83)

There are four presently used or future disposal sites within the planning area. (Map 4.4-1) Three active sites are located in the bay off the Empire and Barview shorelines at river miles 3, 4, 5. The fourth site, west of Isthmus Slough and south of the Georgia Pacific plant, is considered for future disposal. A site in Empire near the CB #2 sewage plant is now filled to capacity and will no longer be used.

The U.S. Army Corps of Engineers and the Oregon Department of State Lands have jurisdiction over the practice of dredging the spoil disposal and issue joint permits. The above sites within the planning area are regulated as follows:

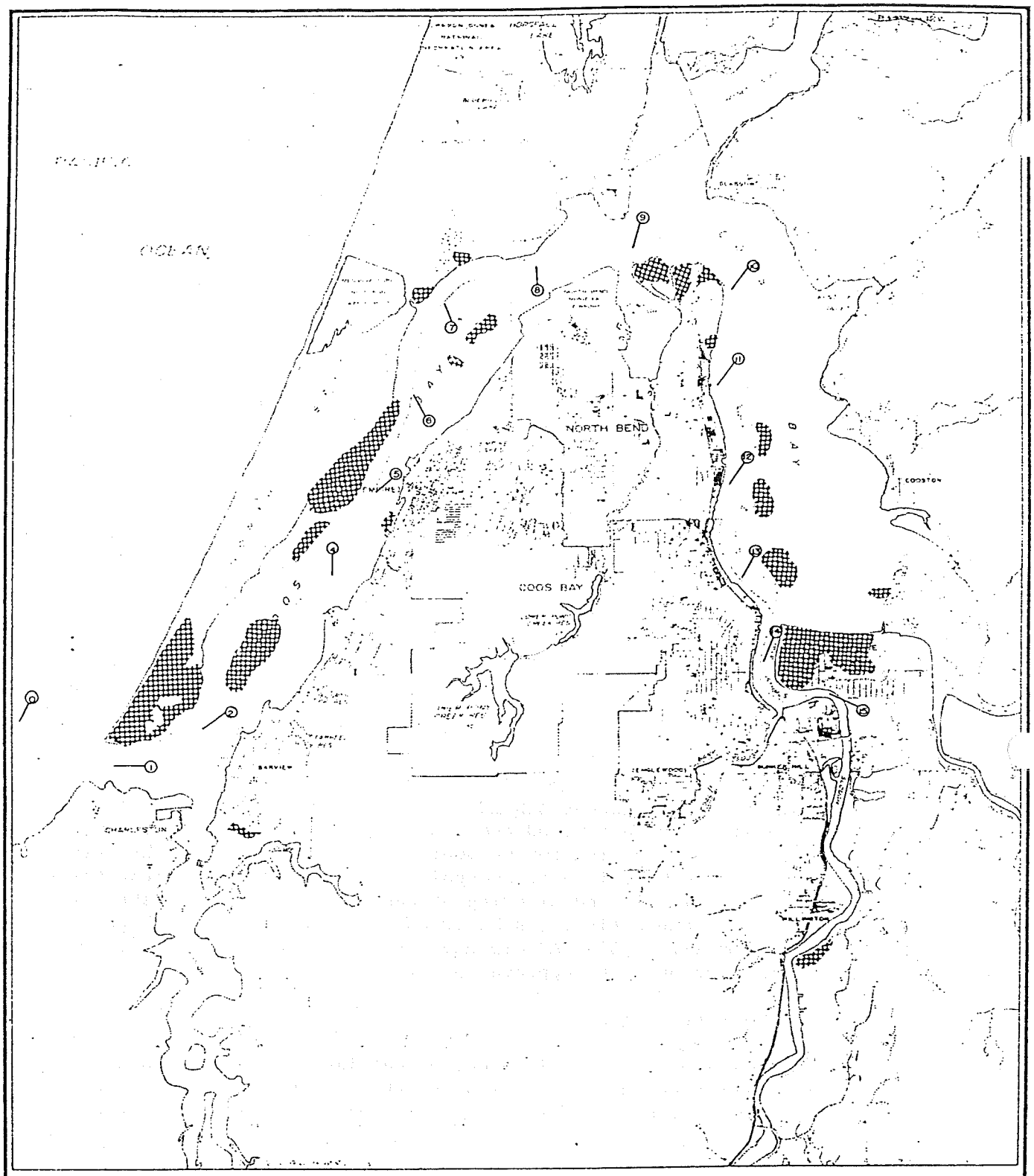
1. In-bay sites A, B, C -- Each site is 5 acres in size. No parameters are designed for these sites since environmental impacts are poorly understood at this time. These sites will continue to be used until it is inadvisable to do so. (U.S. Department of the Army 1976:4-28).

2. Isthmus Slough Proposed Site -- The site encompasses 50 acres with a capacity of some 650,000 cubic yards. Permits are conditioned upon prohibiting dredging during poor water circulation months between April 1 and Oct. 1, placing spoils behind berms above mean higher high tide level, and altering disposal activity if a fishery agency deems current activity is hazardous to fish life (U.S. Department of the Army 1976:4-41) A comparable site on the east site of Isthmus Slough has not been approved due to its critical habitat resource.

Solid Waste Disposal Sites

Solid waste disposal sites may be detrimental to water quality due to erosion of exposed and unstable soils and the contamination of groundwater and nearby surface water by subsurface drainage through the buried waste (leachate). The DEQ regulates the operation of solid waste disposal sites by permit, designating parameters for location, drainage control, and disposal in relation to the groundwater table, among others (discussed in detail in this volume in section 4.3, Land Quality).

There presently are no approved solid waste disposal sites within the city limits of Coos Bay. Solid waste within the planning area is removed to the Joe Ney disposal site located on county land southwest of the city and at a privately-owned site located in the county south of the Englewood neighborhood. Another privately-owned site at Shinglehouse Slough as closed in August 1978. The Joe Ney site is opearting under a special permit from the



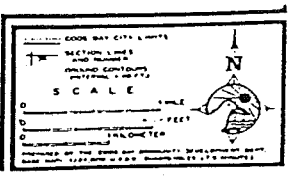
MAP 4.4-1

LOCATION OF DREDGE SPOILS IN COOS BAY

KEY:

▦ — DREDGE SPOIL DISPOSAL SITE

⑥ — RIVER MILEPOST



SOURCE: PORT OF COOS BAY
COOS-CURRY COUNCIL OF GOVERNMENTS
U.S. ARMY CORPS OF ENGINEERS

DEQ as it does not meet all standards established under federal and state regulations. According to a recently adopted county sold waste management plan, this site is slated to close within two years (see section 4.3). The site near Englewood is waiting final permit approval from the DEQ.

The County is seeking alternatives to the sites now servicing the Coos Bay/North Bend area and is actively working on future plans. The City of Coos Bay recognizes that the responsibility for selecting sites that are economically and environmentally sound lies by law with the County, and will cooperate as necessary.

Log Storage Operations

The transport and storage of logs within waterways have been studies recently and alleged to adversely impact water quality of the receiving waters. (Jackson 1974; Zegers 1978). Sources of pollution can result from individual logs or their massing in rafts.

Leachate from the bark affects the commercial quality and water color; water in the vicinity of the storage area becomes a yellow-brown. The chemical changes create an increased demand on dissolved oxygen which can be detrimental to benthic communities. Leachate also emanates from the log itself similarly demanding more oxygen and becoming toxic to some organisms. Therefore, debarking the logs before storage does not solve the problem. In addition, raft storage of logs can change normal water currents especially during periods of low water flow. (Jackson 1974:11-12)

A recently completed study by the DEQ documents the effects of grounding of log rafts during recurrent low tides. Although this study was directed toward the effect of grounding on biotic communities, the DEQ has expressed concern over the concommitant disturbances to the mudflats. This routine disturbance resuspends organic sediments and increases water turbidity. (Zegers 1978)

Logs are stored in water throughout much of Isthmus Slough. Jackson has noted that the fish population has changed in the Slough and there is an increase in pollution-thriving animals. (Zegers 1978:12) The water quality conditions in Isthmus Slough will be discussed in greater detail under nonpoint sources. However, it appears to be a problem area and log storage may be one of several contributing factors.

Alternatives to water transport and storage of logs have been suggested. Logs could be transported by truck from the cutting area and stored on land at the mill. This process would increase truck traffic within the urban area (location of primary lumber plants) and may increase congestion and reduce air quality. Such alternatives would perhaps violate the spirit of Oregon's energy conservation goal. The lumber industries foresee increased operational costs and increased energy consumption. Also, they perceive water log storage as a long-standing historical practice.

Nonpoint Source

As an outgrowth of the Federal Water Pollution Control Act Amendments, 1972 (Clean Water Act), the Oregon Department of Environmental Quality recently has completed a statewide study of nonpoint source problems. (Reikert et al. 1978) Nonpoint source problems are so termed because the water polluting source does not stem from a specific site like an outfall or pipe (point source). Hence, in addition to point pollution sources, water quality may be impacted by a variety of general polluting sources diffused over a large area of entry. Because of the nature of point vs. nonpoint sources, the concerned environmental protection agencies must take an opposite approach to identify and ameliorate each source. For instance, with point sources, the cause/source of the pollution is pinpointed and the resulting problems are controlled by specific discharge standards. However, with nonpoint sources, it is easier to identify areas with specific water problems and then attempt to rectify the cause/source. Section 208 of the federal legislation amendments specify the following major objectives:

1. Identify and prioritize nonpoint source (NPS) problems.

2. Develop conservation procedures and methods to control identified sources to the extent possible.

3. Develop and adopt a workable implementation program, including designationn of agencies.

In partial compliance with these objectives, the DEQ study by Reikert satisfies the initial step of identification and prioritization. It identifies nonpoint problems that interfere with beneficial water uses (Table 4.4-1 beneficial water uses). It also identifies general geographic areas within the state reflecting these problems by degree of severity. "The goals and objectives of the Oregon DEQ specify NPS (nonpoint source) problem identification as a major need." (Reikert et al. 1978:8) Conformation with objectives 2 and 3 of Section 208 will be achieved in the future as the indentification process if further studies and refined. Consequently, immediate development of conservation procedures and control methods is left to local jurisdictions and resource agencies.

Guided by Section 208, the DEQ focused its study not on water quality alone. Its major area of concern was on stream quality -- "physical condition of the stream channel and surrounding banks in addition to the quality of the water." (Reikert et al. 1978:8) The DEQ justifies this attention by the federal requirement that the waters be fishable. The DEQ feels that adequate physical stream conditions must be recognized "because many highly prized fish require stable bottom conditions for spawning and all fish require suitable cover conditions for rearing. Thus, clean water does not, in itself, guarantee fishable streams." (Reikert et al. 1978:12-13) Therefore, the following discourse on nonpoint water pollution addresses the factors of both stream and water quality.

Stream Quality

Identification of nonpoint source problems resulted from input by statewide citizen meetings and from data offered by federal, state, and local resource agencies. "First, a large part of the information is based on the professional judgment of local agency personnel and the management experience of landowners. The information is quite qualitative in nature and, therefore, suitable for statewide or regional planning but not for site specific use." (Reikert et al. 1978:45) These efforts identified the following major nonpoint problems affecting stream quality:

1. Streambank erosion
2. Sedimentation
3. Excessive debris
4. Water withdrawals
5. Elevated water temperature
6. Nuisance Algae

In addition to identifying these stream quality problems, the degree of impairment was assessed as moderate or severe. A moderate problem occurs when the local residents perceive a condition causing some interference with the beneficial uses of water. A severe problem is assessed if local residents perceive a condition producing a substantial or nearly complete interference with beneficial uses of water. The following section will define each aforementioned stream quality problem, the beneficial uses impaired, the impacted location within the planning area, and the degree of impact. (Table 4.4-3)

Streambank Erosion

This erosion is due to the lateral movement of the stream channel undercutting banks and removing soils and vegetation. This problem may impair fish and acquatic species habitats.

Planning area -- The Department of Environmental Quality found no areas within the planning area to be severely or moderately affected by this nonpoint problem.

Sedimentation

This condition of suspended or settled solids impacts water supplies, irrigation, fish and acquatic species habitats, recreation, and aesthetics.

Planning area -- The entire estuary and riverine areas are considered to be a moderate problem.

TABLE 4.4-3

NONPOINT SOURCE PROBLEMS

Problem Impairing Beneficial Use	Problem Defined	Resource Impacted	Planning Area Impacted	Degree of Impact
Stream bank erosion	Lateral movement of stream channel undercutting banks and removing soils and vegetation	Fish and aquatic habitats	None	None
Sedimentation	Suspended or settled solids	Water supplies, irrigation fish and aquatic species habitats, recreation and aesthetics	Entire estuary and riverine areas	Moderate
Excessive debris	Logs, slash, and other materials	Fish and boat passage, damage to culverts and bridges	Pony Creek, Isthmus Slough	Severe
Water withdrawals	Consumption use aggravating natural low flows	Downstream consumption, fish & acquatics species habitats	None	None
Elevated water temperature	Increase in temperature to low flows, high ambient air temperatures, stream corridor management	Rearing of salmonid fish	Pony Creek Isthmus Slouth	Moderate
Nuisance algae	Excessive growths associated with low flows, high water temperatures, high nutrient concentrations	Water supplies, irrigation, fish rearing, recreation aesthetics	Pony Creek, Isthmus Slough	Severe Moderate

Moderate problem: Local people perceive a condition when there is some interference with the beneficial uses of water.

Severe problem: Local people perceive a condition when there is a substantial or nearly complete interference with beneficial uses of water.

Excessive Debris

Logs, slash, and other materials present in waterways constitute excessive debis when they impair fish and boat passage or cause damage to culberts and bridges.

Planning area -- All of Pony Creek from the reservoir to the bay and most of the Isthmus Slough are considered severely impaired.

Water Withdrawals

This problem occurs when consumptive uses reduce the amount of water and interfere with other beneficial uses. It often occurs during low flow periods and aggravates this natural occurrence. It may impair downstream consumption and fish and aquatic species habitats.

Planning area -- This study found no areas that consistently exhibit this problem.

Elevated Water Temperature

This constitutes an increase in temperature relative to low flows, high ambient air temperatures, and stream corridor management. The rearing of salmonid fish can be affected by high water temperatures.

Planning area -- All of Pony Creek and Isthmus Slough are considered moderately affected.

Nuisance Algae

Nuisance algae are excessive growths associated with low flows, high water temperatures, and high nutrient concentrations. These growth affect water supplies, irrigation, fish rearing, recreation, and aesthetics.

Planning area -- Pony Creek is determined to be severe; Isthmus Slough is moderate.

Water Quality

Prior to DEQ's 1978 study, their major thrust in nonpoint source problems was toward general water quality. To this end, numerous water surveillance stations are operated within waterways. These stations sample ambient water and measure the quality against all parameters listed under Analysis B, Table 4.1-3. This datum base is valuable for scientific study and highlights geographic areas with water quality problems. These problem areas can then receive indepth study.

Fifteen such stations have operated within Coos Bay and Isthmus Slough since 1976. (Map 4.4-2) Analysis of the data accumulated over this time reveals some geographical problem areas. (DEQ 1978b) (Fig. 4.4-1, 4.4-5) (Tabulation of surveillance station data, Appendix C)

1. Isthmus Slough exceeds the standards for low levels of dissolved oxygen; sedimentation, and high temperatures in summer due to low seasonal flow.

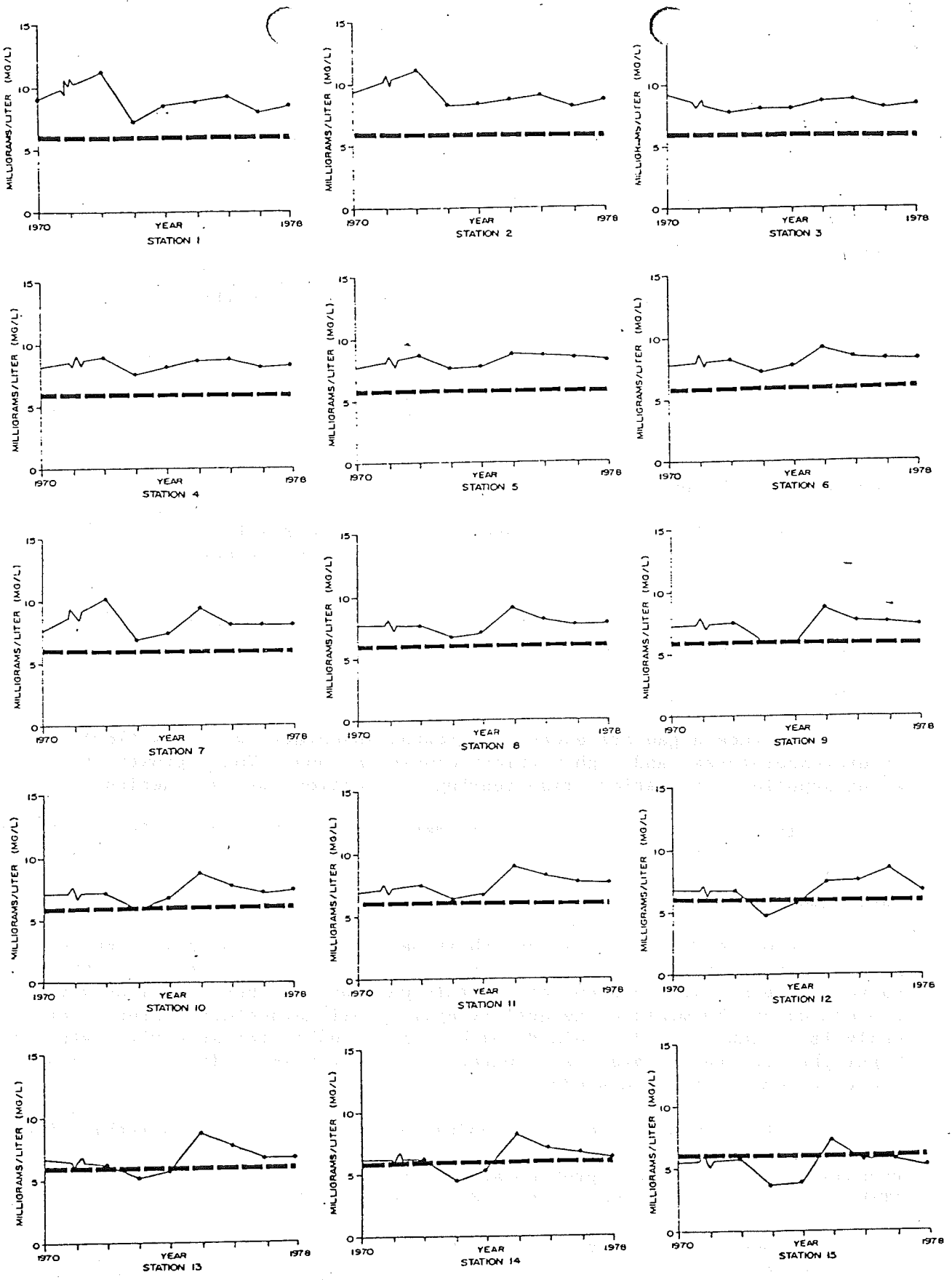


Fig. 4.4-1

COOS BAY

DISSOLVED OXYGEN

ANNUAL MEAN

MILLIGRAMS/LITER (MG/L)

KEY:

—— - SAMPLE

– – - STANDARD (NO LESS THAN 6 MG/L)

SOURCE: OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

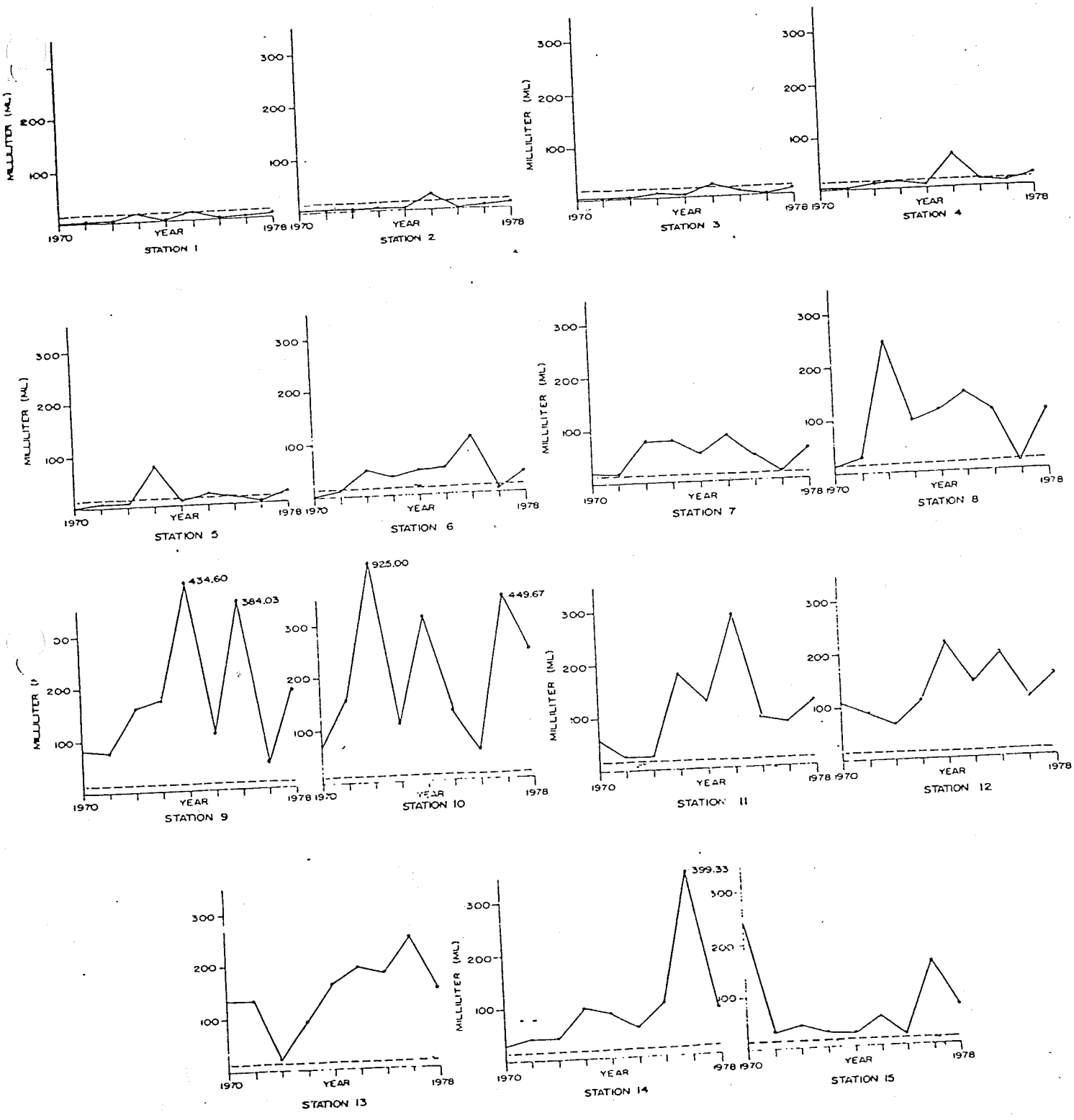


Fig. 4.4-2

COOS BAY

FECAL COLIFORM

ANNUAL MEAN

MOST PROBABLE NUMBER PER 100 MILLILITER (ML)

KEY:

——— SAMPLE

– – – – STANDARD (14 MPN/100 ML OR NO MORE THAN 10% OF THE SAMPLES SHALL EXCEED 43 MPN/100 ML)

SOURCE: OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

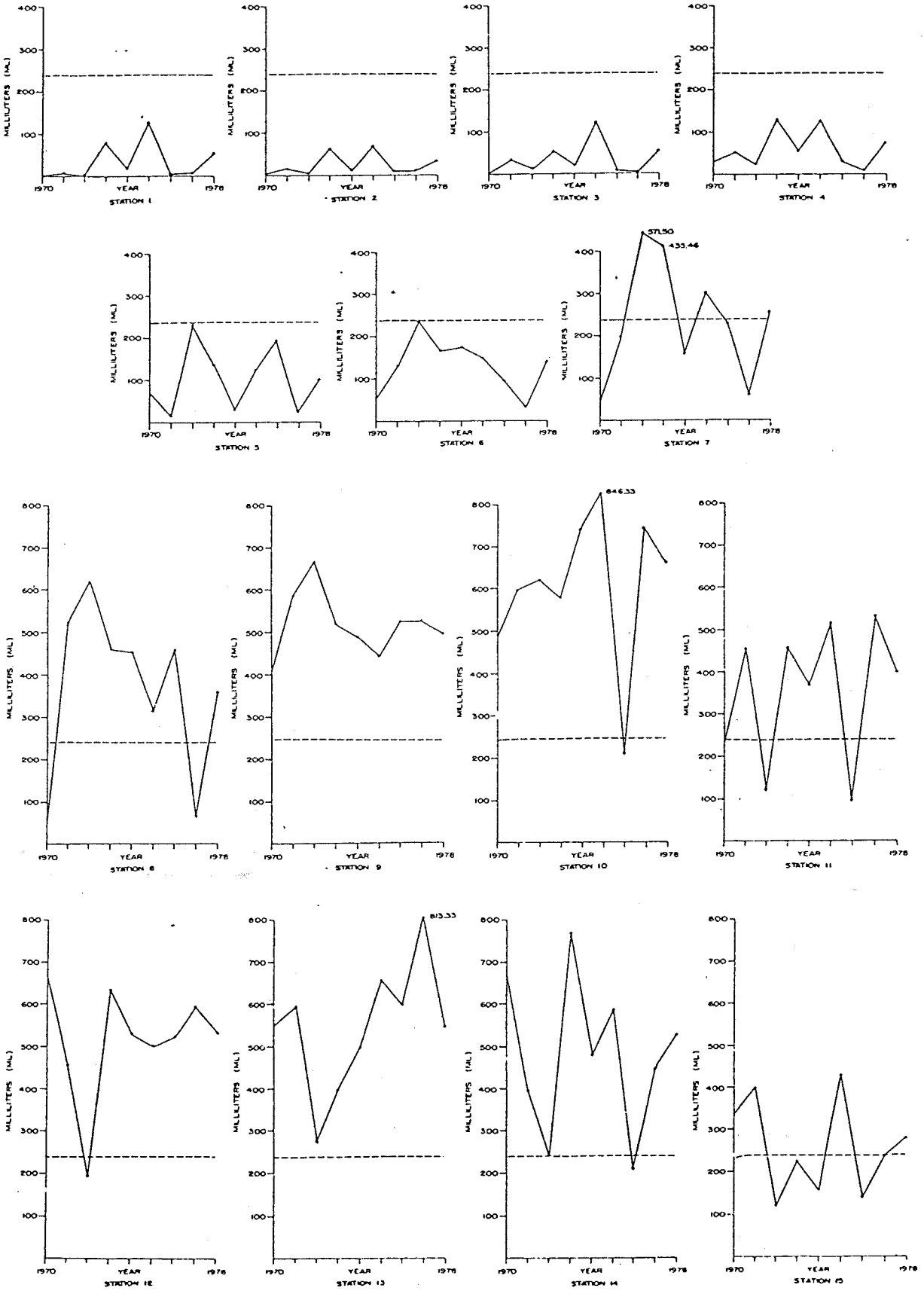


Fig. 4.4-3

COOS BAY

TOTAL COLIFORM

MOST PROBABLE NUMBER/100 MILLILITERS (ML)

ANNUAL MEAN

KEY:

——— SAMPLE

- - - - STANDARD (240 MPN/100 ML OR NOT TO EXCEED THIS VALUE IN MORE THAN 20% OF THE SAMPLES)

SOURCE: OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

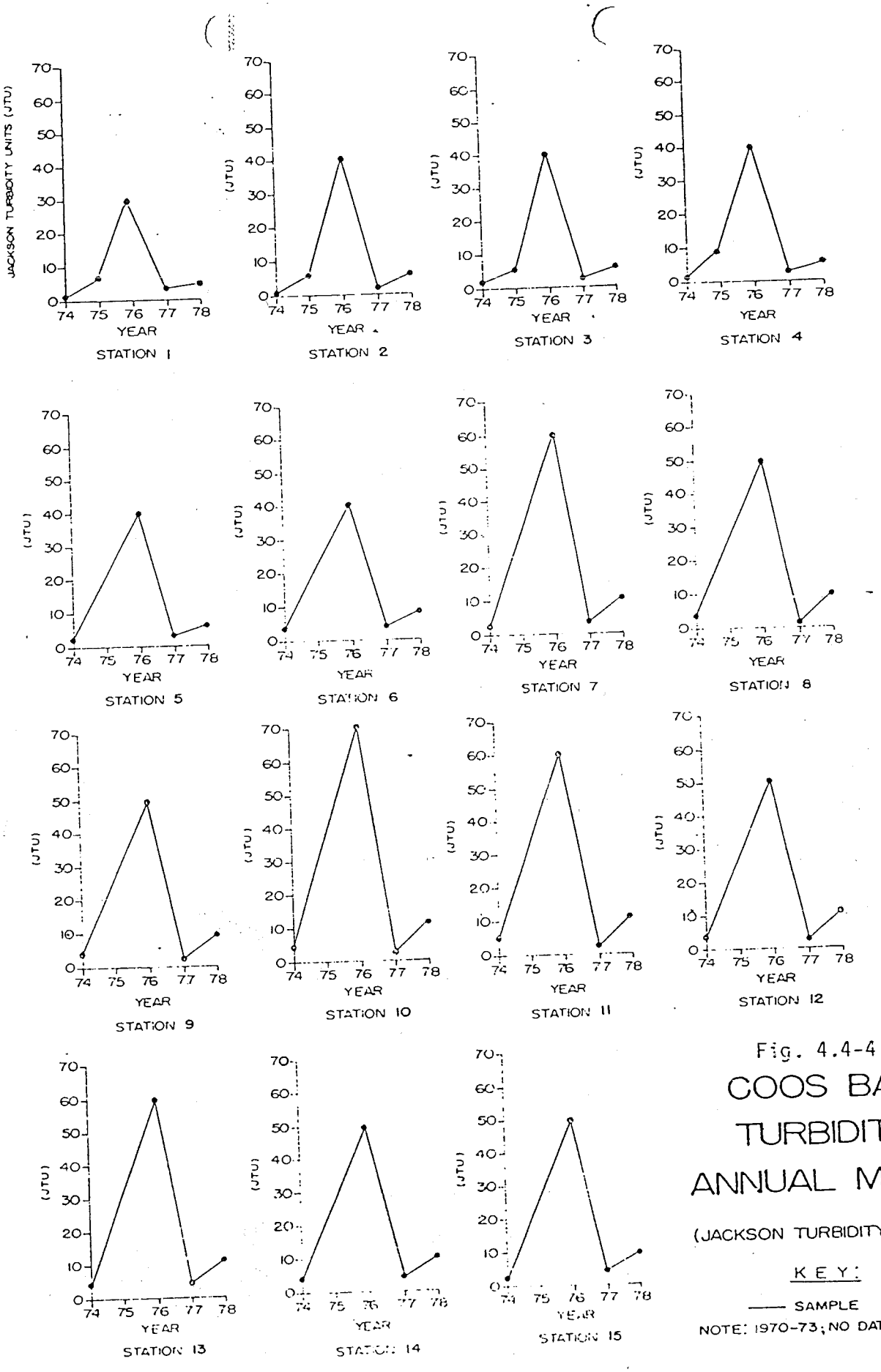


Fig. 4.4-4

COOS BAY TURBIDITY ANNUAL MEAN

(JACKSON TURBIDITY UNITS)

KEY:

—— SAMPLE

NOTE: 1970-73; NO DATA EXISTS

STANDARD: NO MORE THAN 10% INCREASE IN NATURAL BACKGROUND TURBIDITY.
DATA UNAVAILABLE FOR NATURAL BACKGROUND TURBIDITY IN COOS BAY.

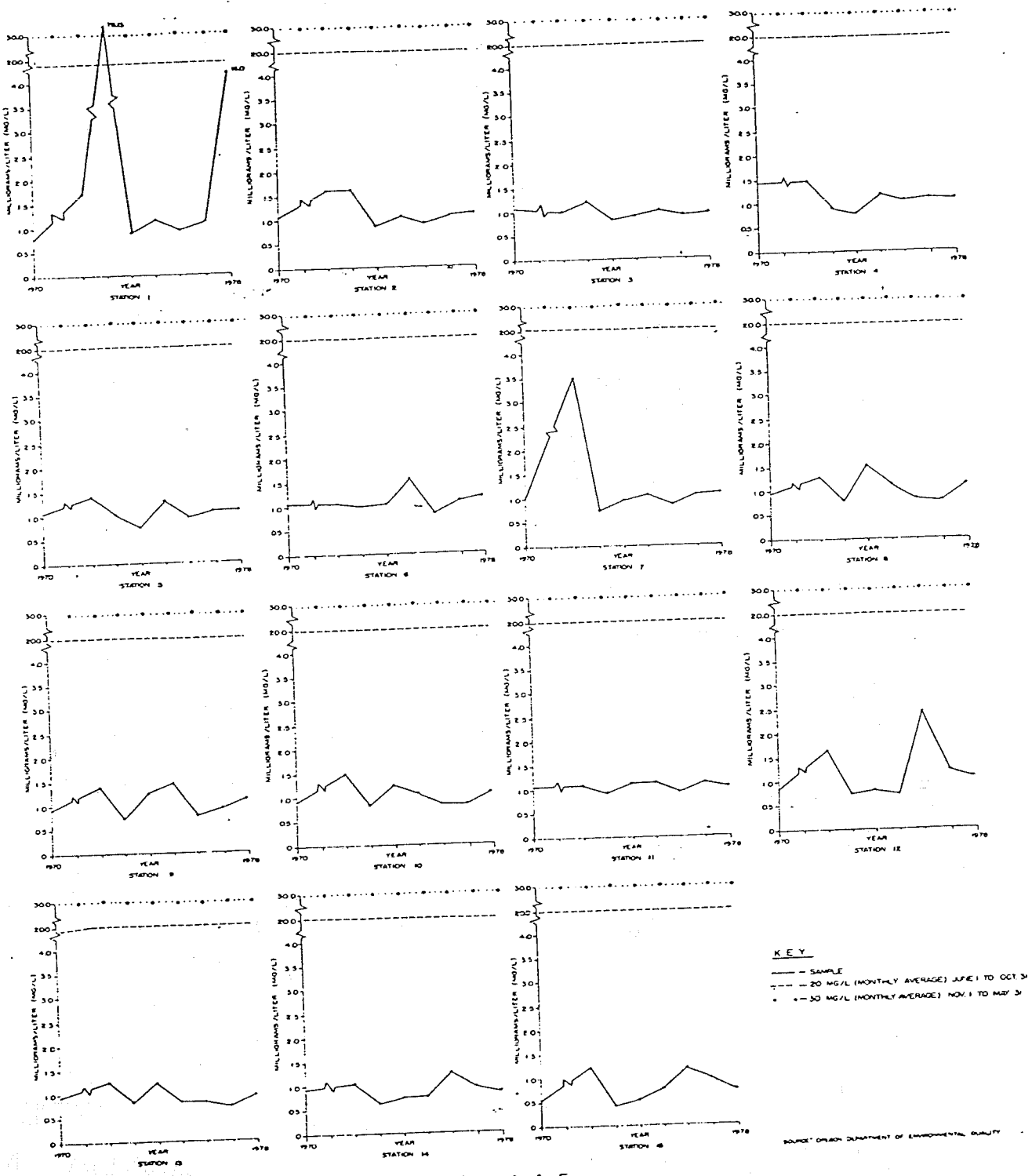


Fig. 4.4-5

COOS BAY

BIOLOGICAL OXYGEN DEMAND

ANNUAL MEAN

MILLIGRAMS/LITER (MG/L)

2. The Coos Bay urban area exhibits consistently high levels of fecal and total coliform (bacteria), and lower levels of dissolved oxygen although within acceptable standard range (probably due to high bacterial count). Some of this information mirrors the results of the 1978 study focusing on stream quality.

One will note that Isthmus Slough was cited earlier in the stream quality study as having a moderate degree of sedimentation, elevated water temperature, and nuisance algae; and as severely burdened with excessive debris. All of these conditions augment chemical and organic utilization of dissolved oxygen, lowering adequate levels for acquatic habitats. Sedimentation may also interfere with the seasonal flushing of the stream aggravating low flow levels, and, in turn, higher summer water temperatures.

Interestingly, the parameters for fecal bacterial levels are not addressed under the stream quality problems. This issue is extremely important to urban areas responsible for sewage waste disposal. On the other hand, geographical areas such as Pony Creek are ignored by a sole water quality program based on surveillance stations which have not been located in smaller tributaries in this area.

The control of nonpoint source problems is difficult at best as indicated by the change in DEQ's approach. Initially, the department collected some hard data (surveillance stations) coupled with attempts to pinpoint causes (sewer and septic systems, urban runoff, etc.). However, it was realized that tributary streams are commonly the most severely impacted by nonpoint source problems. "In Oregon, as throughout the country, there simply is insufficient measured data on tributary streams to permit a data analysis approach to statewide NPS assessments." (Reikert et al. 1978:10) Also, the collection of hard data is expensive and often impossible logistically, (Reikert et al. 1978:10-12) Therefore, the DEQ has reverted to a rather subjective approach in compiling and interpreting its information. At present, information interpretations and remedial action are left to resource agencies and local planners and officials and the DEQ encourages the development of enforceable practices at the local level. However, the DEQ is no longer laying blame for nonpoint source problems. It is "impossible to separate man-caused from natural NPS problems." (Reikert et al. 1978:45)

Conclusion

For the purposes of the comprehensive plan as relating to water quality, the following conclusions may be made:

1. Point Source Problems -- These problems are regulated by the Department of Environmental Quality. There appear to be no ongoing violations in the record.

2. Nonpoint Source Problems -- The low oxygen level and high turbidity (sedimentation) exhibited at Isthmus Slough had in earlier water quality reports been liked to log storage practices which have long existed in most of the slought. Resource agencies are likely to consider this an area of future concern.

The problem with high federal bacterial levels around the Coos Bay urban area is another concern. Attention should be given to the improvement of the sanitary sewer system.

There had been no previous reports concerning the upper reaches of Pony Creek and the information in the 1978 DEQ study is preliminary. Future assessment should be made here.

3. The water quality problems discussed briefly above have been addressed by governmental agencies and a number of actions have been taken or proposed which should serve to reduce these problems. Cities in the Bay Area are cooperating in the development of improved sewage treatment facilities. Private firms are investing in measure designed to keep industrial waste discharges within limits governed by the Oregon Department of Environmental Quality.

   With respect to water quality problems related to log storage and handling, a series of recommendations have been made which, if followed, should serve to alleviate the problems on a short-term as well as long-term basis. These recommendations basically call for allowing continued use of the bay for log storage until such time as dry land storage facilities become feasible. Also recommend are the imposition of requirements for the gentle let-down of logs at log dumps, improved procedures for debris cleanup, and improved logistics by mill operators so as to reduce the time spent by logs in the water before processing (Coos-Curry Council of Governments, 1974).

4.5
Energy Conservation

Introduction

Energy is an integral part of all aspects of urban life, making energy consideration by city government and individuals essential to responsible land use planning. In light of the fact that most energy sources are exploited to near maximum, wise decisions toward land development, building construction, and transportation are needed for the most efficient use of the energy sources still available. Many energy sources are finite, that is, their loss is permanent. Like any rate commodity, scarcity and demand will raise its value, and impose economic increases on the consumer. Enlightened attitudes toward energy conservation will result not only in better natural resource management but also in financial compensations to the consumer.

Industrial nations over the centuries have derived most of their energy resources from the finite stock of fossil fuels (e.g., coal, oil, natural gas). Currently, there is a world-wide increase in demand for a decreasing supply of fuel. The results manifest themselves in such ways as higher gasoline and home heating oil costs.

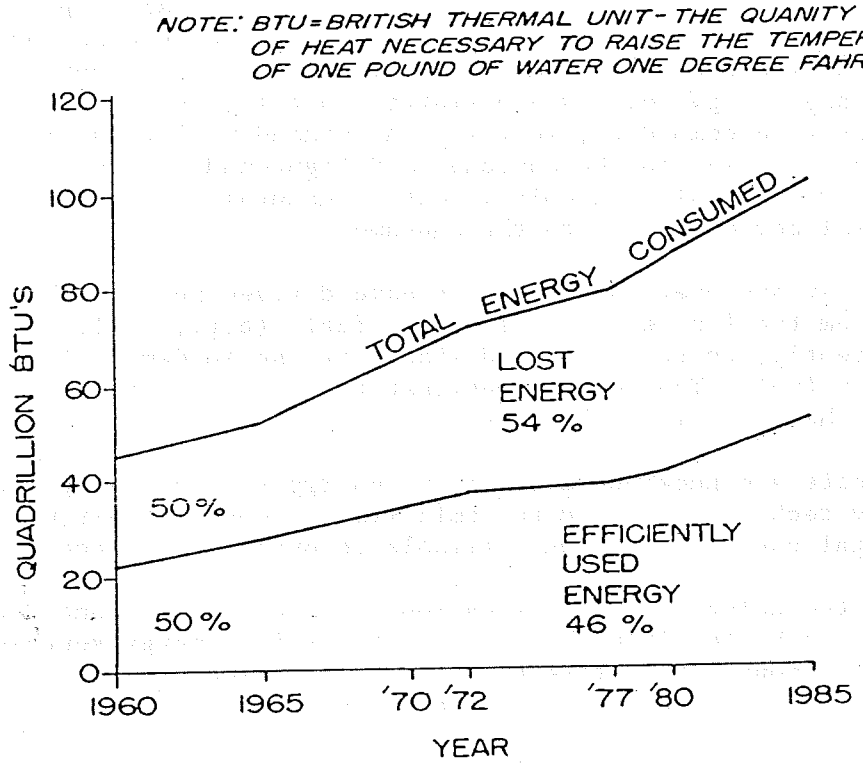
Although there are numerous alternative energy sources being studied, there are presently technological and economic limitations to their use. Therefore, the frugal use of our known available resources is a necessity.

Increasing technological sophistication and a changing economic environment may soon make feasible the use of alternative energy sources not currently employed. Among alternative energy sources which may be particularly significant to the Coos Bay area are solar, wind power, coal and solid waste recovery.

The amount of energy that is being wasted in the United States is phenomenal. As shown in Figure 4.5-1, trends since 1960 indicate that Americans waste more energy (54%) than which is used efficiently (46%). Although energy efficient usage versus energy wasteful usage was equal in 1960, trends have been toward increased energy losses, with the prediction that these differences will deviate further in the future.

Figure 4.5-1

EFFICIENCY OF ENERGY UTILIZATION IN THE U.S. 1960-1980



EFFICIENCY OF ENERGY UTILIZATION, 1960-80

SOURCE: MACKIE, AFTER DEPT. OF INTERIOR, 1974

President Carter focused on the issue of conservation in his speech on energy on April 18, 1977. "Conservation is the quickest, cheapest, most practical source of energy. Conservation is the only way we can buy a barrel of oil for a few dollars." It is theorized that the U.S. could meet all its future energy needs for the next 25 years simply by using current energy more efficiently. Local efforts should be geared toward conserving energy and thereby reducing the demand. If energy is used more efficiently, the consumer buys less, inducing an immediate and long-range savings to the user. The statewide planning goal on Energy Conservation requires the encouragement of land uses which "shall be managed and controlled so as to maximize the conservation of all forms of energy, based on sound economic principles." (LCDC 1977. Goal 13) The guidelines accompanying this goal stress measures to implement wise energy/land use planning; such as those which:

1. Maximize energy efficiency.

2. Minimize depletion of non-renewable energy sources - coal, oil, natural gas,

3. Centralize development before expansion,

4. Promote transportation efficiency, and

5. Tend toward renewable resources as much as possible - water, sunshine, wind, geothermal heat, waste.

To this end, this inventory shall:

1. Assess local sources of renewable and non-renewable energy at present and in the future.

2. Evaluate the energy used locally by all sectors of the Coos Bay community, and

3. Suggest conservation measures that can be exercised on the local level.

In particular, local government can have a definite impact on energy use through energy-efficient land use planning and implementation of energy-efficient construction standards. It should be stressed, however, that Coos Bay is a small part of a much larger regional energy system. The local energy situation is largely determined by activities at the regional and national levels. Local efforts at energy conservation are limited to the efforts of individuals in the private sector and the efforts of city government in planning and zoning. Nevertheless, according to Marion Hemphill, acting energy advisor for Portland, the impact of local energy conservation efforts can be a substantial contribution.

> Local governments have better techniques for dealing with energy problems than has the National Energy Act. Through the exercise [sic] of legislative, regulator, administrative, and political power...local energy conservation planning can result in immediate and significant energy savings and can have a greater impact than the N.E.A. on reducing the nation's energy demand. (Mackie and Mackie 1977:1)

Non-renewable Energy Sources

Coal

One of the few non-renewable energy sources that exist in the Coos Bay area is coal. Between the mid 1800's and mid 1900's approximately 3,000,000 tons of coal were mined in Coos County (State of Oregon Department of Geology and Mineral Resources, 1973). Although no energy sources are being recovered at this time, exploitation of the extensive coal basin lying beneath the Coos Bay urban area may again become a reality. The mining of coal was a significant industry at the turn of the century but the increased production of oil and gas and usage of fuel oil for heating caused the industry to wane and finally end by the time of World War II. Economic factors may make coal a valuable energy resource. The Pacific Power and Light Company owns leases to large coal deposits in the area, and in the past has stated plans to utilize coal for a fossil fuel-fired steam plant (State of Oregon Department of Geology and Mineral Resources, 1973). Two other sections of this report, Natural Disasters and Hazards and Economic Development, document the geologic and economic aspects of the coal industry; only the energy producing potential of the coal deposits will be touched upon here.

The potential of coal reserves for producing fuel energy is summarized by Beaulieu and Hughes in a 1975 report entitled, Environmental Geology of Western Coos and Douglas Countries, Oregon. They assert that the coal in this area is of low to medium, subbituminous grade with a heating value of 10,000 BTU per pound. Analysis shows that it contains 17% moisture, 8% ash, and 1% or less of sulfur. Although approximately one billion tons remain throughout the basin, only about 60 million tons are minable considering present economic conditions and technological capabilities. However, under the strained energy situation nationwide and the relatively dated resource information (1944, 1968, 1970), reevaluation of the limits of economic recovery may be in order in the future.

Beaulieu and Hughes conclude that the potential of the coal reserves for producing fuel energy would be most advantageous for smaller power plants designed to provide power for local industry. Large-scale coal gasification would deplete the entire reserve in six years based on only a 50% recovery rate. Moreover, the amount of water required for a large power producing plant appears to far exceed the capabilities of current, local water supplies.

> Potential future use of the coal for power is local and small in scale. For development to proceed several obstacles will have to be overcome, including overlapping ownership, economic constraints, and the need for surrounding transportation and water systems. Environmental considerations in the Coos Bay area include air and water pollution and use restrictions in the South Slough Sanctuary which limit possible future mining to certain areas and under strict conditions. (Beaulieu and Hughes 1975)

Gas and Oil

The discovery of large gas and oil reserves in the Coos Bay area; exploration begun in 1919 have continued intermittently to 1963 with no significant finds. (Table 4.5-1) A noteworthy investigation in the Libby mining area revealed a pitch coal deposit (a form of asphalt). However, the relative economic importance of this find is unknown. Exploratory drilling for gas reserves occurred south of the planning area, also with unpromising results. Other wells have been sunk in the Bandon and Coquille areas but results have been negative; Or, if traces of gas and oil were found, they were of insufficient quantity to warrant economical recovery.

Similarly, offshore oil and gas explorations have been minimal to date. This resource is addressed more conclusively under the Economic Development section. However, the coastal waters off Coos County are believed to be worthwhile potential sources for oil and gas.

> Approximately 1,100 square miles of shelf lands offshore from Coos County remain unexplored for oil and gas. Prospects are considered to be good for the area, and it is considered to be one of the best for petroleum exploration in western Oregon. (Beaulieu and Hughes 1975:50)

Traditionally, little electricity is produced in the Northwest by using oil and gas sources. (Mayes 1978:2) This should probably be the case until such time as oil and gas sources are discovered.

Uranium

There are no uranium sources in the Coos Bay area, nor are there any nuclear power plants in operation.

Renewable energy sources

Hydro-electric, thermal, nuclear

There are no local sources of hydro-electric, thermal, or nuclear power, and, although, electricity will be shown to be the predominant form of energy in local use, very little is produced in the state; none is produced locally. As a matter of fact only 30% of all electricity consumed in Oregon is produced in Oregon. Electricity utilized in Coos Bay is transferred by Pacific Power & Light (PPL) from generating plants in eastern Oregon. PPL also receives electricity generated on the Columbia River in exchange for that generated by their coal burning thermal plants in Wyoming and Washington. Although hydro-electric power predominantly comes from a constantly renewable water source, the problem of expanding or adding such generating plants in fact limits future increases hydro-electric power. Rather, it seems that future generation of electricity will be met by fossil-fire (coal, oil, natural gas) power plants, sources, naturally, that are non-renewable. (Mayes 1978:1)

TABLE 4.5-1

HOLES DRILLED FOR OIL AND GAS IN COOS COUNTY

Company	Well Name	Location	Date	Depth Drilled	Remarks
Coast Oil Co. (deepened by Fat Elk Oil Co.	Well No. 1	Coquille area NE¼SE¼ sec. 10, T.28S., 13W.	1929-1934	2526'	Cable tools. A thin oil-bearing sand reported at 1585' and gassy salt water at 1745'.
Coast Oil Co.	Well No. 2	Coquille area NE¼SW¼ sec. 10, T.28S., 13W	1939	2255'	Cable tools. A good gas flow reported at 1170'.
Coast Oil Co.	Well No. 3	Coquille area SW¼SE¼ sec. 10, T.28S., 13W.	1939	1640'	Cable tools. Reported to be a small gas well.
Coast Oil Co.	Well No. 4	Coquille area SW¼SE¼ sec. 10, T28S., 13W.	1939	1640'	Cable tools. Hit flowing salt water.
Coast Oil Co.	Rhoades-Menasha No. 1	Westport Arch NE¼SE¼ sec. 32, T26S., 13W.	1938	1365'	Cable tools. Reported shows of gas and numerous coal layers.
Libby Mine area	Pitch Coal occurrence	Westport Arch Approx. sec. 3 or 4, T.26S., 13W.	1920	---	Pitch coal found in fractures of coal. This is a form of asphalt.
Oregon Coastal Corp.	J. Coy No. 1	Bandon area NW¼ sec. 4, T.29S., 14W 330' S. of N. line & 330' E. of W. line	1953	1894'	Rotary. No oil or gas shows reported.
Pacific Petrol Co. (J.B. Ewell)	Morrison No. 1	Bandon area S½ NW¼ sec. 26, T. 28S., 14W.	1936-1937	2282'	Claimed enough gas was encountered to fire the boiler.
Pan American Petroleum Corp.	OCS P-0112	Bandon area Tract 102	1967	6146'	Gas show at 5400' in tight sandstone.
Phillips Petrol. Co.	Dobbyns No. 1	Coos Bay area SW¼sec.28,T. 26S., 13W.330'S. & 330'E. from W¼ cor.	1943-1944	6941'	Gas sand on electric log at 1040'. Submarine basalt at 2300'.
Sunset Oil Co. (J.B. Ewell	Bandon	Bandon area Sec.4,T.29S, 14W.	1944	1089'	Rotary. No information.
Warren, E.M.	Coos County No. 1-7	Coquille area SE¼sec.7, T.27S., 13W. 450'N. of S. line & 2200' W. of E. line	1963	6337'	Rotary. Traces of gas and oil. Bottomed in Coaledo Formation
West Shore Oil Co.	?	Bandon area NW¼ sec. 23, T.30S., 14W.	1913-1919	1400'	No information.

Source: Beaulieu and Hughes 1975:49

Solar

The use of solar energy has long been investigated for feasibility. It has the qualities of being renewable and relatively inexpensive, and therefore, an attractive energy alternative. Solar energy has been used primarily in residences for space and water heating. Passive space heating is similar to the effect of a greenhouse and is achieved by numerous and properly-placed windows, proper orientation of the dwelling to the sun, appropriate landscaping for protection against the elements, and other non-mechanical means to absorb, store, and transmit solar heat. Other ways to utilize the sun for space heating and water heating can be more complex by employing glass encased collectors, pipes, pumps, storage tanks and mechanical circulation systems. This use of solar energy is described as an "active" system.

Heat and electrical power generation are the direct methods in which solar energy may be utilized. The use of solar collectors, which can be mounted on the walls or roofs of houses or buildings, eventually may provide most of the needed energy for heating, cooling and hot-water preparation in many homes throughout the country. (Wolf, 1974) Solar energy can provide electrical power by the conversion of sunlight to heat, heat to steam, steam to mechanical power, and mechanical power to the production of electrical energy. Also, sunlight may be directly converted to electricity through the photovoltaic process (Wolf, 1974). Many ways to utilize solar energy are today technologically, but not economically feasible. For example, the photovaltaic process is currently being used to produce energy for use within different types of space craft. However, domestic use may still be economically unfeasible. Further refinement of technology, combined with mass production of equipment to utilize solar energy may eventually provide this country with a significant alternative energy source.

It has been demonstrated that solar energy can be successfully applied in the Pacific Northwest for at least the majority of heating needs, and that the maritime climate of the Coos Bay area should be no obstacle in utilizing this resource. One of the first solar homes in the Northwest was constructed just south of the city in 1967 by Henry Mathew. In 1974, his self-designed "active" system provided approximately 80% of the space and water heating for the house. (Reynolds 1976)

The costs of installing an active solar system appears to be the primary deterrent in widespread usage of solar energy by this means. Equipment and labor costs range anywhere from $5,000 to $7,000. Sources at Pacific Power and Light estimate the annual savings in monthly utility bills accrued by using an active system would take 20 to 30 years to amortize just the cost of the equipment (roughly $1,200). (Mayes 1978)

A small number of other Coos Bay residents have installed active solar heating units. However, the most viable option in terms of new construction and for the effective role of local government seems to be in passive energy. Adjustments in building design and siting can achieve more to capture a portion of incident solar radiation at little cost than the more complex active systems. Local government can, through ordinance, provide the flexibility required by passive and active solar energy.

Wind

Since the turn of the century windmills have been used to generate electrical power (National Science Foundation, 1974). Energy can be generated by converting the force of the wind to electrical energy. The economic advantages of using fossil fuel resources were, in part, responsible for lessening interest in the use of windpower. The Oregon coast would seem to be a likely place for wind power considering the rather strong, consistent seasonal winds which assault the region. The City of Bandon has investigated the feasibility of generating power from the wind on a large-scale basis. Dr. Wendell E. Hewson, Chairman of the Department of Atmospheric Sciences from Oregon State University has also studied the feasibility of tapping wind energy along the Oregon Coast (Hewson, 1974). Also, experimentation to satisfy individual needs is occurring locally. Small wind generators are operating in the city -- on atop a building in the downtown commercial district, the other serving a single-family residence.

The use of wind power as an energy alternative requires that local government consider the effects of design and location for some of the smaller, individual units and the impact of size on the larger units designed for mass production of electricity. The latter units may have a visual impact on the coast due to the diameter of the rotor (at least 125 feet) and the vast number of units needed to produce meaningful amounts of energy. (Mayes 1978:9) The Coos Bay area is a suggested location for aerogenerators (Hewson, 1974) There is a reasonable possibility that windpower may contribute to this area's energy supplies in the future, but the extent of that contribution is not presently known.

Waste

The term solid waste basically applies to all waste materials commonly disposed of on land, including but not limited to household and commercial garbage, demolition debris, limbs, brush, auto bodies, tires and hazardous materials. The convenient, safe, sanitary and economical disposal of solid wastes is necessary for the maintenance of environmental quality. According to the Environmental Protection Agency, there is enough energy in this country's solid waste to provide lighting for every house and commercial establishment in the United States each year.[1] On a nationwide basis, the equivalent of 180 million barrels of oil per year could be saved by recycling and deriving fuel from solid waste (National Wildlife Federation, 1974)

Solid waste resource recovery systems have been discussed by Coos County as a possible alternative to solid waste disposal in landfills. By this process, waste may simply be burned to generate electricity or converted to methane gas or oil. This process has been recognized by the County's solid waste management plan as a desirable opportunity should it be proved economically and technologically feasible.

> As materials, energy and water resource become scarce, more Oregonians are turning to recycling and resource recovery for waste reduction and alternatives to waste disposal. In addition, restrictions on property tax revenues may cause governments to consider reductions in solid waste volumes to reduce disposal costs and to extend landfill life expectancies. (Coos County, Oregon 1978:12)

Specific plans to establish a resource recovery site are not firm at this time but are being investigated for consideration by 1984. Variables to be considered include:

1. Waste quantities that are available to the proposed facility.
2. Composition the available wastes.
3. Market conditions for each material that might be recovered.
4. Capital, operational and maintenance costs for the facility.
5. Availability and cost of energy for the facility.
6. Specific technology available. (Coos County, Oregon 1978:13)

Another variable to be considered is pollution. "Refuse is by no means a clean fuel when it is burned. But, as plants are converted to accept refuse, or new ones are constructed, pollution controls can be built in." (Mayes 1978:5)

Biomass

Biomass is the burning of plant material as an energy source. Locally, some lumber milling establishments have used the wood residue as "hogged" fuel to supplement power in their own operations. Presently, there are no other successful applications of biomass as an energy source for individual purposes or large-scale energy production nor is there an attempt to propagate plant life solely for the purpose of producing energy.

Summary

1. Few, non-renewable energy sources (coal, gas, oil, uranium) exist in the Coos Bay area. Those that are present are not being recovered at this time due to economical or technological constraints:
2. There are no hydroelectric, thermal or nuclear energy-producing plants in the Coos Bay area.
3. Alternative energy sources -- solar, wind, waste, biomass -- are under-utilized.

4. There are numerous additional possible alternative energy sources which may effect Eastside in the future. It has been suggested that energy may be derived from warm ocean currents, wave energy, sewage waste, and wood alcohol, among other sources. For the immediate future, conservation of known sources is a necessity until the limitation of alternative energy resources are removed.

Energy Consumption

Energy consumption can be analyzed by each of the major consuming sectors -- residences, commercial enterprises, industries, and transportation. Although specific data on the amounts and kind of energy sources utilized locally are not available, general comparisons can be made of the statewide situation with fair reliability. Annual reports published by the Oregon Department of Energy (DOE) analyze statewide energy usage versus resources and attempt to forecast energy supply and demand during the next 20 years. Given the assumption that these forecasts generally hold true for Coos Bay with some natural deviation from the overall state situation, local trends can be predicted.

Statewide Demand and Costs

The general trend, as indicated by the DOE, is a slowdown in the growth rate of all forms of energy consumption over the next 20 years. More energy will be consumed, but consumption will not increase as rapidly as it has in the past.

According to DOE, the main reasons for the slowdown are increased energy prices, slower population growth, slower growth in total and per capita income, slower growth in manufacturing production, and improvements in the operating efficiency of automobiles. (DOE 1978a:70) Spokesman for Pacific Power and Light, on the other hand, state that their agency believes that trends are growing at a greater rate than DOE predicts. (Brazelle and Mayes 1979)

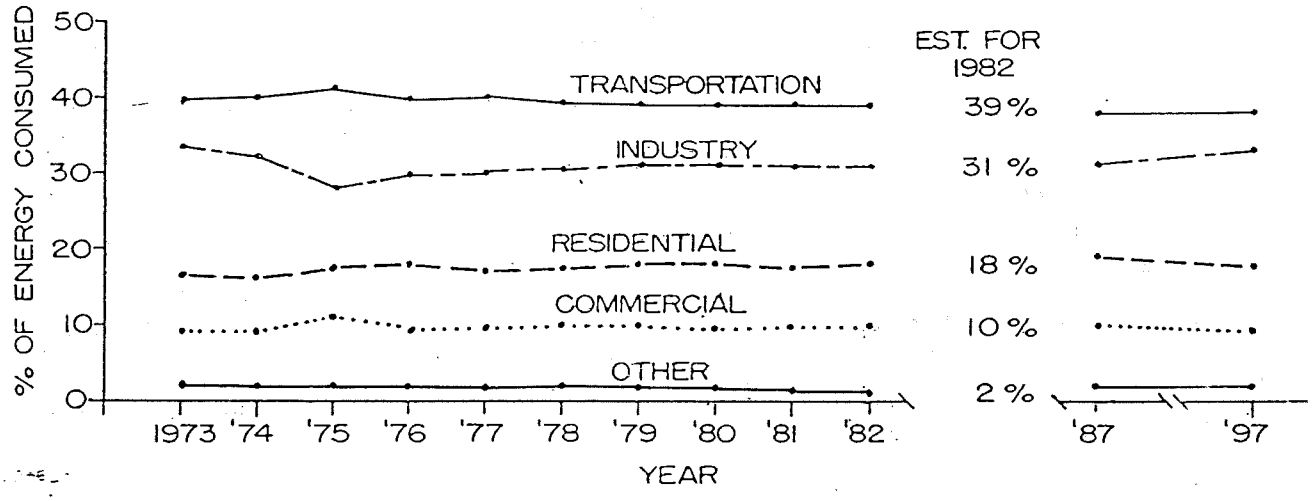
The DOE also compiles comparative data on the total energy consumed statewide and on total energy consumed by sector, as well as the amount of energy from each energy source. On a state level, total energy consumption can be broken into five sectors: residential, commercial, industrial, transportation, and other consumers. Statewide consumption figures (Fig. 4.5-2) reveal that transportation is the single largest consumer of energy (39%), followed in degree of usage by industry (31%), residents (18%), and commerce (10%). Agricultural uses account for 1% (DOE 1977:11); with the remaining amount owing to such uses as street and highway lighting. These percentages have been consistent and are projected to be so during the next 20 years.

Although transportation constitutes over one-third of energy consumed, this inventory focuses on consumption by industry, commerce and housing.

Examples of transportation conservation, such as mass transit and direct transportation routes are addressed elsewhere in this document. In addition, efficient land use practices by the industrial, commercial, and housing sectors can spin off energy savings in transportation as well.

In order to make comparisons between the DOE standards forecasts and the Coos Bay situation, data provided by Pacific Power and Light, the 1970 U.S. Census, and the city building permit records are used. Unfortunately, the information available on energy consumption in Coos Bay is neither complete nor strictly comparable to state information. Pacific Power and Light's Coos Bay franchise includes communities outside the planning area such as Charleston, North Bend, and Greenacres. In addition, local suppliers of oil and gas serve areas that extend beyond the planning area. On the other hand, the 1970 U.S. Census data portrays the area solely within the city limits, as do the building permit statistics. Further, much of the available data for Coos Bay dates back to 1970 only, so it is impossible to accurately determine past energy consumption trends. With these qualifications in mind, the following assessment is made which may lead to the development of policies to implement a citywide energy conservation program. It should be stressed, however, that besides the limited local data available, few alternatives exist that the City can pursue to substantially affect energy conservation.

Fig. 4.5-2



PERCENT OF TOTAL ENERGY CONSUMED IN OREGON BY EACH SECTOR.

SOURCE: OREGON DEPARTMENT OF ENERGY 1978

Electricity is the predominant form of energy used statewide. Generated from various sources -- water, gas, oil, and coal -- electricity is in greatest demand. Traditionally, the Pacific Northwest has obtained most of its electrical power from hydro-electric power plants, a comparatively inexpensive source of energy in the past. However, as aforementioned, suitable sites to locate additional plans or expand existing ones restricts this "renewable" energy source. This fact coupled with a growing consumer demand has swollen electricity costs to all three consuming sectors ending the longstanding pleasure of cheap electricity in the Northwest. Trends in the cost of electricity are depicted in Table 4.5-2 and Fig. 4.5-3. The information reveals that dramatic increases are expected that is, a 15% to 23% increase in rates by 1996. Comparable cost data for other energy sources (wood, propane, oil) are not available. However, one would expect these costs also to be rising.

Table 4.5-2

PRIVATE AND PUBLIC UTILITY COSTS/KWH, STATEWIDE

	Residential			
Year	Private Utility Rates	Public Utility Rates	Commercial	Industrial
1971	1.33	1.02	1.31	.44
1976	1.92	1.41	1.82	.74
1981	2.91	2.02	2.75	1.09
1986	4.40	2.91	4.13	1.59
1991	6.21	4.00	5.79	2.21
1996	8.78	5.53	8.17	3.12

Source: DOE 1977:29

The data from Table 4.5-2 may prove to be out of line even by 1981. Energy costs are predicted on resource capabilities and demand; and, although the annual rate of demand may be slowing, unforeseen contingencies in the resource may increase consumer costs dramatically. Water shortages due to low streamflows and the delays in the construction of nuclear, coal, and thermal power plants cause added shortages in the projected amounts of energy available. In an address to the Washington State Legislature in January, 1980, Sterling Munro, Bonneville Power Administrator, asserted that the probability of shortages in 1983-1984 is most likely to approximate 40% rather than the 28% previously predicted. (Munro January 17, 1980) Inevitably, the cost to the consumer will closely follow.

Local Demand and Costs

Consistent with state characteristics, local energy demand is satisfied through the consumption of electricity. A cursory comparison of data of statewide costs discussed above and local costs to consumers Table 4.5-3 shows that in 1971 and 1976, local rates have leaned strongly toward or exceeded the higher average private utility rates. Remarkably, the average bill to consumers has more than doubled during the eight year period these rates were computed. If the statewide costs are projected to increase by as much as 18% to 23% for residential use, local rates will most likely follow suit.

Industrial and residential sectors consume the most electricity statewide, 40% and 38% respectively. However, in contrast to state trends, the Coos Bay residential sector consumer 10% more electricity (45%) than the industrial sector (35%), and 25% more than the commercial sector (20%). (Table 4.5-4).

The industrial sector consumes the most energy statewide; closely followed by residential usage. A comparison of overall local usage reveals that the residential sector falls first in the consumption category and exceeds industrial usage by 10%. This disparity is logical when one considers the amount of industry in the bay area and that the type of industry (wood and lumber products, fish processing) are relatively low energy users in comparison to other industries operating in the state.

Table 4.5-3

TRENDS IN LOCAL ENERGY COSTS.
1970-1978

Year	Average Cost/KWH	Average Bill/Customer[a]
1970	1.35	$15.64
1971	1.48	$18.44
1972	1.48	$18.29
1973	1.48	$18.35
1974	1.55	$19.35
1975	1.75	$22.78
1976	1.83	$23.64
1977	2.33	$28.36
1978[b]	2.64	$38.72

[a]"Customer" includes all three sectors: residential, commercial, and industrial.

[b]Includes January, February, March only.

Source: Pacific Power and Light, Coos Bay Office 1978

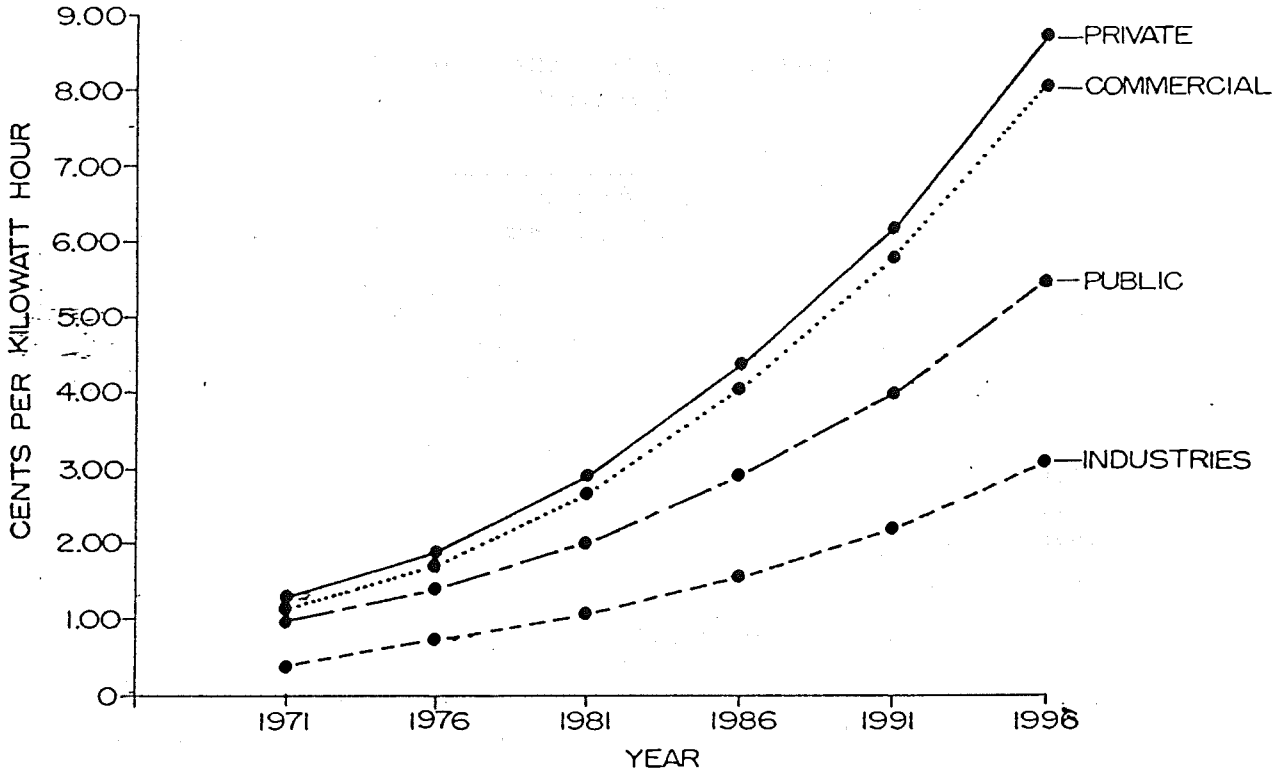
Table 4.5-4

COMPARISON OF LOCAL AND STATEWIDE ELECTRICITY CONSUMPTION BY SECTOR, 1977

Sector	Coos Bay	Oregon
Residential	45%	38%
Industrial	35%	40%
Commercial	20%	20%
Other	0%	2%

Source: DOE 1977 and Pacific Power and Light, Coos Bay, Oregon

Fig. 4.5-3



RISING COST OF ELECTRICITY

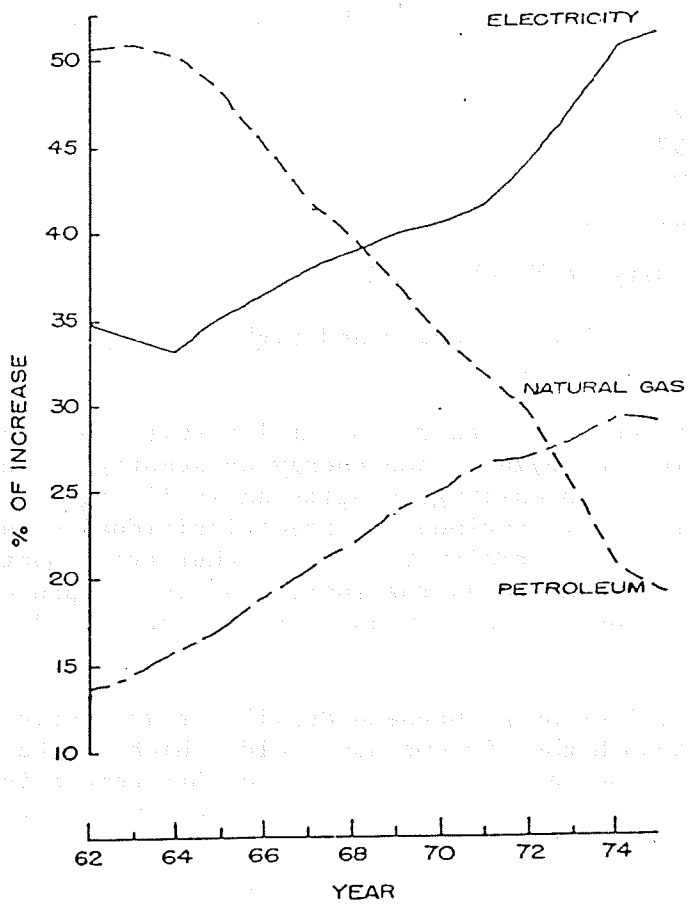
SOURCE: OREGON DEPARTMENT OF ENERGY 1977

Demand: Residential Sector

The size of the residential sector in Coos Bay is growing rapidly. Between 1970 and 1978, a net total of 967 new dwelling units were added to the housing stock, including mobile homes. The increase represents 17% of the actual total stock. (City of Coos Bay, Building Permit Records) Historically, actual land use for residential purposes has far outstripped industrial land uses in the city. In 1977, 807.13 acres of land were in residential use; 37.39 acres were occupied by industry.

Local data suggest that the residential sector will continue to grow faster than the other sectors and that it will continue to consume more electrical energy. More and more houses are utilizing electricity for <u>all</u> energy costs, they are usually backed-up by electrical heat. Fewer new homes are using oil and gas for space heating; this has been the trend throughout the state since 1962. (Fig. 4.5-4)

FIGURE 4.5-4



CHANGING COMPOSITION OF ENERGY CONSUMPTION IN THE RESIDENTIAL SECTOR IN OREGON.

SOURCE: O.D.E. 1977

Today, almost 100% of all new homes in the bay area use electricity for space and water heating and for cooking. This fact is supported by data contained within Table 4.5-5 which accounts for the number of new connections made by Pacific Power and Light, the percentages of those connections for space heating and for water heating, and the number of units which converted to electricity from other forms of heating. Figure 4.5-5 graphically shows the importance of electricity as an energy source in the residential sector in Coos Bay in 1970. Gas, oil and wood were used by relatively small percentages of homes for water heating and cooking, while over 90% used electricity. Space heating, on the other hand, was dominated by both electricity and fuel oil at that time.

Table 4.5-5

RESIDENTIAL ACCOUNTS FOR COOS BAY DISTRICT
(SINGLE-FAMILY AND MULTIPLE)

Year	New Connections	% Electric Space Heating	% Electric Water Heating	Conversions
1976	327	97	100	101
1977	457	98	100	92
1978[a]	107	99	100	20

[a]January to March, 1978

Source: Pacific Power and Light Data.

The projected increased demand will result from increases in population, income, employment, and energy-consumptive trends in lifestyle (eating out, fast-food packaging, single-family living). As a result, rising cost of electricity will continue to affect individual consumers in several ways. Not only will electricity bills be higher every month, but services and goods will be more expensive as the increased cost of production is passed on to the consumer. Trends in energy costs to the year 1997 are shown in Fig. 4.5-6.

Naturally, low-income households will be more severely affected by these increases than higher-income households which can better absorb the increased costs. Since a portion of the Coos Bay population is low to moderate income, conservation measures should be implemented in all three sectors to achieve the lowest energy costs possible.

Demand: Commercial Sector

This sector consumes, which includes retail businesses, services, offices, and entertainment facilities, about 20% of the electricity consumed statewide, and locally. Figures 4.5-7 shows that throughout the state electricity and natural gas have been the main sources of energy for the commercial sector. In Coos Bay electricity is again the primary commercial energy source. DOE predicts that electricity will continue to be the main energy source in the commercial sector over the next 20 years. (Figure 4.5-8) Again, there is no indication that the energy situation in Coos Bay will be substantially different from the statewide trend, although there probably will not be an increase in the amount of petroleum used in the commercial sector in Coos Bay.

This sector is an important one in Coos Bay as it is directly tied to the residential sector by providing jobs and services. Energy conservation in the commercial sector will directly benefit the individuals involved in commercial endeavors by lowering energy bills. Beyond this direct benefit, the community at large will benefit financially from energy conservation through slower increases in the costs of goods and services and through slower increases in the costs of electricity. Once again, energy conservation must be considered a source of energy.

Demand: Industrial Sector

Thirty-five percent of all electricity consumed locally is used by industry. This lower-than-statewide statistic is partially attributable to the fact that the City of Coos Bay does not house many energy-intensive-industries. Information on other sources of energy utilized by industry in Coos Bay is difficult to appraise, however, electricity will most likely continue to be the predominant energy source with propane and oil used as backup systems. (Brazelle and Mayes 1980)

Energy Conservation on the Local Level

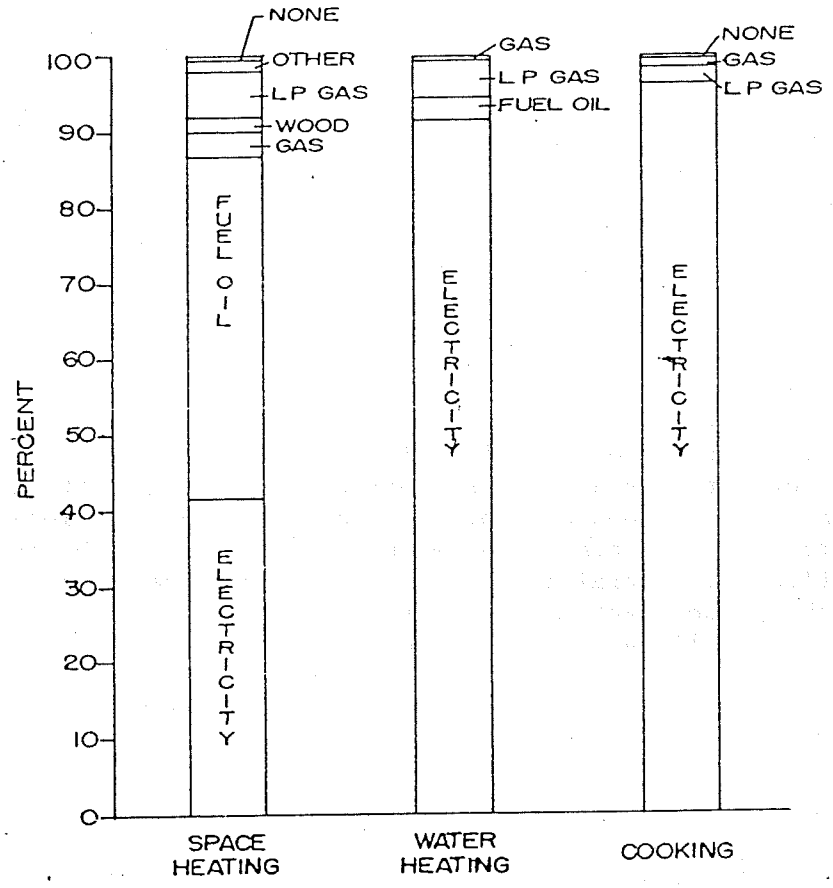
Residential Sector

The residential sector consumes the most electrical energy in Coos Bay, and probably the most energy overall. Conservation efforts in this sector can result in substantial energy and financial savings. Actions can be taken by individual homeowners and by local governments to stimulate energy conservation measures.

Individual Measures

The list of conservation measures that can be implemented by individual homeowners is extensive. Many of these measures are simply common sense approaches to reducing energy waste in existing houses. These measures have received a great deal of publicity: extinguish lights, turn thermostats down, insulate homes, install weather stripping and storm windows. These simple procedures can reduce energy consumption appreciably.

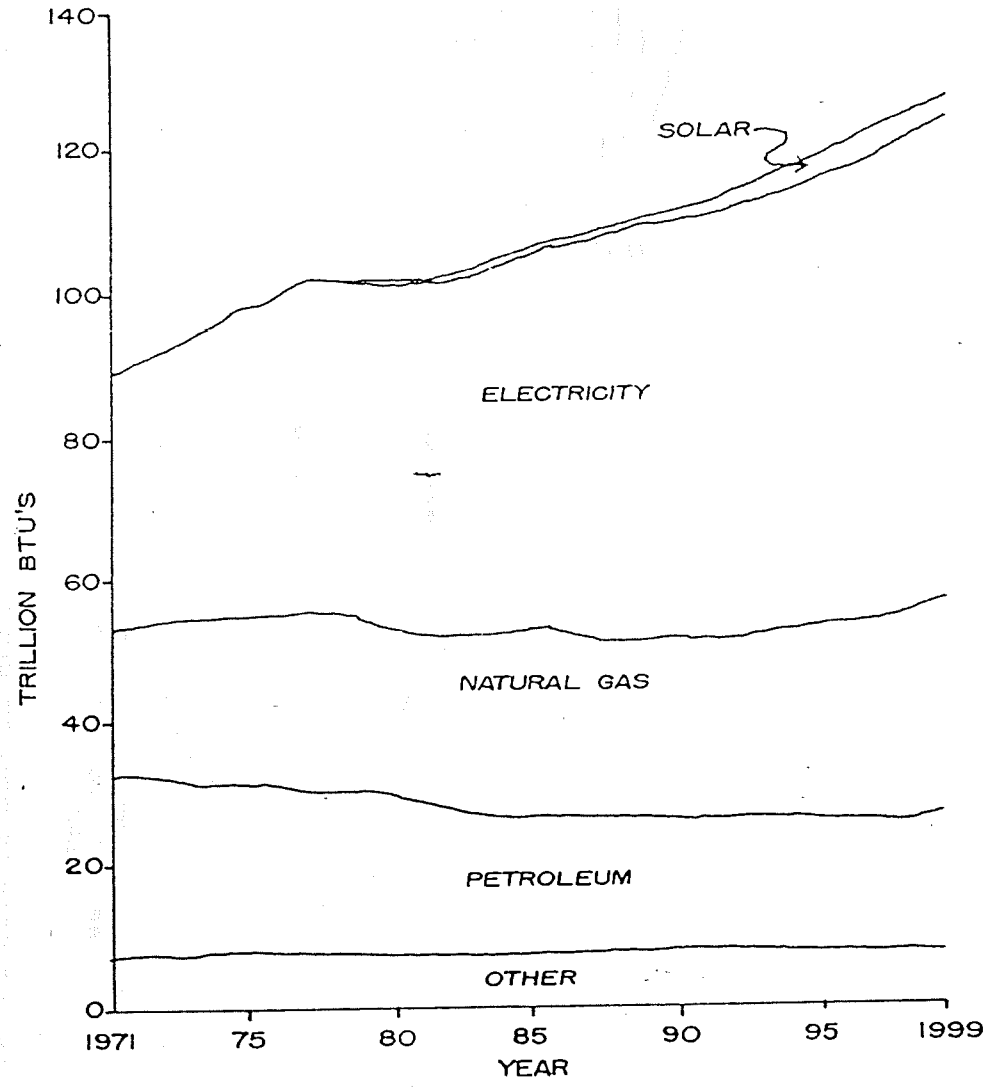
Fig. 4.5-5



ENERGY SOURCES FOR THREE END USES—
RESIDENTIAL SECTOR, COOS BAY: 1970

SOURCE: 1970 CENSUS.

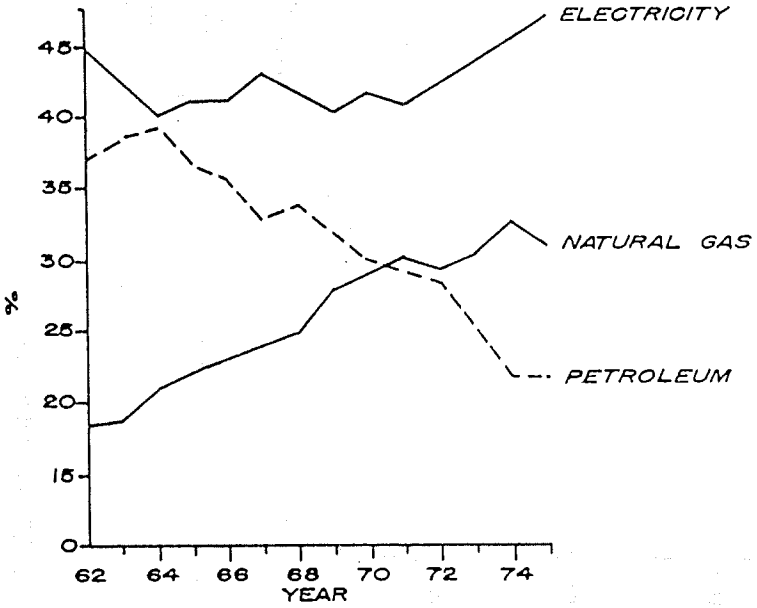
Fig.. 4.5-6



STATEWIDE SOURCES OF ENERGY FOR RESIDENTIAL SECTOR IN OREGON, 1971-1999

SOURCE: O.D.E. 1978

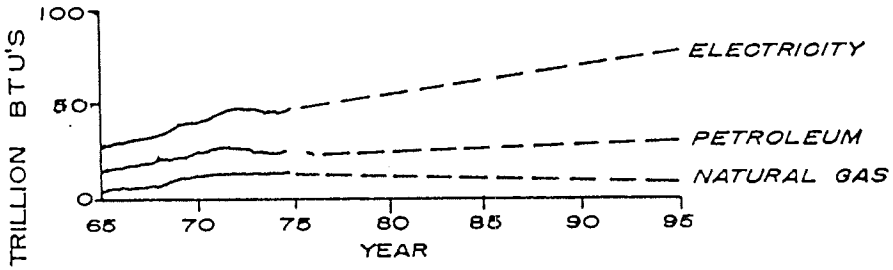
Fig. 4.5-7



CHANGING COMPOSITION OF ENERGY CONSUMPTION IN THE COMMERCIAL SECTOR IN OREGON: 1962-1974

SOURCE: O. D. E., 1977

Fig. 4.5-8



SOURCES OF ENERGY FOR COMMERCIAL SECTOR IN OREGON: 1965-1995

SOURCE: O. D. E., 1977

Individuals can also implement conservation methods when designing and building new residences (both single-family and multiple-unit buildings). At the time of construction, insulation can be provided throughout the building as well as storm windows and weather stripping. In addition, the building itself can be situated on the lot in such a way as to maximize utilization of solar energy.

Recycling is a form of energy conservation and is conducted locally by only a few industries and organizations. The primary recycling operation is South Coast Recycling sponsored by the Star of Hope in North Bend. Newspapers, high grade office paper, cardboard, aluminum, and glass are collected, stored, and then transported to Portland or Eugene. Cardboard is recycled locally by Menasha Corporation who reimburses South Coast Recycling for its supply, and by two local sanitary services. The latter plans on including newspapers in its recycling efforts. Recycling as an energy conservation measure can only be profitable if done on a broad scale.

Energy conservation assistance programs are available to consumers through federal, state, and private agencies. On the federal level, energy efficiency standards have been adopted for home appliances, such as refrigerators and dishwashers. The Oregon Department of Energy has compiled the following list of weatherization incentives. (DOE 1978b)

1. Low-interest weatherization loans through the Department of Veterans Affairs.

2. Tax credit of 25% of weatherization costs up to $125.

3. Refund up to $300 on weatherization for low-income senior citizens whose home is valued less than $30,000.

4. Homeowner tax credit of 25% of costs, up to $1,000, to install an alternate energy system (solar, wind, geothermal).

5. Weatherization inspections and low-interest loans from most local heating companies.

6. Energy efficiency rating program for new homes.

7. Energy efficiency home design assistance.

Locally, Pacific Power and Light Company provides inspections and low-interest loans for home weatherization. Also, Southwestern Oregon Community Action Programs administers programs for low-income families by obtaining fuel and/or assistance to pay fuel bills.

Local Government

The city can have a considerable impact on energy conservation in the residential sector. At the present, the City enforces the standards set by the Uniform Building Codes regarding insulation and heat loss and requires that these standards be met by all new construction. Several cities, however, have taken a more extreme approach to energy conservation. For instance, the City of Davis, California has adopted an energy conservation ordinance which makes it mandatory for all new residential construction to comply with strict energy performance standards. This ordinance addresses the effects of insulation, solar orientation, amount of surface area, color, glazing, shading, heat storage, floor area, and window area, on energy conservation.

The City of Coos Bay should seriously consider incorporating energy conservation standards into the zoning and subdivisions ordinance. Multiple-unit housing consumes less energy for heating than single-family housing. Lot sizes and setbacks could be adjusted to allow for higher densities and additional high-density residential zones could be created along major transportation corridors. There will be lower costs involved in providing power and water lines to high density developments along transportation corridors than to single family houses built in outlying areas. The same reasoning holds true for telephone and TV cable lines. Generally, urban sprawl can be energy consumptive and, therefore, expensive; it should be avoided. The zoning ordinance should encourage development in areas already served by utilities.

There are a number of residential site design alternatives that can be addressed in the zoning ordinance that can result in more energy efficient land use. The Planned Unit Development is one tool that a developer can use to maximize densities without compromising open space. Other alternatives are zero lot line construction, in which a side yard is eliminated to gain one larger yard; or clustering in back-to-back construction, and townhouses construction (Figure 4.5-9). These alternatives provide greater flexibility for residential developments and make it easier for developers to use concepts of solar orientation and shading as well as providing more usable open space for recreation and gardening in urban areas.

Another way the zoning ordinance can aid in energy conservation is by designating lands to be used for community gardens. These gardens could result in substantial energy savings, in light of the fact that 17% of the energy consumed in the United States is used for food transportation. Some effort should be made to encourage local urban food production, or at least to make sure that land will be available for such use in the future.

The subdivision ordinance can also incorporate energy conservation techniques. Some of the numerous requirements that could be imposed on subdivision design are:

1. Solar orientation required for all lots.

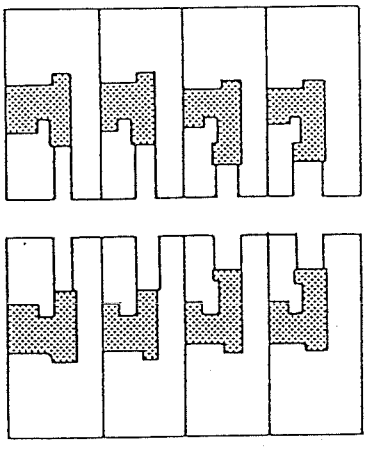
2. Street widths reduced, eliminating some heat reflection from the road surface.

3. Landscaping required along all streets for a shading/cooling effect.

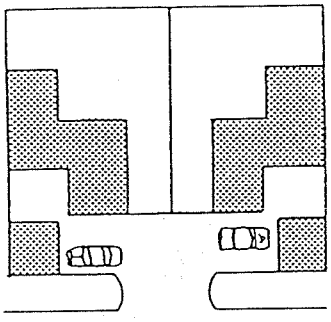
4. Bike paths and/or sidewalks required along major streets to encourage forms of transportation that are not energy consumptive as well as increasing public safety.

In conclusion, there are dozens of ways that energy can be conserved in the residential sector. Individuals can reduce their energy bills substantially by taking steps to reduce heat loss in their homes and by changing their lifestyles to be less energy consumptive. State and federal government and private organizations have provided several incentives for individuals to pursue energy conservation. Local government can promote energy conservation through wise land use planning.

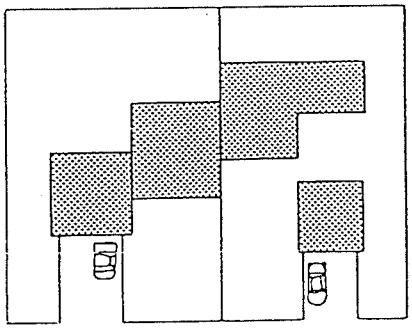
Fig. 4.5-9



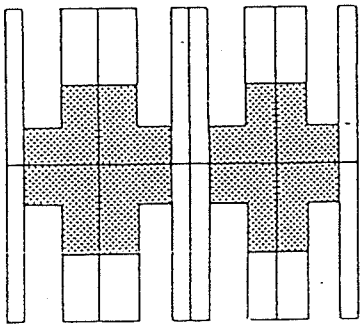
ZERO LOT LINE: NO SIDE SETBACK ON ONE SIDE.



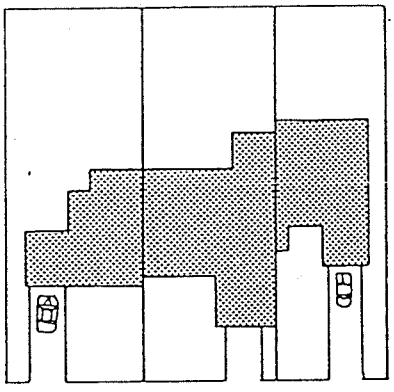
ZERO LOT LINE: NO SIDE SETBACK ON ONE SIDE AND REDUCED FRONT SETBACK.



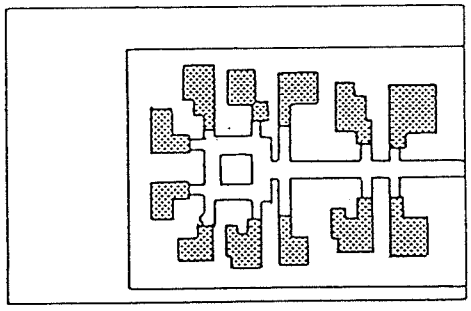
ZERO LOT LINE: NO SIDE SETBACK ON ONE SIDE AND COMMON WALL.



BACK TO BACK: FOUR UNITS WITH COMMON WALLS.



TRIPLEX OR TOWNHOUSE CLUSTER



SMALL LOT SIZES RESULTING IN MORE OPEN SPACE

SITE PLAN DEVELOPMENT ALTERNATIVES TO CONVENTIONAL RESIDENTIAL SUBDIVISIONS.

Commercial Sector

Conservation in the commercial sector is dependent on space and size. The amount of energy used per square foot increases at a higher rate for buildings over 50,000 square feet than for smaller buildings. In other words, small detached commercial buildings use less energy per square foot than shopping complexes. Moreover, if these smaller buildings are concentrated in a shopping area, no additional energy will necessarily need to be consumed for transportation. Shops that share common walls are also energy efficient as heat loss is reduced. The Coos Bay mall and downtown area are ideally suited for this type of development.

Energy use in the commercial sector can also be made more efficient by using existing buildings to their full potential. For example, buildings could be used for offices and shops on the lower floors and residences on the upper floors. There would be multiple benefits from this type of arrangement. It would create more medium to high density residential development which, as discussed in the residential section of this report, is more energy efficient than conventional low-density residential development. It would also result in a more intensive use of areas that are essentially unused except during the working day. The mix of residential and commercial uses would give the commercial uses better exposure, as well as making it easier for individuals to take advantage of commercial establishments. Energy used for transportation to commercial areas from residential areas would be reduced.

The concept of mixed land use is a controversial one and is not acceptable in all situations. However, it is an alternative that can help eliminate excessive travel and inefficient energy and land use.

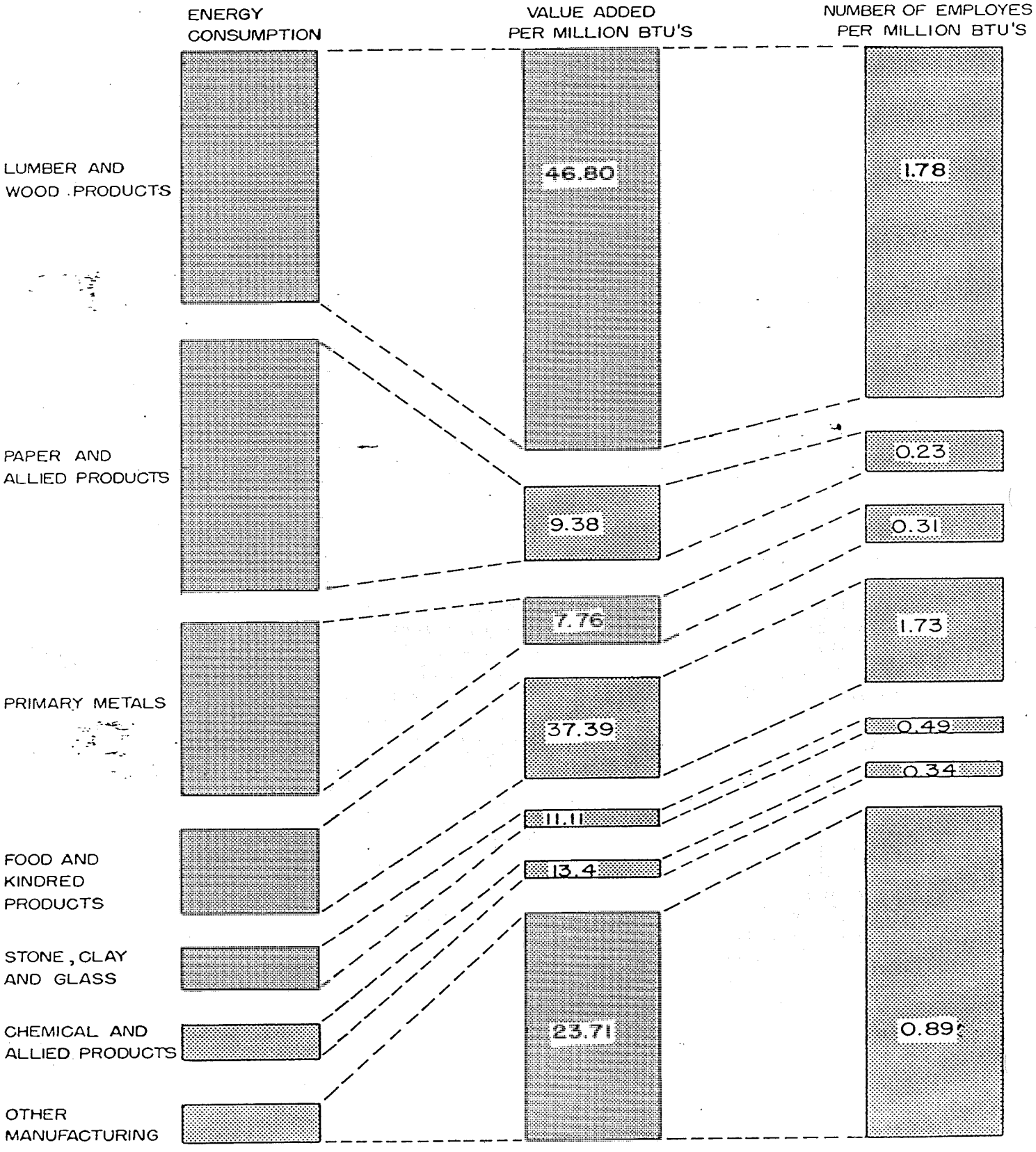
Industrial Sector

Energy conservation in the industrial sector is a more complex problem than in either the residential or commercial sectors. There are two ways to look at the relationship between energy and employment. On one hand, it can be argued that industry consumes extreme amounts of energy. However, industry is integral to the economic base of a community in employment and tax generation. The association of labor and energy can be crucial. On a purely energy conservation basis, it can be argued that industries requiring lower energy consumption per manpower value would be ideal.

Figure 4.5-10, based on DOE information, shows six key manufacturing industries in relation to the amount of energy consumed and the relative value added to the state's economy and employment. Of particular interest to this area are the figures for lumber and wood products. Note that production by these manufacturing industries contribute greater amounts to the economy and employment in proportion to the amount of energy depleted. Similar other industries in this area are fish processing plants. Their energy consumption vs. economic contribution is not specified by the state report, but may be construed to be included in the "food and kindred products" category. This group demonstrates an adequate value/manpower ration in relation to the energy consumed in processing.

Fig. 4.5-10

RELATIONSHIP OF ENERGY CONSUMPTION AND ECONOMIC CONTRIBUTION FOR OREGON INDUSTRIES.



SOURCE: OREGON DEPARTMENT OF ENERGY 1977.

It would seem that the few industries that have historically located within the planning area are comparably energy efficient and less energy intensive. This fact is documented by the DOE who has found that "industries such as lumber and wood products and food processing...are comparatively low in energy usage per unit of output or per employee." (DOE, 1978:26)

Energy conservation can be seen as a basically attractive option to the industrial sector. The high correlation between energy costs/supply and the cost of production should coerce most manufacturers to strive for energy efficient processes and equipment. Public policies will also affect future industrial energy usage. For instance, the state has established financial incentives to encourage acquisition of equipment that conserves energy. The state has also adopted a policy to promote less energy intensive industry.

An energy conservation measure especially suited to this area is biomass/cogeneration--usage of processing waste to generate energy. This alternative has not been attractive to industries statewide because of the low cost of available electricity, (DOE 1978a:37) and the seasonal, operational, and environmental constraints. (Brazelle and Mayes 1979) However, it has potential primarily "in the pulp and paper and wood products industries." Like other price-responsive energy conservation measures, greater implementation of biomass will only become reality when it becomes economically feasible. It should be noted that private utilities often purchase the surplus energy generated by industries. (Brazelle and Mayes 1979) The only industry within the planning area practicing cogeneration is the Georgia Pacific Corporation uses as fuel the ground-up bark and wood residues.

Conclusions

1. Residential, commercial, and industrial sectors combine to use the most of all energy consumed locally and statewide.

2. The principal energy source utilized in the bay area is electricity, most of which is consumed by the residential sector.

3. The costs of electricity are rising, while the state must rely on outside sources for 70% of electricity consumed.

4. Due to the energy crises, energy conservation can be considered a primary energy resource. Conservation measures can be achieved by individuals, local government, commerce and industry.

5. Alternative energy sources either do not exist in this area or are not yet economically or technologically feasible.

4.6

Noise Problems

Introduction

Excessive noise, in addition to causing hearing loss, has also been linked to other physiological and psychological problems such as creating stress, disrupting communication and affecting performance. On the federal level, the Environmental Protection Agency has been working on acceptable noise standards since 1973 by directive of the Noise Control Act. In Oregon, noise control has been established by the legislature to be in the interest of public health and welfare. Consequently, by authority of Oregon Revised Statutes, Chapter 467 and Oregon Administrative Rules, Chapter 240, the Department of Environmental Quality has been charged with noise control responsibility. They have adopted noise standards, established a measurement program; they enforce statutory and administrative law, and provide local assistance through regional offices.

Causes

Noise problems are expected to occur from motor traffic, airplanes, sports vehicles and facilities, and by equipment, facilities, or activities stemming from commercial and industrial uses. Often these problems can be prevented by applying general land use standards before a potential noise source is established.

Problems of unwanted sound happen when incompatible uses are too close to each other. Some of the ways in which noise problems can be avoided are:

1. Placing as much distance as possible between the noise source and the noise sensitive activity;

2. Placing noise-compatible activities such as parking lots, open space, and commercial facilities, between the noise source and the sensitive activity;

3. Using buildings, earth berms, or walls as barriers; or

4. Orienting noise-sensitive buildings to face away from the noise source.

These acoustical solutions can be achieved by appropriately zoning land to separate incompatible uses, by adding specific requirements to the land division ordinance and to the building and health codes, by employing municipal control of land to be used as a buffer, by offering site design incentives in exchange for acoustical considerations during development, and by providing educational assistance to developers before and during plan review.

However, noise sources cannot always be foreseen. Land use patterns change over time so that long-time activities unexpectedly become problems. These problems should be monitored and abated on a case-by-case basis as nuisances.

Affected Planning Area

Potential noise problems can be expected to occur in Coos Bay where established residential neighborhoods are contiguous to commercial and industrial zones. Documented complaints in this regard involve outside equipment or commercial/industrial traffic disturbing nearby residents after normal business hours. Unfortunately, many of these cases fall within areas that are fully developed and conflicts are inevitable.

Motor vehicle noise is likely where arterial streets pass through residential areas. Again, this occurs where traffic patterns have intensified in established neighborhoods making abatement difficult.

Although no private or commercial airport is located within the city limits or in the defined planning area, flight patterns for the North Bend Airport could disturb Coos Bay residents.

Currently there are no motor vehicle sports facilities in the city and any new one would only be permitted within the more intense commercial or industrial zones.

There is no documented noise problem associated with the North Bend Municipal Airport. Noise contours have been developed for both Runways 4-22 and 13-31 for years of 1980-2000. The contours for the 65 Ldn level which affects most urban uses, and the 55 Ldn level affecting entertainment facilities were analyzed. The area of impact for the 65 Ldn does not affect any land area in the city.

The land use compatibility guidelines for aircraft noise environments find the 55-60 Ldn level to be critical for auditoriums/concert halls/music shells. The 55 Ldn contour does not include any property within the city appropriately zoned for those areas. (Airport Planning and Engineering Consultants 1979:66-72)

Conclusions

The potential for noise problems can be expected to occur due to established land use patterns. These noise producers can be avoided or reduced by requiring compliance with state regulations of all commercial and industrial uses in the Land Development Ordinance. City staff can also become familiar with the use of noise monitoring equipment when complaints are received or routine monitoring is necessary. Preventing new noise problems can be accomplished during land use permit approvals and site design reviews. Cooperation with the City of North Bend can help to alleviate unnecessary noise impacts from air traffic patterns.

City of Coos Bay
Comprehensive Plan 2000

Volume II – Plan Inventories

CULTURAL ENVIRONMENT

CHAPTER 5

5.1 HISTORIC PRESERVATION

Introduction

Coos Bay is rich in history. However, as is often true of a modern and growing society, this historical tradition is often overlooked in our efforts to "modernize". Now, however, it is being found increasingly necessary to recognize our historical resources so that we may have a better understanding of our past. It is the intent of this plan to inventory, assess, and where appropriate, protect those sites, structures, or areas within the City of Coos Bay which have local, state, or national historical or archaeological significance. Before these sites are discussed, however, brief summary of the history of Coos Bay may be in order. A listing of these important historical occurrences effecting the development of the Coos Bay area is in Table 5.1-1 and Map 5.1-1.

Area History

? - 1850:

The land at the southern end of the sand dune area of the southwestern Oregon coast was inhabited by the Coos Indians. The Coos are separated by two groups distinguished by the different languages spoken by them. The Hanis lived on the upper part of the bay and the Miluk on the lower bay and on the coast south to the lower reaches of the Coquille River. Typical of the other coastal Indians, the Coos lived in plank houses, traveled the ocean and waterways in dugout canoes, and exploited the rich resources of the sea for sustenance, clothing and shelter. Salmon was a primary foodstuff, supplemented by fish, shellfish, mollusks, and sea mammals, Hunting the abundant waterfowl, deer, elk, and bear, and gathering roots and berries provided a varied diet. These resources also provided materials for clothing. The inner bark of the cedar, hazel, and maple tree was used as fiber, tanned leather as fabric, and bear-grass, dentalia shells, pine seeds, and pendants of abalone shell for adornment.

It was reported by anthropologist, James Mooeny. That perhaps as many as 2,000 Indians lived around Coos Bay in 1790. This figure was supported by a Coos Indian, Lottie Evanoff, who reported a similar number when recounting stories of her people in 1931. (Beckham 1977:58) At that time, she recalled some forty villages of the Hanis and Miluk with such names as Yah-ai-hkin-ho-tsch, Mo-hok-win, and Ko-lok-hitch. (Beckham 1977:58)

FAX TRANSMITTAL

OREGON PARKS & RECREATION DEPARTMENT
1115 COMMERCIAL ST NE
SALEM OR 97310-1001
PHONE (503) 378-6305
FAX (503) 378-6447

TO: Kevin Kuppler

FAX #: 2675615

VOICE #:

FROM: Susan Haylock

VOICE#: 3786508 x 227

DATE: 12/9/94

PAGES: 4

RE: Call me & let me know if this made it to you.

IF YOU HAVE PROBLEM RECEIVING THIS FAX PLEASE CALL ASAP

COUNTY: COLUMBIA
FLIPPIN, THOMAS J, HOUSE
ADDRESS: 620 TICHENOR
CITY: CLATSKANIE 97016
DATE(S): 1900 1900
DATE LISTED: 03/07/79 79002048

COUNTY: COLUMBIA
LONGVIEW BRIDGE
ADDRESS: COLUMBIA RIVER
CITY: RAINIER
DATE(S): 1930 1930
DATE LISTED: 07/16/82 82004208

COUNTY: COLUMBIA
MOECK, GEORGE F, HOUSE
ADDRESS: 713 B ST, W
CITY: RAINIER 97048
DATE(S): 1888 1888
DATE LISTED: 04/14/78 78002283

COUNTY: COLUMBIA
PORTLAND & SOUTHWESTERN RAILROAD TUNNEL
ADDRESS:
CITY: SCAPPOOSE VCTY 97056
DATE(S): 1910 1920
DATE LISTED: 08/17/81 81000481

COUNTY: COLUMBIA
ST HELENS DOWNTOWN HISTORIC DISTRICT
ADDRESS:
CITY: ST HELENS 97051
DATE(S): 1847 1934
DATE LISTED: 10/25/84 84000137

COUNTY: COLUMBIA
WATTS, JAMES GRANT, HOUSE
ADDRESS: 206 SE FIRST ST
CITY: SCAPPOOSE 97056
DATE(S): 1902 1902
DATE LISTED: 11/28/80 80003308

COUNTY: COOS
ABERNETHY, EDWIN AND ETHEL, HOUSE
ADDRESS: BOX 103, SITKUM ROUTE
CITY: MYRTLE POINT VCTY 97458
DATE(S): 1905 1905
DATE LISTED: 09/22/88 88001532

COUNTY: COOS
BLACK, A H & COMPANY, BUILDING
ADDRESS: 531 SPRUCE ST
CITY: MYRTLE POINT 97458
DATE(S): 1890 1890
DATE LISTED: 10/25/90 90001586

COUNTY: COOS
BREUER BUILDING
ADDRESS: 460 W FIRST AVE
CITY: BANDON 97411
DATE(S): 1905 1910
DATE LISTED: 10/02/92 92001308

COUNTY: COOS
CAPE ARAGO LIGHTHOUSE (MPS)
ADDRESS:
CITY: CHARLESTON VCTY 98174
DATE(S): 1934
DATE LISTED: 05/15/93 73002338

COUNTY: COOS
CARY, LEO J, HOUSE (MPS)
ADDRESS: 572 E FIRST ST
CITY: COQUILLE 97423
DATE(S): 1912 1912
DATE LISTED: 10/14/92 92001317

COUNTY: COOS
CHANDLER HOTEL & ANNEX
ADDRESS: 187 W CENTRAL AV
CITY: COOS BAY 97420
DATE(S): 1909 1909
DATE LISTED: 06/14/84 84002966

COUNTY: COOS
COKE, J S, BUILDING
ADDRESS: 150 CENTRAL AVE
CITY: COOS BAY 97420
DATE(S): 1910 1910
DATE LISTED: 02/20/91 91000048

COUNTY: COOS
COOS BAY CARNEGIE LIBRARY
ADDRESS: 515 MARKET
CITY: COOS BAY 97420
DATE(S): 1914 1914
DATE LISTED: 02/27/86 86000297

COUNTY: COOS
COOS BAY NATIONAL BANK BUILDING
ADDRESS: 201 CENTRAL AVE
CITY: COOS BAY 97420
DATE(S): 1923 1923
DATE LISTED: 10/30/89 89001868

COUNTY: COOS
COQUILLE CITY HALL (MPS)
ADDRESS: 99 E SECOND ST
CITY: COQUILLE 97423
DATE(S): 1912 1913
DATE LISTED: 10/14/92 92001318

COUNTY: COOS
COQUILLE RIVER LIFE BOAT STATION
ADDRESS: 390 SW FIRST ST
CITY: BANDON 97411
DATE(S): 1939 1939
DATE LISTED: 08/03/84 84002969

COUNTY: COOS
COQUILLE RIVER LIGHT
ADDRESS: BULLARD'S BEACH STATE PK
CITY: BANDON 97411
DATE(S): 1898 1898
DATE LISTED: 03/22/74 74001682

COUNTY: COOS
HARLOCKER, JUDGE LINTNER, HOUSE (MPS)
ADDRESS: 18 S COLLIER ST
CITY: COQUILLE 97423
DATE(S): 1891 1891
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COUNTY: COOS
HUB DEPARTMENT STORE BUILDING
ADDRESS: 125 CENTRAL ST
CITY: COOS BAY 97420
DATE(S): 1914 1934
DATE LISTED: 10/02/92 92001307

COUNTY: COOS
KOSKI BUILDING
ADDRESS: 241 N BROADWAY
CITY: COOS BAY
DATE(S): 1926
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COUNTY: COOS
MARSHFIELD ELKS TEMPLE
ADDRESS: 195 S SECOND ST
CITY: COOS BAY 97420
DATE(S): 1920 1920
DATE LISTED: 05/19/83 83002146

COUNTY: COOS
MARSHFIELD HOTEL
ADDRESS: 275 BROADWAY
CITY: COOS BAY 97420
DATE(S): 1925 1928
DATE LISTED: 03/22/84 84002971

COUNTY: COOS
MARSHFIELD SUN PRINTING PLANT
ADDRESS: 1049 N FRONT ST
CITY: COOS BAY 97420
DATE(S): 1895 1895
DATE LISTED: 03/21/73 73001574

COUNTY: COOS
MYRTLE ARMS APARTMENT BUILDING
ADDRESS: SIXTH & CENTRAL STS
CITY: COOS BAY 97420
DATE(S): 1914 1914
DATE LISTED: 10/31/85 85003478

COUNTY: COOS
NASBURG-LOCKHART HOUSE
ADDRESS: 687 N THIRD ST
CITY: COOS BAY 97420
DATE(S): 1884 1884
DATE LISTED: 12/02/85 85003038

COUNTY: COOS
NERDRUM, HJALTE, HOUSE
ADDRESS: 955 S FIFTH ST
CITY: COOS BAY
DATE(S): 1912
DATE LISTED: 05/27/93 93000435

COUNTY: COOS
OLSSON, CAPT BROR W, HOUSE
ADDRESS: 631 S TENTH
CITY: COOS BAY 97420
DATE(S): 1913 1913
DATE LISTED: 11/02/86 86002905

COUNTY: COOS
PAULSON, JOHN E & CHRISTINA, HOUSE
ADDRESS: 86 N DEAN ST
CITY: COQUILLE 97423
DATE(S): 1906 1906
DATE LISTED: 08/11/83 83002147

COUNTY: COOS
POWERS HOTEL
ADDRESS: 310 SECOND
CITY: POWERS 97466
DATE(S): C1915 C1915
DATE LISTED: 06/05/86 86001216

COUNTY: COOS
SANDY CREEK BRIDGE
ADDRESS: SANDY CREEK
CITY: REMOTE
DATE(S): 1921 1921
DATE LISTED: 11/29/79 79002051

COUNTY: COOS
SHERWOOD, A J, HOUSE (MPS)
ADDRESS: 257 E MAIN ST
CITY: COQUILLE 97423
DATE(S): 1901 1901
DATE LISTED: 10/14/92 92001314

COUNTY: COOS
TOWER, MAJOR MORTON, HOUSE
ADDRESS: 486 SCHETTER AVE
CITY: COOS BAY 97420
DATE(S): 1869 1869
DATE LISTED: 10/31/85 85003453

COUNTY: COOS
TRIBAL HALL OF THE CONFEDERATED TRIBES OF COOS
ADDRESS: 338 WALLACE STREET
CITY: COOS BAY 97420
DATE(S): 1940 1941
DATE LISTED: 03/29/89 89000202

COUNTY: CROOK
CROOK COUNTY BANK BUILDING
ADDRESS: 246 N MAIN ST
CITY: PRINEVILLE 97754
DATE(S): 1911 1911
DATE LISTED: 06/19/91 91000802

COUNTY: COOS
PHILPOTT SITE (35 CS 1)
ADDRESS: NORTH BANK RD
CITY: BANDON 97411
DATE(S):
DATE LISTED: 10/18/79 79002049

COUNTY: COOS
REORGANIZED CHURCH OF LATTER DAY SAINTS
ADDRESS: SEVENTH & MAPLE
CITY: MYRTLE POINT 97458
DATE(S): 1910 1910
DATE LISTED: 10/18/79 79002050

COUNTY: COOS
SEELIG-EYLER HOUSE
ADDRESS: 1920 N 14TH ST
CITY: COOS BAY 97420
DATE(S): 1909
DATE LISTED: 01/21/94 93001510

COUNTY: COOS
ST JAMES EPISCOPAL CHURCH (MPS)
ADDRESS: 210 E THIRD ST
CITY: COQUILLE 97423
DATE(S): 1897 1897
DATE LISTED: 10/14/92 92001316

COUNTY: COOS
TOWER-FLANAGAN HOUSE
ADDRESS: 476 NEWMARK AV
CITY: COOS BAY 97420
DATE(S): 1872 1872
DATE LISTED: 02/16/84 84002976

COUNTY: CROOK
BALDWIN, THOMAS M, HOUSE
ADDRESS: 126 W FIRST STREET
CITY: PRINEVILLE 97754
DATE(S): 1907 1907
DATE LISTED: 09/10/87 87001525

COUNTY: CROOK
ELLIOTT, MARION REED, HOUSE
ADDRESS: 305 W FIRST STREET
CITY: PRINEVILLE 97754
DATE(S): 1908 1908
DATE LISTED: 02/21/89 89000049

Oregon
John A. Kitzhaber, M.D., Governor

Parks and Recreation Department
State Historic Preservation Office
1115 Commercial St. NE
Salem, OR 97301-1012
(503) 378-4168
FAX (503) 378-6447

Copy
M&C
City Mgr
Plan. Admin
CSD Director

April 26, 2001

The Honorable Joanne Verger
City of Coos Bay
500 Central Avenue
Coos Bay OR 97420-1895

Re: National Register of Historic Places

Dear Mayor Verger:

We are pleased to confirm that during its' meeting on 22 and 23 February 2001, the State Advisory Committee on Historic Preservation reviewed and approved the following property for nomination to the National Register of Historic Places.

CEMETERIES OF THE CONFEDERATED TRIBES OF COOS, LOWER UMPQUA, AND SIUSLAW INDIANS – MULTIPLE PROPERTY NOMINATION
Florence, Coos Bay, Charleston, and Lakeside Vicinities in Coos and Lane Counties

WU'ALACH CEMETERY
Lake Shore Drive
Coos Bay, Coos County

As is customary, we may be providing the preparer with a list of minor technical corrections or amplifications that we ask the preparer to take care of by means of replacement pages or continuation sheets for the nominating document, as may be appropriate.

The nomination document will be signed and forwarded to the National Register once our office, in cooperation with the preparer, completes the production work. All concerned will be notified when final action on the nomination has been taken in Washington, D.C. The remaining steps in the process will take place over a period of several months.

If questions concerning the National Register nomination process arise, please contact the National Register Coordinator, Nancy A. Niedernhofer, at 503-378-4168, ext. 256.

Sincerely,

James M. Hamrick, Jr.
Deputy State Historic Preservation Officer

cc: Tribal Chair, Confederated Tribes of Coos, Lower Umpqua, & Siuslaw Indians
Tribal Council, Confederated Tribes of Coos, Lower Umpqua, & Siuslaw Indians
Anna Macy Campbell
Steve Beckham, Lewis & Clark College

CITY OF COOS BAY

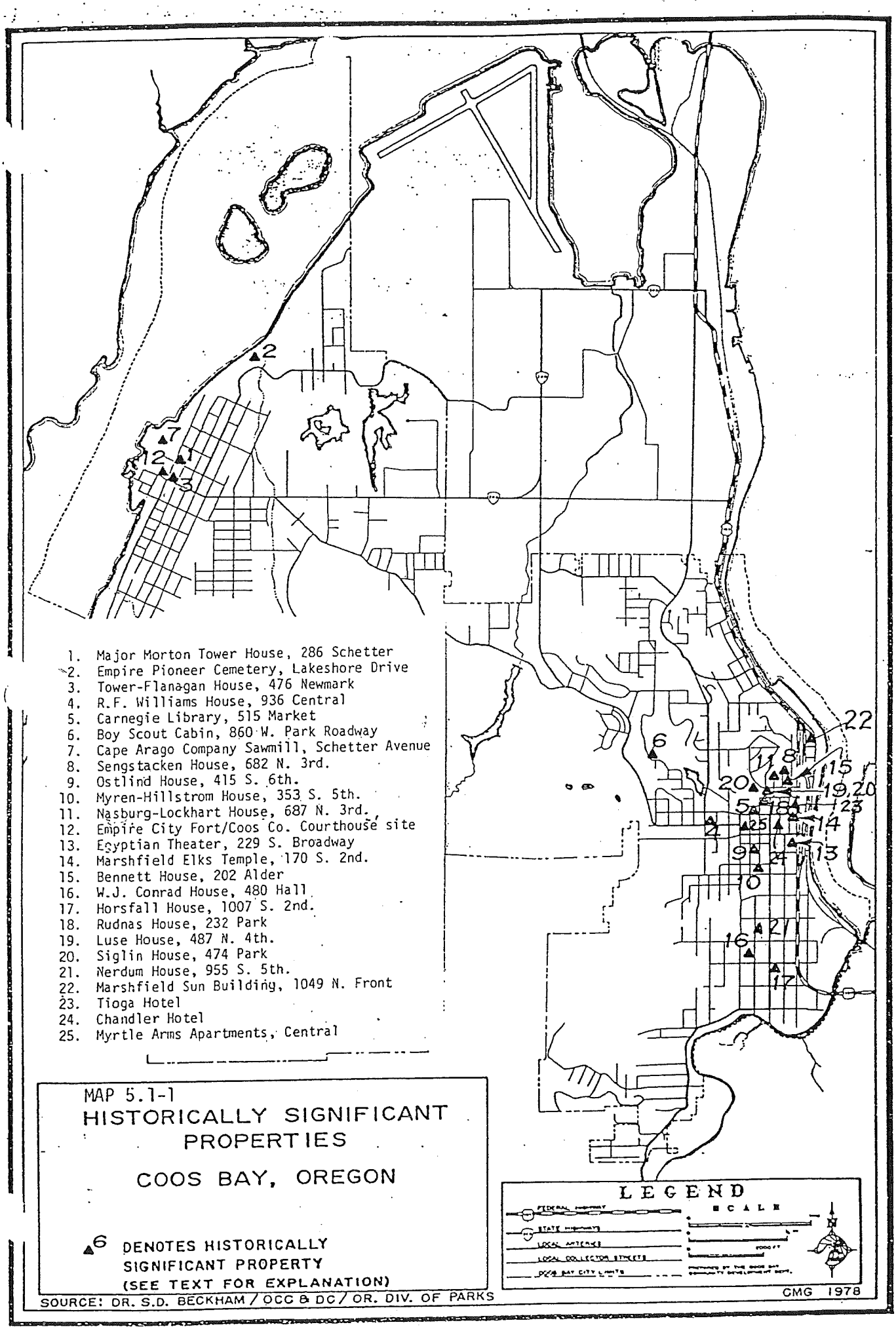
COOS BAY SITES LISTED ON THE
NATIONAL REGISTER OF HISTORIC PLACES
3/87

CARNEGIE LIBRARY	515 MARKET
ELKS TEMPLE	170 S 2ND ST
CHANDLER HOTEL	150 S 2ND ST *
MAJOR MORTON TOWER HOUSE	486 SCHETTER
MYRTLE ARMS APARTMENT BUILDING	613 CENTRAL *
MARSHFIELD HOTEL (TIOGA)	275 N BROADWAY *
MARSHFIELD SUN BUILDING	1049 N FRONT
NASBURG/LOCKHART HOME	687 N 3RD ST
CAPTAIN BROR W. OLSSON RESIDENCE	631 S 10TH ST *
TOWER-FLANAGAN HOME	476 NEWMARK
Nerdrum-Conrad House	979 S. Fifth — note 6/19/03 need Hopefully be adopted into the compplan
Old City Hall/Marshfield City Hall	375 Central (1997)

STATEWIDE INVENTORY OF HISTORIC SITES AND BUILDINGS
Oregon State Historic Preservation Office, 1976

Egyptian Theatre — 229 S. Broadway — need Hopefully officially adopt

JOSEPH W. BENNETT HOME	202 ALDER
BOY SCOUT CABIN	850 W PARK ROADWAY
CARNEGIE LIBRARY	515 MARKET *
CAPE ARAGO CO. SAWMILL	200 ROSS
POWERS-CONRAD HOME	480 HALL
EGYPTIAN THEATER	229 S BROADWAY
EMPIRE CITY FORT	NEWMARK & EMPIRE BLVD
EMPIRE PIONEER CEMETERY	
FLANAGAN HOUSE	474 PARK AVE
HORSFALL HOUSE	1007 S 2ND
JESS LUSE HOME	487 N 4TH ST
KOSKI BUILDING	241 N BROADWAY
MYREN-HILLSTROM HOME	353 S 5TH ST
NEWBURG-LOCKHART HOME	687 N 3RD ST
NERDRUM HOUSE (ADELSPERGER-POWERS HOUSE)	955 S 5TH ST
BEN OSTLIND HOME	415 S 6TH ST.
RUDNAS HOME	232 PARK AVE
SENGSTACKEN HOME	682 N 3RD ST
MAJOR MORTON TOWER HOME	486 SCHETTER AVE
TOWER-FLANAGAN HOME	476 NEWMARK AVE
WILLIAMS HOME	936 CENTRAL AVE


1. Major Morton Tower House, 286 Schetter
2. Empire Pioneer Cemetery, Lakeshore Drive
3. Tower-Flanagan House, 476 Newmark
4. R.F. Williams House, 936 Central
5. Carnegie Library, 515 Market
6. Boy Scout Cabin, 860 W. Park Roadway
7. Cape Arago Company Sawmill, Schetter Avenue
8. Sengstacken House, 682 N. 3rd.
9. Ostlind House, 415 S. 6th.
10. Myren-Hillstrom House, 353 S. 5th.
11. Nasburg-Lockhart House, 687 N. 3rd.
12. Empire City Fort/Coos Co. Courthouse site
13. Egyptian Theater, 229 S. Broadway
14. Marshfield Elks Temple, 170 S. 2nd.
15. Bennett House, 202 Alder
16. W.J. Conrad House, 480 Hall
17. Horsfall House, 1007 S. 2nd.
18. Rudnas House, 232 Park
19. Luse House, 487 N. 4th.
20. Siglin House, 474 Park
21. Nerdum House, 955 S. 5th.
22. Marshfield Sun Building, 1049 N. Front
23. Tioga Hotel
24. Chandler Hotel
25. Myrtle Arms Apartments, Central
MAP 5.1-1
HISTORICALLY SIGNIFICANT PROPERTIES
COOS BAY, OREGON
▲6 DENOTES HISTORICALLY SIGNIFICANT PROPERTY (SEE TEXT FOR EXPLANATION)
LEGEND
SCALE
SOURCE: DR. S.D. BECKHAM / OCC & DC / OR. DIV. OF PARKS
CMG 1978

5.1 HISTORIC PRESERVATION

Introduction

Coos Bay is rich in history. However, as is often true of a modern and growing society, this historical tradition is often overlooked in our efforts to "modernize". Now, however, it is being found increasingly necessary to recognize our historical resources so that we may have a better understanding of our past. It is the intent of this plan to inventory, assess, and where appropriate, protect those sites, structures, or areas within the City of Coos Bay which have local, state, or national historical or archaeological significance. Before these sites are discussed, however, brief summary of the history of Coos Bay may be in order. A listing of these important historical occurrences effecting the development of the Coos Bay area is in Table 5.1-1 and Map 5.1-1.

Area History

? - 1850:

The land at the southern end of the sand dune area of the southwestern Oregon coast was inhabited by the Coos Indians. The Coos are separated by two groups distinguished by the different languages spoken by them. The Hanis lived on the upper part of the bay and the Miluk on the lower bay and on the coast south to the lower reaches of the Coquille River. Typical of the other coastal Indians, the Coos lived in plank houses, traveled the ocean and waterways in dugout canoes, and exploited the rich resources of the sea for sustenance, clothing and shelter. Salmon was a primary foodstuff, supplemented by fish, shellfish, mollusks, and sea mammals, Hunting the abundant waterfowl, deer, elk, and bear, and gathering roots and berries provided a varied diet. These resources also provided materials for clothing. The inner bark of the cedar, hazel, and maple tree was used as fiber, tanned leather as fabric, and bear-grass, dentalia shells, pine seeds, and pendants of abalone shell for adornment.

It was reported by anthropologist, James Mooeny. That perhaps as many as 2,000 Indians lived around Coos Bay in 1790. This figure was supported by a Coos Indian, Lottie Evanoff, who reported a similar number when recounting stories of her people in 1931. (Beckham 1977:58) At that time, she recalled some forty villages of the Hanis and Miluk with such names as Yah-ai-hkin-ho-tsch, Mo-hok-win, and Ko-lok-hitch. (Beckham 1977:58)

TABLE 5.1-1

CHRONOLOGICAL LIST OF IMPORTANT HISTORICAL DATES

1852	The Captain Lincoln wrecks on North Spit
1853	Coos Bay Commercial Company establishes settlement at Empire and designated County seat, gold discovered at Whiskey Run.
1855	Major coal mining and exporting begins.
1856	Henry Heaton Luce and Asa Simpson open first major lumber mills.
1867	John Perschbaker opens mills in Marshfield
1872	Coos Bay Wagon Road opened.
1874	Marshfield becomes county's first incorporated city.
1878	Marshfield Academy established.
1893	Railroad between Coquille and Coos Bay established.
1896	County seat moved to Coquille.
1916	Relay between Eugene and Coos Bay opened.
1930	Oregon Coast highway opens.
1936	McCullough Bridge finished.
1937	Institute of Marine Biology established.
1944	Election to consolidate Marshfield, North Bend, and Empire fails.
1944	Marshfield becomes Coos Bay.
1966	Coos Bay and Empire merge.
1983	Coos Bay and Eastside merge.

Like the other Indian tribes of Oregon, the peaceful existence of the Coos ended with the settlement of the whites around 1850, who were in search of new land to homestead, and natural resources to exploit such as gold, beaver, and timber. By 1857 the Coos, along with the Siuslaw and Lower Umpqua Indians, were marshalled to a sand spit at the mouth of the Umpqua River as part of the US Government's efforts to contain all Indians on reservations. Their life at the Umpqua Sub-agency was marked by many deaths due to disease and illness. The Sub-agency was closed in 1959, and the Coos, Siuslaw, and Lower Umpqua, still with no ratified treaty, were moved to the Alsea Sub-agency at the mouth of the Yachats River. When in 1875, the government opened up this land for white settlement, the Indians were told to move to the Siletz Reservation. Some did, but many returned to their old homes around Coos Bay.

1850 - 1900:

The early white visitors to Coos Bay were trappers who were drawn to the area because of the availability of furs. These early fur traders did not stay to settle in the area, but remained only a short while to exploit the region's fur wealth. (Grile 1978:6)

The passengers of the Captain Lincoln, a military vessel, did not come to stay in the area either, but would live among the Indians longer than any other white men by the spring of 1852. The ship was transporting men and supplies to new military posts in the Oregon Territory when she encountered stormy seas. She missed Port Orford but found safety on the dune covered spit between the sea and Coos Bay harbor. Men from Fort Umpqua came to help as news of the shipwreck spread. Two men who participated in the rescue would later become leading citizens of the area, S.S. Mann and Patrick Flanagan. (Grile 1978:7)

Other military vessels were soon sent to salvage and distribute the cargo of the Captain Lincoln. As these vessels safely entered and left Coos Bay, news of the country spread to adventurous pioneers. Stock companies heard of this new and important bay, and with the risk of investment shared between them, the Coos Bay Commercial Company was formed. The Company played a vital role in the settlement of the Coos Bay area in 1853 at Empire. The settlement was designated the county seat, when the territorial legislature established Coos County in 1853.

J.C. Talmon was a member of the company when he settled on the Coos Bay peninsula in 1853. He chose the head of the bay where he believed future business would concentrate. He made a claim, built a cabin, and named the place "Marshfield," after his old home-town in Massachusettes. He convinced a couple of men to erect a store the following year and thereby opened a trading post with the Indians and the few settlers there. (Grile 1978:8)

Knowledge of the settlement's resources and potential had spread far by the end of 1853. Men and women were drawn to the area with dreams of a better life. Many came to look for gold, which had been discovered at Whiskey Run in 1853. But many knew the real wealth was in providing services and commodities to the speculators, miners, and pioneer settlers. These goods and services were primarily coal, lumber, shingles, pilings, fish, and transportation by ship and rail.

In the summer of 1853 several dozen veins of coal were located in the hillsides and ravines near the harbor of Coos Bay. By October, nineteen claims were staked on the mineral lands by the men of the Coos Bay Commercial Company. The capital thus derived from the coal mines eventually paid carpenters, loggers, cooks, bookkeepers, pile drivers, and miners. The mines brought in laborers who built homes, bought food and clothing, and spent their earnings on the bay's small settlements. Four hundred families were able to earn livable incomes from 1855-1890, despite the fluctuations in coal prices. The vessels that transported coal provided regular connections with San Francisco. The exploration of coal stimulated the area's growth, affected its cultural values, and acclaimed Coos Bay as a valuable harbor. (Grile 1978:10)

White men began lumbering in the area in the summer of 1853, at the time gold was discovered at Whiskey Run. The locally manufactured lumber supported the mining by providing planks for rifle boxes and diversion conduits for water. However, the bulk of the great forests were destined to become studs, beams, boards, shingles, stoves and matchwood to build masts, planking of ships, houses, and businesses. (Grile 1978:12)

Early lumbering activities were locally developed as a result of heavy outside investment, which was also true for coal mining operations. The only local operators of lumber mills were Henry Heaton Luce and Aaron Lobree, who were able to gain a gold on lumbering and opened their own logging camps.

Luce, who had come to Coos Bay in 1855, recognized the opportunities of the area, and built his sawmill in 1856 at Empire. Then as business began to stabilize he opened a mill store that became the commercial depot of the bay; he invested in real estate, and built ships to serve his interest on the bay.

1900 - 1950:

The Coos Bay region continued to grow at a moderate rate through the twentieth century. (Grile 1978:21) The industrial activities that originally drew people to the harbor continued to draw people to the area. Coal mining decreased in importance while fishing developed into a major industry. Lumbering and agriculture continued to provide jobs and a steady economy. Shipbuilding was a continuing industry in the area. It especially prospered during the war years, with the Coos Bay Shipbuilding Company in Marshfield building ten hulls for the U.S. Shipping Board during World War II.

Services in Coos Bay improved and enlarged as its industries expanded and brought in more laborers. (Grile 1978:23) The region had a great deal to offer to citizens. There were hotels, banks, schools, churches, hospitals, doctors, libraries, newspapers, transportation, and a large concentration of professional and mercantile firms. Other firms, businesses, and services added between 1900-1950 enhanced Coos Bay's desirability. The area did, however, encounter some problems, particularly with respect to local political decisions.

Marshfield had tried for twenty years, since its incorporation in 1874, to wrestle the county seat from Empire, prior to it being moved to

Coquille. As a result of this aggressiveness of Marshfield's leaders, further political problems followed. The greatest upheavel came in 1944 when Marshfield's progressive leaders made arrangements to consolidate Marshfield, North Bend and Empire. The attempt failed as North Bend voted almost unanimously against it. (Empire and Coos Bay did consolidate in 1966). With the consolidation failing, Marshfield made a successful bid changing the city's name to Coos Bay. There was, however, much dissatisfaction both within and outside the city. The people of the entire bay region had no say in the matter and were not pleased that Marshfield had taken the name that had been a heritage for nearly a century. The people were unhappy with Coos Bay's aggressiveness, but by 1952, Coos Bay had become a metropolitan center of the bay area.

Historical and Archaeological Characteristics-Eastside

Historical resources may be defined as districts, sites, buildings, structures and objects which have a relationship to events or conditions of the human past. Archaeological resources are those districts, sites, buildings, structures and objects which possess material evidence of human life and culture of prehistoric and historic past, and which may be recovered and studied. (Oregon Coastal Conservation and Development Commission, 1975).

The only known historical site in Eastside is the site of an old ferry landing on the northwest edge of the City on Isthmus Slough. A ferry at this location carried automobiles prior to construction of the bridge over Isthmus Slough between Eastside and the community of Bunker Hill.

No Archaeological sites have been discovered in Eastside. However, an old Coos Indian Village was partially excavated on South Slough in 1972. (Oregon Coastal Conservation and Development Commission). Other archaeological sites have been discovered in Coos County near Cape Arago, the Middle Fork of the Coquille River, and Bullards Beach.

Historical Background-Eastside

The first settlement of the area now called Eastside seems to have been around 1868, though dates of this earliest period are uncertain. The pioneer families of this period of settlement included the Dunbars, Jennings, Jones, Jordans, Kerns, Petersons, and Timmermans. The area was generally referred to as Bay City, but as time passed specific areas acquired the names of Timmerman's Point, Aaronsville, and East Marshfield.

The area remained inaccessible except by boat throughout its early development. Each family maintained small rowboats or sailboats for their own personal use. Steamboats also provided a means of contact with bay areas. Since trade and other business activity were vital links with other areas, a boardwalk across the tideflats at Isthmus Slough was constructed to facilitate ferry lands. Ferry service connected the community to Marshfield and the upper Coos River area. This service enabled wagons and teams to cross the slough with ease. This mode of access to Eastside continued until the present highway bridge was constructed across Isthmus Inlet from the Bunker Hill area.

Boat and river traffic were vital elements in the development of Eastside. The Coos Bay Wagon Road from Roseburg to Sumner was completed in 1873, linking the bay area with the inland valleys. The road was eventually extended to Bay City, with its terminus located on Timmerman's Point. The extension brought direct stage service to the area.

Despite improvements in intercity roads, the two main roads in Eastside, one running north and south and the other running east and west, remained relatively undeveloped until around 1911. At this time, the young city took some innovative steps forward by grading its streets. Eastside was then a step ahead of other towns of comparable size.

The grading of the streets in Eastside was partially responsible for a rapid population growth in the City. But of even greater influence on growth was the construction of the "Big Mill" on the east bank of Isthmus Slough in 1885.

In 1891, the first post office was established with the name East Marshfield. It was not until 1907 that the areas of "East Marshfield" and Bay City held public meetings in the local schoolhouse to discuss the issue of incorporation. Eastside finally voted to incorporate on February 8, 1908.

C.E. Jordan took the chair as first mayor of the newly incorporated city. Other early city "fathers" included J.A. Olson, E.A. Stonecypher, J.C. Steckel, F.S. Riebe, Robert Kittson, John Mattson, and S.J. La Palme, the city recorder. The year 1912 witnessed the construction of the first city hall.

Eastside became a member of the League of Oregon Cities in 1938. A new city hall was built and dedicated in 1956. Also, in the political history of Eastside, Eastside and Cooston briefly consolidated in 1914 for only about two years, but the relationship was dissolved.

Around 1906 the old mail distribution hall was converted into a schoolhouse. The two-story building housed primary through third grades downstairs with fourth through eighth grades continued upstairs. Mrs. Frances France and Mrs. Selma Thomas were two of the first teachers and are still spoken of fondly by long-time residents of the area.

The year 1931 saw the run of the first school bus, a truck on which was set a large covered box with two rows of seats. The bus route started in Eastside, ran up Catching Inlet, and back around to Coos Bay.

An elementary school and Millicoma Junior High School at the present time provide the community with educational facilities.

Any discussion of Eastside would not be complete without an account of the prime recreation--baseball. For many years baseball was viewed by many as the "life-blood" of the community. Both the boys and the men had teams which played teams from the other bay areas. Bunker Hill was the chief rival. The cold north wind, however, had an adverse affect on many a young pitcher's arm.

In December, 1983 the City of Eastside consolidated with the City of Coos Bay.

Spatial Growth

The spatial development of the Coos Bay urban area is a function of two major determinants: proximity to the harbor resources and topography. (Grile 1978:44)

The initial bay area settlement occurred along the waterfront of Empire and Marshfield. The influence of the estuary and other water systems cannot be overstated, as water was the major means of transportation. The Coos Bay estuary provided a catalyst for economic development. Empire developed first, primarily because of its proximity to the harbor entrance. Marshfield later developed as its economic potential was realized.

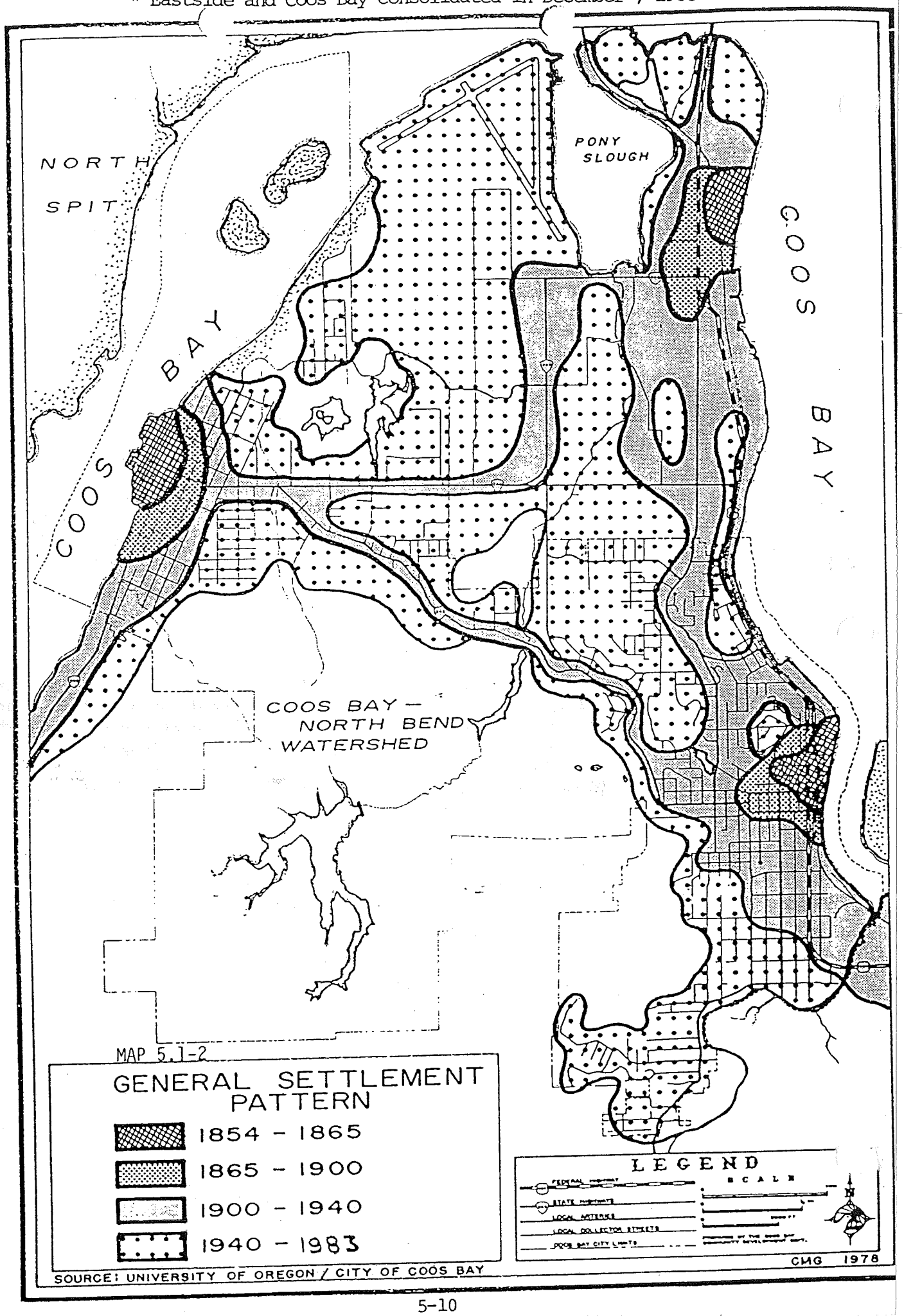
Topography is the second major determinant of development patterns. Virtually all of the initial development occurred along the relatively flat areas adjacent to the estuary. As the demand for port and industrial lands grew, development began to move inland toward higher ground.

Map 5.1-2 depicts the general settlement pattern of the Coos Bay - North Bend peninsula. It is interesting to note the pattern reflects to some extent the "concentric ring" theory of urban development. That is, the cities of the peninsula expanded concentrically from their initial core settlement. Deviations from the strict adherence to the concentric ring theory may be explained by topographical constraints and transportation corridors.

Summary

The early settlers of Coos Bay came because of the abundant resources and the promise of a better life. Many who came stayed, as did their descendants. The goods and services they supplied provided a stable economy, which promoted further growth. It is to these early pioneers, along with their sons and daughters, that the City of Coos Bay owes its beginning. The homes, businesses and other traces of the past hold great historical value to the citizens of Coos Bay as reminders of their past.

* Eastside and Coos Bay consolidated in December , 1983



Historical Sites

Numerous sites and structures in Coos Bay have been inventoried by the State Historic Preservation Office. The bulk of the inventories resulted from a study by Dr. Stephen D. Beckham for the Oregon Coastal Conservation and Development Commission in 1974. An "inventoried" site indicates that a structure's location, design, or workmanship or a site's special association to events or individuals contributes to the locality, region, state, or nation. The degree to which these characteristics determine protection or preservation varies and can be affected by numerous factors: damage or alterations, maintenance, uniqueness, desires of the owner, and so forth.

This section contains a brief description of each site on the state inventory to date. The complete forms are on file in the Community Development Department. The 1983 zoning designation, public or private ownership, current use, and potential conflicts are identified. However, an assessment of the site or structure's significance or "quality" will be made on a case-by-case basis through implementing ordinances as a development or alteration to the site is proposed in compliance with Oregon Administrative Rule 660-16-000. The Plan inventory and policies are intended to include any sites or structures added to the statewide inventory in the future.

BENNETT HOUSE, aka Feller-Bennett House. 202 Alder Avenue Private.

Description: The home was built by Joseph Bennett (b. 1855 in Ireland) who emigrated to the United States in 1873 with his father, George Bennett, the founder of Bandon, Oregon and author of A History of Bandon, Ireland. The younger Bennett established the Flanagan and Bennett Bank of Coos Bay. He lived in the home until his death in 1916.

Charles Feller, an Englishman, resided in this home for many years. He operated a salmon packing business and cold storage facility in Coos Bay.

The home is a large two-story, wooden frame building with three dormer bedrooms under the hipped roof in the attic. The home originally stood near the corner of North Broadway and Market, but was moved about 1926 at the time the Tioga Hotel was constructed to a site in a ravine on N. 2nd., four blocks to the north, and then again in 1973 across 2nd. Street to its present location. It was raised about forty feet in elevation and set on a new concrete foundation.

1983 Zoning Designation: Residential Professional (R-4P)

Current Use/Potential Conflicts: The structure is still occupied as a residence. However, the R-4P zoning would also allow use of the site for professional or limited commercial uses. The property directly to the east is zoned for commercial uses (Central Commercial, C-1).

BOY SCOUT CABIN. 860 West Park Roadway City of Coos Bay

Description: This building is the last remaining structure of the W.P.A. improvements made in Mingus Park in the 1930's. It was completed in 1940 at a cost of $3500 under funding by the Community Chest, Boy Scouts, and the City of Coos Bay. The building is a one-story log structure with a massive attic. It has a large stone fireplace, stone foundations, and four smaller meeting rooms off its center meeting area which measures approximately 25 X 40 feet.

The building was boarded up in the 1950's to curb vandalism and a 1982 structural survey by city staff concluded that it "cannot be feasibly rehabilitated and should be removed from the property." Accordingly, it was posted unsafe to occupy. Much of the structural, electrical, and plumbing systems need to be totally replaced.

1983 Zoning Designation: Park-Cemetery District (QP-2)

Current Use/Potential Conflicts: The building is not safe for human occupancy although it has been used for storage by the Boy Scouts. The major problem facing the building is the necessary renovation which may not be cost-effective.

CAPE ARAGO COMPANY SAWMILL, aka Southern Oregon Company Sawmill. Schetter Avenue Private.

Description: The sawmill is located on the site of an 1856 sawmill erected by Henry Heaton Luce, who sold out to the Southern Oregon Company in 1881. This company, a subsidiary of the Menasha Woodenware Company of Menasha, Wisconsin, erected the present building in 1884. This mill, purported to be the largest in Oregon at the time, was capable of cutting 120,000 board feet per day and had the latest machinery available.

The mill stands on a large wharf made of about 2,000 Port Orford cedar piling that were driven in 1884. Although the machinery has changed, the building is the original one in design and appearance.

1983 Zoning Designation: Waterfront-Industrial (W-I)

Current Use/Potential Conflicts: The present owner of this property, Cape Arago Lumber Company, is perhaps the sixth or seventh firm to cut lumber in the building. The mill is probably the oldest continuously used sawmill building in the state. It would be expected that this site and building will continue to be used for water-dependent industrial activities unless the building does not remain in good repair.

CARNEGIE LIBRARY. 515 Market Avenue City of Coos Bay.

Description: The building and opening of the Carnegie Library in 1915 was the culmination of a long campaign to secure a public reading room and library for the city. The town's Progress Club named a library committee in 1906 to commence work for a library. On February 26, 1907 a book social was held in the Sengstacken home and the first 36 volumes were contributed that evening. The city joined in and participated in the solicitation of funds from Andrew Carnegie for the construction of the building.

It is a one-story wooden frame building with a large basement. It has a simple gable roof and natural woodwork.

Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: With the construction of a new city library in the 1960's, this building has been used by the Coos Artist's League as an art gallery and studio. This is compatible with the permitted activities of the zone which also includes professional offices, limited commercial and multiple-residential uses.

W.J. CONRAD HOUSE, aka Albert Powers House. 480 Hall Private.

Description: This dwelling was the residence of two prominent Coos Bay lumbermen. It was built by Albert Powers, Sr. (b. 1862) some time after the turn of the century. Powers arrived in Coos Bay in 1907 as vice-president

and general manager of the Smith-Powers Logging Company. Later, he became president of the Powers-Davis Logging Company. Before he died in 1930, he made civic contributions to the community as a city councilman, school board member, port commissioner, and commissioner on the Fish Commission of Oregon.

After a brief interval as a sanitarium, the home was owned by W.J. Conrad. Mr. Conrad served as secretary to the engineer of the C.A. Smith Lumber Company. In 1926, however, Conrad formed the W.J. Conrad Lumber Company with mill and office. His family still operates the successor firm of the same name.

The structure is a two-story frame dwelling; the original stable has been razed. Recent renovations resulted in refacing the fireplace in the den with used brick, replastering the second story ceilings, and installing a utility on the second story sun porch. The historic inventory for this site states that it is "nearly as it was when constructed by the Powers family."

1983 Zoning Designation: Single-family/Duplex Residential (R-2)

Current Use/Potential Conflicts: The home is still used and appears to be in good repair. There is no expectation of a conflicting use.

EGYPTIAN THEATER 229 South Broadway Private

Description: This building was originally constructed as a garage called the "Motor Inn," and was converted to a theater in 1925. According to the historic inventory record, the owners, Robert Marsden, Denny Hull, and John Noble built it as a garage with the intention of converting it to a theater since building material could only be purchased for "essential" buildings after World War I.

The building is 75 feet wide and 125 feet long, of reinforced concrete with heavy timbers and wooden roof with a built-up paper and tar finish. The east elevation is three stories high in order to house the balcony and projection room. The original seating was approximately 411 seats in the balcony and 800 seats on the lower floor. The lobby, mezzanine floor and auditorium walls had been decorated and hand painted by a professional "theater artist" from Los Angeles, California in an Egyptian motif.

1983 Zoning Designation: Central Commercial (C-1)

Current Use/Potential Conflicts: The theater is still in use, although the ownership has changed several times since 1925. Recent interior changes resulted in a conversion of the balcony to two mini-theaters. Much of the Egyptian motif remains.

EMPIRE CITY FORT/COOS COUNTY COURTHOUSE SITE. northwest corner of Newmark and Empire Boulevard Private.

Description: A fort was constructed in approximately 1856 by the residents of the Empire settlement as a reaction to the Indian conflicts in the Rogue River Valley. The construction of this fort is documented by Agnes Ruth Sengstacken in Destination West. She was the daughter of pioneers, Freeman and Esther Lockhart.

The fort was a log stockade 14 feet high and 100 feet square. Within was a two-story log blockhouse, thirty feet square, and a guard house. The fort stood on a bluff overlooking the bay and later became the site of the first Coos County courthouse. At the turn of the century this building was changed to a hotel.

1983 Zoning Designation: General Commercial (C-2)

Current Use/Potential Conflicts: The land is presently covered with brush and has no structures on it. Future development may cover or disturb any historic archaeological remains.

EMPIRE PIONEER CEMETERY/INDIAN SITE. Lakeshore Drive, vicinity of Chickses Creek Private.

Description: The cemetery is located on both sides of Lakeshore Drive and was used as the cemetery of Empire City beginning in 1853. A tombstone census in 1963 conducted by Beckham located 27 stones; a census in the 1920's by Gwenedde Tower Maple located about double that number. The graves are hidden by heavy brush; many have been vandalized. Most of the stones have been removed making location of the individual graves difficult. An Indian burial ground and village site is located nearby.

1983 Zoning Designation: Restricted Waterfront Residential (R-W) north of Lakeshore Drive; Single-family/Duplex Residential (R-2) south of Lakeshore Drive.

Current Use/Potential Conflicts: The land is now undeveloped. Any development of the site would require the location and removal of the graves, or plans to protect them from disturbance.

HORSFALL HOUSE. 1007 South 2nd. Private

Description: This house was constructed for Dr. William Horsfall who served the Coos Bay area as a physician for many years. His wife, Lydia Yoakam, was the daughter of pioneers, Marion and Jaspar Yoakum. Horsfall Beach in the Dunes National Recreational Area is named for this family.

The house was constructed on the northwest corner of Central and 3rd. Avenue (318 Central) about 1900; it was moved around 1924 to its present location. Alterations have been made to the room arrangements and other features.

1983 Zoning Designation: Industrial-Commercial (I-C)

Present Use/Potential Conflicts: The structure is still being used as a residence, however, single-family dwellings are not permitted in this zone, thereby, making this structure a nonconforming use. Further, it is located in an area of commercial and light industrial development; the likelihood of conflicting uses is high.

LUSE HOUSE. 487 North 4th. Street Private

Description: This home was built about 1885 by Dave Young for Jesse Luse and has been occupied by the Luse family since that time. Luse was editor and publisher of the Marshfield Sun, the last handset newspaper. Luse held the record for the longest continuous publishing of a newspaper in Oregon from 1891 to 1944. His father was shipbuilder William Luse, his grandfather was sawmill operator and shipbuilder, Henry Heaton Luse.

The home is one of the earliest dwellings which remains unchanged save for the addition of electricity. It stands on the southwest corner of 4th. and Park.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: The structure still serves as a residence. It was once threatened by the location of the 4th. and Alder Intertie project which, if approved, would have diverted traffic from Highway 101 to 4th Street. The zoning of the property would permit professional offices and some commercial uses.

MARSHFIELD ELKS TEMPLE. 170 South 2nd. Private.

Description: Designed by William G. Chandler, construction of this building was completed in 1920 for BPOE Lodge #1160 and served as the Elks' club building until 1980. Besides housing the Elks Club, various commercial enterprises were located on the ground floor throughout its history. The building was recently purchased by Security Bank to serve as their head office and has been nominated to the National Register of Historic Places.

1983 Zoning Designation: Central Commercial (C-1)

Current Use/Potential Conflicts: The building is located in the city's core commercial area and contains two businesses. The current owner plans to restore the historical character of the building. The building is intended to house office and retail space. No potential conflict is expected to arise.

MARSHFIELD SUN BUILDING. 1049 North Front City of Coos Bay

Description: This building was the site of the longest continuous publication of a newspaper under one owner editor in Oregon. Jesse Luse wrote, edited, and printed the Marshfield Sun from February 1891 to June 1944. The building is listed on the National Register of Historic Places and houses the files of the newspaper and is opened as a museum. It is one of the only surviving wooden frame commercial structures on Front Street.

1983 Zoning Designation: Industrial-Commercial (I-C)

Current Use/Potential Conflicts: The structure is owned by the City of Coos Bay and maintained as a museum by the Marshfield Sun Association. The property is in close proximity to the waterfront and fronts on U.S. Highway 101. It is surrounded by commercial and industrial uses. Due to the community interest in this site and the historic designation, there are no expected conflicts.

MYREN-HILLSTROM HOUSE. 353 South 5th. Street Private

Description: This home was built by Robert Myren about 1889 and was occupied by his family. His daughter, Rose, married Jake R. Hillstrom in 1919 and later lived in the dwelling.

The structure was built on a slight knoll. The front porch has a handcarved wooden trim.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: This home is still used as a residence. The zone of the property would also permit professional offices and limited commercial uses. The zoning to the east is Central Commercial and is the site of governmental office.

NASBURG-LOCKHART HOUSE. 687 North 3rd. Street Private

Description: The home was built by Andrew Nasburg, Marshfield merchant and the city's first postmaster, in the summer of 1884. Nasburg was born in Forsa Parish, Sweden and emigrated with his parents to Illinois where they lived in the religious utopia established there by a Swedish Pietest. He came to the coast in 1859 and resided in the Port Orford area until moving to Marshfield in 1867. Here he formed a partnership with Thomas Hirst in general merchandising.

The home is a two-story structure and has little changed since its construction. An early twentieth century addition, now an apartment, is attached to the rear on the north side.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: It is still used as a residence. The zone would permit professional offices and limited commercial use.

NERDUM HOUSE, aka Adelsperger-Powers House. 955 South 5th. Street Private.

Description: This house was built by Hjalte Nerdum around 1911, who, with his brother, Rolf, arrived in Marshfield from Finland. They built a pulp mill with a large concrete building and a 125-foot concrete smokestack on the property now known as Georgia Pacific Corporation north of the Isthmus Slough Bridge into Eastside. With no adequate supply of water to run the mill, the brothers returned to Finland leaving the new homes they each built on 5th. Street. This house was also the home of Gus Adelsperger and later Albert Powers, Jr.

This two-story house has a stucco exterior with front entry opening through both stories.

1983 Zoning Designation: Single-family/Duplex Residential (R-2)

Current Use/Potential Conflicts: The structure is still used as a residence. There are no expected conflicts with this building.

OSTLIND HOUSE. 415 South 6th. Street Private

Description: The home was the residence of Benjamin and Millie Johnson Ostlind and was constructed around 1929. Mr. Ostlind was born in Sweden and came to the Coos Bay area to operate a lumber mill and furniture factory. He was one of Coos Bay's earliest licensed architects and with his brother, Joel, designed the Catholic Church in North Bend, the Conservatory of Music in Coos Bay, the Coos River School, and the First National Bank in Bandon. Millie Johnson Ostlind was the daughter of Peter Johnson, an early Coos Bay resident and author of an early history of this area.

The home is a large two-story building with full concrete basement and party room with inlaid oak floor. It contained many of the earliest conveniences.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: The dwelling is still used and surrounded by other single-family dwellings. However, the zone does permit professional Offices, and limited commercial uses.

RUDNAS HOUSE. 232 Park Avenue Private.

Description: A large house stood on the corner of Park and N. 2nd. In 1896 the house was separated and what is known as the Rudnas House was moved 20 feet to the west. Rudnas purchased the home from D.L. Rood in 1912.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: It is still used as a residence. The zone would permit professional offices and limited commercial activities.

SENGSTACKEN HOUSE. 682 North 3rd. Street Private

Description: This home was constructed in 1904 by Henry Sengstacken, who had emigrated from Germany to California in 1865. He settled in Empire in 1874 in order to open a general merchandise business and represent his partner's business interests in the Coos Bay coal mines. He later opened a drug store, worked as the Wells Fargo agent, and as a real estate broker; he developed Sengstacken's Addition north of Telegraph Hill, and served as mayor of Marshfield around 1903. He was one of the largest landholders in Coos County at the time of his death in 1922.

Sengstacken married twice to sisters, Lillias and Agnes Ruth Lockhart. They were daughters of the early pioneers Freeman and Esther Lockhart. Agnes Ruth was the author of Destination West, a history of southwest Oregon and her childhood.

This home is a large wood-frame dwelling of two and one-half stories with full basement. The original porch has been removed and the music room or front parlor and back parlor were merged into one living room. The original large one-over-one windows were replaced by eight-over-eight variety. The staircase is of myrtlewood.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: It is still used as a residence. The zone would permit professional offices and limited commercial uses.

SIGLIN HOUSE, aka Flanagan House. 474 Park Avenue Private

Description: This dwelling was built for Major J.M. Siglin in 1889 who served in the Civil War and practiced law upon moving to Marshfield. He became the first editor of the Coos Bay News, which was Coos County's first weekly newspaper beginning in 1873. The dwelling was later owned by James H. Flanagan who was born in the Libby area in 1869. He was president of the Flanagan and Bennett Bank, established the Marshfield Water Company in 1897 and later engaged in coal mining and logging. The family moved from this area in the 1940's.

The dwelling is in a Victorian style with tall bay windows and scalloped wood ornamentation around the porches and eaves. A tower or cupola which was a distinguished feature was removed about 1962 due to leaks around the base.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: The structure is still used as a dwelling. The zoning of the property would permit the conversion of the dwelling or use of the property for professional offices or limited commercial interests.

MAJOR MORTON TOWER HOUSE, aka Tower-Maple House. 486 Schetter Avenue Private.

Description: This home is the longest continually occupied dwelling on the southern Oregon coast. It was built and lived in by members of the Tower family during the years 1869-1972. The oldest wing (western wing) of the home was constructed in 1869 as living quarters and office of Dr. Charles W. Tower. A lean-to addition to the back served as his drug store. When he began construction of his new residence in 1872, still standing on Newmark, he moved the office quarters to its present site where it was adjoined in 1892 by the two and one-half tower wing by his brother Morton Tower (Peter Loggie, contractor). The house was covered with tongue and groove siding and shingle work under the eaves. The living room and back parlor on the main floor were altered in the 1940's by the addition of wood paneling over the original wall covering. The home was refurbished in 1977, as part of the City of Coos Bay, Housing Rehabilitation program, but is still in a state of disrepair.

Morton Tower, veteran of the Civil War, settled in Empire in 1874. He served as an engineer in the government works on the harbor, Collector of Customs, and chief officer for the U.S. Census Bureau.

1983 Zoning Designation: Multiple-family Residential (R-3)

Current Use/Potential Conflicts: It is still occupied as a residence. The most likely conflict is the deteriorating condition of the structure, and consequently, its continued use.

TOWER-FLANAGAN HOUSE. 476 Newmark Avenue Private

Description: Dr. Charles W. Tower settled in Coos Bay in 1868 and married Minnie Burrell whose brother Samuel Stillman Mann, was a pioneer resident at Umpqua City in 1850. Dr. and Mrs. Tower moved to Marshfield in 1874 and the home was subsequently occupied by Patrick Flanagan who was Mann's partner in the Libby Coal Mine.

The home is one and one-half stories high and is of wood-frame construction in a T-shape. Its windows are of the country-Gothic style and one "port-hole" opens onto the west elevation overlooking the harbor. It is in its original condition and has one attached shed and carriage house. A modern carport has been added on the west side.

The structure has recently been donated to the Coos County Historical Society.

1983 Zoning Designation: General Commercial (C-2)

Current Use/Potential Conflicts: The structure has not been occupied for some time. Since it is on the main thoroughfare of the Empire area, it is located in the middle of its commercial district. Single-family dwellings are not permitted in this zone, therefore, the home is a nonconforming use. Use of the structure for commercial or cultural activities would be allowed.

R.F. WILLIAMS HOUSE. 936 Central Private

Description: R.F. Williams had this house built in 1896. He managed the Whitney's store in Empire, later worked as cashier for the Flanagan and Bennett Bank and served in banking in this area. The home has a full porch with pillars across the front and half porch on the east side. Rock cemented into the foundation walls in the basement were from ballast of sailing ships coming into Coos Bay. The Douglas home which stood on the west end of this block also had a foundation made from ballast rock. The outstanding feature of the house was the dining room fireplace front which was ornately carved with beveled edged mirror above, green dutch tile, and an antique cast iron grate.

1983 Zoning Designation: Residential-Professional (R-4P)

Current Use/Potential Conflicts: This dwelling has been converted for use as a professional office building. Prior to renovation, the Planning Commission reviewed the Site Plan and Architectural Review and required that the building retain its Victorian character. Most of the original vegetation has been retained. The addition of a parking lot on the east side of the building took the place of an open yard, although at least two fruit trees had to be removed. Much of the outer renovation was needed to replace rotted foundation members and other wooden features.

Archaeological Sites

Numerous archaeological sites are known to exist in the Coos Bay area, several of which are located within Coos Bay's city limits. In general, however, little research and study had been undertaken on Oregon coastal prehistory. Due to this lack of site inventory, recorded data and scientific study, many sites have been destroyed. In order to protect the documented archaeological sites of this area, site specific information has been omitted as recommended by the State Historic Preservation Office.

> Where prehistoric or archaeological resources are concerned, we do not expect to see site specific information listed in local comprehensive plans. In fact, in order to protect the prehistoric resources of your jurisdiction from destruction by uncontrolled excavation ('Pot-Hunting'), we recommend that such data not be included in any planning document ... requirements will be met if the plan reflects an awareness of protective legislation concerning archaeological sites, and if it includes a general overview of the general nature, significance and density of sites in the jurisidction. (Powers 1978)

Historical Preservation: Measures and Funding

A list of Federal and State laws, policies, statutes, enabling legislation and tax measures protecting historical and cultural sites, structures, and areas is located in Appendix E.

5.2
Demography

Introduction

A basic understanding of an area's population is essential in order to make prudent planning decisions regarding future facilities and services for the area. Past population trends and characteristics are key indicators of potential urban growth/decline. Coupled with population projections, they provide a basis for anticipating future uses of land for housing, business, industry, and the related future levels of service for police and fire protection, schools, transportation, utilities, cultural institutions and other public services.

Present Population

The population of the City of Coos Bay is estimated to be 14,290 persons as of July 1, 1987. This figure represents about 62.0% of the urban area population (represented by Coos Bay and North Bend), 24.9% of Coos County's population, and 0.5% of Oregon's estimated total population.

Historical Population Growth

Table 5.2-1 presents comparative population growth figures for the City of Coos Bay, the Coos Bay-North Bend area, Coos County, and Oregon for the period from 1850 through 1987. The City of Coos Bay has traditionally been the largest city in Coos County since 1874 when Coos Bay was incorporated as the Town of Marshfield, although North Bend has closely paralleled this population growth. Coos Bay and North Bend share a common regional economic base and have historically depended on port activities for their economic existence. Minor climatic and topographical variations between the two towns account for the subtle variation in the historical development and population characteristics of the two places.

Figure 5.2-1 graphically depicts the historical population relationship between Marshfield-Coos Bay, Empire and North Bend -- the major cities of the Bay area. It is extremely important to note for comparative purposes that the Town of Marshfield changed its name to Coos Bay in 1944, then later merged with the City of Empire in 1966 and the City of Eastside in 1983. Examination of this graph reveals that Marshfield (later Coos Bay) historically experienced greater populations than both North Bend and Empire, except for the period from 1950 to 1960 when North Bend's population exceeded that of the City of Coos Bay and Empire is chiefly responsible for the substantial population variation which existed at that time between the Cities of Coos Bay and North Bend.

Figure 5.2-2 illustrates the historical relationship between the population growth/decline of Coos County and Oregon, an important point of understanding because of the population and economic interrelationships between the City of Coos Bay, Coos County, and Oregon. A discussion of the relationship between population growth/decline and economic activity in Coos County follows in a later section of this analysis.

TABLE 5.2-1

COMPARISON OF HISTORICAL POPULATION TRENDS FOR COOS BAY, THE COOS BAY/NORTH BEND URBAN AREA, COOS COUNTY AND OREGON; 1850-1987

YEAR	Coos Bay-North Bend Urban Area				Coos County	Oregon
	Coos Bay (Marshfield)	Empire	North Bend	Eastside		
1850	--	--	--	--	--	13,294
1860	--	--	--	--	--	52,465
1870	--	--	--	--	1,644	90,923
1880	642	--	84	107	4,834	174,768
1890	1,461	--	--	--	8,874	317,704
1900	1,391	187	--	--	10,324	413,536
1910	2,980	147	2,078	252	17,959	672,675
1920	4,034	182	3,268	453	22,257	783,389
1930	5,287	493	4,012	556	28,373	953,786
1940	5,259	665	4,262	638	32,466	1,089,684
1950	6,223	2,261	6,099	890	42,265	1,521,341
1960	7,084	3,781	7,512	1,380	54,955	1,768,687
1970	13,466	--	8,553	1,331	56,515	2,091,385
1977	14,350	--	9,700	1,655	61,100	2,396,100
1978	15,300	--	10,300	1,680	63,200	2,474,000
1980	14,424	--	9,779	1,601	64,047	2,633,156
1982	13,710	--	9,320	1,500	61,750	2,656,185
1984	14,770	--	9,110	--	61,000	2,660,000
1986	14,330	--	8,770	--	57,500	2,661,500
1987	14,290	--	8,755	--	57,500	2,690,000

Empire merged with Coos Bay in 1966

Eastside merged with Coos Bay in 1983

Source: Portland State University, Center for Population Research and Census; Coos Curry Douglas Economic Improvement Association 1977; Peterson and Powers 1952.

resource recovery on the offshore continental shelf and shall support such development where its economic, social, and environmental benefits are greater than its economic, social, and environmental costs.

This strategy is based on the recognition: (1) that careful assessment of development such as offshore oil and gas recovery is necessary to conserve other value of the nearshore ocean such as for commercial and recreational fishing, (2) that Coos County is likely to experience some of the beneficial impacts and most of the adverse impacts of such development, and (3) that such development would likely require an Environmental Impact Statement (EIS) to comply with provisions of the National Environmental Protection Act (NEPA).

5.15 POPULATION PROJECTIONS

Problem/Opportunity Statement

A consistent set of population projections provides a means for allocating growth among different areas within the County. These projections are a first step toward coordination of city and County Comprehensive Plans.

ISSUE

Population growth projections are a key criterion used to help determine need for housing and industrial and commercial uses by specific geographical area in city and county comprehensive plans. The required coordination of plans includes a need for coordinating population projections.

GOAL

Coos County shall cooperate with the cities within it to agree upon a coordinated set of population growth projections for Coos County and the cities and urban growth areas within the County.

PLAN IMPLEMENTATION STRATEGIES

Coos County shall adopt the following set of population growth projections for the planning period (1996-2020), recognizing that these projections shall form the basis of rational plans for development throughout Coos County.

1996-2020 PROJECTED POPULATION*

COUNTY/ CITIES	1996	2000	2005	2010	2015	2020
Coos	62399	63612	64950	66338	67870	69513
Bandon	2791	2826	3041	3265	3503	3754
Coos Bay	15696	16001	16337	16687	17072	17485
Coquille	4273	4356	4448	4543	4647	4760
Lakeside	1648	1822	2016	2218	2435	2657
Myrtle Point	2761	2815	2874	2935	3003	3076
North Bend	9997	10191	10406	10628	10873	11137
Powers	703	717	732	747	764	783
Unincor.	24530	24884	25096	25315	25573	25861

*OEA 1996 report provided the County projected population growth numbers

Coos County Comp Plan
9/05

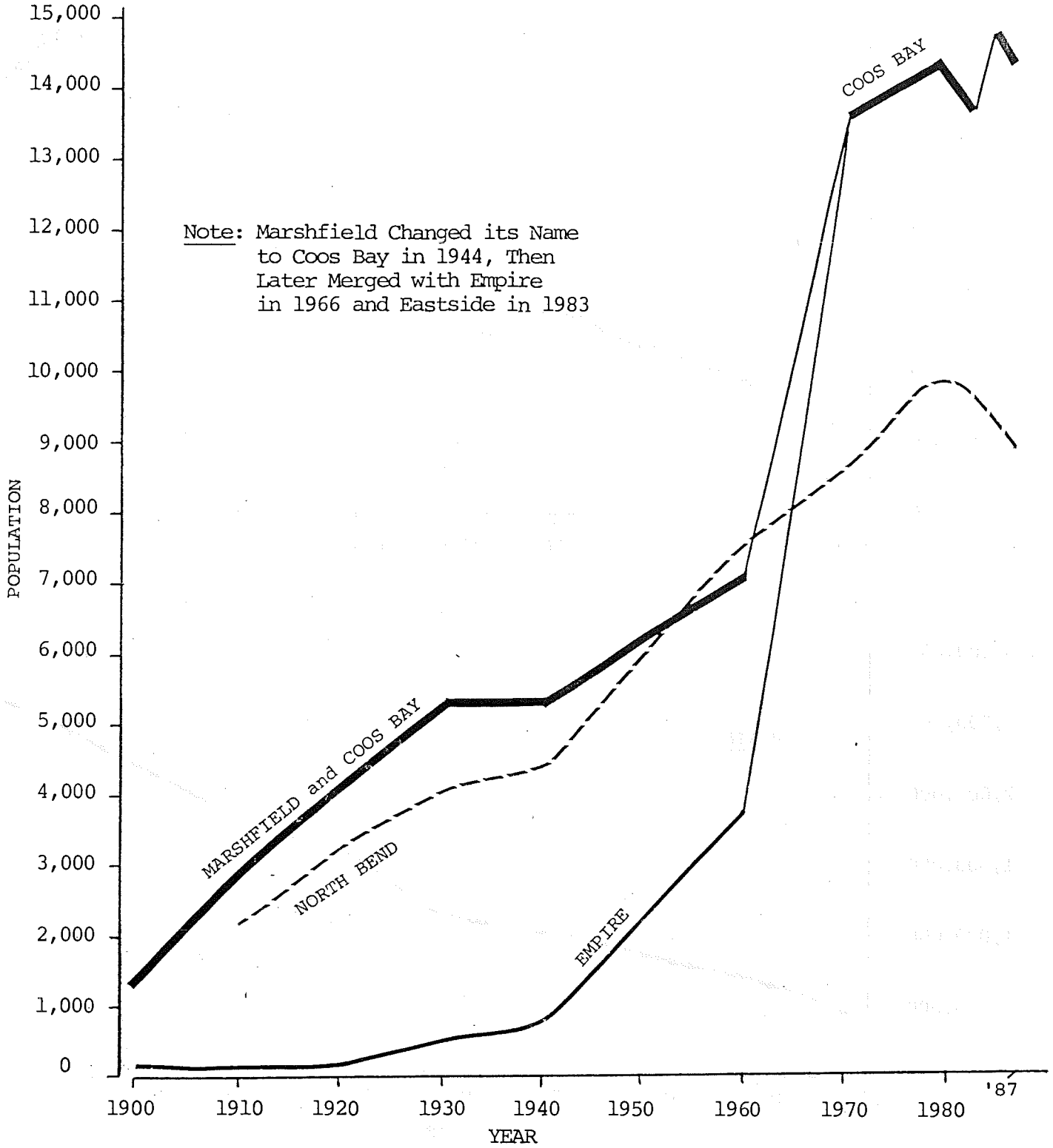
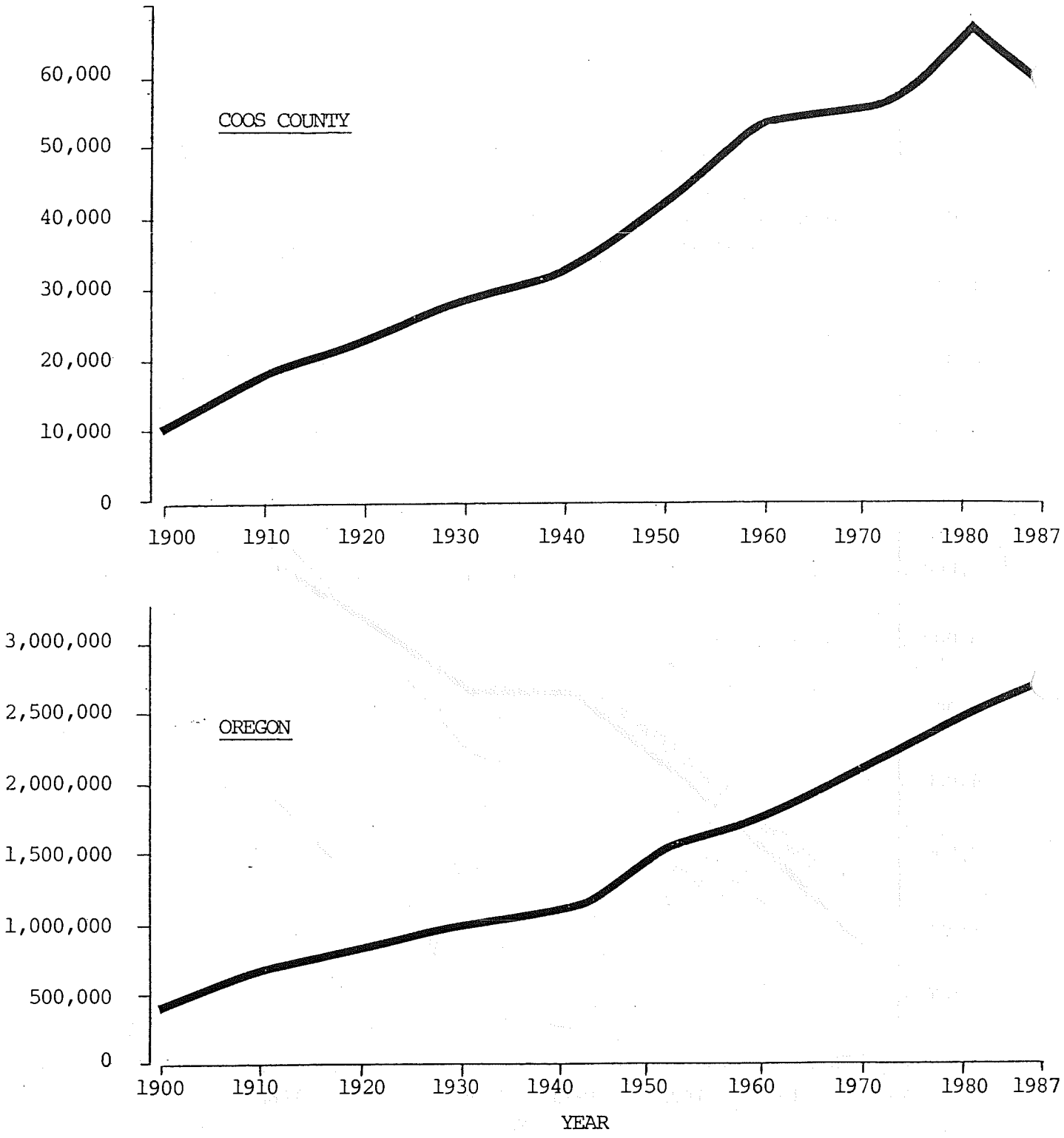


FIGURE 5.2-1

POPULATION OF MARSHFIELD, EMPIRE, COOS BAY AND NORTH BEND; 1900-1987



POPULATION OF COOS COUNTY AND OREGON; 1900 to 1987

FIGURE 5.2-2

While raw population statistics of geographical areas are useful in analyzing the magnitude of people, it is often difficult to determine the relative growth impacts on each area from such figures. Therefore, these data are often converted to growth indices for comparative purposes. Population growth indices show the relative change in population over a period of time, based upon the population at a particular point in time. For example, if it is assumed that population of Coos Bay in the year 1910 (i.e., 2,980) equals an index figure of 100, then all population figures for subsequent years are either greater or lesser than 100 depending upon their relationship to the population of the subject area in 1910. That is, the population of Coos Bay in 1980 was 14,424, which equals a growth index of 484 -- computed by dividing 14,424 by 2980, and by then multiplying this resultant figure by a factor of 100. The population growth index permits the relative comparison of the population growth of various geographic areas over a period of time.

The population growth indices presented in Figure 5.2-3 depict the relative population changes for Coos Bay, North Bend, Coos County and Oregon for two separate time periods: (1) 1910 to 1987, and (2) 1940 to 1987. The first conclusions of this analysis is that the relative population growth decline of these places were "basically" very similar over the two time periods, although differences certainly existed. It is interesting to note that North Bend has grown faster than Coos Bay since 1910, and that both had experienced faster gains than Coos County and Oregon until 1980. Since 1980, Coos Bay, North Bend and Coos County experienced population decreases while the State continued to gain. Comparable analysis for the period from 1940 to 1987 reveals similar trends in population changes, although Coos Bay grew faster than North Bend during this period, principally due to its merger with the City of Empire and City of Eastside. It is also interesting to note that the population growth rate of Coos county substantially leveled off from 1960 to 1980 and then dropped from 1980 to 1987, when using 1940 as a base year (i.e., 1940=100). Prior to the last seven years, the population of Coos Bay and North Bend have historically grown faster than the populations of Coos County and Oregon. The combined populations of Coos Bay (including Empire and Eastside) and North Bend comprised 33% of the Coos County population in 1940, and 40% in 1987, which substantiates the greater influence of the bay area population center in Coos County since World War II.

Recent Population Trends

Changes in Coos Bay's population since 1980 is presented in Table 5.2-2, which includes comparable trend data for Oregon, Coos County and the Coos Bay/ North Bend urban area. Coos Bay's population experienced a decline from 1980-1987. A total loss of 134 persons to its 1980 population of 14,424 inhabitants constitutes a 0.9% net decrease during that time. This equals an average annual loss of 19 people, or about 2.7 decrease per year. These figures are misleading because the City of Coos Bay and former City of Eastside consolidated in December 1983 which substantially increased Coos Bay's population. Adjusting Coos Bay's 1980 population to include Eastside (16,025) will result in a total loss of 1,735 persons which constitutes a 10.8% net decrease during that same period. This equals an average annual loss of 248 people, or approximately 1.5% decrease per year. This rate of decline is in contrast to Oregon which has gained since 1980, and the adjusted rate is approximately the same as Coos County's decline during the same period.

Comparison of population changes experienced by Oregon counties between 1980 and mid-1987 revealed that Coos County's 10.2% decline during that period placed it 35th among Oregon's counties, meaning that only one Oregon County declined at

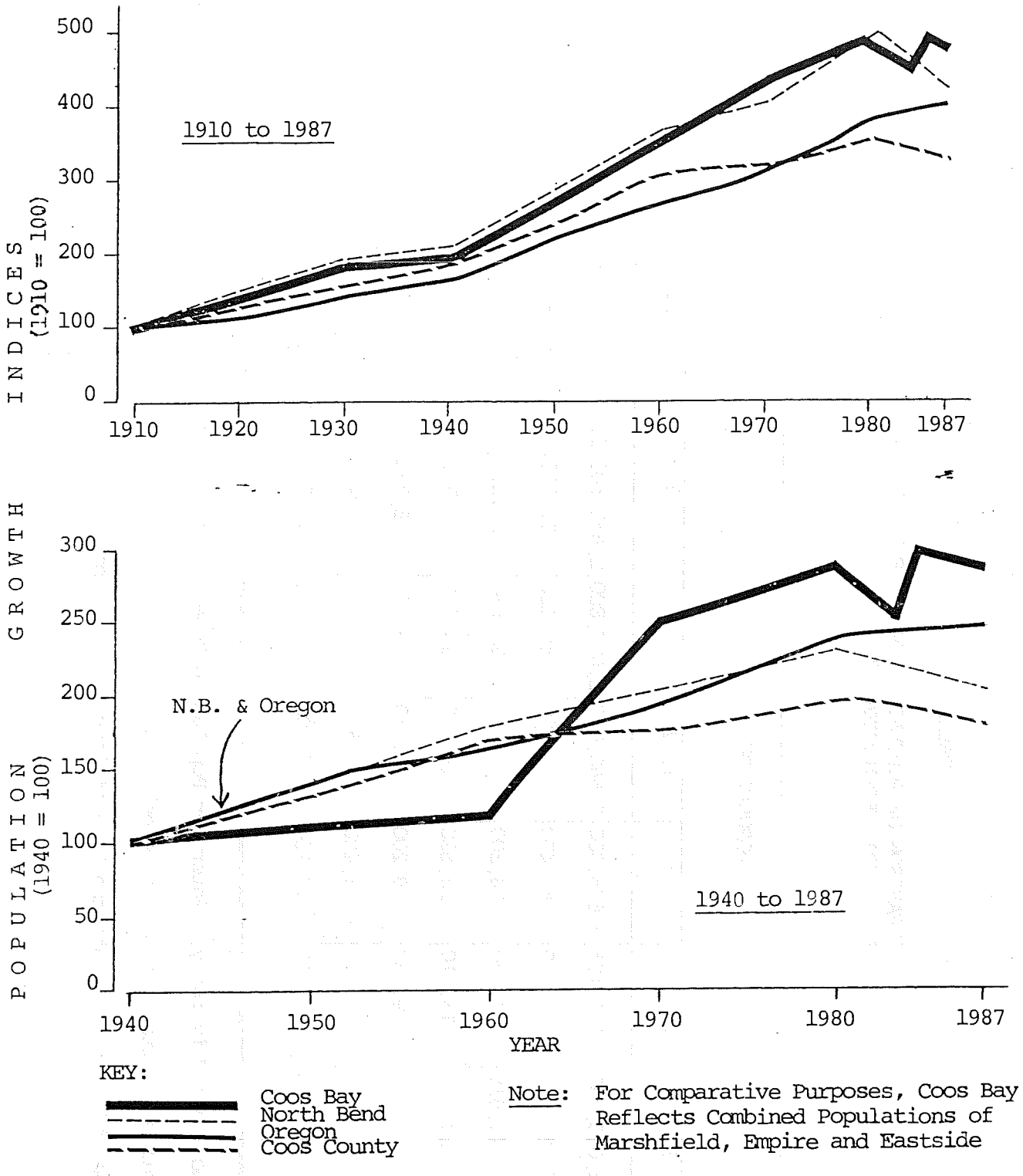


FIGURE 5.2-3

COMPARISON OF POPULATION GROWTH INDICES FOR COOS BAY, NORTH BEND, COOS COUNTY, AND OREGON; 1910-1987 and 1940-1987

TABLE 5.2-2

COMPARISON OF POPULATION TRENDS FOR COOS BAY
THE COOS BAY-NORTH BEND URBAN AREA, COOS COUNTY AND OREGON; 1980-1987

	POPULATION								CHANGE 1980-1987		
	1980	1981	1982	1983	1984	1985	1986	1987	Number	%	Average Annual %
OREGON	2,633,156	2,660,735	2,656,185	2,635,000	2,660,000	2,675,800	2,661,500	2,690,000	56,844	2.2	0.3
COOS COUNTY	64,047	63,300	61,750	61,450	61,000	60,150	57,500	57,500	-6,547	-10.2	-1.5
BAY AREA	25,804	25,515	24,530	24,300	23,880	23,830	23,100	23,045	-2,759	-10.7	-1.5
Coos Bay	14,424	14,275	13,710	13,620	14,770	14,695	14,330	14,290	- 134	- 0.9	-0.13
North Bend	9,779	9,670	9,320	9,200	9,110	9,135	8,770	8,755	-1,024	-10.5	-1.5
Eastside	1,601	1,570	1,500	1,480	##	##	##	##	##	##	##
Coos Bay* (Adjusted)	16,025	15,845	15,210	15,100	14,700	14,695	14,330	14,290	-1,735	-10.8	-1.5

Source: Portland State University, Center for Population Research and Census.

Eastside consolidated with Coos Bay in December 1983

* Adjusted figures which include both the City of Coos Bay and former City of Eastside

a rate faster than -10.2 between 1980 and 1987. Interestingly, the City of Coos Bay's adjusted rate of decline for that seven year span was -10.8%.

Similarly, comparison of growth rates experienced by Oregon counties between mid-1986 and mid-1987 revealed that Coos County's 0% growth during that period placed it tied for 29th with four other Oregon counties. Coos Bay experienced a -0.3% growth rate from 1986 to 1987.

The rate of growth on a statewide basis demonstrates a different trend than that of Coos County. Oregon's population gained approximately 57,000 residents between 1980 and 1987. This 2.2% increase was about one-third the U.S. rate of 7.1% for that time. (Portland State University 1988)

Population Change Components: Births, Death, Migration

An explanation of why the population of an area changes over time imparts an understanding of the economic function of the city, which in turn is necessary in order to anticipate future level of services. For example, population gains resulting from a large number of people moving into an area create a substantially different demand for services than comparable gains resulting from a sharp increase in the local birth rate. A majority of those coming into the area might be senior citizens and, thus, place few demands on the local school system. Additionally, those migrating to the area would be more apt to generate demands for housing and other municipal service than would population gains attributable to a high occurrence of births.

There are three ways that the populations of an area may change: population may be born in the area, die in the area, or move into or away from the area. Births and deaths constitute "natural" population change. A greater number of births than deaths, for example, results in a "natural increase" in population. On the other hand, migration, either to or from an area, is often more difficult to determine. A common technique is to (1) compute the total change in the population of an area over a period of time, (2) determine natural change from readily available vital statistics (births and deaths) for the same period, and then, (3) assume that the difference between the total population change and the natural change constitutes migration; this is often referred to as "inferred migration."

Table 5.2-3 presents data on the components of Coos County population change for 1910-1987. It also presents similar data for Oregon as a comparison (corresponding data for Coos Bay is not available). The statistics reveal that, subsequent to the initial settlement of Coos County, natural change has been much more responsible for county population growth than migration as is true for the state. Note that Coos County experienced substantial out-migration during the period from 1960-1970 and 1980-1987.

Table 5.2-4 shows the components of population change for the City of Coos Bay for the recent period from 1980 through 1987 with comparable data for Coos County and Oregon. Out-migration is revealed as a major component of Coos Bay's and Coos County's population change during this period. Out-migration also occurred at times in Oregon during the period, although it was not as prevalent as in Coos Bay and Coos County.

TABLE 5.2-3

COMPARISON OF POPULATION CHANGE COMPONENTS
FOR COOS COUNTY AND OREGON; 1910-1987

YEARS	POPULATION CHANGE	NATURAL CHANGE: NATURAL CHANGE	Births-Death: BIRTHS	Births-Death: DEATHS	INFERRED MIGRATION
1910-1920	4,298	--	--	--	--
1920-1930	6,116	--	--	--	--
1930-1940	4,093	2,095	5,074	2,979	1,998
1940-1950	9,799	3,781	7,175	3,394	6,018
1950-1960	12,690	9,243	13,384	4,141	3,447
1960-1970	1,560	6,348	11,016	4,668	-4,788
1970-1980	6,985	4,015	8,838	4,823	2,970
1980-1987	-6,547	2,143	6,451	4,308	-8,690
1910-1920	110,624	46,402	117,806	71,404	64,222
1920-1930	170,397	53,746	150,006	96,260	116,651
1930-1940	135,898	28,823	140,661	111,838	107,075
1940-1950	431,657	137,332	266,507	129,175	294,325
1950-1960	247,346	228,845	379,335	150,490	18,501
1960-1970	322,698	162,352	343,985	181,633	160,346
1970-1980	540,034	145,614	349,600	203,986	394,420
1980-1987	56,844	129,948	293,692	163,744	-73,104

SOURCE: Oregon State Health Division, Vital Statistics Section; Portland State University, Center for Population Research and Census

TABLE 5.2-4

COMPARISON OF POPULATION CHANGE COMPONENTS FOR
COOS BAY, NORTH BEND, COOS COUNTY AND OREGON: 1980-1987

	YEAR	TOTAL POPULATION CHANGE[a]		NATURAL CHANGE: BIRTHS-DEATHS				MIGRATION	
				Natural Change					
		Number	%	Number	Rate[b]	Births	Deaths	Number	Rate[b]
COOS BAY	1980	124	0.9	172	11.9	316	144	-48	-3.3
	1981	-149	-1.0	144	10.0	281	137	-293	-20.5
	1982	-565	-4.0	101	7.4	252	151	-666	-48.6
	1983	-90	-0.7	58	4.3	240	182	-148	-10.7
	1984*	1,510	11.1	78	5.3	254	176	1,432	60.0
	1985	-75	-0.5	83	5.7	254	171	-158	-10.8
	1986	-365	-2.5	82	5.7	263	181	-447	-31.2
	1987	-40	-0.3	97	6.8	276	179	-137	-9.6
COOS COUNTY	1980	297	0.5	480	7.5	1,061	581	-183	-2.9
	1981	-747	-1.2	407	6.4	972	565	-1,154	-18.2
	1982	-1,550	-2.5	383	6.2	908	525	-1,933	-31.3
	1983	- 300	-0.5	238	3.9	858	620	-538	-8.8
	1984	- 450	-0.7	279	4.6	901	622	-729	-12.0
	1985	- 850	-1.4	197	3.3	830	633	-1,047	-17.4
	1986	-2,650	-4.4	143	2.5	770	627	-2,793	-48.6
	1987	-0-	-0-	149	2.6	754	605	-149	-2.6
OREGON	1980	48,806	1.9	21,335	8.1	43,091	21,756	27,471	10.4
	1981	27,579	1.1	21,176	8.0	42,974	21,798	6,403	2.4
	1982	-4,550	-0.2	19,418	7.3	41,012	21,594	-23,968	-9.0
	1983	-21,185	-0.8	17,588	6.7	39,949	22,361	-38,773	-14.7
	1984	25,000	1.0	16,435	6.2	39,536	23,101	8,565	3.2
	1985	15,800	0.6	15,595	5.8	39,419	23,824	205	0.1
	1986	-14,300	-0.5	15,522	5.8	38,850	23,328	-29,822	-11.2
	1987	28,500	1.1	14,493	5.4	38,674	24,181	14,007	5.2

[a] From previous year

[b] Per 1000 population

SOURCE: Portland State University for Population Research and Census
Oregon State Health Division, Vital Statistics Section

*The former City of Eastside was consolidated with Coos Bay in December, 1983.

Coos Bay has experienced out-migration every year since 1980 except in 1984. The only reason Coos Bay had a high migration rate in 1984 was due to the consolidation of the former City of Eastside and City of Coos Bay in December, 1983. If not for this consolidation, Coos Bay would have had another year of out-migration. A comparison of the natural change and migration rates of Coos Bay, Coos County and Oregon indicates that out-migration from Oregon is partly responsible for the large recent loss in the local population, but that this phenomenon has occurred to a much higher degree in Coos County and the City of Coos Bay.

Age/Sex Characteristics

Examination of the age/sex characteristics of the local population is useful because of the distribution of persons by age and sex affect such phenomena as natural increase (birth and death rates), gross regional product, housing needs, and demand for educational as well as other facilities and public services. Figure 5.2-4 presents the distribution of the population of Coos County and Oregon by age and sex for 1970, 1980 and 1987. Current information for the City of Coos Bay is not available. However, it can be assumed that the City of Coos would resemble Coos County more than Oregon. Easier interpretation of these data is facilitated by "population pyramids," the graphs that statistically illustrate the comparative age/sex data presented from the tables on the same page.

Pyramids that have a broad base which gradually tapers toward the apex characterize large youthful populations. The Coos County pyramid depicting age/sex characteristics for 1970 (Figure 5.2-4) generally resembles this phenomenon. This is to be expected in a population which has a "balanced" age/sex distribution. A population is "balanced" if the number of people in each successive age/sex group is smaller than previous years. Deviations from this natural relationship occur when either (1) death rates are low, (2) young people move away from the area, (3) old people move away from the area, or (4) combinations of these occur.

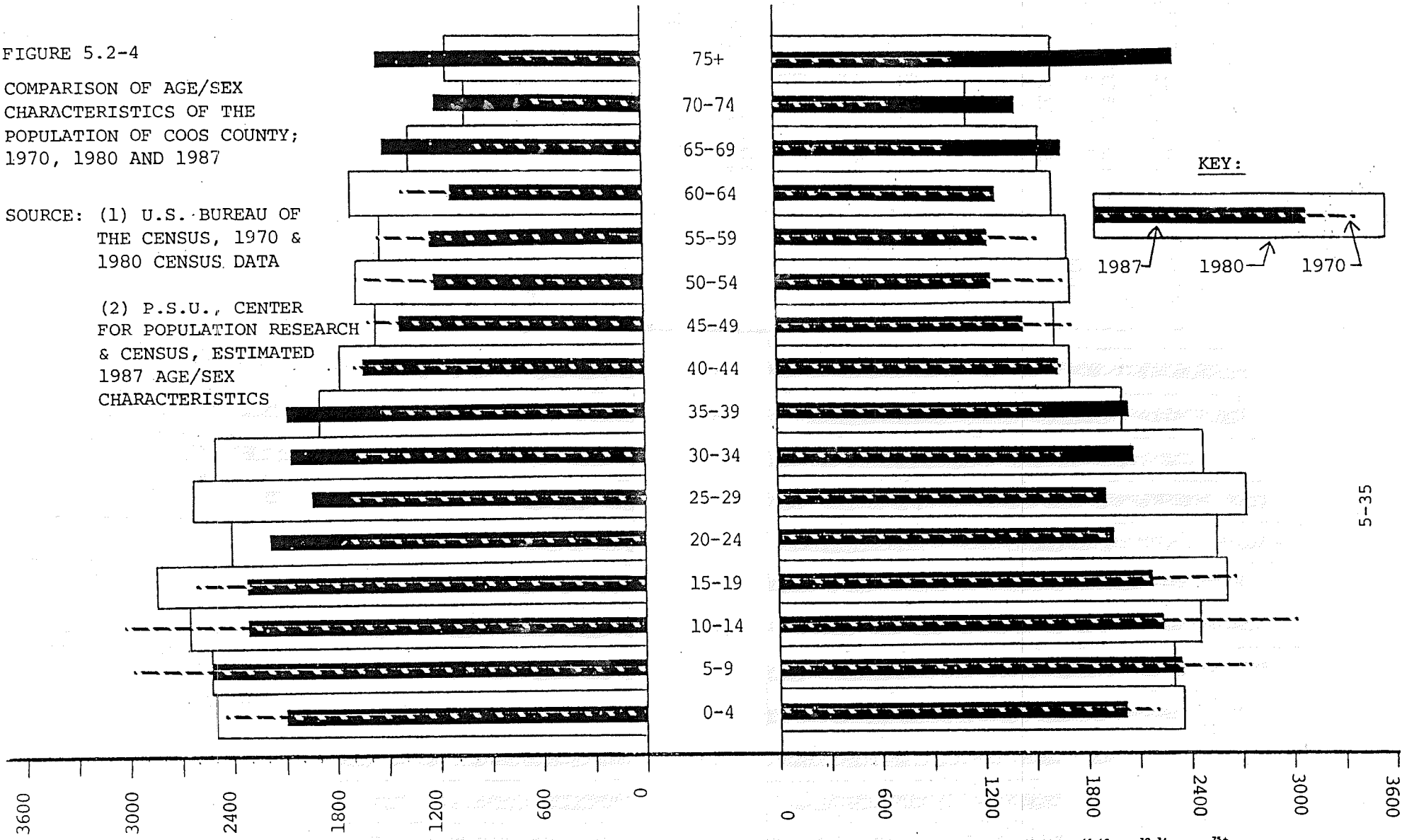
The following analysis primarily concern Coos County; Oregon data is provided for comparison. Coos County's population pyramid (Figure 5.2-4) indicates that the County's 1987 population contains fewer young persons in the 0-19 year age groups than it did in 1970 and even 1980. This trend also occurred to a lesser extent in Oregon during the same period (Figure 5.2-4(a)). Declining school enrollment is one repercussion of this phenomenon. Further comparison of the age/sex composition of Coos County compared to Oregon indicates that the local population contains a greater proportion of children and young teenagers (0-14 years) than does the state population, but that the state's population contains a greater proportion of older teenagers and young adults (15-25) entering the labor market than does the local population. As concluded by the Coos - Curry - Douglas Economic Improvement Association (CCDEIA) this lends credibility to "the assumption that young persons who are entering the labor market for the first time leave the ... [county] ... to seek employment elsewhere in the State due to a lack of employment opportunities here." (CCDEIA, 1977:III-7)

FIGURE 5.2-4

COMPARISON OF AGE/SEX CHARACTERISTICS OF THE POPULATION OF COOS COUNTY; 1970, 1980 AND 1987

SOURCE: (1) U.S. BUREAU OF THE CENSUS, 1970 & 1980 CENSUS DATA

(2) P.S.U., CENTER FOR POPULATION RESEARCH & CENSUS, ESTIMATED 1987 AGE/SEX CHARACTERISTICS



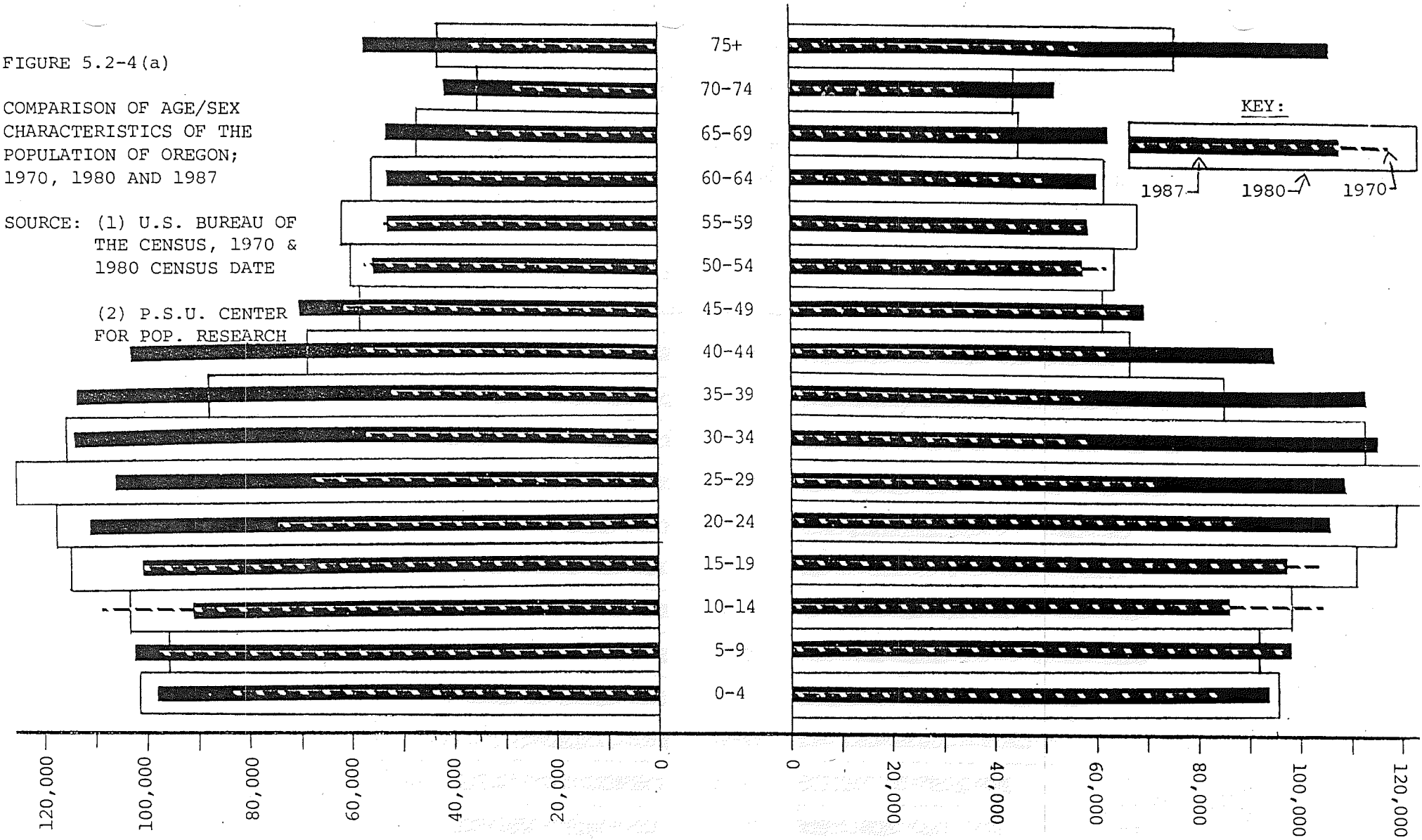
Year & Sex	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
1970	56,515	4,713	5,758	6,143	5,279	3,618	3,558	3,346	3,185	3,359	3,346	3,369	3,129	2,700	1,936	1,340	1,444
	100.0	8.3	10.2	10.7	9.3	6.4	6.3	5.9	5.6	5.9	5.9	6.0	5.5	4.8	3.4	2.4	3.3
Male	28,345	2,479	2,997	3,119	2,606	1,707	1,712	1,693	1,532	1,726	1,630	1,686	1,569	1,416	995	657	826
	100.0	8.7	10.6	11.0	9.2	6.0	6.0	6.0	5.4	6.1	5.8	6.0	5.5	5.0	3.5	2.3	2.9
Female	28,170	2,234	2,761	3,024	2,673	1,911	1,846	1,653	1,541	1,632	1,716	1,683	1,560	1,284	941	683	1,018
	100.0	7.9	9.8	10.7	9.5	6.8	6.6	5.9	5.5	5.8	6.1	6.0	5.5	4.6	3.3	2.4	3.6
1980	64,047	4,889	4,815	5,115	5,472	4,959	5,357	4,933	4,003	3,501	3,190	3,403	3,378	3,298	2,870	2,139	2,725
	100.0	7.6	7.5	8.0	8.5	7.7	8.4	7.7	6.2	5.5	5.0	5.3	5.3	5.2	4.5	3.3	4.3
Male	31,890	2,501	2,516	2,655	2,857	2,398	2,641	2,472	1,988	1,782	1,561	1,668	1,655	1,684	1,355	1,037	1,120
	100.0	7.8	7.9	8.3	9.0	7.5	8.3	7.8	6.2	5.6	4.9	5.2	5.2	5.3	4.2	3.3	3.5
Female	32,157	2,388	2,299	2,460	2,165	2,561	2,716	2,461	2,015	1,719	1,629	1,735	1,723	1,614	1,515	1,102	1,605
	100.0	7.4	7.1	7.6	8.1	8.0	8.5	7.7	6.3	5.3	5.1	5.4	5.4	5.0	4.7	3.4	5.0
1987	57,500	4,127	4,900	4,638	4,564	4,156	3,861	4,079	4,047	3,281	2,854	2,471	2,468	2,415	3,173	2,594	3,872
	100.0	7.2	8.5	8.1	8.0	7.2	6.7	7.1	7.0	5.7	5.0	4.3	4.3	4.2	5.5	4.5	6.7
Male	28,369	2,105	2,519	2,381	2,382	2,186	1,	1,982	2,002	1,657	1,427	1,204	1,208	1,128	1,517	1,203	1,562
	100.0	7.4	8.9	8.4	8.4	7.7		7.0	7.1	5.8	5.0	4.2	4.3	4.0	5.4	4.2	
Female	29,131	2,022	2,381	2,257	2,182	1,970	1,	2,097	2,045	1,624	1,427	1,267	1,260	1,287	1,656	1,391	2,
								7.2	7.0	5.6	4.9	4.3	4.1	4.4	5.7	4.8	

FIGURE 5.2-4(a)

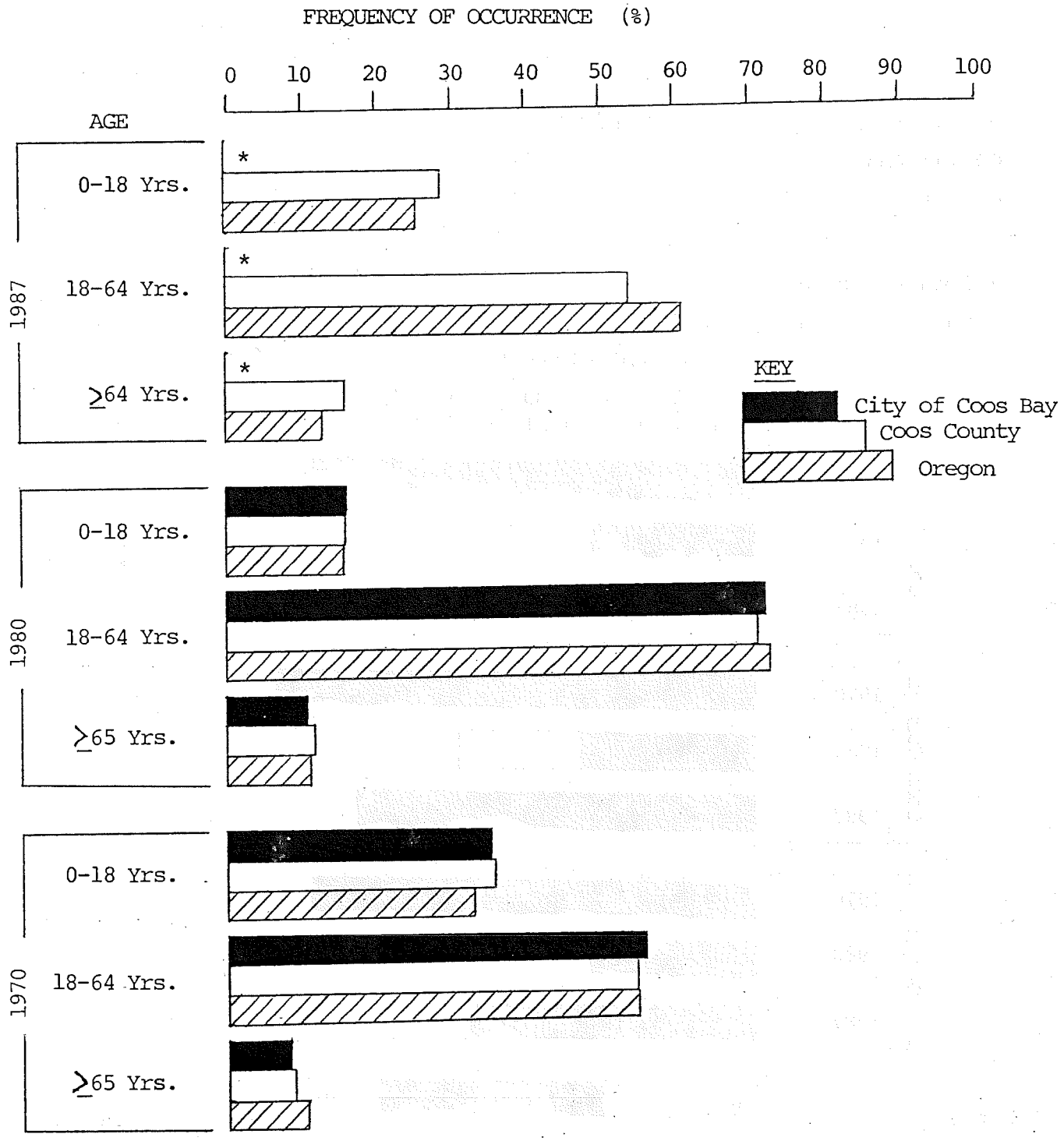
COMPARISON OF AGE/SEX CHARACTERISTICS OF THE POPULATION OF OREGON; 1970, 1980 AND 1987

SOURCE: (1) U.S. BUREAU OF THE CENSUS, 1970 & 1980 CENSUS DATE

(2) P.S.U. CENTER FOR POP. RESEARCH



Year & Sex	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
1970	2,091,385	164,060	194,345	211,284	203,362	162,638	138,978	115,599	107,832	117,950	124,395	118,996	110,739	94,408	75,601	60,321	90,877
	100.0	7.8	9.3	10.1	9.7	7.8	6.7	5.5	5.2	5.6	6.0	5.7	5.3	4.5	3.6	2.9	4.3
Male	1,023,952	83,836	99,274	107,664	100,952	75,549	68,827	57,764	52,738	57,790	60,407	58,563	54,576	45,809	35,886	26,956	32,361
	100.0	8.2	9.7	10.5	9.9	7.4	6.7	5.6	5.2	5.6	5.9	5.7	5.3	4.5	3.5	2.6	3.7
Female	1,067,433	80,224	95,071	103,620	102,410	87,089	70,151	57,835	55,094	60,160	63,988	60,433	56,163	48,599	39,715	33,365	53,516
	100.0	7.5	8.9	9.7	9.6	8.1	6.6	5.4	5.2	5.6	6.0	5.7	5.3	4.6	3.7	3.1	5.0
1980	2,632,663	197,931	189,293	202,546	225,814	237,788	253,472	227,565	170,694	133,101	119,249	124,344	129,866	117,676	105,165	79,367	118,752
	100.0	7.5	7.2	7.7	8.6	9.1	9.6	8.6	6.5	5.1	4.5	4.7	4.9	4.5	4.0	3.0	4.5
Male	1,296,355	101,815	96,965	103,594	114,690	117,800	126,867	115,071	86,047	67,073	58,948	60,356	62,001	56,031	49,287	35,404	44,406
	100.0	7.9	7.5	8.0	8.8	9.1	9.8	8.9	6.6	5.2	4.5	4.7	4.8	4.3	3.8	2.7	3.4
Female	1,336,308	96,136	92,328	98,952	111,124	119,988	126,605	112,494	84,647	66,028	60,301	63,988	67,865	61,645	44,878	43,963	74,346
	100.0	7.2	6.9	7.4	8.3	9.0	9.5	8.4	6.3	4.9	4.6	4.8	5.1	4.6	3.4	3.3	5.6
1987	2,690,000	192,916	200,947	177,119	198,519	217,826	214,345	231,011	226,525	186,141	140,213	113,878	111,216	114,205	116,891	94,431	153,817
	100.0	7.2	7.5	6.6	7.4	8.1	8.0	8.6	8.4	6.9	5.2	4.2	4.1	4.2	4.4	3.5	5.7
Male	1,320,068	98,406	102,835	90,949	101,347	111,244	106,112	114,841	113,918	93,710	70,370	56,412	53,330	53,379	53,710	42,028	57,477
	100.0	7.4	7.8	6.9	7.7	8.4	8.0	8.7	8.6	7.1	5.3	4.5	4.0	4.0	4.0	3.2	4.4
Female	1,369,932	94,510	98,112	86,170	97,172	106,582	108,233	116,170	112,607	92,431	69,843	57,466	57,886	60,826	63,181	52,403	96,340
	100.0	6.9	7.2	6.3	7.1	7.8	7.9	8.5	8.2	6.8	5.1	4.2	4.2	4.4	4.6	3.8	7.0



* CITY OF COOS BAY NOT AVAILABLE

COMPARISON OF BROAD AGE GROUPS FOR COOS BAY, COOS COUNTY, AND OREGON: 1970, 1980 and 1987

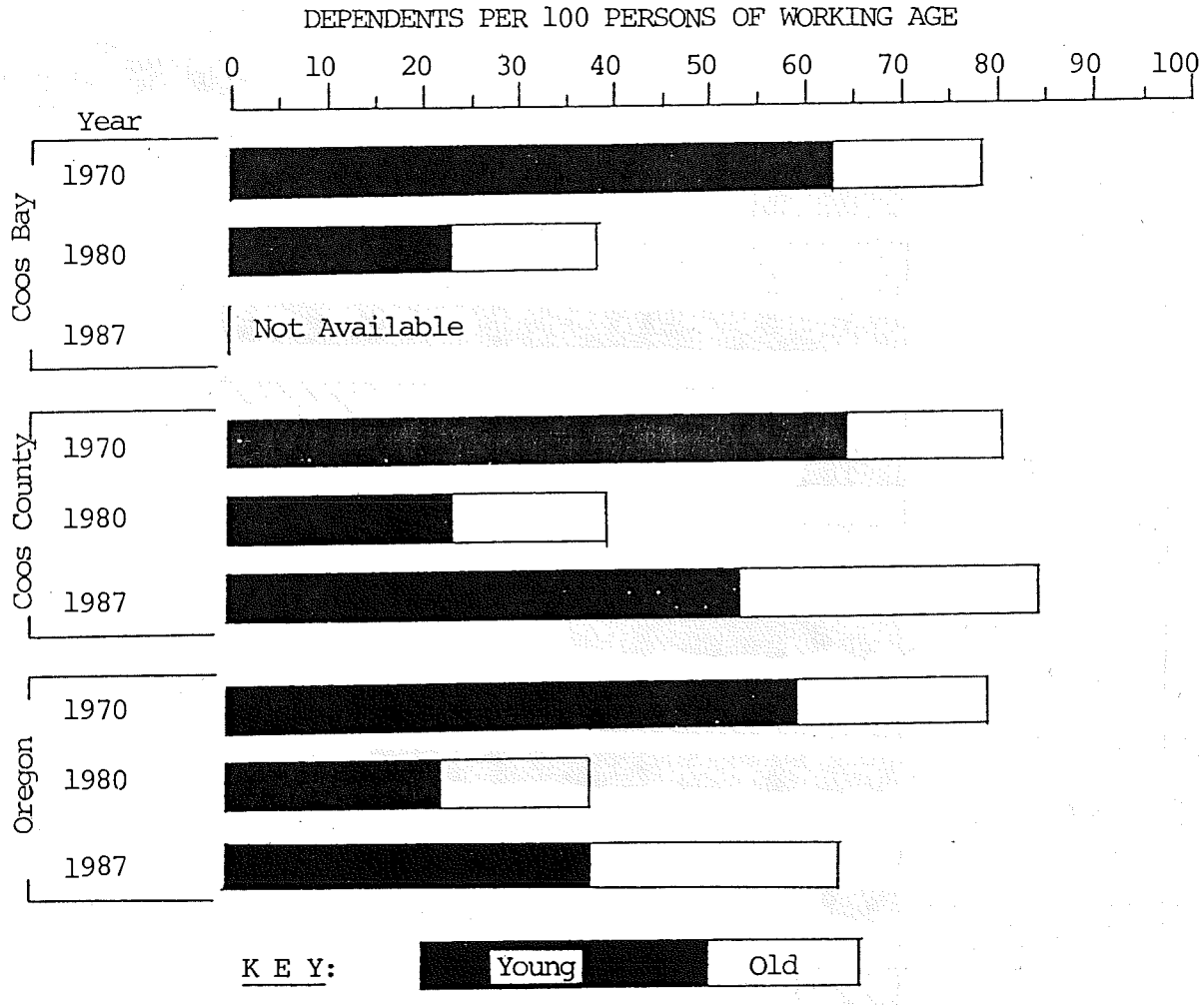
FIGURE 5.2-5

SOURCE: U.S. Bureau of the Census and P.S.U./C.P.R.C.

	Dependents per 100 Persons of Working Age								
	1970			1980			1987		
	Young	Old	TOTAL	Young	Old	TOTAL	Young	Old	TOTAL
CITY OF COOS BAY	62.9	15.3	78.2	22.8	15.7	38.5	N/A	N/A	N/A
COOS COUNTY	64.5	16.4	80.9	22.8	16.9	39.7	53.5	30.9	84.4
OREGON	59.8	19.4	79.2	22.1	15.9	38.0	41.9	22.3	64.2

(1) Young = 0-20 Years of Age

(2) Old = 65 Years of Age, or Older



COMPARISON OF DEPENDENCY RATIOS* FOR THE CITY OF COOS BAY, COOS COUNTY AND OREGON: 1970, 1980, and 1987.

*Note: The dependency ratio is a measure of age composition, and compares non-productive ages of the population (i.e., those persons less than 18 years and greater than 65 years) with the working age population (i.e., those persons between 18 and 65 years)

FIGURE 5.2-6

SOURCE: U.S. Bureau of the Census and P.S.U./C.P.R.C.

TABLE 5.2-5

AGE CHARACTERISTICS BY BROAD AGE GROUPS
FOR COOS BAY, COOS COUNTY, AND OREGON;
1970, 1980 AND 1987

CITY OF COOS BAY

AGE GROUP	1970		1980*		1987		Change: 1970-80		Change: 1970-87	
	NO.	%	NO.	&	NO.	&	NO.	%	NO.	%
TOTAL	13,466	100.0	16,025	100.0	N/A	--	2,559	19.0	N/A	--
Under 18 yrs.	4,754	35.3	2,638	16.5	N/A	--	-2,116	-44.5	N/A	--
18-64 yrs.	7,554	56.1	11,573	72.2	N/A	--	4,019	53.2	N/A	--
65 yrs. & over	1,158	8.6	1,814	11.3	N/A	--	656	56.7	N/A	--

*Includes City of Eastside

COOS COUNTY

AGE GROUP	1970		1980		1987		Change: 1970-80		Change: 1970-87	
	NO.	%	NO.	&	NO.	&	NO.	%	NO.	%
TOTAL	56,515	100.0	64,047	100.0	57,500	100.0	7,532	13.3	985	.7
Under 18 yrs.	20,159	35.7	10,440	16.3	16,674	29.0	-9,719	-48.2	-3,485	-17.3
18-64 yrs.	31,241	55.3	45,857	71.6	31,187	54.2	14,616	46.8	-54	-0.2
65 yrs. & over	5,115	9.0	7,750	12.1	9,639	16.8	2,635	51.5	4,524	88.5

OREGON

AGE GROUP	1970		1980		1987		Change: 1970-80		Change: 1970-87	
	NO.	%	NO.	&	NO.	&	NO.	%	NO.	%
TOTAL	2,091,385	100.0	2,633,105	100.0	2,690,000	100.0	541,720	25.9	598,720	28.6
Under 18 yrs.	697,683	33.4	421,297	16.0	686,395	25.5	-276,386	-39.6	11,288	1.6
18-64 yrs.	1,166,903	55.8	1,909,001	72.5	1,638,466	60.9	742,098	63.6	471,563	40.4
65 yrs. & over	226,799	10.8	302,807	11.5	365,139	13.6	76,008	33.5	138,340	61.0

SOURCE: U.S. Bureau of the Census, 1970 and 1980 Census Data
Portland State University, Center for Population Research and Census

Table 5.2-5 summarizes broad age-group characteristics of Coos Bay, Coos County and Oregon for 1970, 1980 and 1987. 1987 data was not available for the City of Coos Bay. The statistics reinforce the conclusions reached through the visual analysis of the population pyramids in Figure 5.2-4. Three general age groups are used: (1) less than 18 years, (2) 18-64 years, and (3) 65 years and over. These respectively constitute: (1) the school age population, (2) the labor force, and (3) the retirement population of an area. It is apparent that Coos Bay, the country and state are all growing older, as persons 65 years and older represent larger proportions of their populations in 1980 and even more so in 1987 than they did in 1970. This increase was slightly smaller in 1980 for Coos Bay than in Coos County and Oregon. In 1987, Coos County had a 16.8 percent increase for persons 65 years and older as compared to 13.6 percent for Oregon. At the same time, the younger segment of the population constituted a smaller proportion of the population of the city, county and state since 1970. The potential labor force population (i.e., those persons 20-64 years) registered overall gains in Coos Bay, Coos County and Oregon from 1970 to 1980 but then decreased between 1980 and 1987. It is important to note that Coos County's potential labor force decreased 14,670 persons during the recent period from 1980 to 1987, and that this 30.0% loss was substantially more than Oregon's rate of decrease for the same period. Figure 5.2-5 graphically illustrates the comparison of the broad age groups for Coos Bay, Coos County and Oregon from 1970 to 1980 and for Coos County and Oregon from 1970 to 1987. The most obvious conclusion reached by comparing this graph with the population pyramids (Figure 5.2-4) is that while the population of the broad age groups of the three jurisdictions have been generally comparable since 1970, substantial differences exist between the City, County and State when comparing the component populations that comprise the broad age groups of Coos Bay, Coos County and Oregon. It is supposed that present variations in economic opportunity are chiefly responsible for this occurrence.

A measure of the age composition of the local population is provided by the dependency ratio," which compares the non-productive ages of the population (i.e., those under 20 and over 65 years) with the population of working age (i.e., those persons between 20 and 65 years). Dependency ratios provide an indication of the potential for labor force participation and economic productivity. The 45 years between the ages of 20 and 65 are generally a person's most productive ones. However, whether or not a person is dependent is <u>not solely</u> a function of age; health, financial standing, and normal retirement ages associated with various occupations also influence dependency.

Figure 5.2-6 presents a comparison of dependency ratios for the City of Coos Bay, Coos County and Oregon for the period from 1970 through 1987 and for Coos County and Oregon from 1970 through 1987. Note that dependency ratios had dropped significantly for all three jurisdictions from 1970 to 1980 and then significantly increased for Coos County and Oregon between 1980 and 1987. Although 1987 data for Coos Bay is not available, the City probably followed a pattern more closely resembles Coos County then Oregon. It is important to note that while the State's dependency ratio increased between 1980 and 1987, it did not exceed 1970 levels like that of Coos County. It is interesting to note that 1980 ratios for all three jurisdictions are nearly identical including the composition of dependents. As Figure 5.2-6 illustrates, all three jurisdictions had approximately 22 young dependents and 16 old

dependents per 100 persons of working age in 1980. By contrast, Coos County had nearly 12 more young dependents and approximately nine more old dependents per 100 persons of working age than that of the State in 1987. Assuming Coos Bay experienced similar trends like that of Coos County, 1987 shows a difference of approximately 20 additional dependents for the City and County as compared to the State. Therefore, while total 1975 dependency ratios for Coos Bay, Coos County and Oregon are comparable variations among the young and old components of their ratios reflect differences in the types and amounts of "social investment" that occurs in their respective geographic areas. Greater occurrence of younger dependents requires a social commitment to an educational investment, as opposed to a greater occurrence of aging dependents that make claims on regional (statewide) production without contributing to economic output. Thus, based solely on "social investment," it is concluded that the economic quality of life has worsened in Coos Bay, Coos County and Oregon since 1980 because each now has more dependents per productive working person in their respective geographic areas. This is especially true for Coos County and most likely as well for Coos Bay which have a significantly higher number of dependents than Oregon.

Consideration of the number of males and females in any given population is generally less valuable in demographic analysis than consideration of other population variables. Nevertheless, inspection of these data does provide insight into "social fiber" of the community. The "sex ratio", which is computed by determining the numbers of males per 100 females, provides a statistical measure of the sex distribution of an area's population. Rations below 90 and above 115 are considered "out of balance."

Figure 5.2-7 presents 1970, 1980 and 1987 sex ratios for Coos Bay, Coos County and Oregon. Older populations tend to have lower sex ratios than younger populations because older males have a higher mortality rate than do older females. However, economic activity and occupational demand also affect sex ratios, which make sex ratios often difficult to explain. Lumbering, wood products industries, and ranching are physically demanding occupations which provide numerous male employment opportunities in Coos County and for Coos Bay residents. These tend to raise local sex ratios. However, the graph shows that sex ratios in Coos Bay and Coos County have been decreasing since 1970 while Oregon has experienced a slight increase. The City and County ratios have decreased at almost identical rates between 1970 and 1980. Oregon experienced a slight increase between 1970 and 1980 and then like Coos County there was a decrease from 1980 to 1987. It is felt that local economic changes since 1970 are chiefly responsible for the changing ratios, and the related economic factors are addressed elsewhere in this background document.

Ethnic Characteristics of the Population

Ethnic characteristics of an area's population also help explain the "social fiber" of the community. Table 5.2-6 presents comparative ethnic data for Coos Bay, Coos County and Oregon for 1980, which is the last year for which accurate city data is available.

It is seen that Coos Bay's ethnic population in 1980 was generally comparable to that of Coos County and Oregon. While minorities comprise a very small component of the local and state populations, it is apparent that minorities comprise a slightly smaller proportion of the Coos Bay and Coos

Note Page

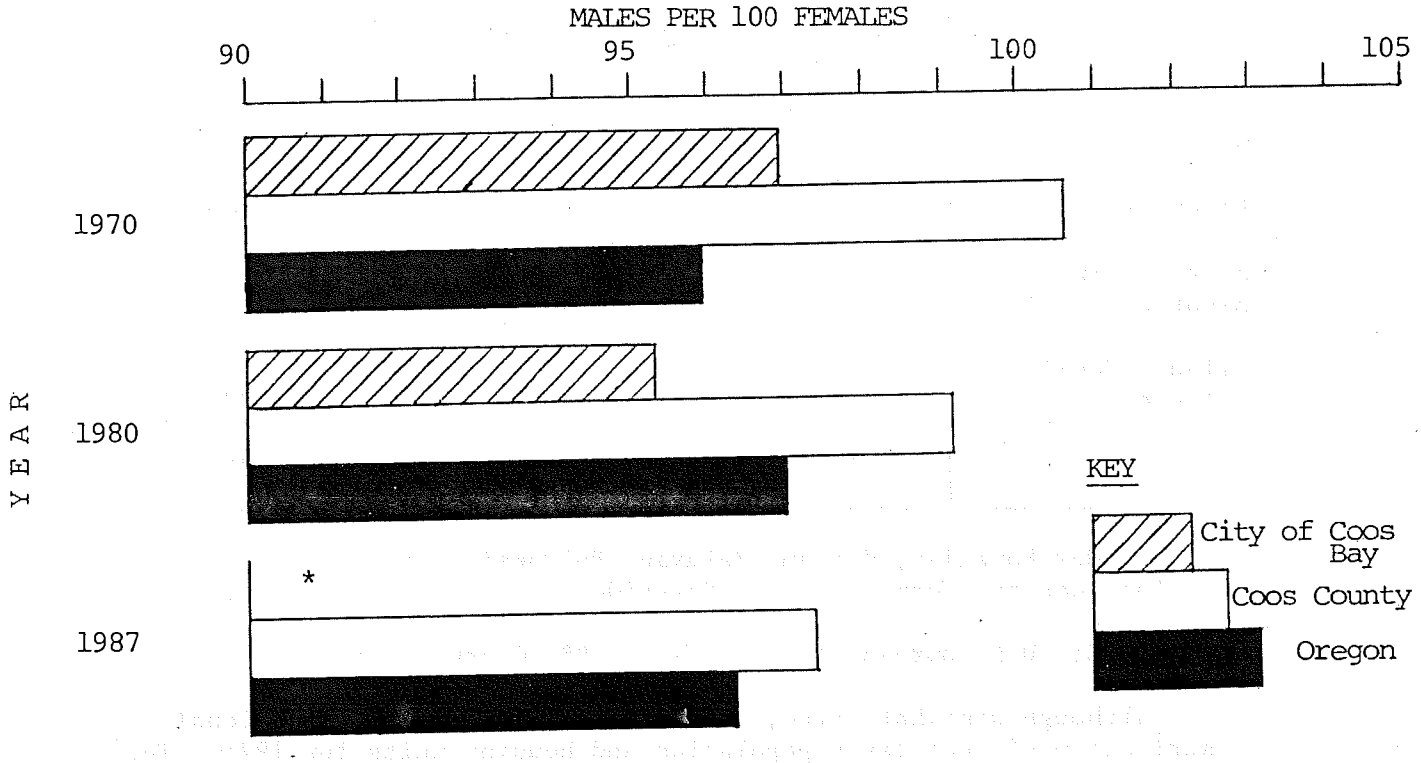
Note Page

County populations than they do for the state in general. The statistics are dated (1980), but the proportional relationships are still considered to be generally valid in 1987. One other minority group, that of "Spanish Origin," comprised 2.0% of the Coos Bay population in 1980. This compares to 1.8% for Coos County and 2.5% of Oregon at that time.

Locational Distribution of the Population

Knowledge of the locational patterns of an area's population is vital to any planning effort. It is impossible to appropriately allocate future land uses and determine the demand for supportive public services and facilities without such information.

	Males per 100 Families		
	1970	1980	1987
CITY OF COOS BAY	96.96	95.30	N/A
COOS COUNTY	100.62	99.17	97.38
OREGON	95.93	97.01	96.36



COMPARISON OF SEX RATIOS** FOR THE CITY OF COOS BAY, COOS COUNTY, AND OREGON: 1970, 1980, and 1987

*Note: Data for the City of Coos Bay not available

**Note: The "Sex Ratio is the Universal Demographic Measure of Sex Distribution, and is the Number of Males per 100 Females

FIGURE 5.2-7

SOURCE: U.S. Bureau of the Census, and P.S.U./C.P.R.C.

TABLE 5.2-6

ETHNIC CHARACTERISTICS OF THE POPULATIONS OF
COOS BAY, COOS COUNTY AND OREGON, 1980

	COOS BAY*		COOS COUNTY		OREGON	
	NUMBER	%	NUMBER	%	NUMBER	%
TOTAL	16,025	100.0	64,047	100.0	2,633,105	100.0
White	15,287	95.4	61,719	96.4	2,490,610	94.6
Black	24	0.2	74	0.1	37,000	1.4
American Indian, Aleut and Eskimo	363	2.3	1,308	2.0	27,314	1.0
Asian & Pacific Islander	183	1.1	455	0.7	34,775	1.3
All Other	168	1.0	491	0.8	43,346	1.7

Includes Hawaiian, Korean, Malayan, Polynesian, etc.
*Includes the former City of Eastside

SOURCE: U.S. Bureau of the Census, 1980 Census Data

Although somewhat dated, Map 5.2-1 illustrates the locational distribution of Coos Bay's population and housing units for 1971. The data does not include the former City of Eastside. Information concerning Eastside follows this discussion. The data are derived from a special census of the city taken at that time by Portland State University (PSU); it is felt that this information is more accurate than the generally comparable data tabulated in the previous year by the U.S. Bureau of the Census (1970 Census of Population).

The 1971 P.S.U. enumeration divided the city into five "census districts" of generally equal population but varied land area. Districts 3 and 4, representing "Old Marshfield" constitute the densest population concentrations in the city. Their population densities in 1971 were respectively 4.8 and 4.9 persons per acre. Districts 1 and 2 constituted the lowest population densities in Coos Bay at that time, with 2.2 persons per acre. However, it should be noted that much of the undeveloped area in these districts is devoted to public use for recreation, education and watershed purposes. Similarly, Census District 5, with a population density of 3.3 persons per acre, contains nearly 400 undeveloped acres, which artificially lowers the settled density of the entire district. The map also shows the distribution of persons per dwelling unit. This measure is helpful in inferring location of school age children. Districts 1 and 3 registered the

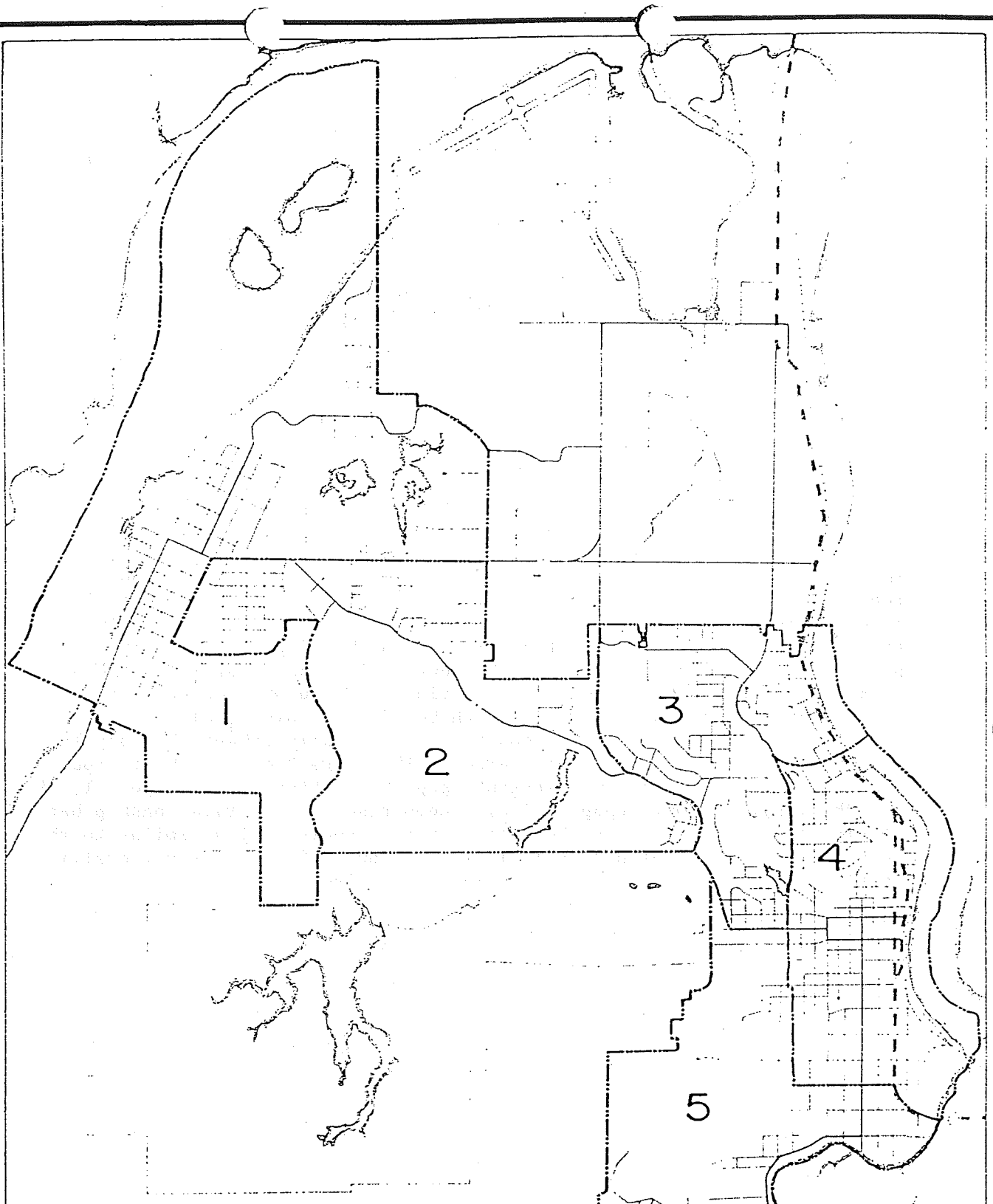
greatest population/housing ratios in 1971, followed respectively by Districts 5, 2, and 4. Current spatial population data for Coos Bay does not exist at the same level of detail as the 1971 P.S.U. enumeration. However, in 1977 Coos Bay's Housing Program conducted a survey of the city's housing stock. The results of the survey indicated a total, city-wide, housing stock of 5,237 units. The general distribution of these units was found to be as follows:

If one assumes population is distributed proportionately with housing, then it can be estimated that the 1977 population of these areas was:

Empire	5,534 persons
Englewood	572 persons
NDP	601 persons
Marshfield	7,593 persons
	14,300 persons

Based upon 2.73 persons per household.

The unincorporated areas south of the existing city limits of Coos Bay represent lands that are considered to be potentially "urbanizable" lands -- potentially within the city's urban growth boundary. Map 5.2-2 illustrates the locational distribution of population and housing for Coos Bay and its potentially urbanizable lands to the south. The last year for which accurate data are available was 1970. At that time, about 6,000 people inhabitated the area within the potential urban growth boundary. This equals about 47% of Coos Bay's 1970 population. Coos Bay's potentially urbanizable population is somewhat clustered in five focal areas. These are "Coos Bay West" (pop. 985), "Barview" (pop. 1,388), "Charleston" (pop. 923), "Bunker Hill (pop. 1,549), and "Millington-Libby" (pop. 1,503). Comparison of the relationship between population and housing for these five areas reveals ratios similar to those found to exist in Coos Bay in 1971 (i.e., about 2.86 persons per dwelling unit). Barview had the highest ratio of the five urbanizable areas, while Coos Bay West was found to have the lowest ratio.



5.2-1
DISTRIBUTION OF POPULATION AND HOUSING UNITS FOR COOS BAY, 1971

CENSUS * DISTRICT	POPULATION NUMBER	%	HOUSING NUMBER	%	PERSONS PER DWELLING UNIT
TOTAL	13,227	100.0	4,780	100.0	2.77
1	2,720	20.6	893	18.7	3.05
2	2,386	18.0	857	17.9	2.78
3	2,793	21.1	858	17.9	3.26
4	2,726	20.6	1,249	26.1	2.18
5	2,602	19.7	923	19.3	2.82

* ESTABLISHED BY P.S.U. STUDY (NOT COMPARABLE TO U.S. "CENSUS TRACTS")

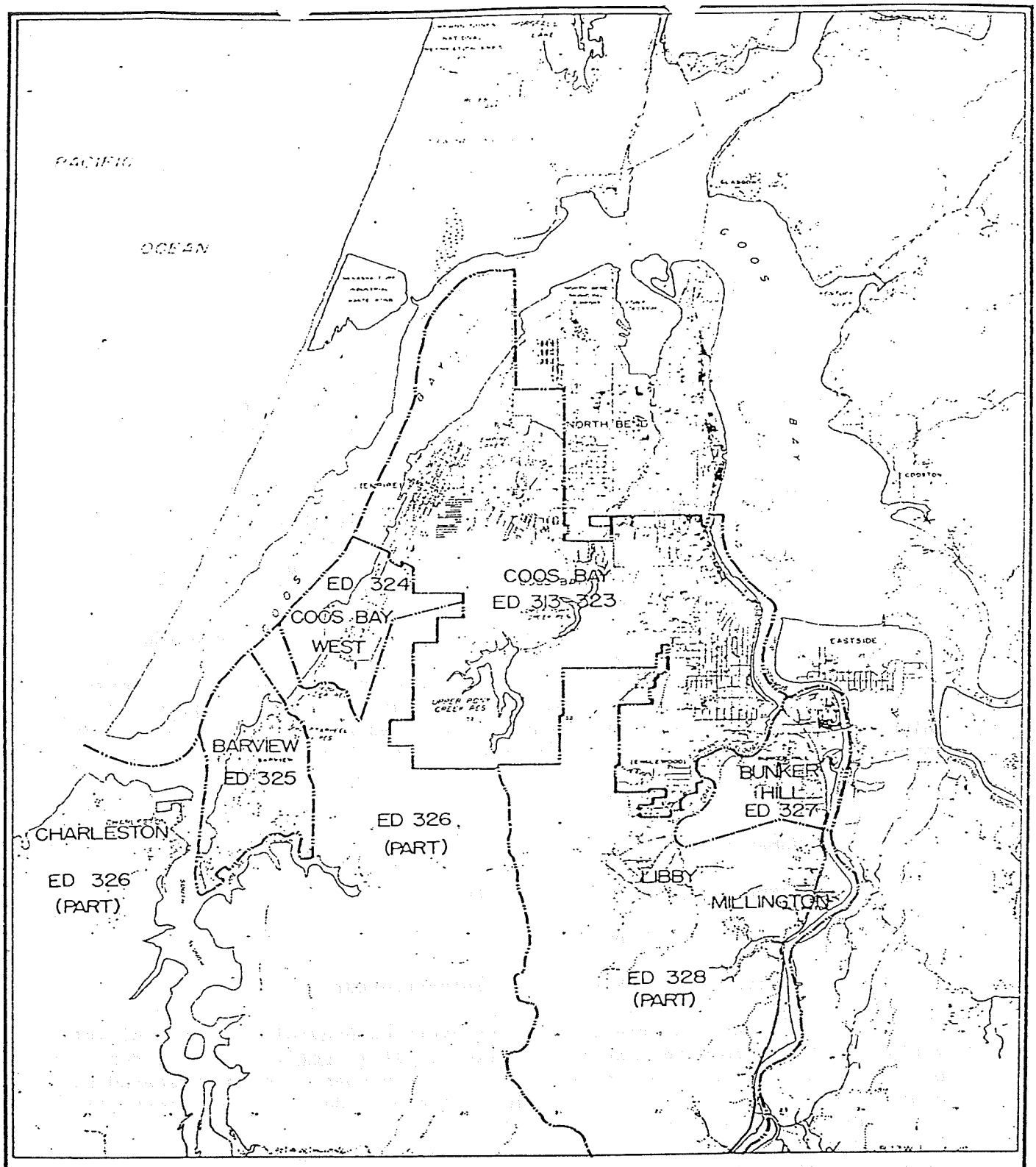
SOURCE: 1971 P.S.U. CENSUS OF COOS BAY

LEGEND

FEDERAL HIGHWAY (101)
STATE HIGHWAYS (101)
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS

SCALE

PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

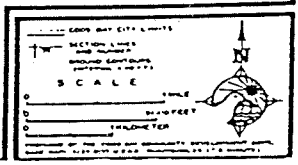


5.2-2

DISTRIBUTION OF POPULATION AND HOUSING UNITS FOR COOS BAY AND UNINCORPORATED AREAS SOUTH OF CITY, 1970

GEOGRAPHIC AREA	POPULATION		HOUSING		PERSON PER DWELLING UNIT
	NUMBER	%	NUMBER	%	
COOS BAY AND UNINCORPORATED AREAS	19,844	100.0	6,923	100.0	2.86
• CITY OF COOS BAY (ED 313-323)	13,466	68.0	4,710	68.0	2.86
• "COOS BAY WEST" (ED 324)	985	5.0	368	5.3	2.68
• "BARVIEW" (ED 325)	1,388	7.0	460	6.6	3.02
• "CHARLESTON" (ED 326-PART)	923	4.7	319	4.6	2.89
• "BUNKER HILL" (ED 327)	1,549	7.8	558	8.1	2.78
• "MILLINGTON/LIBBY" (ED 328-PART)	1,503	7.5	508	7.4	2.96

SOURCE: 1970 U.S. CENSUS DATA



5.3
Economic Development

Introduction

LCDC goals and guidelines recognize the importance of integrating economic considerations into local comprehensive plans. The goal states, in part, that:

> Plans and policies shall contribute to a stable and healthy economy in all regions of the state; (and further) that economic growth and activity in accordance with such plans shall be encouraged in areas that have under-utilized human and natural resource capabilities and want increased growth and activity.

The central purpose of the following narrative is to provide a succinct analysis of the economy of the Coos Bay region in order to (1) provide a basic understanding of what the economy is and how it works, (2) help identify alternative growth options, and (3) help design strategies which will guide the community toward its desired alternative. The planning inventory focuses on five basic components of the local economic structure:

1. Natural Resources
2. Human Resources
3. Commercial/Industrial Structure
4. Land Use and Tenure
5. Public Support Systems and Infrastructure

The analysis is brief. It is an overview providing a level of information necessary to make planning decisions. It is <u>not</u> intended to duplicate or replace many other fine analyses of the south coast economy prepared by other agencies and consultants. Rather, it consolidates these reports focusing on Coos Bay's integral roles in the area's economic activities. Because a city's "economy" is actually a component part of a larger "functional system" -- that is, a regional economy -- Coos Bay's "economy" is considered synonomous with that of Coos County.

Natural Resources

Coos County's geographic setting is the single most important determinant of the area's economic characteristics. The County's location between the Coast Range and the Pacific Ocean is directly responsible for the intense, but narrow range of economic activities that provide a basis for the area's population. Productive forest lands, pasture and crop farmlands, the Coos Bay

estuary and Pacific Ocean, and the scenic southern Oregon coast itself are all economic amenities of the Coos Bay, Coos County region.

Forest Resources

The conifer forests of southwestern Oregon constitute the primary natural resource base that supports Coos County's population and economy. These forest resources are converted to forest products (logs, wood chips, lumber, and plywood) which are, in turn, exported through the Port of Coos Bay. Douglas fir is the dominant tree species of the area in number and also with respect to harvested commercial value and jobs generated by processing its wood products. Other commercially significant tree species contributing to the local economy include Western red cedar, Hemlock, and Port Orford cedar. (CCD-EIA 1978a:IV-4-IV-5) Because lumber and wood products dominate the local economy, it is important to identify the resource area (i.e., where do the lumber products come from), and assess the long range capability of the resource within the resource area to sustain acceptable levels of production.

Forests located in Coos and Curry Counties constitute the greatest proportion of the local forest products resource area. Research compiled by the U.S. Forest Service documents that in 1985 62.6% of the log flow to Coos and Curry Counties came from Coos and Curry forests (combined to avoid disclosure); other log contributors that year included Douglas County (26.2%), Lane County (7.4%), Josephine County (1.1%), Jackson County (1.1%), Klamath (0.7%) and out-of-state (0.9%) (U.S.D.S. Forest Service, 1985).

The U.S.D.A. Forest Service places Coos Bay in the Southwest region which is one of five in Oregon. (Figure 5.3-1) Table 5.3-1 shows the distribution of log consumption by resource area and industry for Oregon in 1985.

Table 5.3-1

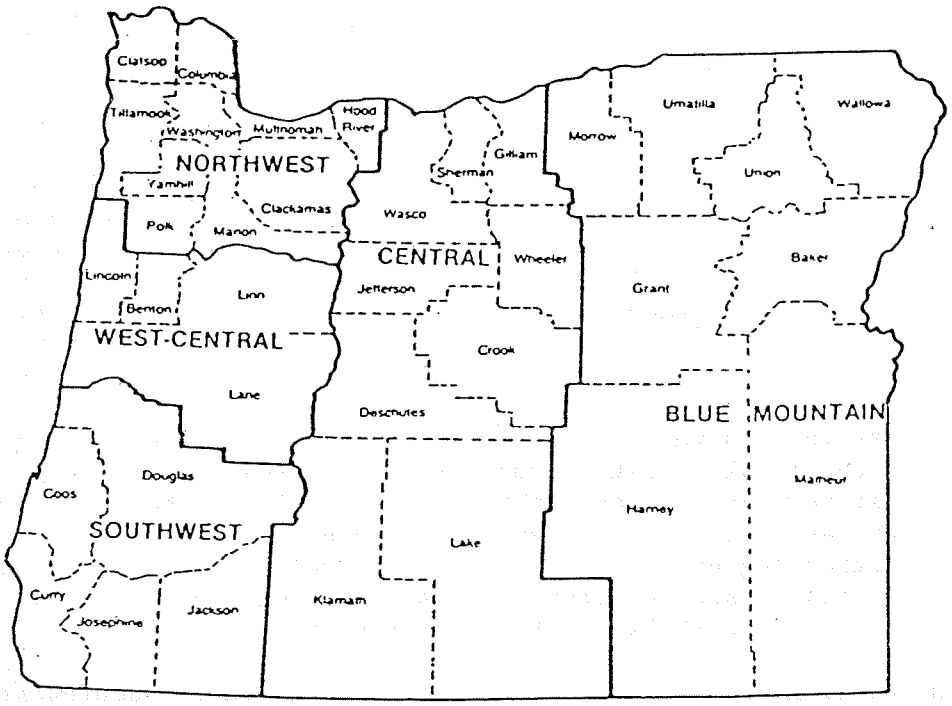
DISTRIBUTION OF LOG CONSUMPTION BY RESOURCE AREA AND INDUSTRY, OREGON, 1985

REGION	PERCENT OF LOG CONSUMPTION
BLUE MOUNTAIN	8%
CENTRAL	12%
NORTHWEST	23%
SOUTHWEST	34%
WEST-CENTRAL	23%
TOTAL	100%

Source: USDA Forest Service, 1985

FIGURE 5.3-1

RESOURCE AREAS FOR 1985 OREGON FOREST PRODUCTS INDUSTRY SURVEY



Source: U.S.D.A. Forest Service, 1985

The International Port of Coos Bay reports that from 1983 to 1987 Coos Bay lost nearly 280,000 tons of lumber and 100,000 tons of plywood exports for the Far East and Europe to other Oregon ports. This recent downward trend explains, in part, the high number of mill closures over the last decade. In 1976 the Southwest Region, which includes Coos Bay, had 54 saw mills and 44 ply and veneer mills. By 1986, Coos Bay's region had lost 14 saw mills and 9 ply and veneer mills for a -26% and -20% closure rate respectively. Despite these losses, Coos Bay's region fared better than all other regions in Oregon. (International Port of Coos Bay, 1988:p.10)

Figure 5.3-2 shows 1987 waterborne statistics and the economic impact of recapturing lumber exports through the port of Coos Bay.

FIGURE 5.3-2
ANNUAL WATERBORNE STATISTICS - 1987

OUTBOUND			SHORT TONS
Lumber			
Mediterranean	70,962,605		
North Eruope	24,877,000		
Australia	107,954,431		
South Seas	26,140,450		
Domestic	45,234,279		
TOTAL	275,168,765	FBM	481,545.4
Logs:			
Japan	155,590,125		
China	51,400,308		
TOTAL	206,990,433	Scribner	827,962.3
Plywood			73,884.8
Linerboard			38,864.9
Containers (27)			265.0
Woodchips			3,053,874.3
		TOTAL OUTBOUND	4,476,396.7
INBOUND			
Petroleum			183,035.8
Aggregate			141,372.3
		TOTAL INBOUND	324,408.1
TOTAL DEEP DRAFT VESSELS		288	
TOTAL TONNAGE 1987			4,800,804.8

ECONOMIC IMPACT OF RECAPTURING LUMBER EXPORTS THROUGH COOS BAY

ADDITIONAL SHIPMENTS VIA COOS BAY PER YEAR			COOS BAY'S SHARE OF OREGONS LUMBER EXPORTS TO FAR EAST + EUROPE	INCREASE IN EXPORT SALES FROM COOS BAY	ECONOMIC IMPACT					
					INCREASE IN PERSONAL INCOME ($ MILLION)		PERCENT WAGE INCREASE		INCREASE IN "JOB EQUIVALENTS"	
# OF SHIPS	VOLUME									
	VOLUME	MBF	PERCENT	$ MILLION	LOW	HIGH	LOW	HIGH	LOW	HIGH
0	0	0	13%	0	0	0	0	0	0	0
4	14,400	9,600	17%	$4.9	$1.4	$1.8	5%	6%	51	67
8	28,800	19,200	20%	$9.8	$2.8	$3.7	10%	13%	101	135
12	43,200	28,800	23%	$14.8	$4.1	$5.5	15%	19%	152	202
16	57,600	38,400	26%	$19.7	$5.5	$7.4	19%	26%	202	270
20	72,000	48,000	30%	$24.6	$6.9	$9.2	24%	32%	253	337
24	86,400	57,600	33%	$29.5	$8.3	$11.0	29%	39%	304	405

The International Port of Coos Bay concludes in its study that:

"It is time for the Port of Coos Bay to act as a catalyst in the economic recovery of waterborne commerce and related activity within Coos County."

"Over the past five years, Coos Bay has lost 277,000 tons of lumber and 97,000 tons of plywood to other ports in Oregon."

"In order to regain its market share at least to the Far East and Europe, Coos Bay must recapture the 87,000 tons (or 58 million board-feet equivalent) of lumber and plywood each year."

"If you were to succeed, we estimated an increase in annual personal income in southwest Oregon of up to $11 million each year and between 200 and 300 new jobs in the transport sector and support services. Included in this would be up to 20 new longshore jobs on the Coos Bay waterfront."

"There are a number of options available to the private and public sector in Coos Bay:

You could keep things as they are and probably continue to witness the decline in market share and overall waterfront activity.

You could create a Shippers Association of key southwestern shippers to increase the leverage on ocean carriers to serve the Port.

The Port could support the Shippers Association by securing overseas representation in Japan and Europe.

The Port and the private sector could jointly establish a distribution and consolidation organization designed to reduce transport costs and increase overall efficiency.

The Port could construct a public dock with improvements being made by a "cooperative" of users."

"All but the marginal wharf have positive benefit cost ratios."

"A combination of strategies, specifically the Shippers Association and consolidation company provides the highest net benefit and most attractive benefit/cost ratio."

"Success of these strategies will require that the Port of Coos Bay revisit the dock construction question by 1990, for to do nothing in this area may result in the Ports inability to meet the international trade needs early in the next century."

Source: International Port of Coos Bay, 1988:P.33 & 34.

Future supply and demand factors coupled with the export capabilities of the Port of Coos Bay, will provide the ultimate answer to a paramount question of local concern: What is the future of the forest industry in Coos Bay, and when, if ever, will a local wood products mill be forced to close?

The relationship between the forest resources and the jobs associated with it is discussed in more detail later in this inventory. It is necessary at this point, however, to note that Coos County has lost about 2,520 jobs in wood products employment between 1966 and 1986 (State of Oregon, Employment Division). This unfortunate decline must be carefully monitored. It also fuels arguments favoring diversification of Coos County's fragile resource-dependent economy.

It is neither necessary nor desirable for this text to present an in-depth analysis of the existing and potential forest resources of the Port's hinterland; other studies by qualified experts have addressed this consideration. However, it is crucial for the residents of Coos Bay to recognize and understand the vital link between the forest resources of southwestern Oregon and the related employment, wood processing and export facilities of the Coos Bay area. The relationship is obvious: South coast lumbering and wood products activities are a vital component of the economy of the state.

Fishing Resources

The fish resources of the southern Oregon Coast are another natural economic advantage of the Coos Bay area, for Coos Bay fish landings make a significant contribution to the fisheries economy of Oregon. However, commercial fishing and seafood are not, and traditionally have not been, as economically significant to Coos Bay as the lumber and wood products industry. Nevertheless, fishing is an important basic industry which many feel poses the key to making the area less dependent on wood products for economic stability.

The Coos Bay estuary and nearby coastal waters provide the habitat for a great variety of fish and shellfish. Table 5.3-2 shows recent trends in fish landings for Coos Bay as compared to the state. Groundfish, salmon, crab and tuna landings have generally out-paced other varieties with respect to total pounds landed in each category during the last nine-year period. (Oregon Department of Fish and Wildlife) This table makes clear the relative significance of Coos Bay's fish catch versus Oregon's total catch. Coos Bay's landings represent nearly one-fourth of Oregon's total landings over the last five years. More than one-fifth of Oregon's shrimp landings in 1986 were credited to Coos Bay. Further, about one-sixth of all statewide albacore tuna and chinook salmon landings were credited to Coos Bay that year. (Oregon Department of Fish and Wildlife)

Examining the dollar value of the local catch is another way to quantify the importance of the fisheries resource to the local economy. Table 5.3-3 reveals that Coos Bay's 1986 catch brought $12,020,719 to the area's fisherman. The table also shows the relative economic importance of the various species, salmon are obviously worth more than shrimp and groundfish, although there were more than ten times as many pounds landed of the latter. Supply and demand forces are evidenced here.

The West Coast Fisheries Development Foundation reports that:

"In the late 1970's the increase in fishery activity was due mainly to shrimp harvesting. As this resource declined, fishing activity shifted toward groundfish, reaching a peak in 1982 when over 90 million pounds ($20 million ex-vessel) were harvested in Oregon. In 1985 the total landings decreased to 55 million pounds, but the ex-vessel value remained fairly high at $17 million." (West Coast Fisheries Development Foundation, no date)

Table 5.3-2

COMMERCIAL FISH LANDINGS IN COOS BAY AS A PERCENT OF TOTAL OREGON FISH LANDINGS, 1978-1986

SPECIES	1978	1979	1980	1981	1982	1983	1984	1985	1986
Albacore Tuna	20.2	7.1	14.3	23.1	42.5	10.7	19.7	17.6	17.4
Clams	15.5	12.4	64.5	71.5	69.0	70.2	43.3	14.6	22.7
Crab	20.5	18.4	19.7	18.6	24.7	14.9	14.1	11.0	11.2
Ground Fish	19.6	22.6	18.2	20.4	21.6	29.9	27.6	31.3	25.4
Chinook Salmon	10.0	15.4	18.7	10.1	22.3	10.3	5.6	35.2	26.0
Coho Salmon	17.3	16.8	13.0	15.1	17.3	20.1	-0-	8.4	4.7
Shrimp	30.5	30.8	34.6	31.3	29.9	18.6	31.2	18.3	21.6
Other	0.2	0.5	0.1	51.3	21.1	3.8	1.7	4.2	2.1
Total	22.3	21.7	22.0	26.0	23.2	26.2	23.8	25.7	21.4

Source: Oregon Department of Fish and Wildlife

Table 5.3-3

COMPARISON OF 1986 COOS BAY FISHERY LANDINGS AND PRICE PAID TO FISHERMAN

SPECIES	LANDINGS (POUNDS)	PRICE PAID TO FISHERMAN ($)	AVERAGE PRICE/POUND TO FISHERMAN ($)
Albacore Tuna	428,911	228,339	0.53
Clams	19,557	4,579	0.23
Crab	4,660,672	773,288	0.17
Ground Fish	13,957,955	4,175,830	0.30
Chinook Salmon	1,680,900	2,479,026	1.48
Coho Salmon	328,702	294,979	0.90
Shrimp	7,358,225	3,981,025	0.54
Other	83,038	83,653	1.01
Total	28,517,960	12,020,719	0.42

Source: Oregon Department of Fish and Wildlife

Although the decline in fishing activity adversely affected most ports that depend mainly on salmon and tuna, Coos Bay continued to grow. (West Coast Fisheries Development Foundation - W.C.F.D.F.) The ability to adapt to changing condition is important not only to fisherman, but also those businesses that rely on the fishing industry. This is evidenced by West Coast Fisheries Development Foundation's report which states:

> "Because much of the revenue goes directly into salaries and wages, general businesses in the local area (retail, wholesale, housing, and medical services for example) are affected as much as are specific businesses serving the local fishing industry. For example, in 1986 it was estimated that the impact of commercial fishing on Coos Bay was $34,019,704. More than half of this income ($18,633,404) was received directly by workers and proprietors of the fish harvesting and processing industries. Local businesses that depend on the fishing industry (boat repair, gear dealers, and so on) received about $3,996,868 from sales and services rendered to the fishing industry. The remaining $11,387,432 were generated by purchases in the local consumer sector.
>
> The retail sector, comprising a multitude of shops from automobiles to liquor stores, was particularly affected by fishing activity. For example, the Coos Bay retail sector received $2,897,472 in 1986." (W.C.F.D.F.)

In 1986, Oregon's commercial fishing industry yielded 14 million pounds of fish and shellfish which contributed approximately $251 million to the state's economy which is the equivalent of 12,500 full-time jobs. (W.C.F.D.F.)

The 1987 figures look even more promising as a record $94 million was paid for approximately 139 million pounds of fish and shellfish, and furthermore, about $355 million were injected into Oregon's economy by the 1987 fishing industry. (W.C.F.D.F.) West Coast Fisheries Development Foundation has indicated that:

> "The largest increases were in groundfish (from 54 to 67 million pounds) and shrimp (from 34 to 45 million pounds). And while salmon landings increased only from 13.8 to 14.8 million pounds, their ex-vessel value nearly doubled in 1987. Tuna landings actually decreased (from 2.5 to 2.3 million pounds) but their 1987 ex-vessel value was also nearly twice its 1986 total." (W.C.F.D.F.)

In Coos County, the 1987 fishing industry contributed $48.1 million to personal income. (W.C.F.D.F.)

West Coast Fisheries Development Foundation concludes that:

> "With continued abundance of the resource and intelligent management practices, commercial fishing should bring an even greater return to Oregon in years to come. Utilization of the vast Pacific whiting resource is imminent, and even though this species does not command a high price in the marketplace, the sheer volume of production will add considerably to the already significant economic impact of Oregon's fisheries." (W.C.F.D.F.:p.11)

It can be concluded that Coos Bay will make a significant contribution to the growth of Oregon's fishing industry. Any future growth of the fishing industry can only benefit the Coos Bay area.

Agriculture

Coos County's agricultural valleys were once a primary resource of the area. Although historical data are sketchy, many, if not the majority, of the Bay area's earliest residents were farmers. Each developed a specialty, ranging from raising cattle and making cheese to growing potatoes, vegetables, and fruit. Farmers of the nearby fertile bottomlands produced more crops than needed for their personal consumption. Thus, local markets developed at Empire City, Marshfield and North Bend. Coos Bay's principal crop was the potato, which was exported to San Francisco from Empire by barge. Dairying was also a very successful activity. In the early 1890's, Coos Bay's cheese market exceeded that of San Francisco. (Grile 1978:15)

In Coos County agriculture is an important economic activity. In 1982, 782 farms averaging 215 acres in size utilized 167,841 acres or 16.3% of Coos County's land base. It is interesting to note that while the amount of farm land has declined by 408 acres between 1978 and 1982, the number of farms has increased by 114. (U.S. Census of Agriculture) This recent trend of smaller sized farms may, in part, be the result of increased cranberry production where cranberry growers generally utilize smaller farm acreages for their operations. Table 5.3-5 summarizes the distribution of farm lands into various agricultural use categories.

TABLE 5.3-5

	1982		1978		PERCENT CHANGE
	ACRES	%	ACRES	%	1978 - 1982
TOTAL FARM ACREAGE	167,841	100.0	168,249	100.0	-0.2
HARVESTED CROPLAND	13,790	8.2	13,057	7.8	5.6
PASTURAL CROPLAND	29,821	17.8	22,976	13.7	29.8
OTHER CROPLAND	1,036	0.6	460	0.3	125.2
WOODLAND	72,037	42.9	66,232	39.3	8.8
OTHER LAND	51,157	30.5	65,524	38.9	-21.9

Source: U.S. Census of Agriculture

TABLE 5.3-6

LAND AVAILABLE FOR AGRICULTURAL USE
IN COOS COUNTY, 1982*

SCS "CROP LAND" CLASSES:#	I-IV ACRES	%	I ACRES	%	II ACRES	%	III ACRES	%	IV ACRES	%
TOTAL AVAILABLE LAND	127,327	100.0	THIS LAND IS		10,272	100.0	14,537	100.0	104,372	100.0
CROP LAND	27,757	21.8	NEGLIGIBLE		894	8.7	5,669	39.0	13,986	13.4
PASTURE LAND	3,183	2.5	IN				3,300	22.7	417	0.4
IDLE LAND	96,387	75.7	COOS COUNTY		1,366	13.3	5,568	38.3	89,967	86.2

Source: SCS, 1971 data and staff computations

*This inventory is based on 1971 SCS data which excluded federal land except cropland operated under lease or permit, urban or built-up areas including roads, railways and farmland within city limits, water acreage and rivers greater than two acres, and lands not classified as cropland by SCS. 1982 estimates were computed by using the same percentages for crop, pasture and idle land that occurred in 1971.

#Explanation of SCS "Crop Land" Classes:

Class I: Very good cultivatable land, can be cultivated very intensively.

Class II: Good cultivatable land, can be cultivated intensively.

Class III: Moderately good cultivatable land, possible poor drainage and needs careful management, can be moderately cultivated.

Class IV: Fairly good cultivatable land but with severe limitation, suitable for occasional cultivation.

The value of the components of local agriculture production for 1982 are summarized in Table 5.3-7. It appears from this analysis that ranching is Coos County's primary agricultural activity, for livestock production accounts for about 80% of the total dollar output for the agricultural sector. This information also reveals that the value of Coos County's agricultural sales registered a 16.6% increase from 1978 to 1982. However, a closer examination of this figure reveals that inflationary increases in the wholesale price index for farm products grew so that "real" production gains during the period were only marginal. Based upon the present relationship between growing inflation and the County's present agricultural structure (Table 5.3-7), this trend may be expected to continue.

Mineral and Energy Resources

Mineral and aggregate resource areas in the Coos Bay region are specifically identified and addressed in the "Natural Resources" component of this background document. More generally, the following analysis addresses the commercial importance of Coos County's mineral resources to the area's economy. Mining and mineral production, chiefly coal extraction was once a major economic activity in Coos County, but its significance has been minimal since World War II when production ended. The current demand for energy resources, coupled with the possibility of future technological advances in extraction processes, makes the County's untapped coal reserves a potentially marketable resource. However, such technological advances are not imminent at this time.

TABLE 5.3-7

VALUE OF AGRICULTURAL PRODUCTION IN COOS COUNTY, 1982

COMMODITY	VALUE OF SALES	%
TOTAL PRODUCTION	$ 18,430,000	100.0
Dairy Products	8,548,000	46.4
Cattle & Calves	4,402,000	23.9
Hogs & Pigs	58,000	0.3
Sheep, Lambs, & Wood	1,464,000	7.9
Other Livestock & Livestock Products	409,000	2.2
Hay, Silage, & Field Seeds	197,000	1.1
Fruits, Nuts, & Berries	2,735,000	14.8
Nursery & Greenhouse Products	592,000	3.2
Other Crops	25,000	0.2

Source: U.S. Census of Agriculture, April 1984.

Coos County contains two major coal fields. These are the Eden Ridge Field in southern Coos County, and the Coos Bay Field, located generally between Coos Bay and Coquille. The Eden Ridge Field contains a better grade of coal than exists in the Coos Bay Field; its deposits are highly volatile and thus suited for steam generation. The field may contain 50 million tons or more of coal (Baldwin 1973:73) which would be suitable for powering various economic activities in the Coos Bay-North Bend urban area (CCD-BDC 1982:VII-12). However, the remoteness of the Eden Ridge Field has been a persistent obstacle to its exploitation.

The Coos Bay Field encompasses approximately 250 square miles south of Coos Bay with reserves varying between 50 million to one billion tons. Its deposits are very low in grade and, thus, not an attractive energy source. (CCD-BDC 1982:VII-12) However, it once contributed heavily to the area's economy, producing a total 2.9 million tons of coal during its mining history (CCD-BDC 1982:VII-12). The Coos Bay Field was discovered in 1853. Two primary mines were developed: the Eastport and the Newport. The Eastport mine opened in 1855 and was located near Coalbank Slough in present-day Englewood. The Newport mine was located two miles further upstream Coalbank Slough and also opened in 1855. Many other mines opened near Coos Bay between 1853 and 1855, but these generally failed because of their inferior deposits. (Grile 1978:10) Although the deposit is low grade, its size might support mining activities, mindful that physiographic constraints caused by "faulted" seams would make extraction very expensive. Overland transportation and port access pose other impediments to development. (CCD-BDC 1982:VII-12).

Coal Mining was a major sector of Coos Bay's economy for about 60 years contributing heavily to the early development of the Bay area. However, coal exports, chiefly to the San Francisco area, diminished by 1905. Shortly thereafter, the local market demand lessened as fuel oil replaced coal as the major local energy source. (Grile 1978:10) Local coal production steadily decreased until World War II when mining activities ceased. (U.S. Department of the Army 1975c:2-2).

Although there is no coal mining activity in Coos County at the present time, local mining might once again become profitable as the national demand for energy increases. The Coos, Curry, Douglas - Business Development Corporation notes that:

> In the future, the commercial production of [Coos County] coal may be limited by competition from petroleum products delivered by ships to the local area, natural gas pipe lines, and by discoveries of offshore oil and gas deposits. The Coos County fields may be able to compete favorably with other western coal producing areas if two new techniques of producing fuel from coal are considered. These are a low-temperature carbonization process and a high-temperature hydrogenation process. Both processes produce a fuel for industrial and domestic use. The value of the coal resources of Coos County should increase as other fuels are depleted. (1982:VII-13).

The nation's energy shortage has prompted speculation that non-productive regions with favorable geologic conditions might be explored to determine their extent, if any, of oil and gas deposits. Coos County and its offshore environs comprise one such region. Exploratory oil and gas drilling in Coos County began near Bandon in 1919. Results were unfavorable. Strong gas deposits were later discovered southwest of Coquille, but attempts to finance a commercial gas system from the deposits were unsuccessful. Drilling south of Coos Bay during World War II was intended to discover petroleum reserves. However, sand bearing gas was discovered instead. This resource was not tested for many years until 1963, when further exploratory analysis revealed several gas and oil "shows." Unfortunately, the "sediments were too fine grained to produce commercial amounts of petroleum." (Baldwin 1973:69)

Curiosity has focused on southern Oregon's offshore areas at least since 1964 when submerged lands controlled by the State of Oregon were leased to private oil companies to allow exploratory drilling. The leased areas were located southwest of Florence and comprised nine square-miles each. An additional four offshore tracts were leased at that time by the U.S. Bureau of Land Management. These parcels were known as the "Bandon Block" because of their location 10 miles northwest of Bandon. Exploratory drilling in the "Bandon Block" revealed gas deposits in a 60-foot deep sandstone zone considered "too tight to yield commercial amounts." (Baldwin 1973:71) According to the Oregon Department of Geology and Mineral Industries, approximately 1,100 square miles of submerged lands offshore from Coos County have yet to be explored for oil and gas deposits. The State of Oregon feels that "prospects are still considered to be very good in this area," and further that "this strip of shelf land remains as one of the best prospects for exploration in Western Oregon." (Baldwin 1973:71) However, the U.S. Bureau of Land Management believes the Oregon coast to be a lower rated oil and gas prospect than Alaska and other continental coastal areas; thus favoring to postpone the decision to lease its local offshore lands. However, the Oregon Department of Geology and Mineral Industries believes that BLM's "postponement of leasing off the coasts of Oregon and Washington was a political decision and not a geologic one." (Newton 1978) This same source notes that: "regarding the shelf offshore from Coos County there exists a very deep sedimentary basin which offers excellent prospects for hydrocarbon (oil and gas) accumulation." Successful exploitation of offshore oil and gas resources could have significant impact on the economy, housing, and public facility capabilities of the Coos Bay area and Coos County.

Other mineral resources found in Coos County are deposits of gold, chronium and platinum which have eroded from hillsides and found their way to the block sands of coastal rivers. The coastal dune sands, which have a high silica content, are another local resource. High silica sands "may have considerable economic potential as a resource for the manufacture of glass." (CCD-EIA 1978:IV-35) Of less importance, it should be noted that semi-precious gemstones (agates, jasper and petrified wood) are occasionally found along Coos County beaches. (U.S. Department of the Army 1975:2-2) These contribute to small cottage industries and gift shops catering to local tourist trade. Generally, these resources do not contribute significantly to the area's economy.

The 1976 economic value of mineral production in Coos County - chiefly stone, sand and gravel - was $1,858,000. This constituted 1.2% of the total statewide mineral production that year, and substantiates that Coos County is not a major contributor to Oregon's present mineral output. (CCD-EIA 1978:IV-36)

Tourism Amenities

Coos County's scenic qualities contribute significantly to the local economy. The ocean itself is undoubtedly the greatest single attraction, as many visitors are drawn to nearby parks and beaches to enjoy its magnificence. State parks located south of Charleston and in the sand dunes north of the city are major attractions. Coos County's forests and streams offer other outdoor recreation activities - hunting, fishing, camping, hiking, and swimming.

It is difficult to precisely access the relative importance of tourism to the local economy. By utilizing the city's transient occupancy tax for fiscal year 1987-88 is one method for attempting to quantify tourism's impact on the local economy:

> Given $161,672.58 = 5% Transient Occupancy Tax for Fiscal Year 1987-1988, then $161,672.58 - 05 = $3,239,451.60 which is total dollars spent on lodging by transient occupants/visitors.
>
> Assuming the average cost for lodging each night is $35 per room, then $3,239,451.60 - 35 = 94,555.76 visitor party nights per year.
>
> Assuming each visitor party occupied room spends an average of $50 per day, then: $92,555.76 x $50 = $4,627,788.00 which is the estimated total amount tourism contributes to the local economy.

Based on the above estimate that over $4 million is generated by transient occupants/visitors, it can be concluded that tourism is an important economic resource in Coos Bay. The economic significance of tourism will be addressed in more detail later in this inventory.

Labor Force Participation

The local "labor force" constitutes that portion of Coos County's population over 16 years of age who are either currently employed or unemployed but known to be actively seeking employment. Manpower planners use several statistical indicators to measure and evaluate the economic vitality of an area's human resources. The labor force participation rate (LFPR) is one such indicator. Very simply, the LFPR is the percentage of the working age population that is either working, or unemployed and looking for a job. A 60% LFPR, as an example, would indicate that six out of every ten working age people are in the labor force. Table 5.3-8 compares the LFPR for Coos County and Oregon, by sex, for the years 1970 and 1980. The table reveals two key considerations: (1) 1970 local labor force participation rates which were lower for Oregon in general are now higher in 1980, and (2) female labor force participation rates have registered marked increases both locally and statewide since 1970. According to CCD-BDC:

> "The Coos County labor force has grown almost two and one half times as fast as the County's population since 1970. The population in Coos County increased 6,785 persons from 1970 to 1981 or 12.0%, while the civilian labor force increased by 7,170 persons or 32.5%. The labor force grew faster than total employment, which increased by 4,300 persons or 21.7%, causing the unemployment rate to rise from 8.4% in 1970 to 15.9% in 1981. (CCD-BDC 1982: III-2)

Table 5.3-8

COMPARISON OF MALE AND FEMALE LABOR FORCE PARTICIPATION RATES FOR COOS COUNTY AND OREGON, 1970 and 1980

	COOS COUNTY		OREGON	
	1970	1980	1970	1980
MALE	77.6%	72.3%	74.0%	74.6%
FEMALE	35.3%	43.6%	40.5%	50.2%
TOTAL	56.3%	58.1%	56.9%	62.2%

Source: State of Oregon Employment Division, 1982

Table 5.3-9 profiles the ethnic employment and unemployment characteristics of the local labor force, and also identifies female labor force participation. White workers dominate the local labor force, constituting nearly 99% of those working or unemployed and seeking a job.

Table 5.3-9

COOS COUNTY

Work Force, Employment and Unemployment by Sex and Minority Status
1981

Sex and Minority Status	Labor Force	Employed	Unemployed	Percent Distribution Labor Force	Employed	Unemployed	Unemployment Rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Both Sexes							
1. TOTAL	29,110	24,410	4,700	100.0	100.0	100.0	16.1
2. White	28,666	24,058	4,608	98.5	98.6	98.0	16.1
3. Black	25	6	19	0.1	0.0	0.4	76.0
4. Other Races	419	346	73	1.4	1.4	1.6	17.4
5. Spanish American	280	227	53	1.0	0.9	1.1	18.9
6. Minority Group*	724	579	145	2.5	2.4	3.1	20.0
Female							
7. TOTAL	10,585	8,294	1,661	100.0	100.0	100.0	15.7
8. Percent of Both Sexes	36.4	36.6	35.3	xxx	xxx	xxx	xxx
9. White	10,413	8,790	1,623	98.4	98.5	97.7	15.6
10. Black	0	0	0	0	0	0	xxx
11. Other Races	172	134	38	1.6	1.5	2.3	22.1
12. Spanish American	106	80	26	1.0	0.9	1.5	24.5
13. Minority Group*	278	214	64	2.6	2.4	3.9	23.0

Notes: *Sum of Spanish American and all races except white. Some duplication possible since Spanish American may include nonwhite races in addition to white.

Source: C.C.D. Business Development Corporation

Education

Education attainment is a key indicator of the potential skill levels of an area's labor force. Table 5.3-10 presents comparative statistics on educational attainment for Coos County, Oregon, and the U.S.

Table 5.3-10

Education of Adults Over 25 As Percentage of Population by Education Level
Southern Oregon Coast (Coos County), Oregon, U.S., 1980

	Less than 12 Years	12 Years	13-15 Years	16+ Years
Southern Oregon Coast	32.0	39.2	17.6	11.2
Oregon	24.3	37.1	20.7	17.9
U.S.	33.5	34.6	15.7	16.2

Source: Pacific Power, Target Industry Study Southern Oregon Coast, 198 :46.

Persons with less than a high school education are generally capable of semi-skilled positions related to manufacturing and assembly. 32% of Coos County's population may be categorized in this skill group. Table 5.3-10 also indicates that a high percentage (68%) of Coos County's population older than 25 years has 12 or more years of education. Generally, persons who have attained high levels of education are capable of handling high technology skills and management functions. Note that Coos County's population over age 25 years which has at least a high school level education is higher than the U.S., but falls short of comparable statewide educational attainment. It can be that the educational characteristics of Coos County's population should be attractive to both business and industry demanding a labor force with high technology skill requirements and those with needs for a semi-skilled labor force.

Labor Force/Employment Opportunities

Tables 5.3-11 and 5.3-12 provide an overview of the 1980 labor force status by sex for both Coos County and Oregon. It is believed that the relationships evident from interpretation of these 1980 data are still generally applicable in today.

Table 5.3-11
1980 LABOR FORCE STATUS BY SEX, COOS COUNTY

Universe: Persons 16 Years and Over	Total
Total labor force	28,128
Labor force participation rate	59.1
Civilian labor force	27,798
Civilian labor force participation rate	58.4
Employed	24,625
At work full time	18,012
Percent of employed	73.1
At work part time	5,822
Unemployed	3,173
Unemployment rate	11.4
16-19 years old	22.4
20-24 years old	18.1
25 years and over	9.2
Not in labor force	20,014
Inmate of institution	544
Other	19,470
Male labor force	17,464
Labor force participation rate	74.4
Civilian labor force	17,136
Civilian labor force participation rate	73.0
Employed	15,157
At work full time	12,291
Percent of employed	81.1
At work part time	2,370
Unemployed	1,979
Unemployment rate	11.5
16-19 years old	24.6
20-24 years old	17.8
25 years and over	9.5
Males not in labor force	6,234
Inmate of institution	234
Other	6,000
Female labor force	10,664
Labor force participation rate	44.2
Civilian labor force	10,662
Civilian labor force participation rate	44.2
Employed	9,468
At work full time	5,721
Percent of employed	60.4
At work part time	3,452
Unemployed	1,194
Unemployment rate	11.2
16-19 years old	19.8
20-24 years old	18.4
25 years and over	8.7
Females not in labor force	13,780
Inmate of institution	310
Other	13,470

Source: U.S. Census of Population, 1980.

Table 5.3-12

1980 LABOR FORCE STATUS BY SEX, OREGON

Universe: Persons 16 Years and Over

	Total
Total labor force	1,244,067
Labor force participation rate	63.0
Civilian labor force	1,241,025
Civilian labor force participation rate	62.9
Employed	1,138,425
At work full time	848,241
Percent of employed	74.5
At work part time	260,581
Unemployed	102,600
Unemployment rate	8.3
16-19 years old	16.6
20-24 years old	12.5
25 years and over	6.7
Not in labor force	756,913
Inmate of institution	26,885
Other	730,028
Male labor force	727,536
Labor force participation rate	75.9
Civilian labor force	724,648
Civilian labor force participation rate	75.6
Employed	661,531
At work full time	546,413
Percent of employed	82.6
At work part time	99,429
Unemployed	63,117
Unemployment rate	8.7
16-19 years old	18.1
20-24 years old	14.8
25 years and over	6.9
Males not in labor force	244,327
Inmate of institution	13,489
Other	230,838
Female labor force	516,531
Labor force participation rate	50.9
Civilian labor force	516,377
Civilian labor force participation rate	50.8
Employed	476,894
At work full time	301,828
Percent of employed	63.3
At work part time	161,152
Unemployed	39,483
Unemployment rate	7.6
16-19 years old	14.9
20-24 years old	9.7
25 years and over	6.4
Females not in labor force	512,586
Inmate of institution	13,396
Other	499,190

Source: U.S. Census of Population, 1980

Regarding female employment, CCD-BDC notes that limited female employment opportunities in the lumber and wood products industry contributes heavily to the low, female LFPR. In 1980, Coos County had a female LFPR of 44.2%. It is reasonable to believe that a sizeable percentage of the County's female work force would actively seek employment if suitable opportunities existed. The female LFPR for Oregon in 1980 was 6.7% higher than in Coos County. Table 5.3-11 and 5.3-12 indicates that Coos County has a female unemployment rate that is 3.6% higher than the state.

Table 5.3-11 and 5.3-12 show that male LFPR for Coos County and Oregon are 30.2% and 25.0% higher than the female LFPR, respectively. It is noteworthy that Coos County's male LFPR more closely resembles the State's male LFPR than that of female LFPR. However, the Coos County's male unemployment rate is similar to the females in that it is 2.6% higher than the State. Unemployment will be discussed further in this chapter.

In regards to occupational employment, it is an extremely difficult task to determine which of the area's occupations are in short supply and which are oversupplied. Fortunately, the Career Information System of the University of Oregon recently developed an exhaustive inventory of job opportunities in Coos and Curry Counties. The report includes an "outlook" for some 240 occupational categories based on local supply, demand, turnover, and other employment considerations. The following list has been prepared as an indicative overview of select occupational opportunities in Coos County, based upon the University of Oregon research. (University of Oregon 1978) Moreover, these data have been generally substantiated by a more recent survey of employment trends in the bi-county area. (State of Oregon Employment Division 1979:29-33)

1. Shortage Occupations (Shortage of experienced/qualified workers):

   Full-charge Bookkeepers
   Auto Mechanics
   Experienced Secretaries
   Registered Nurses
   Lumber Graders and Inspectors
   Fry Cooks

2. High Turnover Occupations (Frequent Openings):

   Motel Maids
   Waiters and Waitresses
   General Office Clerks
   Nurse Aids and Orderlies
   Janitors

---

[1]Bank tellers, bookkeepers, cashiers and checkers, typists, clerks, secretaries, shorthand reporters, stenographers and travel agents.

3. Surplus Occupations (Oversupply of workers):

Green-chain Pullers
Chokersetters
Forestery Technicians
Retail Sales Clerk
Cashiers
Truck Drivers
Construction Laborers
Heavy Equipment Operators
Food Processing Workers

It can be generally concluded that current employment reflects a surplus primarily of semi-skilled workers, although shortages in some occupations certainly exist. This surplus, coupled with local educational characteristics, should be appealing to an industry seeking to locate in an area with an available semi-skilled labor force.

Wages and Salaries

Current wage and salary figures for the Coos County labor force are not readily available. However, U.S. Department of Labor has compiled statistics on a wide cross-section of occupations for the southern Oregon labor market as of August, 1988. These data are presented in Table 5.3-13.

Coos County's average wage levels are influenced by rates paid to lumber and wood products workers. CCD-BDC states that these rates "are well above those for other types of manufacturing; average hourly earnings in the lumber and wood products firms were over $11 in June, 1985. While these wages provide social and economic benefits to those who receive them, CCD-BDC further notes that "since labor costs are a principal consideration in plant site location, the wage rates as presented appear to be a slight disadvantage for the area." (1986:III-6) Table 5.3-14 details prevailing journeyman wage rates for basic building and specialty trades in Coos County.

The CCD-BDC has noted that a survey of a southern Oregon community has shown a labor pool which is willing to start at wages well below the industry average. The Oregon Employment Division has information which reveals that a labor pool with similar wage demands is present in Coos County. (CCD-BDC 1986:III-6)

Employment and Unemployment

The percentage of a labor force that is unemployed (i.e., the "unemployment rate") is the main statistical indicator of the degree to which the human resources of an area are utilized. Fig. 5.3-3 presents a historical comparison of local unemployment versus state and national unemployment for the period from 1975 to 1985. It is readily apparent that local unemployment problems have consistently exceeded those of the state and nation during recent years. CCD-BDC fixes blame for this unfortunate situation on the seasonality of the local economic structure -- forest and wood products industries, agricultural activities, fishing and tourism -- which are characterized by low winter employment levels. (1982:III-4) Fig. 5.3-4 summarizes and illustrates the seasonal characteristics of Coos County's unemployment rate from 1980-88.

Table 5.3-13

SOUTHERN OREGON WAGE RATES, 1988

Occupation[1]	Number of workers	Hourly earnings (in dollars)[1]			Number of workers receiving straight-time hourly earnings (in dollars) of —																						
		Mean	Median	Middle range	3.35 and under 3.50	3.50 – 4.00	4.00 – 4.50	4.50 – 5.00	5.00 – 5.50	5.50 – 6.00	6.00 – 6.50	6.50 – 7.00	7.00 – 7.50	7.50 – 8.00	8.00 – 8.50	8.50 – 9.00	9.00 – 9.50	9.50 – 10.00	10.00 – 10.50	10.50 – 11.00	11.00 – 12.00	12.00 – 13.00	13.00 – 14.00	14.00 – 15.00	15.00 – 16.00	16.00 – 17.00	17.00 – 18.00
Secretaries	62	9.64	9.95	8.55-10.65	-	-	-	-	-	4	-	-	1	3	4	8	-	16	7	9	8	1	1	-	-	-	-
Secretaries II	27	9.34	9.96	9.85-10.34	-	-	-	-	-	4	-	-	1	1	-	-	-	10	7	4	-	-	-	-	-	-	-
Secretaries III	17	9.96	9.95	8.55-11.40	-	-	-	-	-	-	-	-	-	-	-	6	-	4	-	2	5	-	-	-	-	-	-
Secretaries IV	10	10.62	10.61	- -	-	-	-	-	-	-	-	-	-	-	-	2	-	2	-	2	2	1	1	-	-	-	-
Word processors	24	6.54	7.11	4.79- 7.80	-	-	-	8	-	-	1	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Word processors I	24	6.54	7.11	4.79- 7.80	-	-	-	8	-	-	1	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Key entry operators	84	6.18	6.69	4.53- 7.48	-	14	7	-	9	2	10	2	19	16	5	-	-	-	-	-	-	-	-	-	-	-	-
Key entry operators I	80	6.11	6.43	4.31- 7.40	-	14	7	-	9	2	10	2	18	14	4	-	-	-	-	-	-	-	-	-	-	-	-
Receptionists	13	6.03	6.38	- -	-	-	-	-	4	-	8	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drafters	62	11.27	10.50	9.28-12.70	-	-	-	-	-	-	-	1	-	-	1	10	13	-	-	9	-	18	-	2	8	-	-
Drafters IV	47	10.92	10.50	9.28-12.70	-	-	-	-	-	-	-	-	-	-	-	9	9	-	-	9	-	18	-	2	-	-	-
Electronics technicians	134	11.96	11.42	9.75-15.53	-	-	-	-	-	-	-	-	2	12	8	3	6	8	13	8	22	3	-	-	49	-	-
Electronics technicians I	11	7.85	7.80	- -	-	-	-	-	-	-	-	-	2	6	2	1	-	-	-	-	-	-	-	-	-	-	-
Electronics technicians II	98	12.70	13.74	10.00-15.53	-	-	-	-	-	-	-	-	-	6	6	2	5	5	7	1	17	-	-	-	49	-	-
Maintenance carpenters	26	12.17	11.33	11.05-11.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	17	1	-	-	-	3	1
Maintenance electricians	238	12.70	12.10	11.45-13.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	8	90	58	24	4	-	9	25
Maintenance machinists	57	12.63	12.04	11.45-12.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	25	23	-	-	-	-	6
Maintenance mechanics (machinery)	627	12.09	11.44	11.00-12.79	-	-	-	-	-	-	-	-	-	-	-	-	-	4	56	71	288	144	-	8	-	-	56
Maintenance pipefitters	63	14.91	16.66	11.40-17.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	8	-	-	-	14	24
Motor vehicle mechanics	238	11.43	11.55	10.50-12.38	-	-	-	-	-	-	-	-	-	-	3	5	9	5	29	34	68	76	-	1	5	2	1
General maintenance workers	29	6.67	6.00	6.00- 7.22	-	-	-	5	-	-	10	-	11	-	-	-	-	2	-	-	1	-	-	-	-	-	-
Truckdrivers	1,420	9.54	9.20	8.70-10.16	-	-	-	12	18	1	-	4	6	-	84	313	483	134	40	91	181	53	-	-	-	-	-
Truckdrivers, medium truck	76	8.21	9.13	5.00-11.57	-	-	-	12	18	1	-	-	1	-	1	2	13	2	1	-	25	-	-	-	-	-	-
Truckdrivers, heavy truck	92	10.92	10.92	10.92-11.31	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	54	32	2	-	-	-	-	-
Truckdrivers, tractor-trailer	1,175	9.49	9.20	8.70- 9.50	-	-	-	-	-	-	-	-	5	-	83	310	470	87	39	6	124	51	-	-	-	-	-
Heavy equipment operators	518	11.57	12.05	10.42-12.38	-	-	-	-	-	-	-	-	-	-	6	-	19	28	81	32	63	219	53	17	-	-	-
Material handling laborers	120	6.85	6.50	6.50- 8.08	-	8	2	1	-	16	1	40	-	22	25	1	-	2	2	-	-	-	-	-	-	-	-
Forklift operators	870	9.59	9.51	8.91-10.33	-	-	3	-	-	-	20	24	19	8	37	107	104	225	106	37	180	-	-	-	-	-	-
Guards	53	6.47	5.75	5.60- 6.20	-	-	-	-	10	25	7	1	1	1	-	-	-	-	5	3	-	-	-	-	-	-	-
Guards I	53	6.47	5.75	5.60- 6.20	-	-	-	-	10	25	7	1	1	1	-	-	-	-	5	3	-	-	-	-	-	-	-
Janitors, porters, and cleaners	103	5.69	5.64	4.50- 6.88	10	-	11	11	16	17	12	6	1	5	10	4	-	-	-	-	-	-	-	-	-	-	-

[1] Excludes premium pay for overtime and for work on weekends, holidays, and late shifts. Also excluded are performance bonuses and lump-sum payments of the type negotiated in the auto and aerospace industries, as well as profit-sharing payments, attendance bonuses, Christmas or year-end bonuses, and other nonproduction bonuses. Pay increases—but not bonuses—under cost-of-living allowance clauses and incentive payments, however, are included. Hourly earnings reported for salaried workers are derived from regular salaries divided by the corresponding standard hours of work. The wages of learners, apprentices, and handicapped workers are excluded. The mean is computed for each job by totaling the earnings of all workers and dividing by the number of workers. The median designates position—one-half of the workers receive the same as or more than this rate and one-half receive the same as or less than this rate. The middle range is defined by two rates of pay; one-fourth of the workers earn the same as or less than the lower of these rates and one-fourth earn the same as or more than the higher rate. Middle ranges are not provided when fewer than 15 workers are reported.

[2] For occupations with more than one level, data are included in the overall classification when a subclassification is not shown or information to subclassify is not available.

Source: U.S. Department of Labor, October, 1988.

Table 5.3-14

PREVAILING JOURNEYMAN WAGE RATES IN COOS COUNTY, 1989

OCCUPATION:	Average Straight Time Hourly Wage	Average Hourly Cost of Benefits
Asbestos Workers	$15.40	$4.03
Boilermakers	20.58	4.80
Bricklayers	17.65	3.82
Cement Masons	16.69	4.97
Divers	43.62	3.67
Drywall	15.95	4.02
Electricians	20.71	5.63
Elevator Constructors	19.22	4.33
Glaziers	13.76	1.72
Highway & Parking Stripers	18.14	1.04
Ironworkers	18.26	5.81
Limited Energy Electricians	9.80	1.77
Painters	13.71	3.26
Plasterers	17.35	4.02
Plumbers & Steamfitters/Pipefitters	17.50	4.00
Roofers	15.04	2.93
Sheetmetal Workers	16.34	2.99
Soft Floor Layers	15.15	3.42
Sprinkler Fitters	20.30	3.90
Tile Setters	16.05	2.65
Carpenters	17.87	3.67
Laborers	8.50 - 14.24	4.90
Power Equipment Operators	16.24 - 18.84	5.17
Truck Drivers	15.73 - 16.90	4.70

Source: Oregon Bureau of Labor and Industries, 1989.

Unemployment rates are clearly highest during winter months and lowest during summer months.

Figure 5.3-5 documents the statistical relationship that has existed between labor force participation, employment and unemployment in Coos County since 1970. Although average annual employment increased by more than 5,000 workers in Coos County since 1970, the labor force gained nearly 6,000 participants during the period. The net effect of the relationship between the greater labor force size and current unemployment rates is simple. 8.4 percent unemployed in 1970 meant that about 1,860 Coos County workers were unemployed, while 9.4 percent unemployment in 1988 meant that about 2,640 workers were without jobs. Thus, it becomes clear that severe unemployment impacts have resulted in Coos County since 1970 because the number of local job opportunities has not kept pace with labor force increases.

Fig. 5.3-3

COMPARISON OF AVERAGE ANNUAL UNEMPLOYMENT RATES (%)
FOR COOS COUNTY, OREGON AND THE U.S., 1975-1985

YEAR	OREGON	UNITED STATES	COUNTIES			
			JACKSON	JOSEPHINE	COOS	CURRY
75	10.6	8.5	11.1	16.1	14.5	13.6
76	9.6	7.7	10.6	13.7	11.5	12.2
77	7.3	7.1	7.9	11.0	8.7	8.6
78	6.0	6.1	7.0	9.0	7.2	6.9
79	6.8	5.8	8.9	10.1	8.8	10.2
80	8.3	7.1	10.3	13.0	13.8	12.6
81	9.9	7.6	12.7	14.7	15.7	14.9
82	11.5	9.7	14.4	15.2	14.3	16.3
83	10.8	9.6	12.0	13.4	14.5	13.2
84	9.4	7.5	10.1	12.1	14.4	11.6
85	8.8	7.2	9.4	10.3	13.2	11.7

* State and local rates are preliminary (3/1/89)
Sources: Oregon Employment Division
U.S. Department of Labor

Fig. 5.3-4

SEASONAL CHARACTERISTICS OF COOS COUNTY'S
UNEMPLOYMENT RATE (%) BY YEAR, 1980-1988

MONTH	1980	1981	1982	1983	1984	1985	1986	1987	1988	Average 1980-88
January	10.3	17.0	15.9	17.1	16.1	15.8	13.7	10.0	10.4	14.0
February	10.4	16.3	16.0	16.5	15.6	15.4	12.7	10.3	9.8	13.7
March	10.3	17.2	15.7	16.0	15.3	15.4	12.6	9.8	9.9	13.6
April	12.9	15.9	15.2	14.5	13.7	14.6	10.9	8.3	9.3	12.8
May	14.6	15.8	13.2	14.8	13.8	11.8	10.3	7.4	9.2	12.3
June	14.7	14.8	12.9	13.0	12.8	12.9	9.8	7.0	9.2	11.9
July	13.7	14.2	12.9	13.1	13.2	11.4	10.3	7.1	8.8	11.6
August	12.9	13.9	13.2	14.6	12.7	10.5	9.7	6.4	9.3	11.5
September	12.8	14.6	12.9	11.1	12.7	12.2	9.4	7.8	9.6	11.5
October	17.3	15.9	12.6	12.7	14.7	12.0	8.7	7.5	8.8	12.2
November	19.1	16.8	14.8	15.0	16.1	13.6	9.7	8.2	10.5	13.8
December	16.5	16.2	16.1	15.5	15.7	11.8	9.0	8.7	8.6	13.1

Source: Oregon Employment Division, Department of Human Resources
Employment Statistics

Fig. 5.3-5

ANNUAL AVERAGE CIVILIAN LABOR FORCE, EMPLOYMENT, UNEMPLOYMENT AND UNEMPLOYMENT RATE FOR COOS COUNTY, 1970-1988

YEAR	CIVILIAN LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT NUMBER	UNEMPLOYMENT %
1970	22,050	20,190	1,860	8.4
1971	22,810	20,600	2,210	9.7
1972	23,630	21,560	2,070	8.8
1973	24,200	22,460	1,740	7.2
1974	24,070	21,870	2,200	9.1
1975	24,060	20,570	3,490	14.5
1976	24,740	21,840	2,900	11.7
1977	25,830	23,540	2,290	8.9
1978	27,130	25,180	1,950	7.2
1979	24,460	25,040	2,420	8.8
1980	29,410	25,350	4,060	13.8
1981	29,210	24,620	4,590	15.7
1982	27,800	23,830	3,970	14.3
1983	27,810	23,780	4,030	14.5
1984	28,680	24,560	4,120	14.4
1985	27,360	23,760	3,600	13.2
1986	27,640	24,720	2,920	10.6
1987	27,730	25,460	2,270	8.2
1988	27,950	25,310	2,640	9.4

Source: Oregon Employment Division, Department of Human Resources Employment Statistics.

Table 5.3-9, previously referenced, indicates that ethnic minority unemployment in Coos County is generally higher than unemployment for the general population, which is typical throughout Oregon and the United States. It also indicates that female unemployment in Coos County in 1981 was slightly less than overall unemployment, and that more minority females were unemployed their male counterparts. While 16.1 percent of the County's workers were unemployed in 1981, total blacks workers in the local labor force numbered only 25 that year.

Coos County's employment and unemployment statistics for the 1988 year are presented in Table 5.3-15 together with comparative data for Oregon. Annual averages for 1988 are not available at the time this report is prepared, however, Table 5.3-15 does reveal preliminary trends:

1. Coos County's labor force and employment experienced slight gains until September, 1988 and then dropped to the year's lowest level in October. Similar trends were experienced statewide, however, the decrease in September and October for the state was not as significant as in Coos County.

2. October, 1988 employment of 27,210 jobs is lower than all recent yearly averages dating back to 1979.

3. Local unemployment levels during 1988 have been consistently higher than statewide unemployment in this period. Unemployment remains a serious problem in the area.

Local Manpower Training Programs

Three major manpower training opportunities exist for the local labor force. These are:

1. the education programs of the Southwestern Oregon Community College District;

2. South Coast Business Employment Corporation programs; and

3. Apprenticeship program of the Oregon Bureau of Labor and Industry.

Southwestern Oregon Community College is a two-year public community college located in Coos Bay. The objectives and educational policies of the college are designed to provide career training based on locally determined occupation and education needs. A lower division college curriculum is provided for those students wishing to transfer to four year colleges and universities. Applied technical training also exists for those wishing earlier entry into the labor market; such curriculums include coursework in nursing, law enforcement, aviation, fire sciences, electronics, forestry, industrial mechanics and business.

South Coast Business Employment Corporation programs offer a second range of manpower training opportunities for the local labor force and would-be participants.

The apprenticeship program of the Oregon Bureau of Labor offers a wide range of work training opportunities for the local labor force including women and minorities. The apprenticeship program is not a placement program but rather a form of education. This program allows applicants to earn an income while learning and requires supplemental schooling i.e., related training.

Table 5.3-15

COMPARISON OF CIVILIAN LABOR FORCE, EMPLOYMENT AND UNEMPLOYMENT, COOS COUNTY AND OREGON, 1988

	MONTH	CIVILIAN LABOR FORCE	TOTAL EMPLOYMENT	UNEMPLOYMENT NUMBER	UNEMPLOYMENT %
C	January	27,870	25,000	2,870	10.3
O	February	27,960	25,230	2,730	9.8
O	March	27,690	24,950	2,740	9.9
S	April	27,910	25,290	2,620	9.4
	May	28,470	25,890	2,580	9.1
C	June	28,580	25,980	2,600	9.1
O	July	28,200	25,700	2,500	8.9
U	August	28,570	25,920	2,650	9.3
N	September	28,190	25,470	2,720	9.6
T	October	28,210	24,810	2,400	8.8
Y	November				
	December				
	Annual Average				
	January	1,399,900	1,300,100	99,800	7.1
	February	1,410,700	1,310,000	100,700	7.1
O	March	1,420,200	1,325,900	94,300	6.6
R	April	1,429,800	1,342,200	87,600	6.1
E	May	1,432,000	1,348,000	84,000	5.9
G	June	1,454,400	1,369,800	84,600	5.8
O	July	1,434,200	1,354,800	79,400	5.5
N	August	1,432,300	1,355,700	76,600	5.3
	September	1,415,700	1,345,700	70,000	5.4
	October	1,415,700	1,345,700	70,000	4.9
	November	1,207,900	1,131,500	76,400	6.3
	December				
	Annual Average				

Source: Oregon Employment Division, Resident Oregon Labor Force and Unemployment by Area, Monthly reports, 1988.

COMMERCIAL/INDUSTRIAL STRUCTURE

The "economic structure" of an area relates to the distribution of the area's employed work force into their respective types of employment, which are generally termed employment "sectors." Examples of sectors include manufacturing, construction, retail trade, and services. Areas containing a balance of employment in various sectors are said to be "diversified." Areas that are dependent on only one or two sectors for their economic "reason for being" are generally considered to have a more fragile economic structure than diversified economies, as changes in the employment levels of the key sectors can bring about profound changes in the other sectors. The relationship between the sectors is addressed later in this section.

A comparison of the economic structures among Coos County, Oregon, and the U.S. is shown in Table 5.3-16. These data reflect the situation as the structures existed in 1980. Consistent with the rest of the nation, manufacturing, trade, and services form the foundation blocks of the local economy.

Sector Employment Trends

A historical overview of the changes that have occurred in Coos County's employment structure since World War II is presented in Fig. 5.3-6. Five trends are evident:

1. Total employment has decreased by approximately 18% over the last decade.

2. Total County employment has increased by about 70% since World War II.

3. Manufacturing employment (chiefly lumber and wood products employment) has been declining since 1950.

4. Non-manufacturing employment (i.e., construction, trade, services, etc.) has more than tripled since 1940 and was responsible for total county employment gains up until the last decade.

5. Agricultural employment has registered steady declines since World War II. Fourteen out of every hundred jobs in Coos County in 1940 were agricultural employment. Today, less than three out of every 100 County jobs are in this sector.

It is worthwhile to compare the structural economic shifts of the local and state economic structure. A comparison of Coos County and Oregon employment for the period of 1982 to 1987 has been made. (Table 5.3-17, Fig. 5.3-7) It reveals that statewide sector employment shifts exceeded local

employment changes during the period in all but two sectors -- construction, and wholesale trade. Coos County construction employment gained 80 jobs between 1982 and 1987, which was slightly more the state's rate of increase during that time. Local wholesale trade employment grew six percent more than statewide gains in this subsector during the six years. Total non-manufacturing employment in Coos County gained 740 jobs between 1982 and 1987, which was a 5.3 percent gain over the six years. Coos County's manufacturing employment gained 250 jobs for a 5.7 percent gain between 1982 and 1987.

TABLE 5.3-16

EMPLOYMENT BY INDUSTRY AS PERCENTAGE OF TOTAL EMPLOYED LABOR FORCE
SOUTHERN OREGON COAST (COOS COUNTY), OREGON, U.S., 1980

Industry	Southern Oregon Coast	Oregon	U.S.
Agriculture/Forestry/ Fisheries/Mining	5.1%	4.8%	4.0%
Construction	6.1	6.4	5.9
Manufacturing:			
Durable	19.8	14.8	13.8
Nondurable	3.4	4.7	8.6
Transportation	5.0	4.3	4.4
Communications	2.8	2.9	2.9
Wholesale Trade	3.6	4.7	4.3
Retail Trade	18.2	17.9	16.1
Financial/Insurance/Real Estate	4.4	6.3	6.0
Business/Repair Service	3.1	3.7	4.2
Personal/Entertainment/Recreation Service	3.9	3.9	4.2
Professional Services:			
Health	6.6	6.9	7.4
Education	8.7	9.1	8.6
Other	4.4	4.6	4.3
Public Administration	4.9	5.0	5.3
Total	100.0	100.0	100.0

Source: Pacific Power, Target Industry Study Southern Oregon Coast, n.d.: p.48

FIG. 5.3-6

HISTORICAL OVERVIEW OF CHANGES IN GENERAL EMPLOYMENT SECTORS, COOS COUNTY 1940-1987

	1940		1950		1960		1970		1977		1987		% CHANGE	
EMPLOYMENT SECTOR	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	1940-1987	1977-1987
TOTAL EMPLOYMENT	11,329	100	16,519	100	19,320	100	20,190	100	23,540	100	19,234	100	70	-18
AGRICULTURE	1,535	14	1,219	7	990	5	730	4	620	3	472	3	-69	-24
MANUFACTURING	4,415	39	6,852	42	6,910	36	6,580	33	6,030	26	4,624	24	5	-23
NON-MANUFACTURING	3,626	32	6,100	37	8,490	44	10,810	53	14,190	60	12,308	64	239	-13
MISCELLANEOUS[b]	1,753	15	2,348	14	2,930	15	2,070	10	2,700	11	1,830	9	4	-32

Source: Coos-Curry C.O.G., Coos County Population and Economic Characteristics, 1930-1970, and Oregon Employment Division, Department of Human Resources, Employment Statistics.

[a]Figures presented above are not strictly comparable to other employment figures cited in this study due to changes in reporting methodologies.

[b]Includes unpaid farm workers domestic workers, self-employed and those involved in labor-management disputes.

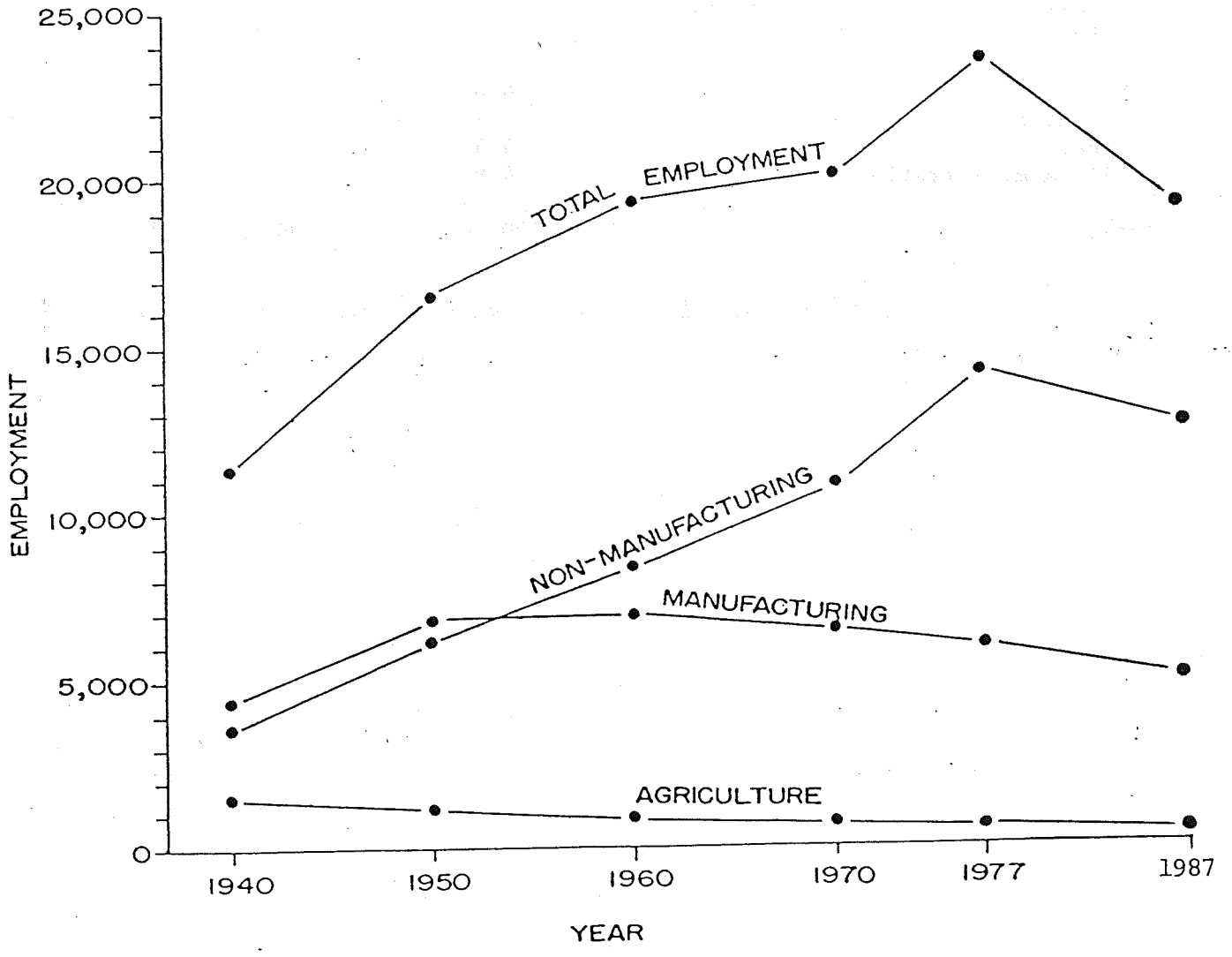


TABLE 5.3-17
COMPARISON OF EMPLOYMENT, COOS COUNTY
AND OREGON, 1982-1987

	1982		1983		1984		1985		1986		1987		CHANGE: 1982-1987	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
COOS COUNTY														
Total Employment	23,830	---	23,780	---	24,560	---	23,760	---	24,720	---	25,460	---	1,630	6.8
Total Wage & Salary	18,330	100.0	18,370	100.0	18,520	100.0	18,390	100.0	18,830	100.0	19,310	100.0	980	5.4
Manufacturing, Total	4,420	24.1	4,670	25.4	4,640	25.1	4,410	24.0	4,540	24.1	4,670	24.2	250	5.7
Durable Goods Manufacturing	3,430	18.7	3,690	20.1	3,690	19.9	3,520	19.1	3,610	19.2	3,720	19.3	290	8.5
Lumber & Woods	3,130	17.1	3,390	18.5	3,360	18.1	3,140	17.1	3,310	17.6	3,370	17.5	240	7.7
Other Durable Goods	300	1.6	300	1.6	330	1.8	380	2.1	300	1.6	350	1.8	50	16.7
Non-Durable Goods Manufacturing	990	5.4	980	5.3	950	5.1	890	4.8	930	4.9	950	4.9	-40	-4.0
Food Products	580	3.2	560	3.1	530	2.9	480	2.6	560	3.0	590	3.1	10	1.7
Other Non-Durable Goods	410	2.2	420	2.3	420	2.3	410	2.2	370	2.0	360	1.9	-50	-12.2
Non-Manufacturing, Total	13,910	75.9	13,700	74.6	13,880	75.0	13,980	76.0	14,290	75.9	14,650	75.9	740	5.3
Construction	400	2.2	420	2.3	480	2.6	490	2.7	470	2.5	480	2.5	80	20.0
Transportation, Communication & Utilities	1,480	8.1	1,460	8.0	1,400	7.6	1,360	7.4	1,380	7.3	1,410	7.3	-70	-4.7
Trade	3,880	21.2	3,910	21.3	4,030	21.8	4,060	22.1	4,270	22.7	4,550	23.6	670	17.3
Wholesale	610	3.3	630	3.4	630	3.4	630	3.4	640	3.4	700	3.6	90	14.8
Retail	3,270	17.8	3,280	17.9	3,400	18.4	3,430	18.7	3,630	19.3	3,860	20.0	590	18.0
Finance, Insurance & Real Estate	780	4.3	760	4.1	780	4.2	790	4.3	800	4.3	800	4.1	20	2.6
Services	2,930	16.0	2,920	15.9	2,900	15.7	2,990	16.3	3,110	16.5	3,230	16.7	300	10.2
Government	4,440	24.2	4,230	23.0	4,290	23.2	4,300	23.4	4,260	22.6	4,180	21.7	-260	-5.9
OREGON														
Total Employment	1,171,000	---	1,196,000	---	1,210,000	---	1,200,000	---	1,245,000	---	1,301,000	---	130,000	11.1
Total Wage & Salary	960,800	100.0	986,700	100.0	1,006,900	100.0	1,030,000	100.0	1,058,000	100.0	1,100,100	100.0	139,300	14.5
Manufacturing Total	185,700	19.2	188,800	19.5	201,100	20.0	199,300	19.4	198,400	18.8	206,200	18.7	20,500	11.0
Durable Goods Manufacturing	132,700	13.7	135,100	14.0	146,700	14.6	144,800	14.1	143,400	13.6	149,200	13.6	16,500	12.4
Lumber & Woods	55,600	5.8	62,600	6.5	66,700	6.6	63,600	6.2	64,600	6.1	68,000	6.2	12,400	22.3
Other Durable Goods	77,100	8.0	72,400	7.5	80,100	8.0	81,200	7.9	78,800	7.5	81,100	7.4	4,000	5.2
Non-Durable Goods Manufacturing	53,000	5.5	53,800	5.6	54,500	5.4	54,500	5.3	55,000	5.2	57,100	5.2	4,100	7.7
Food Products	23,700	2.5	24,200	2.5	24,100	2.4	23,800	2.3	23,700	2.2	24,000	2.2	300	1.3
Other Non-Durable Goods	29,300	3.0	29,700	3.1	30,300	3.0	30,700	3.0	31,300	3.0	33,200	3.0	3,900	13.3
Non-Manufacturing- Total	775,100	80.2	797,900	80.5	805,800	80.0	830,700	80.7	860,100	81.3	893,900	81.3	118,800	15.3
Construction	30,700	3.2	29,600	3.0	31,800	3.2	34,600	3.4	35,700	3.4	36,700	3.3	6,000	19.5
Transportation, Communication & Utilities	56,700	5.9	55,400	5.7	57,100	5.7	57,300	5.6	57,200	5.4	58,500	5.3	1,800	3.2
Trade	238,700	24.7	242,600	25.1	253,000	25.1	258,600	25.1	267,300	25.3	276,700	25.2	38,000	15.9
Wholesale	62,700	6.5	62,600	6.5	64,500	6.4	65,800	6.4	67,400	6.4	68,200	6.2	5,500	8.8
Retail	176,000	18.2	180,000	18.6	188,400	18.7	192,800	18.7	199,900	18.9	208,500	19.0	32,500	18.5
Finance, Insurance & Real Estate	64,900	6.7	64,500	6.7	65,400	6.5	66,800	6.5	69,500	6.6	72,100	6.6	7,200	11.1
Services	188,600	19.5	194,600	20.1	204,500	20.3	215,600	20.9	230,200	21.8	244,400	22.2	55,800	29.6
Government	195,500	20.2	192,300	19.9	194,100	19.3	197,700	19.2	200,200	18.9	205,600	18.7	10,100	5.2

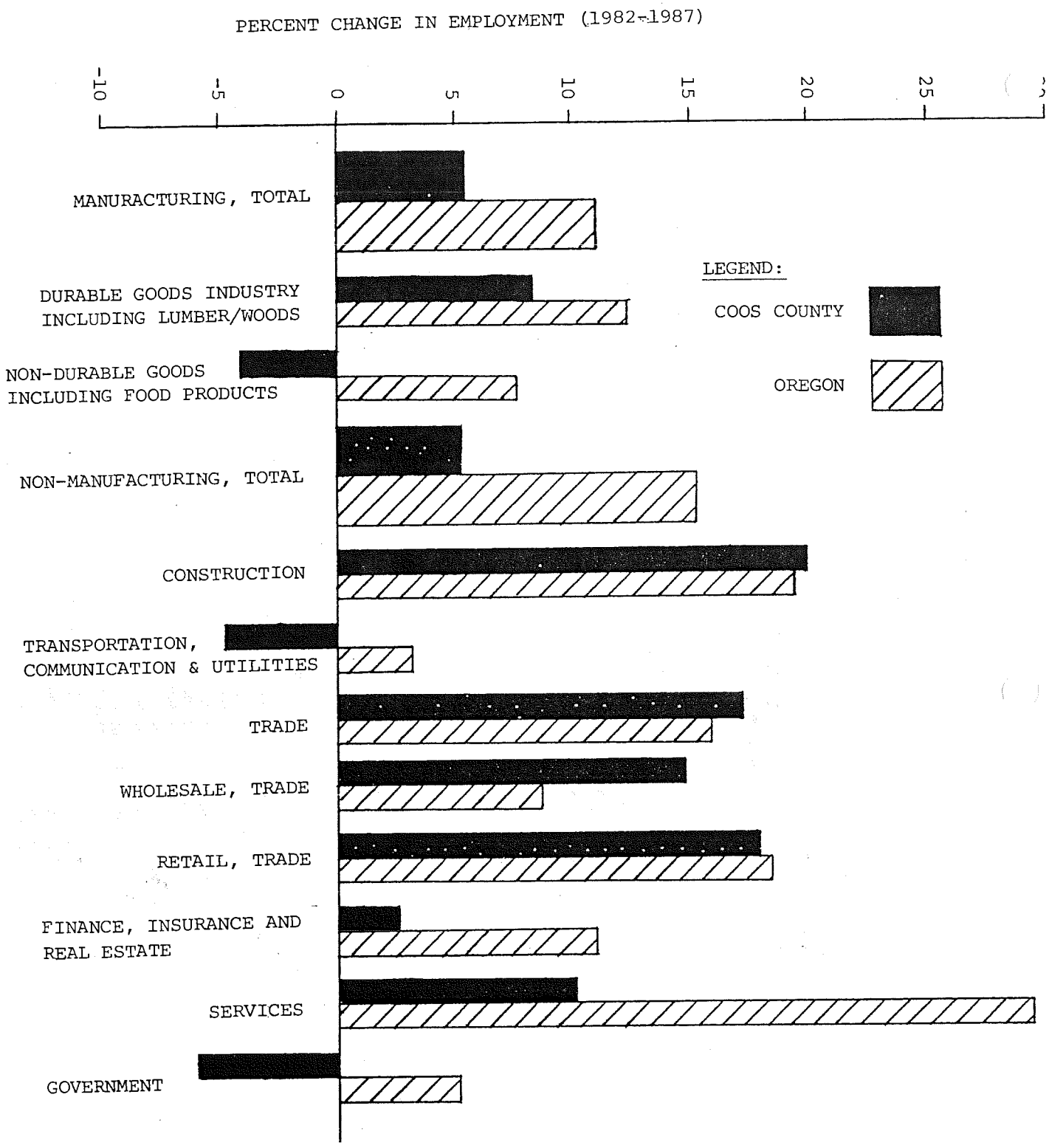


FIGURE 5.3-7

COMPARISON OF STRUCTURAL EMPLOYMNENT SHIFTS, COOS COUNTY AND OREGON (1982-1987)

Local employment in wholesale and retail trade increased 17.3% during the 6 years by gaining 670 new local jobs. The local trade employment gains were slightly higher than the state's rate of increase from 1982 to 1987, the 670 new jobs in the County reflect gradual diversification achievements as other sectors absorb losses in local lumber and wood products employment.

In addition, the 1987 sector employment characteristics of Coos County and Oregon have been compared (Fig. 5.3-8) Three local sectors -- manufacturing, government and transportation, communication and utilities -- had employment levels that were proportionately higher than total statewide employment in these sectors. In particular, it is significant that 5.0% of Oregon's total lumber and wood products employment in 1987 was comprised of Coos County employment in that subsector. In spite of recent gains in local trade employment, Coos County's proportion of jobs in this sector was slightly lower than statewide trade employment. Nearly 76% of local jobs were in non-manufacturing employment in 1987, compared to approximately 80% in these sectors statewide. Coos County lags far behind the state in increased employment opportunities in local non-manufacturing sectors (Fig. 5.3-7) which is a key if Coos County is to diversify its fragile resource-dependent economy.

Lumber and Wood Products

Preserving the economic vitality of Coos County's lumber and wood products (LWP) is extremely important, as this sector directly provided one out of every five jobs in the area in 1987. Indirect beneficial "spin-offs" attributable to the lumber and wood products industry are addressed under "Basic and Non-basic Characteristics of Local Economic Structure," which follows in this report.

The trends in LWP employment since 1960 are summarized in Fig. 5.3-9. The graph accompanying the table makes it abundantly clear that local lumber and wood products employment is declining and contributing less and less to the local economy. There were about 6,220 LWP jobs in Coos County in 1960. However, given the steady declines that have occurred since that time, local LWP employment was reduced to 5,010 jobs in 1977, or 21.5% of the local work force. It is encouraging to note that the county's losses in this subsector were limited to 370 jobs between 1970 and 1977, although 1975 and 1976 were very bad years.

Continued job losses in Coos County's LWP are inevitable. John Beuter reports in a study entitled Timber for Oregon's Tomorrow that forest harvest volumes will decline sometime before 1995, but that precise determinations of when this will occur cannot be done because of free-market decision processes. A 1978 study by the CCD-EIA also addresses this phenomenon. (1976:38)

> The mutually reinforcing causes (of future LWP employment losses) are (1) depletion of the resource, (2) federal government policy actions in managing the remaining resource and protecting the environment, and (3) productivity increases (automation) that displace labor. (1978)

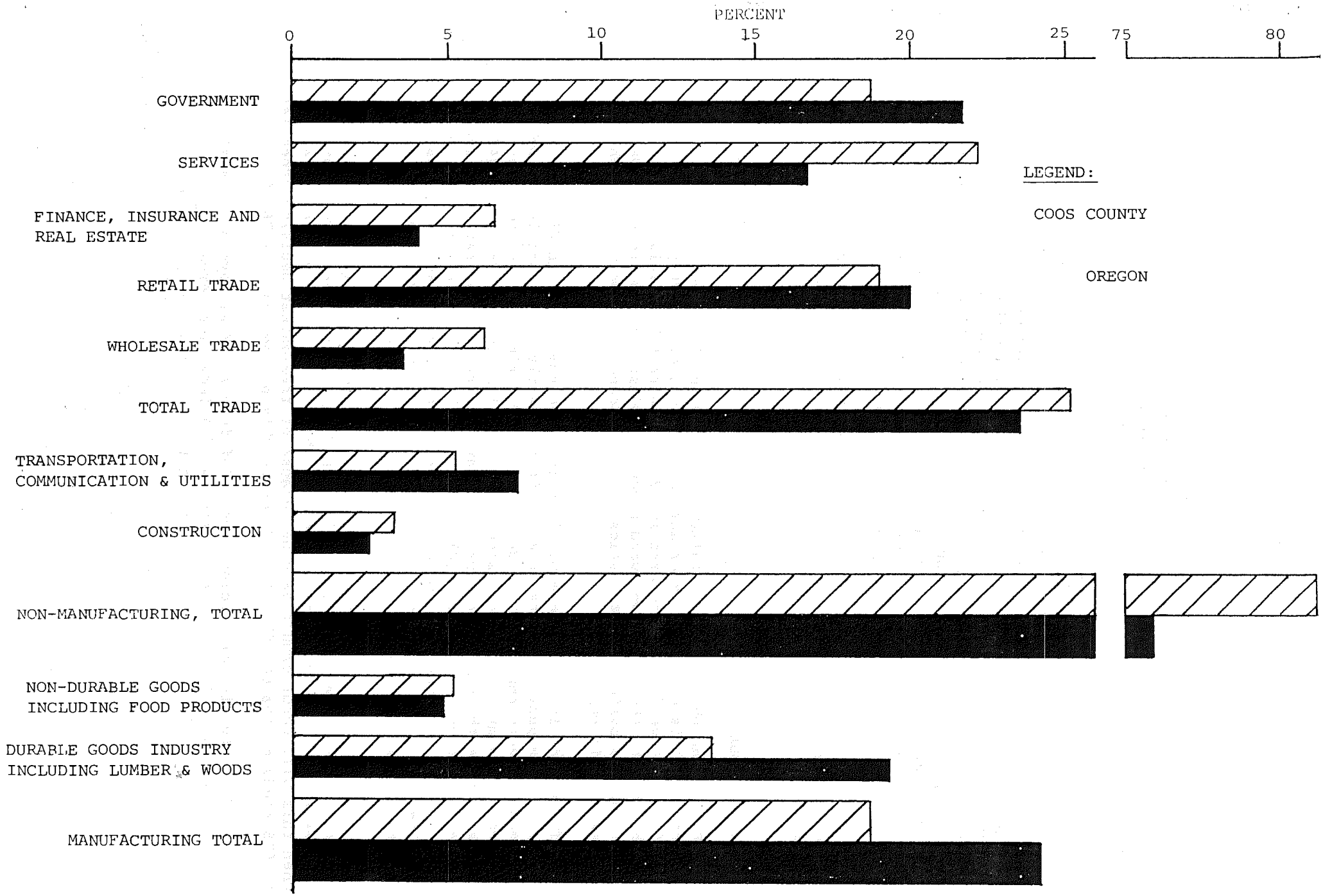


FIGURE 5.3-8

COMPARISON OF EMPLOYMENT BY SECTOR, COOS COUNTY AND OREGON, 1987

FIGURE 5.3-9

COMPARISON OF LUMBER AND WOOD PRODUCTS EMPLOYMENT VERSUS TOTAL EMPLOYMENT, COOS COUNTY, 1960-1977

	TOTAL EMPLOYMENT		LUMBER AND WOOD PRODUCTS EMPLOYMENT		
YEAR	NUMBER	INDEX (1960=100)	NUMBER	% OF TOTAL EMPLOYMENT	INDEX (1960=100)
1960	19,320	100.0	6,220	32.2	100.0
1961	18,320	94.8	5,500	30.0	88.4
1962	18,120	93.8	5.350	29.5	86.0
1963	18,410	95.3	5,260	28.6	84.6
1964	19,570	101.3	5,870	30.0	94.4
1965	20,050	103.8	5,960	29.7	95.8
1966	20,570	106.5	6,020	29.3	96.8
1967	20,460	105.9	5,830	28.5	93.7
1968	21,110	109.3	5,820	27.6	93.6
1969	20,770	107.5	5,680	27.3	91.3
1970	20,190	104.5	5,440	26.9	87.5
1971	20,600	106.6	5,270	25.6	84.7
1972	21,560	111.6	5,270	24.4	84.7
1973	22,460	116.3	5,280	23.5	84.9
1974	21,870	113.2	5,200	23.8	83.6
1975	20,570	106.5	4,270	20.8	68.6
1976	21,840	113.0	4,720	21.6	75.9
1977	23,540	121.8	5,070	21.5	81.5

Source: Oregon Employment Division, Department of Human Resource, Employment Statistics.

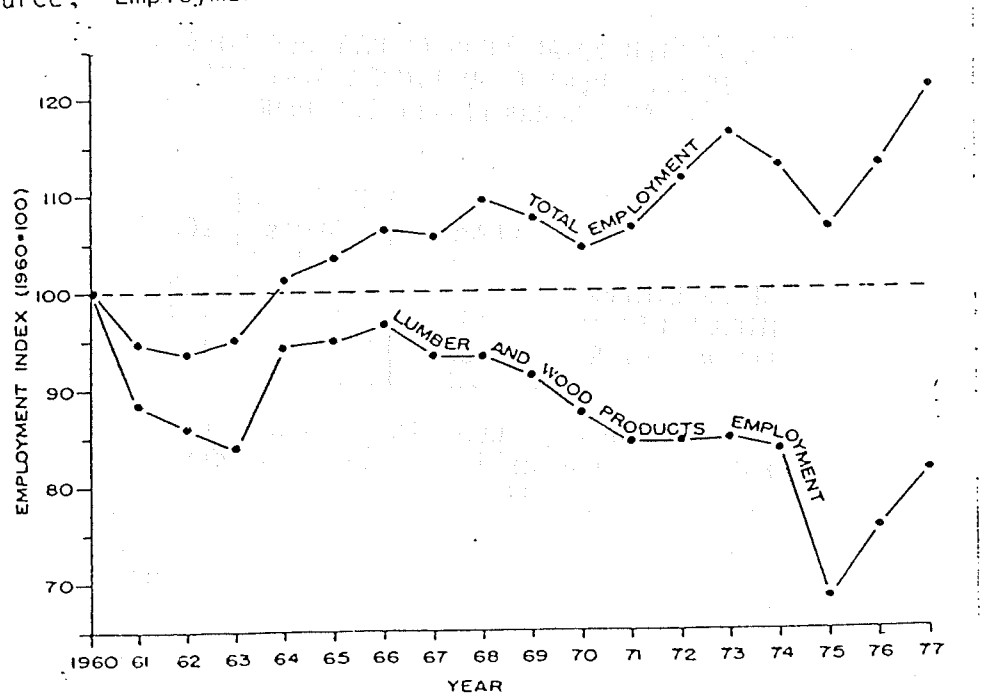


Table 5.3-18

DISTRICT 7[a] EMPLOYMENT IN LUMBER AND WOOD PRODUCTS (LWP)

YEAR	ANNUAL AVERAGE EMPLOYMENT	% OF TOTAL NON-AG WAGE AND SALARY EMPLOYMENT
1960	8,100	42.8
1970	6,750	32.2
1977	6,320	25.0
1985 (projected)	5,890	19.6

Source: State of Oregon Employment Division, 1979.

[a]Includes Coos and Curry Counties.

Although limited in use, CCD-EIA has prepared estimates of projected job losses in Coos County's timber industry employment. Those interested in a detailed explanation of the estimates, and their limitations, should reference the CCD-EIA report cited. For brevity, a summary of the projected estimates by CCD-EIA is presented in Table 5.3-19.

Table 5.3-19

PROJECTED TOTAL COOS COUNTY JOB LOSSES DUE TO ALL IDENTIFIED TIMBER AVAILABILITY AND PRODUCTIVITY INFLUENCES

	1980's	1990's	2000's
UPPER LIMITS	-7	796	1,573
MIDDLE LIMITS	168	948	1,712
LOWER LIMITS	355	1,111	1,856

Source: CCD-EIA, Projection of Future Job Losses in the Timber Industry in Coos County, 1978.

CCDE-EIA notes in its 1978 "Comprehensive Economic Development Strategy" that one way to mitigate and off-set LWP job losses would be to better utilize the area's lumber resources before exporting them from the region. For example, finished lumber and plywood manufactured locally could be processed to make kitchen cabinets, furniture, prefabricated homes, etc., which in turn could be exported from the county to Pacific Northwest and California markets (1978a).

Local Manufacturing

The following list represents a sampling of the major manufacturers located in Coos Bay-North Bend's urban area. Employment estimates are those published in the 1978-79 "Directory of Oregon Manufacturers," printed annually by the Department of Economic Development.

Table 5.3-20

EMPLOYMENT BY MAJOR MANUFACTURERS IN THE BAY AREA, 1978

FIRM	ESTIMATED EMPLOYMENT	ACTIVITY/PRODUCT
Weyerhauser Co., Inc.	1,640	Softwood vaneer and plywood
Georgia-Pacific Corp.	700	Softwood vaneer and plywood
Coos Head Timber Co.	400	General sawmill and planning mill
Westlog Inc.	200	General logging contractor
Menasha Corp.	175	Paperboard Mill
Moore Oregon Lumber Co.	150	General sawmill and planning mill
Cape Arago Lumber Co.	150	General sawmill and planning mill
Al Pierce Co.	115	General sawmill and planning mill

Source: Department of Economic Development, Directory of Oregon Manufacturers, 1978-79, January, 1978.

Commercial Trade and Services

Commercial trade and service employment constituted 32.5% of the Coos County's employment in 1977, with 19.6% attributable to the former and 12.9% to the latter. Trade employment contributed proportionately more total local employment than statewide, but that the opposite was true for services. Both sectors grew at a slower rate in Coos County than respective statewide increases between 1972 and 1977. However, it is significant that 1,050 trade and service jobs were added to Coos County's total employment between 1972 and 1977.

Table 5.3-21

COMPARISON OF LOCAL AND STATEWIDE RETAIL TRADE OPPORTUNITIES, 1972

	COOS BAY		COOS BAY-NORTH BEND[a]		COOS COUNTY		EUGENE		OREGON	
	Number	Rate[b]	Number	Rate[b]	Number	Rate[b]	Number	Rate[b]	Number	Rate[b]
TOTAL, ALL ESTABLISHMENTS	273	20.5	400	18.2	672	11.7	962	11.3	22,595	10.3
BUILDING MATERIALS, HARDWARE, GARDEN SUPPLY, MOBILE HOME DEALERS	17	1.3	22	1.0	41	0.7	31	0.4	1,170	0.5
GENERAL MERCHANDISE GROUP STORES	6	0.5	8	0.4	11	9.2	20	0.2	506	0.2
FOOD STORES	29	2.2	42	1.9	85	1.5	98	1.2	2,635	1.2
AUTOMOTIVE DEALERS	26	2.0	30	1.4	48	0.8	71	0.8	1,552	0.7
GASOLINE SERVICE STATIONS	30	2.3	48	2.2	86	1.5	117	1.4	2,828	1.3
APPAREL AND ACCESSORY STORES	7	0.5	17	0.8	26	0.5	57	0.7	1,103	0.5
FURNITURE, HOME FURNISHINGS, AND EQUIPMENT STORES	19	1.4	31	1.4	36	0.6	71	0.8	1,310	0.6
EATING AND DRINKING PLACES	46	3.5	70	3.2	120	2.1	181	2.1	4,298	2.0
DRUG STORES AND PROPRIETARY STORES	5	0.4	8	0.4	16	0.3	21	0.2	497	0.3
MISCELLANEOUS RETAIL STORES	88	6.6	124	5.6	201	3.5	295	3.5	6,696	3.1

Source: Portland State University population statistics and 1972 census of Retail Trade

[a]Coos Bay and North Bend

[b]Rate per thousand population in 1972

Tables 5.3-21, 22 compare local retail trade and service opportunities with state wide trade and service opportunities in 1972, the last year for which comparable data are readily available. Total retail establishments in Coos Bay and the Coos Bay-North Bend trade center occurred at nearly double the rate per thousand population of trade establishments statewide that year. This may be explained, in part, by the belief that Oregon's lower rate is influenced by its metropolitan areas, which have stores that are generally capable of "capturing" a larger market than exists locally. It would appear that Coos County has a larger number of smaller retail outlets than does Oregon in general, as evidenced by the "miscellaneous retail stores" category.

Moreover, Table 5.3-22 indicates that selected services occur more frequently throughout Oregon than in Coos County. Coos County has a higher frequency of "hotels, motels, RV parks and camps" than does Oregon in general. However, this is to be expected due to the influence of tourism on the local economy.

CCD-EIA states that local growth in these sectors has managed to lessen the "trade drain" from the area, as new commercial developments have attracted local consumer dollars that has traditionally been spent in adjacent counties. It is common knowledge that a good many County residents have traveled to Eugene and the Willamette Valley to make major purchases, in spite of the many trade opportunities that exist locally. It is hoped that the new trend will continue so that dollars earned locally can, to the maximum extent possible, be consumed locally and, thus, bolster the areas trade and service characteristics. A comparison of the trends in retail sales as a percent of effective buying income for local and statewide consumption market is shown in Table 5.3-23.

Table 5.3-23

COMPARISON OF RETAIL SALES AS A PERCENT OF EFFECTIVE BUYING INCOME FOR COOS COUNTY AND OREGON, 1970-77

	1970	1977
COOS COUNTY	57.9%	68.4%
OREGON	61.3%	55.9%

SOURCE: CCD-EIA, 1978-79 C.E.D.S., and Oregon Department of Economic Development.

"Effective buying income" is money available to spend for commercial trade and service purposes.

Simply stated, Table 5.3-23, shows that 68.4% of all the locally earned dollars available for local consumption expenditures were actually spent at the local marketplace. That is, Coos County's estimated effective buying income in 1977 was $322,652,000. All of that could have been spent locally for commercial goods and services. However, total County retail sales that year were only $220,679,000, or 68.4% of total spendable income that year. (Pearson 1979)

TABLE 5.3-22

COMPARISON OF SELECTED LOCAL AND STATEWIDE COMMERCIAL SERVICES, 1972

	COOS COUNTY		OREGON	
	Number	Rate+	Number	Rate+
TOTAL, ALL SELECTED ESTABLISHMENTS	404	7.1	18,945	8.7
Hotels, Motels, R.V. Parks, and Camps	45	0.8	1,533	0.7
Personal Services#	109	1.9	4,978	2.3
Business Services*	76	1.3	3,958	1.8
Automotive Repair, Services and Garages	47	0.8	2,149	1.0
Miscellaneous Repair Services•	47	0.8	2,238	1.0
Amusement and Recreation Services□	34	0.6	1,696	0.8
Dental Laboratories	4	0.1	159	0.1
Legal Services	26	0.5	1,137	0.6
Architectural, Engineering and Land surveying Services	16	0.3	917	0.4

Source: Portland State University population statistics and 1972 Census of Selected Service Industries.

+Rate per thousand population in 1972.

#Includes laundry and cleaning services, photographic, studios, beauty and barber shops, shoe repair, shoeshine and hat cleaning shops, funeral services, crematories and other personal services.

*Includes advertising, services to dwellings and other buildings, computer and data processing services, management, consulting and public relations services, equipment rental and leasing services, and other business services.

•Includes electrical and radio repair shops, reupholstery and furniture repair, and other repair shops and related services.

□ Includes motion pictures theaters, bowling alleys, pool halls, and other amusement and recreational services.

These figures suggest that more locally earned dollars are spent in Coos County now than were spent in 1970, and that an opposite trend is occurring statewide, but caution should be used in making this conclusion. While locally generated retail consumption is undoubtedly increasing, so may be "exports" of local goods and services to out-of-country residents. A later section of this analysis documents that a considerable portion of the local trade economy is "exportive" in nature, that is, many purchases sold and services rendered are to non-local residents. Tourism contributes to this phenomenon, but it is also clear that the Coos Bay-North Bend trade center has drawing power that far exceeds its civil boundaries. Map 5.3-1 delineates Coos Bay's effective trading area in 1971, based upon an analysis done at that time by a city consultant. Based upon data available in 1971 the consultant declared that:

> Coos Bay's effective retail trading area encompasses far more than just the City of Coos Bay itself. It incorporates the entire Coos Bay Urbanized Area, and the remainder of Coos County as well. Further, it extends southward down the coast of Oregon to include Curry County, and northward up the coast as far as the City of Florence. In short, it continues its historic role as the major trading center serving the southwestern Oregon Coast. (Keisker 1979:26)

The consultant further noted that the market "pull" of the trade center diminishes with distance from Coos Bay, as to be expected, but that "the communities of Port Orford, Gold Beach and Brookings to the south, and Winchester Bay, Reedsport, and Florence to the north, remain without question within the sphere of economic influence of Coos Bay." (1979:26)

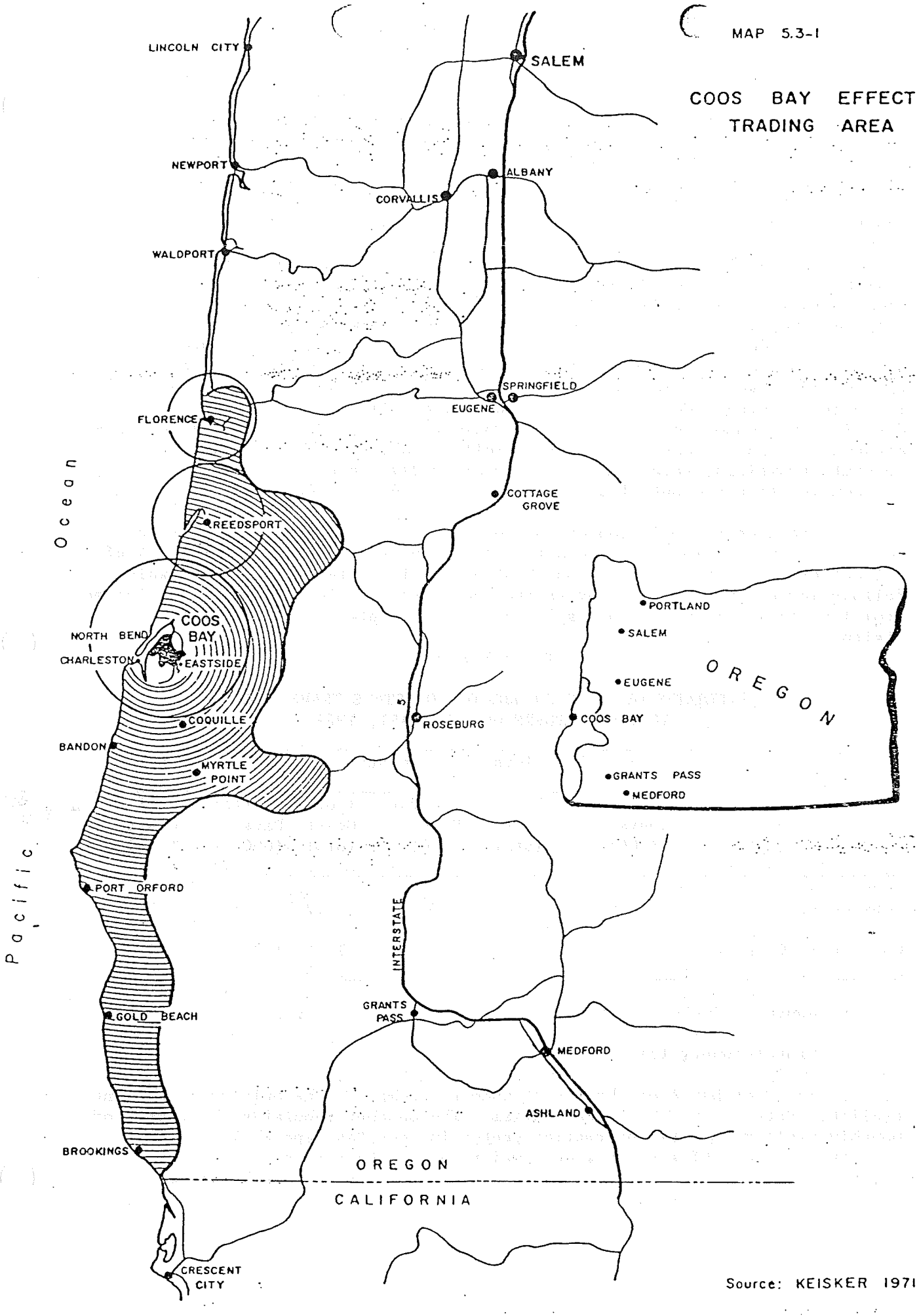
Much speculation and anxiety currently exists over the economic state of commercial activities centering about the Coos Bay "core area." The recent announcement by a major department store anchoring the mall that it would discontinue its operation, coupled with similar door closures by smaller trade outlets in the City Center, have contributed to a legitimate feeling of concern over the economic health of the Coos Bay Mall. Competition from a major shopping center in North Bend, as well as from outlying commercial trade areas within Coos Bay, all contribute to the present dilemma. More detailed investigations regarding revitalization of the core area are certainly warranted, but are unfortunately beyond the scope of these present analyses.

Tourism and Travel

Several factors make it extremely difficult to assess the impact of tourism on the local economy. While the tourism industry is "people intensive" and highly visible, the only practical means whereby numbers of travelers can be statistically quantified is by the use of samples and estimates. It is equally difficult to determine the employment benefits resulting from tourism, the generated commercial trade and services expenditures, because no Standard Industrial Classification (SIC) exists solely for tourism employment (SIC Codes are used by the federal government to group similar employment types). In spite of statistical obstacles limiting the ability to fully understand tourism impacts, an attempt is made here to address the issue.

MAP 5.3-1

COOS BAY EFFECTIVE TRADING AREA



Source: KEISKER 1971

A 1974 Study commissioned by the Oregon Coastal Conservation and Development Commission (OCCDC) reveals that the tourism in Oregon has been increasing since the 1960's. Since the team responsible for the OCCDC report judged that statewide tourism and travel trends are generally applicable on the Coast, it is reasonable to believe that tourism has also been gaining importance locally. OCCDC documents that tourism nearly doubled between 1960 and 1973. (OCCDC, 1974a) More current data are not available.

The local impact of tourism in 1969 can be estimated by measuring visitor days and expenditures generated by tourists and other travelers to the area. (Tables 5.3-24, 25) Although the data are ten years old, they represent the most current information available. Two important relationships can be concluded from the tables. First of all, travelers to the Oregon Coast in 1969, the southern Oregon Coast (Coos and Curry Counties) captured 15.9% of the out-of-state travelers but only 12.6% of the in-state travelers that year. The northern Oregon Coast captured about 84% of all Coastal in-state visitor days in 1969, undoubtedly due to its proximity to inland metropolitan centers. Although the south coast did not fare well in capturing a larger proportion of in-state travelers, total south coast visitor days were evenly distributed between in-state and out-of-state visitors in 1969. (OCCDC 1974a)

The second conclusion drawn from the tables is that, of all traveler-generated expenditures on the coast in 1969, the south coast captured 15% of all out-of-state expenditures and 12.5% of all in-state expenditures, which follows logically from the above-stated conclusions. Total south coast income from 1969 travelers was evenly split between in-state and out-of-state visitors.

Table 5.3-24

ESTIMATES OF IN-STATE AND OUT-OF-STATE TRAVELLERS TO THE SOUTHERN OREGON COAST, 1969

	Total Travelers		In-State[a]		Out-of-State	
	Visitor Days (000)	% of Coast Total	Visitor Days (000)	% of Coast Total	Visitor Days (000)	% of Coast Total
Coos County	1,749	8.8	908	7.7	841	10.3
Coos-Curry Counties	2,777	13.9	1,484	12.6	1,293	15.9

Source: OCCDC 1974a

[a]Inter-county trips.

The Coos Bay Area Chamber of Commerce compiles the only known current available data on the Bay area tourism. The Chamber tabulates the number of monthly visitors to its information center in Coos Bay, and while the data certainly do not reflect (or even a majority) of the tourists and visitors enjoying the area, the statistics do provide a useful sample that is considered representative.

Table 5.3-25

ESTIMATES OF IN-STATE AND OUT-OF-STATE GENERATED EXPENDITURES BY TRAVELLERS TO THE SOUTHERN OREGON COAST, 1969

	Total Travelers		In-State[a]		Out-of-State	
	Visitor Dollars (000)	% of Coast Total	Visitor Dollars (000)	% of Coast Total	Visitor Dollars (000)	% of Coast Total
Coos County	18	9.0	9	7.5	9	10.9
Coos-Curry Counties	28	13.9	15	12.5	12	15.0

Source: OCCDC 1974a.

[a]Inter-county trips.

The seasonal characteristics of the local travel industry, based on Chamber visits is profiled in Table 5.3-26. As expected, most local travel activity occurs during the summer months. More than 75 of each 100 visitors come to the area between June and September. As inferred by the Chamber data, local tourism was about 12% lower in 1978 than in 1977. (Coos Bay Chamber of Commerce 1977-1978)

The Chamber of Commerce also compiled statistics on time spent in the Coos Bay area by tourists and visitors. Based on the Chamber sample, it is estimated that 53% spend one hour or less, 72% spend two hours or less, and that 80% spend three hours or less. It is further estimated that only 9% spend between four and six hours, while 11% spend seven hours or more in the Bay Area. Of those visitors spending at least one day in the area, 57% are believed to spend just one day 79% two days or less, and 12% between three and six days. Only 8% of the area's visitors are believed to spend a week or more here, based on the Chamber's estimates. (Coos Bay Chamber of Commerce 1978) Obviously, longer periods of time spent in Coos Bay would result in larger tourist expenditures for local goods and services.

Table 5.3-27 provides an estimate of visitor party days by types of lodging. Local regional data are compared to Oregon data in 1972, the last year for which comparable information is available. OCCDC notes in their 1974 analysis of the Coastal Zone that irrespective of the exact figures, Oregon does tend to have a relatively large share of its visitors staying in campgrounds, and a relatively small share staying in motels and hotels. (OCCDC 1974a) OCCDC also notes that this trend has been increasing since the 1960's. It is undoubtedly brought about by the increasing popularity of motorized recreational vehicles and camping trailers.

The Coos Bay Area Chamber of Commerce reports that of those visiting their information center in the summer of 1978, 54% said they were camping (including hostels), 39% said they were lodging in motels, and 7% said they were visiting friends (1978)

Table 5.3-26

SEASONAL CHARACTERISTICS OF THE COOS BAY AREA TRAVEL INDUSTRY, 1977-1978

	1977		1978	
	Number	Percent	Number	Percent
January	348	1.5	493	2.5
February	421	1.9	474	2.4
March	612	2.7	677	3.4
April	682	3.0	493	2.5
May	1,015	4.5	709	3.6
June	2,962	13.2	2,780	14.0
July	5,018	22.3	4,876	24.6
August	6,490	28.9	5,893	29.7
September	3,112	13.8	1,826	9.2
October	933	4.2	857	4.3
November	509	2.3	421	2.1
December	378	1.7	315	1.6
TOTAL:	22,480	100.0%	19,814	100.0%

Source: Coos Bay Area Chamber of Commerce 1977 and 1978.

Table 5.3-27

ESTIMATED DISTRIBUTION OF VISITOR PARTY DAYS BY TYPES OF LODGING, 1972

	Southern Coast[a]	Oregon Coast	Oregon
TOTAL:	100%	100%	100%
Motel/Hotel	20.3	35.5	43.8
Friends	9.6	14.3	26.4
Camping	48.8	40.3	17.3
Trailer Parks, Second Home, No Lodging	21.3	9.9	12.5

Source: OCCDC 1974a.

[a]Coos and Curry Counties

Table 5.3-28 provides an estimate of the expenditures patterns of statewide and coastal travelers in 1972, the last year for which comparable data are available.

> Since the Coast is felt to be heavily favored by campers, it is surprising that coastal visitors spend almost the same share of their dollars on lodging as all Oregon visitors. With the exception of Clatsop and Tillamook Counties (North coast), the relative shares spent on groceries are higher for the coastal counties. This is the result that would be expected in an area that is visited by a large number of pick-up/campers, and similar recreational vehicles each year. (OCCDC, 1974a)

Table 5.3-28

ESTIMATED EXPENDITURES BY TRAVELLERS, 1972

	Southern Coast[a]		Oregon Coast		Oregon	
	$(000)	Percent	$(000)	Percent	$(000)	Percent
TOTAL EXPENDITURES	40,088	100.0	131,186	100.0	558,328	100.0
Lodging	5,347	13.3	23,375	17.8	104,020	18.6
Groceries	7,288	18.2	20,581	15.7	71,589	12.8
Restaurant	11,102	27.7	30,115	23.0	125,610	22.5
Other Food	511	1.3	2,936	2.2	14,428	2.6
Recreation	1,445	3.6	12,815	9.8	36,684	6.6
Gas and Oil	3,560	8.9	9,595	7.3	50,922	9.1
Other Auto	3,993	10.0	5,968	4.5	38,146	6.8
Other Travel	76	0.2	424	0.3	6,812	1.2
General	2,237	5.6	7,112	5.4	32,051	5.7
Apparel	3,066	7.6	8,437	6.4	53,609	9.6
Other	1,463	3.6	9,828	7.5	24,457	4.4

Source: OCCDC 1974.

[a]Coos and Curry Counties.

It is practically impossible to accurately determine the number of employment attributable to the travel industry. Clearly, employment related to expenditure patterns presented in the above table have tourism and travelers to thank for at least a portion of the demand for their goods and services. OCCDC estimates that (1) local Coos County travel industry employment has been increasing since the late 1950's, and (2) about 450 persons were employed in the Coos County travel industry in 1973. (OCCDC 1974a) This constituted 7.5% of the County's trade and service employment, and 2.0% of its total employment that year (see Table 5.3-17). Based on that relationship, it would be reasonable to expect that between 470 and 495 local trade and service jobs may be classified as travel industry employment in 1977.

The seasonal characteristics of local tourism also affect employment levels in the travel industry, as evidenced in Table 5.3-29.

Table 5.3-29

ESTIMATED SEASONAL CHARACTERISTICS OF TRAVEL INDUSTRY EMPLOYMENT, 1973

	Coos County	Southern Coast[a]	Oregon Coast
ESTIMATED ANNUAL AVERAGE EMPLOYMENT	450	713	2,675
January-March	250	367	1,607
April-June	589	908	3,179
July-September	642	1,075	3,896
October-December	319	503	2,017

Source: OCCDC 1974a

[a]Coos and Curry Counties.

From the foregoing analysis, it should be clear that Coos Bay and the south coast region could greatly benefit by increased tourism and travel activity in the area. However, capturing a larger proportion of the in-state tourist market will require considerable local effort in order to overcome the attractive locational advantages which the north coast offers the Willamette Valley population centers.

CCD believes that:

> [local] tourism activity . . . is likely to rise in the future [because of] (1) rising per capita income in the nation and the tendency in the U.S. to spend an increased proportion of one's income on tourism as incomes rise, (2) increasing per capita recreational time, and (3) increasing populations. To maximize the expenditures from this increased tourist activity, major attraction centers must be developed in the area. It is especially important that major winter tourist attractions be developed in the District. (CCD-EIA 1978a:IV-36)

Fishing and Food Processing

Local fishing employment is highly seasonal. Recent statistics for 1978 suggest a high of about 125 jobs in the summer months and a low of about 75 jobs in the winter months. (Giglio 1979) The trend in commercial fishing employment is predicted to be positive due to the "anticipated exploitation of the offshore hake resource" and the 200 mile fishing limit. The fishing industry experienced an annual average employment of 130 in 1977 and is predicted to expand to an average of 250 by 1985. (State of Oregon Employment Division 1979:21)

The food processing industry locally is dominated by seafood processing. The 1979 study by the Employment Division for Coos and Curry Counties indicates that 88.3% of the food products employment was in seafood products in 1977 and that most of this percentage was conducted in Coos County. After a steady decline since 1970 in overall employment, this industry has gained opportunities which have nearly re-established its 1970 employment level. It is anticipated that 650 jobs will be available by the end of 1979 and that this amount will increase to 900 by 1985. The basis for this optimistic prediction is the exploitation of the offshore hake resource. (State of Oregon Employment Division 1979:15-16) Better local processing capabilities is also a key to generating additional jobs in these subsectors. (CCD-EIA 1978a) Table 5.3-30 lists the local fish food processors, and identifies the scope of their processing activities.

Table 5.3-30

LOCAL FISH FOOD PROCESSORS
AT COOS BAY

("P" = species is processed locally,
("S" = produce is purchased locally and exported for processing)

	Crab	Shrimp	Salmon	Shad	Clams	Bottom Fish
Eureka Fisheries, Incorporated	P	P	P	--	P	S
Peterson Sea Foods	P	P	P	P	—	P
California Shellfish Company	P	P	P	--	--	S/P
Chuck's Seafoods	P	--	P	--	--	P
Lazio's	P	--	P	--	--	P
Point Adams Packaging Division of Alaska Packers	S	P	S	--	--	S

Source: Cindy Roye, Oregon Department of Fish and Wildlife, Commercial Fisheries Workshop II, 1977.

Basic/Non-Basic Characteristics of Local Economic Structure

Planners and economists often use "economic base studies" to better understand the economies of their communities, usually through an examination of the employment sectors. Economic employment activities may be classified into two major groups: "basic" and "non-basic." No city (or geographic area) is an "economic island" cities serve areas beyond their own boundaries, and these service areas are termed "market regions," or simply, "markets." Basic employment consists of industries, firms and individuals whose jobs produce a product or service destined for a market outside the community.

"Non-basic employment" consists of industries, firms and individuals who produce and sell a product or service locally. The non-basic sector exists solely through the circulation of existing income. If there is a decline in basic sector employment, it is usually accompanied by a decline in non-basic sector employment. This relationship is exemplified by "ghost-towns" whose services (non-basic employment) lose their demand when a nearby mine dries up. Nevertheless, non-basic employment should not be deemed unnecessary, as local services are an essential component of all urban settlement.

Two separate analytical methods were used in this study to determine the basic and non-basic characteristics of local economic structure. These were (1) a variation of the "minimum requirements" technique of E. Ullman and H. Dacey (1960:121-143) and (2) "location quotients." Each method utilized 1970 census data because it is the most recent year for which comparable city data are available; each is explained in the following narrative.

Ullman and Dacey's minimum requirements approach compared 1970 commercial/industrial sector employment data for the Coos Bay-North Bend urban area and five other cities of comparable size.[1] Percentages of each sector's employment to the total community's employment were then determined. The assumption was made that the smallest percentage in each specific category constituted the minimum level of employment required by any comparable community to fulfill its own local needs in that particular sector category. Thus, all employment above this "minimum requirement" was considered to be "basic" (export) employment. Table 5.3-31 reveals that the estimated basic to non-basic employment ration (B/N) for the Coos Bay-North Bend urban area in 1970 was 2,331 basic jobs to 5,971 non-basic jobs, according to the "minimum requirements" technique. B/N ratios are typically stated in terms of the number of non-basic jobs per 100 basic jobs. The B/N ratio can thus also be stated as 100:256, which means that in 1970 there were an estimated 256 non-basic jobs for each 100 basic jobs in the urban area according to the technique used.

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[1]The CB-MB urban area, as used here, includes the Cities of Coos Bay and North Bend. Urban area data were used in this analysis because regional economic characteristics transcend civil political boundaries.

Basic/non-basic characteristics based on "location quotients" was the second technique used in this study. Location quotients (LQ) indicate the degree that each employment sector is of either greater or lesser importance than the corresponding national employment in each particular sector. Quotients greater than 1.0 imply an export (basic) function. Quotient less than 1.0 imply an import function if demand exists for the particular product or services attributed to the respective sector. For example, a LQ of 1.32 (i.e., 1.32 to 1) means that for every 2.32 jobs in that sector, 1.32 jobs are considered to be export jobs and 1.00 job will provide a service because the assumption is made that everything in excess of the national percentage is basic employment.

Table 5.3-31

ESTIMATED BASIC/NON-BASIC CHARACTERISTICS OF THE BAY AREA ECONOMY, 1970 - DETERMINED BY "MINIMUM REQUIREMENTS" METHOD[a]

"COLUMNS":	(A)	(B)	(C)	(D)	(E)	(F)
EMPLOYMENT SECTORS:	% OF LABOR FORCE EMPLOYED	% NON-BASIC (MINIMUM REQUIREMENT)	% BASIC	NUMBER NON-BASIC	NUMBER BASIC	TOTAL LABOR FORCE EMPLOYMENT
AGRICULTURE, FORESTRY, FISHING AND MINING	2.6	0.8	1.8	65	149	214
CONSTRUCTION	3.7	3.7	0	0	306	306
MANUFACTURING[c]	29.7	16.2	13.5	1,342	1,121	2,463
TRANSPORTATION, COMMUNICATIONS AND UTILITIES	8.2	5.8	2.4	486	199	685
WHOLESALE AND RETAIL TRADE	24.5	20.0	4.5	1,659	373	2,032
FINANCE, INSURANCE, BUSINESS AND REPAIR SERVICES	5.7	4.8	0.9	399	75	474
PROFESSIONAL AND RELATED SERVICES[d]	22.1	21.1	1.0	1,751	83	1,834
GOVERNMENT	3.5	3.2	0.3	269	25	294
TOTALS:	100.0%	28.1%	71.0%	5,971	2,331	8,302

Source: 1970 U.S. Census Data and Staff Calculations

[a]Table presents the data used to calculate the estimated basic/non-basic characteristics of the economy of the Coos Bay-North Bend urban area in 1970. Column A indicates the percentage of the local labor force employed in the eight major sector groups. Column B lists the "minimum requirement" in each sector (non-basic); this is derived from the analysis of the five comparable cities. Column C suggests the percentage of total employment in Coos Bay that is deductively presumed to be basic (export) employment. (Column C equals Column A minus Column B) Columns D, E, and F show the numbers of persons employed in these basic and non-basic categories by computing the preceding percentages of total labor force of 8.302 persons.

[b]Comparable cities: Albany, Beaverton, Medford, Milwaukie, Springfield

[c]Includes furniture, lumber and wood products, metal industries, machinery, transportation equipment, and other durable goods; also includes: food and kindred products, printing, publishing, chemicals, textiles and other non-durable products.

[d]Includes schools, private household and personal services, entertainment and recreational services, hospitals and health services, legal, engineering and non-profit services, religious services and welfare employment.

Table 5.3-32 compares employment location quotients for Coos Bay, the Coos Bay-North Bend urban area, Coos County, and Oregon for 1970. Each is based on comparisons with national employment data for that year. It is important to note that manufacturing, transportation, communication and utilities, trade, and services all characterized basic employment according to the LQ technique. However, it must be stressed that the B/N characteristics yielded from this technique use national employment comparisons and that export employment calculated by location quotients are unmistakenly higher than actually exists. This is evidenced in Table 5.3-33, which presents estimated basic/non-basic characteristics of the bay area economy as determined by the LQ method.

The local B/N ratio based on the LQ technique is 100 : 91, which is considerably variant from the B/N ratio determined by the minimum requirements technique (100 : 256). Urban planners and economists generally agree that a ratio of about 100 : 150 to 250 is characteristic for an area similar in size and function to the Coos Bay-North Bend urban area. CCD-EIA notes that a study performed by Brian Wall of the U.S. Forest Service suggested a B/N ratio of 100 : 146 for Coos County. (CCD-EIA 1978a) It cannot be stressed strongly enough that any attempt to estimate B/N characteristics of an area is subject to criticism and strict limitations as to validity and usage. Precise determinations are impossible to calculate exactly, even using the most sophisticated techniques known. However, value exists in illustrating crude estimates because it is worthwhile to recognize that there is an element of basic employment in each sector grouping. Thus, Table 5.3-34 is presented with the full knowledge and understanding that inherent technical limitations makes the range of estimated B/N relationships little more than a rough, "ball-park" guess.

Manufacturing employment is clearly understood as basic employment because of the ease in recognizing that locally-produced goods exceed local demand and are thus exported. Other sectors, though, also have strong basic characteristics. For example, the commercial trade function of the urban area was estimated to generate between 373 and 1,148 basic jobs in 1970. While Table 5.3-34 indicates that between 2,079 and 5,274 total basic jobs existed in the area at that time, it is felt that the former is more accurate than the later, based purely on subjective logic. Similarly, it is subjectively believed that the minimum requirements method offers the most credibility.

The relationship between the basic and non-basic sectors is often referred to an "employment multiplier." For instance, if it was known that a basic sector employer (such as a wood products manufacturer) was to increase its output by adding 50 long-range jobs to its payroll, then it would be reasonable to hypothesize that quite possibly an additional 128 non-basic retail and service jobs might also be created to support the 50 basic sector jobs -- i.e., 2.5 support jobs for each basic job, computed from a B/N ratio of 100 : 256.

Although the B/N ratio admittedly has conceptual and technical limitations, it is nevertheless a valuable tool that can be used to make rational land-use planning decisions. The known relationship between the basic and non-basic sectors can help determine appropriate land use and zoning allocations for various urban uses (manufacturing, commercial, etc.) when applied to employment forecasts. (Tiebout 1962)

Table 5.3-32

COMPARISON OF LOCATION QUOTIENTS[a] FOR COOS BAY, THE BAY AREA, COOS COUNTY AND OREGON, 1970

EMPLOYMENT SECTORS	COOS BAY	BAY AREA	COOS COUNTY	OREGON
AGRICULTURE, FORESTRY, FISHING AND MINING	0.3	0.60	1.09	1.28
CONSTRUCTION	0.65	0.67	0.85	0.98
MANUFACTURING	1.20	1.22	1.43	0.84
TRANSPORTATION, COMMUNICATION AND UTILITIES	1.06	1.32	1.32	1.06
WHOLESALE AND RETAIL TRADE	1.37	1.30	1.05	1.11
FINANCE, INSURANCE BUSINESS AND REPAIR SERVICES	0.78	0.75	0.67	1.01
PROFESSIONAL AND RELATED SERVICES	1.12	1.02	0.89	1.10
GOVERNMENT	0.62	0.67	0.63	0.93

Source: 1970 U.S. Census data and staff computations

[a]"Location Quotients" (L.Q.) reflect the degree that each employment sector of Coos Bay, the Bay Area, Coos County and Oregon is of either greater or lesser importance than the corresponding national employment in each particular sector. Quotients greater than 1.0 imply an export (basic) function. Quotients less than 1.0 imply an import function if demand exists for the particular product or service. For example, a L.Q. of 1.32 (i.e., 1.32:1) means that for every 2.32 jobs in that sector, 1.32 jobs are considered to be export jobs because the assumption is made that everything in excess of the national percentage is basic employment.

Table 5.3-33

ESTIMATED BASIC/NON-BASIC CHARACTERISTICS OF THE BAY AREA ECONOMY, 1970 - DETERMINED BY "LOCATIONAL QUOTIENT" METHOD[a]

"COLUMNS":	(A)	(B)	(C)	(D)	(E)	(F)	(G)
EMPLOYMENT SECTORS:	% OF BAY AREA LABOR FORCE EMPLOYED	% OF U.S. LABOR FORCE EMPLOYED	L.Q.	% OF SECTOR BASIC	NUMBER BASIC	NUMBER NON-BASIC	TOTAL SECTOR EMPLOYMENT
AGRICULTURE, FORESTRY FISHING AND MINING	2.6	4.3	0.60	37.5	80	134	214
CONSTRUCTION	3.7	5.5	0.67	40.1	123	183	306
MANUFACTURING[b]	29.7	24.4	1.22	55.0	1,355	1,108	2,463
TRANSPORTATION, COMMUNICATION AND UTILITIES	8.3	6.3	1.32	56.9	390	295	685
WHOLESALE AND RETAIL TRADE	24.5	18.9	1.30	56.5	1,148	884	2,032
FINANCE, INSURANCE, BUSINESS AND REPAIR SERVICES	5.7	7.6	0.75	42.9	203	271	474
PROFESSIONAL AND RELATED SERVICES[c]	22.1	21.6	1.02	50.5	926	908	1,834
GOVERNMENT	3.5	5.2	0.67	40.1	118	176	294
TOTALS:	100.0%	100.0%[d]			4,343	3,959	8,302

Source; U.S. Census Data and Staff Computations

[a]Column A indicates the percentage of the local labor force employed in the eight major sector groups. Column B presents the percentage of national labor force employed in the sectors, while Column C reveals the resultant location quotients for each respective sector group (the L.Q.'s in Column C equal Column A divided by Column B). A L.Q. of 1.22 means that a particular sector's ratio of "Basic" to "Non-basic" employment is 1.22 to 1. Column D estimates the percent of each sector's employment considered to be basic employment, as explained earlier. If the L.Q. is 1.22, then the B/N ratio is 1.22:1, which means that for every 2.22 jobs in that particular sector, 1.22 jobs or 55% are basic (1.22 divided by 2.22 equals 55%). Columns E and F convert the percentages tabulated in Column D to actual numbers of estimated basic and non-basic jobs based on total sector employment (Column G).

[b]Includes furniture, lumber and wood products, metal industries, machinery, transportation equipment, and other durable goods. Also includes food and kindred products, printing, publishing chemicals, textiles, and other non-durable products.

[c]Includes schools, private household and personal services, entertainment and recreational services, legal, engineering and non-profit services, religious services, and welfare employment.

[d]Includes "industries not reported" of 6.2%.

Table 5.3-34

ESTIMATED BASIC/NON-BASIC CHARACTERISTICS
OF THE BAY AREA ECONOMY, 1970[a]

EMPLOYMENT SECTORS:	ACTUAL EMPLOYMENT		ESTIMATED BASIC EMPLOYMENT	
	NUMBER	% OF TOTAL EMPLOYMENT	NUMBER	% OF SECTOR'S EMPLOYMENT
AGRICULTURE, FORESTRY, FISHING AND MINING	214	2.6	80- 149	38- 70
CONSTRUCTION	306	3.7	123- 306	40-100
MANUFACTURING[b]	2,463	29.7	1,121-2,034[d]	46- 83
TRANSPORTATION, COMMUNICATION AND UTILITIES	685	8.2	199- 390	29- 57
WHOLESALE AND RETAIL TRADE	2,032	24.5	373-1,148	18- 57
FINANCE, INSURANCE, BUSINESS AND REPAIR SERVICES	474	5.7	75- 203	16- 43
PROFESSIONAL AND RELATED SERVICES[c]	1,834	22.1	83- 926	5- 51
GOVERNMENT	294	3.5	25- 118	9- 40
TOTALS:	8,302	100.0%	2,079-5,274	25- 64

Source: 1970 Census data and staff computations

[a]Determined by "Minimum Requirement's" and "Location Quotient" techniques, and subjective analysis.

[b]Includes furniture, lumber and wood products, metal industries, machinery, transportation equipment, and other durable goods. Also includes food and kindred products, printing, publishing chemicals, textiles, and other non-durable products.

[c]Includes schools, private household and personal services, entertainment and recreational services, legal, engineering and non-profit services, religious services, and welfare employment.

[d]Application of both techniques to this sector produced results considered to be unjustifiably low. Rational logic suggests that the basic share should be higher due to the export nature of local lumber and wood products. Therefore, the higher range of 2,034 basic jobs was recomputed as follows:

1. The Bay Area and Coos County had similar percentages of their labor forces in manufacturing in 1970, and

2. 82.6% of Coos County's manufacturing employment at that time was in lumber and wood products, thus,

3. 82.6% of the Bay Area's manufacturing employment was considered to be in lumber and wood products, and in turn, basic employment equal to 2,034 jobs.

Income Characteristics

A comparison of monthly employment (jobs) and earnings for Coos County in 1986 is provided in Table 5.3-35. Rank/order comparisons reveal that earnings are generally commensurate with employment levels, as expected. For example, lumber and wood products, trade and government were the subsectors with both the highest employment and total earnings, while construction and finance had lower number of jobs and lower total earnings also.

The estimated average annual wages by employment sector for Coos County and Oregon, 1976 are compared in Table 5.3-36. Jobs related to transportation, communication and utilities offer the highest local wages and salaries, but are followed closely by lumber and wood products employment; this relationship is also true for Oregon in general. Average local wages and salaries were about 2.3% higher than statewide wages in salaries in 1976. However, Oregon's wages and salaries were higher than local wages and salaries in every industrial sector except transportation, communication and utilities, and lumber and wood products.

Table 5.3-36

COMPARISON OF ESTIMATED AVERAGE ANNUAL WAGES BY EMPLOYMENT SECTOR FOR COOS COUNTY AND OREGON, 1976

	COOS COUNTY	OREGON
AVERAGE, ALL SECTORS	$10,940	$10,691
CONSTRUCTION	12,665	14,123
MANUFACTURING (all)	13,766	13,008
LUMBER AND WOOD PRODUCTS	14,371	13,807
TRANSPORTATION, COMMUNICATION AND UTILITIES	15,192	14,163
WHOLESALE AND RETAIL TRADE	7,757	8,532
FINANCE, INSURANCE AND REAL ESTATE	8,672	9,529
SERVICES	6,711	7,860
GOVERNMENT	10,712	11,753

Source: CCD-EIA, "1978-79 C.E.D.S.," 1978

Table 5.3-37 presents the component sources of Coos County's personal income for 1970 and 1975. Total personal income in Coos County increased 56.7% over the five year period, although labor and proprietors income gained only about 42% during that time. Income from dividends, interest, and rent gains 73.8% from 1970 to 1975, while transfer payments, government disbursements to eligible public welfare recipients, gained 141.3%. This table also shows per capita income (total dollars earned per person) increased 48.3% during the five years. Family income characteristics are addressed in the Housing component of this study.

Table 5.3-35

COMPARISON OF AVERAGE MONTHLY EMPLOYMENT[a] AND EARNINGS BY EMPLOYMENT SECTOR FOR COOS COUNTY, 1986

EMPLOYMENT SECTOR	EMPLOYMENT Number of Jobs	%	Rank	EARNINGS Wages and Salaries (Millions of $)	%	Rank
CONSTRUCTION	470	2.5	8	8.1	2.6	8
MANUFACTURING	4,540	24.1	--	100.1	32.2	--
Lumber and Wood Products	3,310	17.6	3	80.2	25.8	1
Other Manufacturing	1,230	6.5	6	19.9	6.4	6
TRANSPORTATION, COMMUNICATION AND UTILITIES	1,380	7.3	5	34.0	11.0	5
WHOLESALE AND RETAIL TRADE	4,270	22.7	1	48.0	15.5	3
FINANCE, INSURANCE, AND REAL ESTATE	800	4.3	7	10.5	3.4	7
SERVICES	3,110	16.5	4	35.7	11.5	4
GOVERNMENT	4,260	22.6	2	73.6	23.9	2
TOTAL	18,830	100.0		310.4	100.0	

Source: State of Oregon Employment Division.

Table 5.3-37

COOS COUNTY PERSONAL INCOME BY MAJOR SOURCES, 1970 AND 1975

	PERSONAL INCOME		Percent Change 1970-1975
	1970	1975	
Total Labor and Properties Income by Place of Work	$153,935,000	$220,950,000	43.5
LESS: Personal Contributions for Social Insurance by Place of Work	6,731,000	12,487,000	85.5
Net Labor and Proprietors Income by Place of Work	147,204,000	208,463,000	41.6
PLUS: Residence Adjustment	34,000	676,000	1,888.2
Net Labor & Proprietors Income by Place of Residence	147,238,000	209,139,000	42.0
PLUS: Dividends, Interest and Rent	21,244,000	36,928,000	73.8
PLUS: Transfer Payments	21,249,000	51,274,000	141.3
Personal Income by Place of Residence	189,731,000	297,341,000	56.7
PER CAPITA INCOME	$ 3,358	$ 4,980	48.3

Source: Oregon Department of Economic Development after Bureau of Economic Analysis, Regional Information System.

Existing Land Use and Tenure

Recognizing and understanding existing land use patterns and trends is a key ingredient to a successful economic development program. It is also important to understand that land ownership, zoning, and other restrictions on the use of land are factors that contribute to the success or failure of economic development efforts.

The importance of Coos Bay's retail trade functions was noted earlier in this report. Coos Bay's commercial trade and service activities form the economic "spine" of the City-proper, as the major industrial activities of the urban area are, for the most part, located beyond Coos Bay's city limits. Trade and service activities - including wholesale and retail trade, financial institutions, real estate, insurance, professional and medical services comprised about 187 acres in Coos Bay in 1977, based upon an inventory conducted by city planning staff which today is still considered accurate due to the lack of development over the last decade. These activities are clustered in the city center (mall), along U.S. Highway 101 and Ocean Boulevard, at the Empire "Y" and, to some extent, along Empire Highway. In addition, retail trade activities have traditionally been permitted in the designated industrial areas of Coos Bay. This is a practice which merits reassessment, as a shortage of industrial land clearly exists within the city limits.

The Coos, Curry, Douglas-Business Development Corporation has complied an inventory of industrial lands which reveals that the City of Coos Bay has approximately 930 acres of property zoned for industrial activity, and further that less than 6% of this industrial zoned lands are developed (CCD-BDC, 1982:XII-47). Explanation of the paradox is simple: Coos Bay's "industrial" lands are, in fact, "commercial/industrial" lands. Because of this relationship, three general conclusions may be stated:

1. Coos Bay's planned and zoned "industrial" lands are <u>not</u> truly industrial lands. Rather they are commercial lands that contain a scattering of industrial uses within them.

2. An adequate supply of commercially-suited land currently exists in Coos Bay if existing patterns and trends are acknowledged.

3. Coos Bay does not have as much industrial land as revealed by the CCD-BDC Industrial Site Inventory. They City should determine if the current industrial development scheme is realistic, or whether commercial activities might be better suited for many of Coos Bay's industrially zoned areas.

Amended per Resolution 83-11

Table 5.3-38 provides insight into the disparity between the 930 acres of industrially zoned land and the 53 acres of actual, industrially developed property in the city. Only about 53 of the 930 industrially zoned areas were undeveloped in 1982. Worse yet, it is unrealistic to assume that these undeveloped sites are suitable for industrial development because (1) the parcels are often small, under separate ownership, and dispersed so as to preclude their "assemblage" into larger tracts, and (2) physical constraints such as slope, weak foundation soils and risk of flooding make the properties less competitive with other industrial sites in the Coos Bay-North Bend urban areas.

Table 5.3-38

INVENTORY OF LAND ZONED FOR INDUSTRIAL USE IN COOS BAY, 1982

ZONING DISTRICT (Ordinance #93)	APPROXIMATE LAND ACREAGE	ESTIMATED ACRES	DEVELOPED LAND PERCENT OF TOTAL
TOTAL, ALL INDUSTRIAL DISTRICTS	930	53	100.0
"INDUSTRIAL-COMMERCIAL" (I-C)	525	12	22.6
"GENERAL INDUSTRIAL" (G-I)	280	0	0
"WATERFRONT INDUSTRIAL" (W-I)	125	41	77.4
(North Marshfield District)	43	30.5	57.6
(South Marshfield District)	21	8.0	15.1
(Empire District)	366	6.0	11.3
(Eastside District)	500	8.5	16.0

Source: CCD-BDC Coos County Development Factbook, 1982 and 1989

A 1982 industrial site inventory by the Coos-Curry-Douglas Business Development Corporation assessed 106 potential sites in the Coos Bay-North Bend area, shown on Map 5.3-2 and representing more than one-third of all industrial sites in Coos County (Table 5.3-39). Of these, 38 were in the City of Coos Bay. However, individually 28 of these sites were less than 10 acres in size and all 38 constituted about 15% of the total surveyed. Furthermore, some of the 38 sites were unsuitable for industrial use or were already occupied implying somewhat unrealistic expectations (Table 5.3-40).

Amended per Resolution 83-11

Table 5.3-39

COOS COUNTY INDUSTRIAL SITE SUMMARY, 1982

	APPROX. TOTAL SITES	NUMBER OF SITES, BY SIZE OF SITE				
		1-10 Acres	10-20 Acres	20-40 Acres	40-100 Acres	100+ Acres
CITY OF COOS BAY	38	28	1	4	2	3
COOS BAY-NORTH BEND URBAN AREA	105	63	11	11	15	5
COOS COUNTY (TOTAL)	175	84	26	26	27	12

Source: CCD-BDC, Coos County Area Development Factbook, 1982.

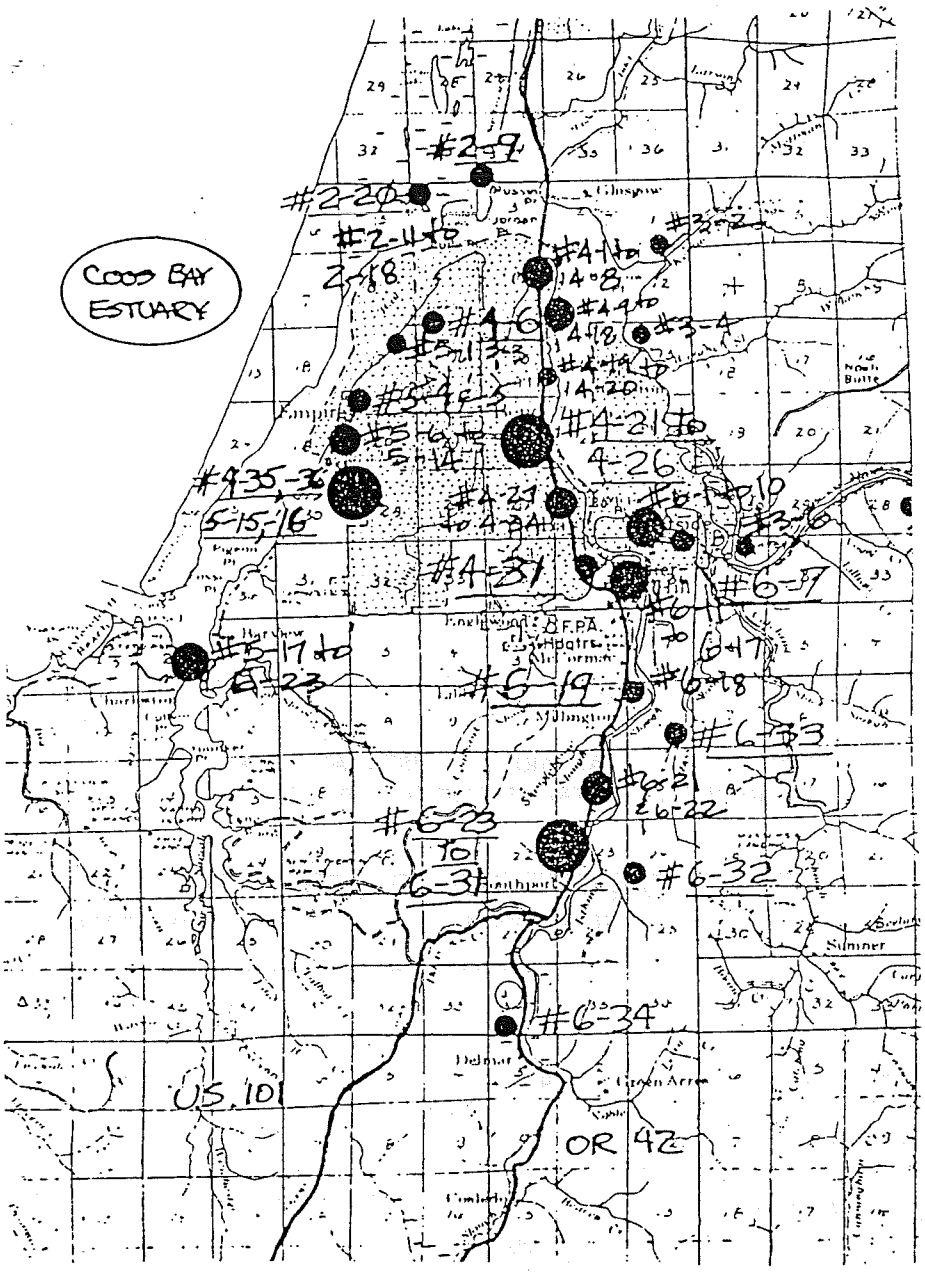
Table 5.3-40

COMPARISON OF BAY AREA INDUSTRIAL SITE ACREAGE BY PLANNING JURISDICTION, 1982

	APPROX. TOTAL INDUSTRIAL SITE ACREAGE	% OF TOTAL
COOS COUNTY	4,815	77.3
CITY OF COOS BAY	930	15.0
CITY OF NORTH BEND	380	6.1
COQUILLE, BANDON AND LAKESIDE	100	1.6
	6,225	100.0%

Source: CCD-BDC, Coos County Area Development Factbook, 1982

Amended per Resolution 83-11



MAP 5.3-2

COOS BAY-NORTH BEND AREA INDUSTRIAL SITE INVENTORY, PREPARED BY COOS, CURRY, DOUGLAS-BUSINESS DEVELOPMENT CORPORATION, 1982

KEY

O--#4-30 Denotes Industrial Site, and Site Number.

This information coupled with the vast discrepancy between land zoned for industrial uses and that actually used compelled the city to reanalyze its industrial site potential. At the same time, two new inventories of existing and potential industrial sites were being prepared, one for locations related to the Coos Bay estuary and the other for the County as a whole. Based upon these studies and the city's work, a projected need to the year 2000 was coordinated for all cities and unincorporated lands. Each study will be discussed briefly.

1. Industrial Land Needs Survey and Comparative Advantage Analysis -- Coos Bay Estuary, Coos-Curry-Douglas Business Development Corporation (CCDBDC), October 1981.

   This assessment was commissioned to provide industrial needs data for the Coos Bay Estuary Management Plan. The survey and analysis considered five, water-related industrial sectors, that is, lumber and wood products; marine industries, mining, minerals, and energy; transportation; and other (tourism, other manufacturing, foreign trade zones). This study predicted a land need of 1,467 additional acres for the estuary area alone.

2. Industrial and Commercial Lands, Coos County Comprehensive Plan, 1982. This assessment accepted the conclusions of the CCDBDC report and analyzed the needs for industrial land for the balance of the County including all urban lands not subject to Goals 16 and 17. The County's study was based on a population/acreage ratio. An assumption was made that if the estuary area comprised 60% of the 1980 Coos County population, it could be equated to 60% of the total industrial land needs. Therefore, the remaining 40 of the population would need 40% or 978 acres of industrial lands by 2000. Contrary to the 1977 inventory, this one excluded sites with physical constraints, sites of a size less than one acre, and sites actually occupied. Industrial sites of varying sizes and characteristics were identified throughout Coos County and included all identified urban locations. The County has identified a need for 293 acres of industrial property within the Coos Bay planning area (Coos Bay and the urban growth area to the south).

3. City of Coos Bay Analysis.

   The city reviewed work accomplished by the CCDBDC and the County and then reassessed the availability of land already zoned for industrial uses. As stated earlier much of this land fell into the "less than one acre category" or suffered other constraints. Consequently, other sites not previously considered were evaluated for industrial potential using the following considerations:

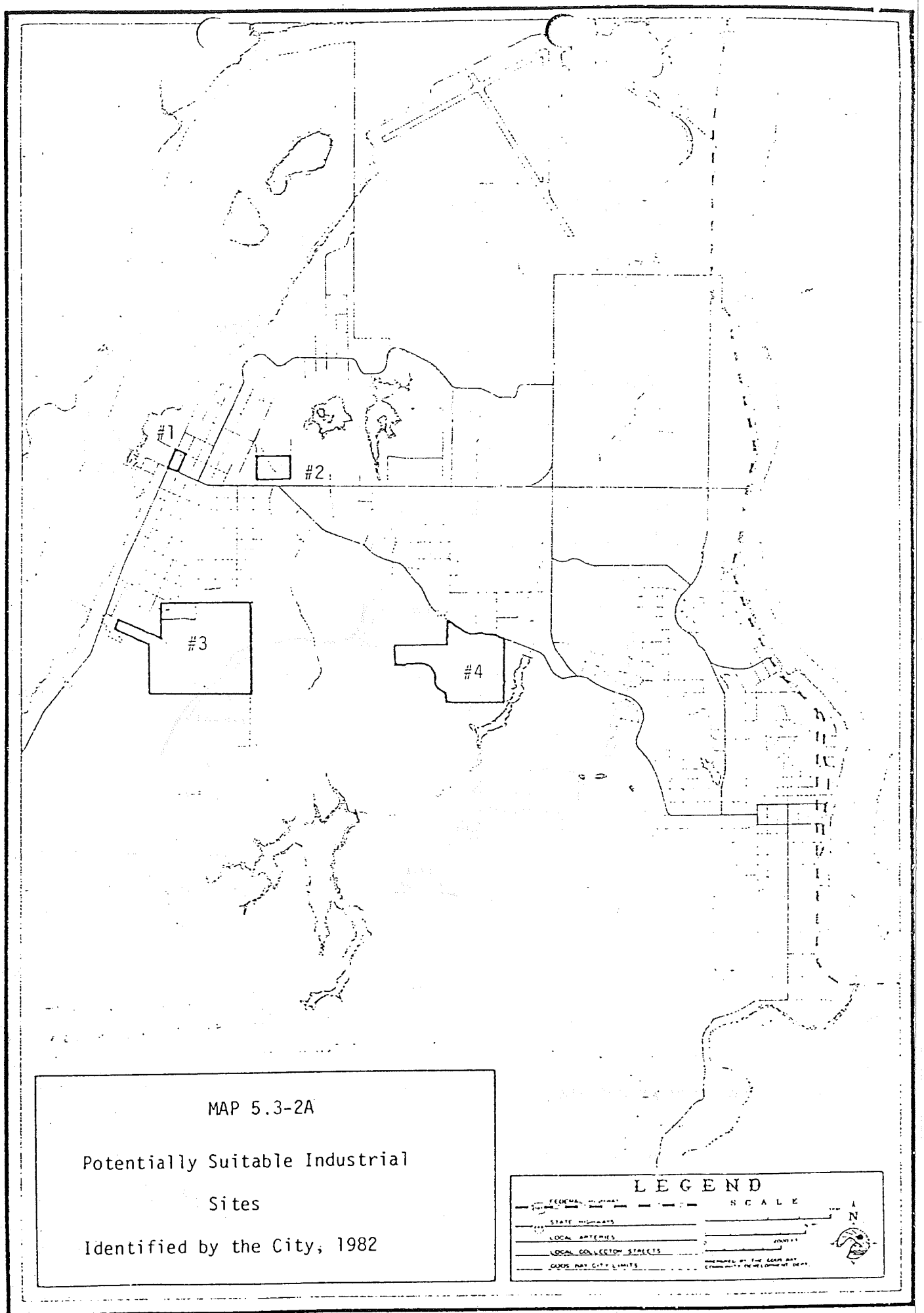
   a. size
   b. utility access
   c. transportation access
   d. surrounding land uses
   e. present use and zoning

Amended per Resolution 83-11

f. topography
g. flooding potential
h. drainage
i. fill requirements
j. soil load bearing capacity
k. ownership and owner interest

Four sites were identified as shown on Map 5.3-2A. Coordinating this site analysis with the County assessment resulted in setting aside one large site in the city for exclusive industrial uses (Area #3, Map 5.3-2A). The remaining sites were to be added to the commercial/industrial mixed use category due to the size, location, or surrounding land uses. Further analysis of these properties is made in Chapter 5.8, Urban Growth Management.

Amended per Resolution 83-11

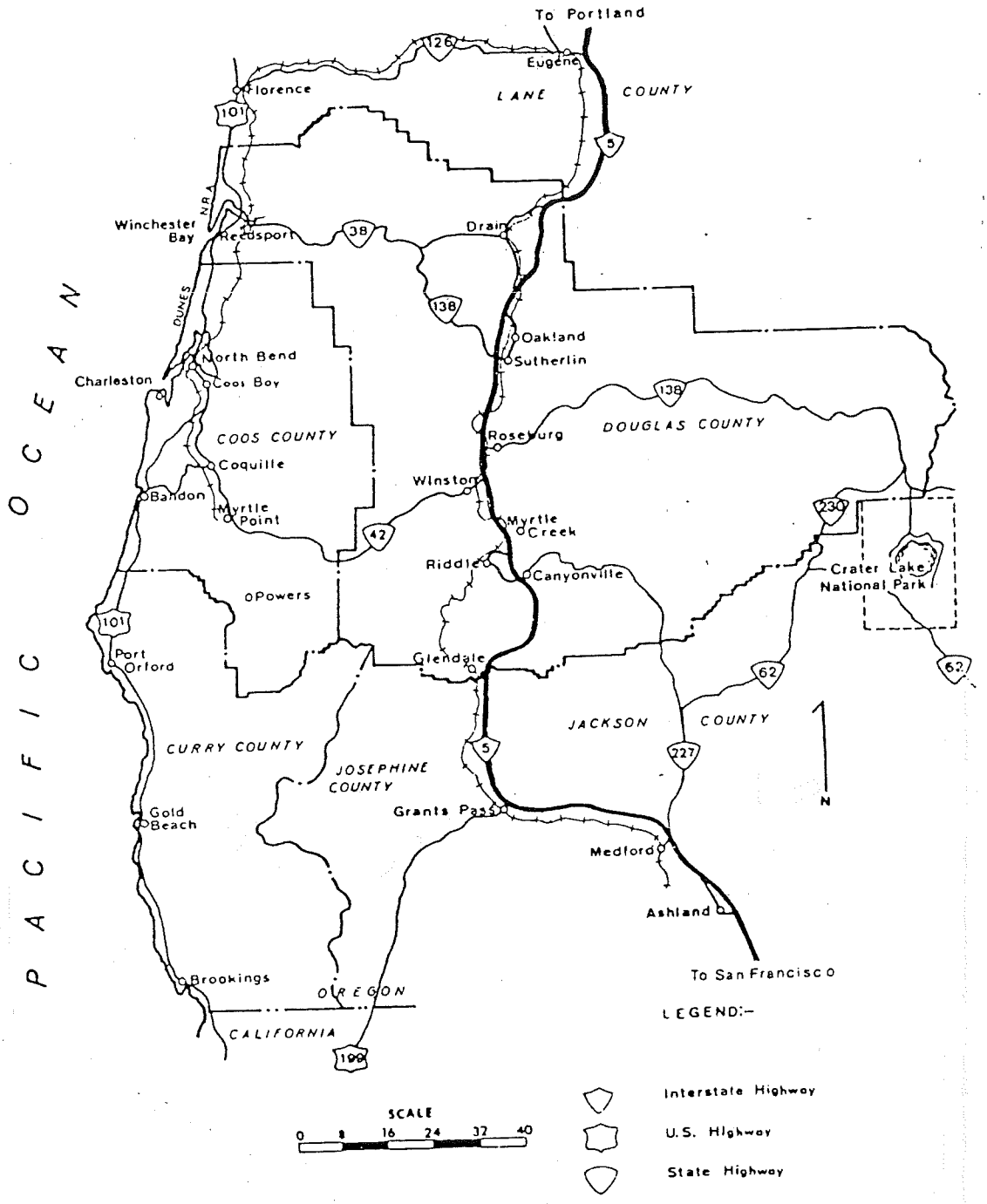


MAP 5.3-2A

Potentially Suitable Industrial Sites

Identified by the City, 1982

Amended per Resolution 83-11



Map 5.3-3

MAJOR HIGHWAY COORIDORS IN SOUTHWESTERN OREGON

SOURCE: CCD-BDC, 1982: p.IV-9

ECONOMIC SUPPORT SYSTEMS

"Economic support systems" consist of the facilities and community services that are necessary in order for the commercial/industrial activities of the area to thrive. Economic support systems include, but are not limited to, the adequacy and suitability of (1) the local and regional transportation system, (2) public and private utilities, such as sewer and water systems and power companies, (3) financial institutions, and (4) community services. While certain aspects of these economic support systems may have been addressed in other sections of the report, the systems are summarized in the following inventory for convenience.

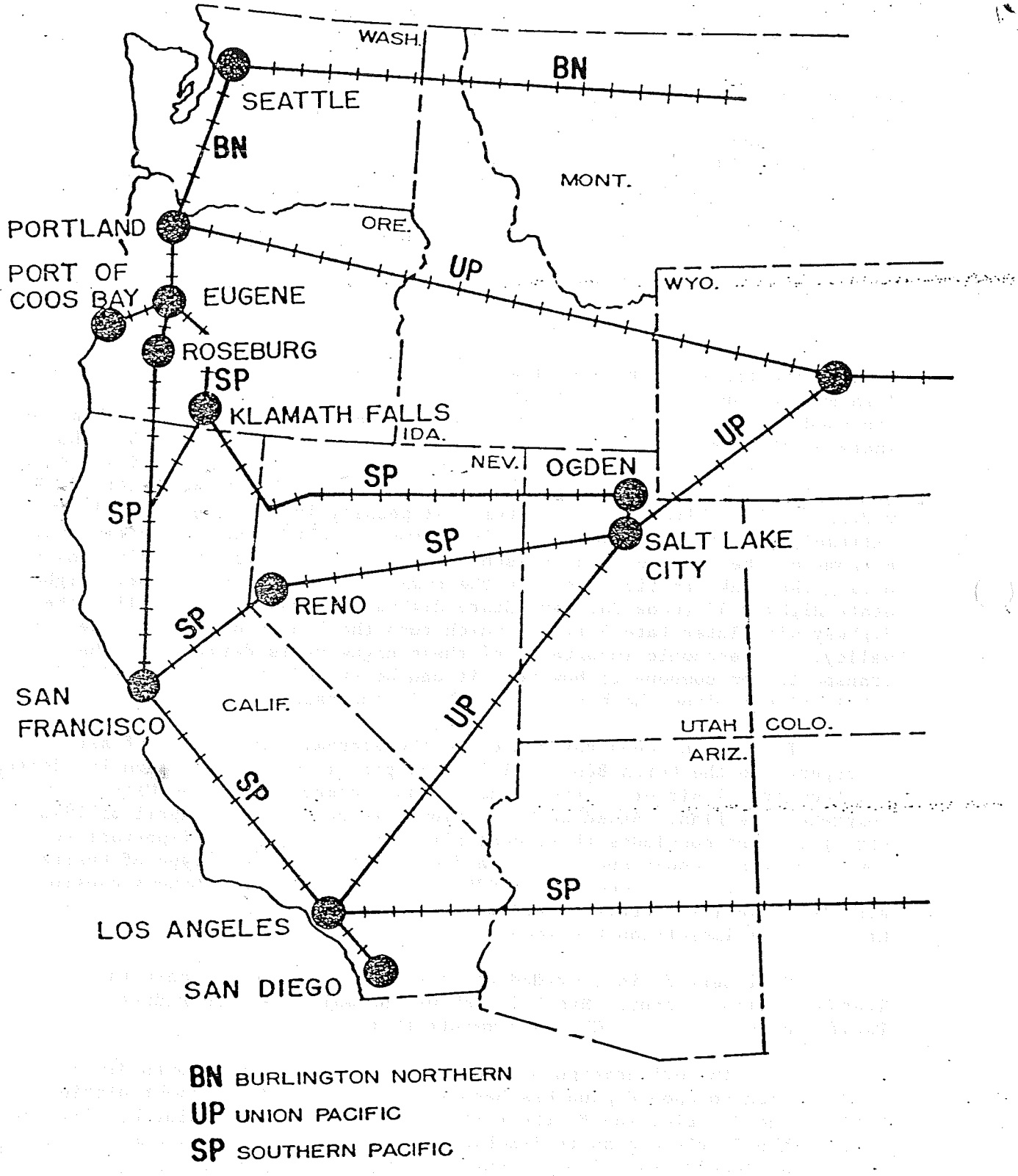
Transportation

The transportation system is extremely important to the local economy. "Transportation makes possible the movement of raw materials, the marketing of finished goods, and the mobility of the populace. It also creates a major share of the costs of production." (CCD-EIA 1978a:V-1) Map 5.3-3 shows the major highway corridors in the southwest Oregon region. The Pacific Coast Highway (U.S. 101) is the highest order highway in Coos County. It is a modern two-lane highway with incremental passing lanes. The route is extremely popular with summer tourists, and is particularly important to the economy of the area for that reason. Accordingly, it is extremely conjested during the peak traffic season in the summer. Two primary "feeder" highways, State Highway 42 (Coos Co.) and State Highway 38 (Douglas Co.), link the Coast Highway with Interstate 5 (I-5), which runs the length of Oregon's central valley. The economic importance of these highways is detailed in the transportation component; however, it can be stated that Highway 42 is the umbilical cord from the bay area to the inland valley.

The City of Coos Bay addressed the economic importance of air transport and the North Bend Municipal Airport in March 1978 when it adopted the "Commercial Airport siting Element" as a component of the City's Comprehensive Plan. Based on a questionnaire conducted in April of 1976, the siting element concludes that local air service is vitally important to the south coast's economy and that it affects virtually every type of business in the region. (City of Coos Bay 1978). The recent circumstances causing the area to loose its "certificated" air service are unfortunate, and will likely have adverse impacts on the local economy.

Rail service is provided to Coos County by the Southern Pacific Transportation Company. Map 5.3-4 shows the major rail corridors in the Pacific coast region. CCD-EIA comments that:

> The orientation of the rail lines in a north-south direction focused upon Eugene has been a hindrance to development within the District and to the Port of Coos Bay in particular by limiting the Port's access to its hinterland. Since Coos Bay and Portland are equidistant from Eugene, the Port of Coos Bay is placed in direct competition with the Port of Portland for goods shipped from the interior hinterland. In addition, the rail tariff rate



MAP 5.3-4

MAJOR RAIL CORRIDORS IN THE PACIFIC COAST REGION

structure discriminates against the Port of Coos Bay for products shipped from within the District, specifically Douglas County. A typical carload rate from Roseburg to Portland is $.57 per 100 pounds with a minimum weight of 100,000 pounds required. The same commodity shipped to the Port of Coos Bay costs $.77 per 100 pounds with a minimum weight of 90,000 pounds. (1978a)

CCD-EIA further notes that:

> There are two major problems confronting the District's rail commerce. First, the District's competitive situation in relation to other lumber producing areas, primarily the south-eastern United States, may deteriorate as the southeast expands its lumber and wood products industry. This could adversely affect rail shipments. Second, there is a serious and chronic seasonal shortage of rail cars to ship the lumber production of the area to consuming markets. (1978a:V-4)

Waterborne transportation is obviously important to the bay area economy. The economic stability of the region has its historical roots in waterborne commerce. Details of the economic benefits of port transportation activities are addressed in the transportation component of this report and will not be repeated here. It should be stated, however, that Port planners should be encouraged to continue past efforts to assure that adequate water-related facilities exist to keep the Port of Coos Bay as economically competitive as possible.

Utilities

The provision of adequate facilities are essential to economic development. The cost of supplying sewer, water, and power lines to a commercial/industrial site can be either a catalyst or hindrance to the feasibility of the site. Local utilities are addressed in detail in the Public Facilities and Energy components of this study.

Financial Institutions

An adequate supply of money is essential to commercial and industrial development. The money must be available through a partnership of local government and private enterprise. Local government has traditionally assumed the responsibility for providing necessary infrastructure -- storm and sanitary sewers, streets, and water lines -- required to support various economic activity. Private enterprise has traditionally assumed the responsibility of financing necessary capital investment for the activity's physical plant; however, government -- particularly the federal government -- also participates in this role to a lesser extent through grant-in-aid and development loans. It is extremely difficult to assess the financial capabilities of an area because of the complexities of the matter. However, a very brief summary follows. Persons wishing a more detailed analysis should consult the "Coos County Area Development Fact-book" prepared by the Coos, Curry, Douglas Business Development Corporation in 1982.

Table 5.3-42 summarizes the growth in the assessed valuation of Coos County and the City of Coos Bay since 1980. The statistics reveal that Coos Bay's valuation grew almost 12% faster than Coos County's during the period. Coos Bay's valuation grew by nearly 24% and Coos County's by 12%. Coos Bay comprises nearly one-fourth of Coos County's current assessed valuation.

TABLE 5.3-42

LOCAL ASSESSED VALUATION CHARACTERISTICS

	1980/81 ($)	1987/88 ($)	0% Change
Coos County	1,265,169,520	1,418,429,419	12.1%
Coos Bay	276,764,260	342,999,776	23.9%
Percent of County Total	21.9%	24.2%	---

Source: City of Coos Bay and Coos County Assessor's Office

The FY 87/88 combined tax rate for the City of Coos Bay and the special taxing districts within its boundaries was $15.86 per $1000 True Cash Value. This may be disaggregated as follows:

City of Coos Bay	$ 7.04
Coos County	2.40
Coos Education Service District	1.51
School District #9	14.56
Southwestern Oregon Community College	1.56
Port of Coos Bay	0.81
	$27.78

Bonded indebtedness (excluding interest) for the City of Coos Bay as of June 30, 1988 was $1,515,757. This constituted less than 1/2% of the City's total assessed valuation at that time. A break-down of Coos Bay's long-range financial obligations are as follows:

Total Bonded Indebtedness (Principal & Interest Payable)	$18,629,200
Bonded Indebtedness (Principal only)	$10,615,222
Water Bonds	$ 2,745,000
Sewer Bonds	$ 7,046,000
Bancroft Improvement Bonds	$ 600,000
General City Bonds	$ 80,000
Unbonded Contracts Payable	$ 16,919

Five commercial banks and four savings and loan associations form the backbone of the local private financial system. Total Coos Bay bank deposits in 1977 equaled $77.9 million; savings and loan deposits equaled another 40.5 million (Oregon Department of Economic Development, 1978).

Community Services

In addition to adequate police and fire protection services, and medical facilities (addressed in Public Facilities and Services component), commercial/industrial activity often chooses to locate in areas possessing adequate social and cultural amenities. In this regard, Coos County has more than 70 churches and a seemingly endless list of clubs and fraternal organizations. Historical attractions, two museums and local libraries provide basic cultural necessities. CCD-BDC's "Coos County Area Development Factbook" contains a thorough inventory of the community's cultural resources.

Potentials and Impediments to Economic Development

Economic Development Potentials

The foregoing analysis is indicated several opportunities and potentials for expansion of the area's economy. However, the Coos, Curry, Douglas-Business Development Corporation (formerly the Coos, Curry, Douglas-Economic Improvement Association), the area's foremost economic development authority, also provides an indepth statement of Coos County's economic development potentials. The CCD-EIA report, 1978-79 Comprehensive Economic Development Strategy, identifies numerous potentials in Appendix E. This CCD-EIA report recognizes that necessary steps should be encouraged to "diversity" Coos County's fragile resource dependent economy which still holds true today. Diversification would result in broadening the economic "base" beyond lumber and wood product activities and fishing.

It is appropriate to note within the context of discussing local development potentials that the Coos Bay-North Bend urban area has been designated as a "Growth Center" by the CCD-EIA Board of Directors. Such designation is helpful in attracting and justifying state and federal capital investment (grants and loans) into the area. The Growth Center concept is valid because:

> The entire Coos Bay estuary area functions as one urban area, and one economic and ecological unit. In addition, the total area has considerable employment, residential and business mix with very frequent movement of people throughout. The extending of the Growth Center boundary to include the areas adjacent to the estuary would provide a considerable amount of tourism, fisheries, and food processing activity within the Growth Center that would not be completely included in the two cities alone. (CCD-EIA 1978a)

CCD-EIA notes several advantages to development of the Growth Center. (1978:VI-I)

1. "Growth Center activity stimulates the economic well-being of the entire district by providing a market and distribution point for many of the district's products,"

2. A healthy Growth Center permits "the establishment of certain types of activities that require a large population base (e.g., medical facilities and cultural amenities),"

3. The Growth Center provides "basic employment opportunities for a development districts surplus population," and

4. The Growth Center "function(s) as (the) governmental trade center for the district."

Economic Development Impediments

While the local economy is blessed with potentials for economic development, several factors frustrate such achievements. Appendix E summarizes the impediments to economic diversification and expansion that were adopted by the Coos County O.E.D.P. Committee on April 12, 1978. The City of Coos Bay can help to remedy some of the impediments, although most are beyond the municipality's control and influence. They are, however, vitaly important to the regional economy that focuses on the bay area.

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[1]Overall Economic Development Program Committee. An advisory committee to the CCD-EIA Board of Directors.

ECONOMIC DEVELOPMENT EFFORTS

Public and semi-public economic development activities promoting Coos County and the bay area are chiefly the efforts of (1) the Coos, Curry, Douglas-Business Development Corporation, (2) the Port of Coos Bay, (3) the Coos Bay area Chamber of Commerce, (4) the Oregon Department of Economic Development, and (5) the City of Coos Bay Community Development Department. The work of each is examined below.

Coos, Curry, Douglas-Business Development Corporation (BDC)

CCD-BDC was formerly known as the Coos, Curry, Douglas-Economic Improvement Association (CCD-EIA) which was designated by the Federal Economic Development Administration (EDA) in 1971 to help remedy severe and chronic unemployment in the three counties in its district. CCD-BDC efforts constitute the main public economic development thrust in Coos County. The District is directly responsible for attracting $4,641,000 of EDA-funded projects and technical assistance aid to Coos County since 1971. In addition, CCD-BDC is involved in an outstanding economic development planning program and industrial recruitment drive. The District also provides technical assistance to its member governments, and has a low-interest revolving loan program that it uses to help stimulate the local economy.

Port of Coos Bay

The Port of Coos Bay is organized by authority of Chapter 777 of the Oregon Revised Statues. Generally, the Port's jurisdiction extends to those areas that drain into the Coos Bay estuary. Central concerns of the Port include maintaining the status of the estuary as a deep-draft development port and promoting the benefits of water-borne commerce. The Port of Coos Bay is the foremost public spokesman for economic development activities in the bay area. One of the Port's chief concerns relates to the development of economic support facilities. The Port is a special-purpose district that finances its projects through bonds and general operating funds derived from tax revenues.

Coos Bay Area Chamber of Commerce

The Coos Bay Area Chamber of Commerce is a voluntary organization of about 400 businesses and organizations whose collective purpose is to promote the commercial trade and service advantages of the local area. The Chamber is beneficial in acting as an information clearinghouse to prospective businesses and industries, and also as a public relations mechanism to promote various business interests and activities.

Oregon Department of Economic Development (DED)

The Oregon Department of Economic Development serves the Economic Development Commission which was created by the Legislature to foster balanced economic and community development and to preserve and enhance all facets of Oregon's environment. It is extremely important to note the Legislature's position regarding economic development in rural areas like Coos County:

> A great imbalance presently exists in the degree of economic health between the State's metropolitan areas and the State's rural communities and that balanced development opportunities must be made available to rural areas to bring about the geographical distribution of business and industry necessary to a healthy economy and environment for all Oregonians; Oregon cannot offer an attractive future to its youth, particularly those in rural areas, unless additional jobs are made available, and without new payrolls and expansion and relocation of existing payrolls the State will suffer a loss of its young people, a decline of its rural communities and damage to our quality of life. (ORS 184.003 (c), (d), 1977)

DED provides technical and monetary assistance for activities which implement the above-stated policies as well as other economic development policies of the State of Oregon. One of the Economic Development Commission's most important functions is to offset the environmental influence of the Land Conservation and Development Commission, which traditionally has been more oriented towards conservation than development. DED argues that there must be a balance between economic development and environmental preservation.

In addition to grants-in-aid and technical assistance to economic development proponents, DED operates a "lagging areas tax credit program" for areas deemed economically disadvantaged, like Coos County. Since Coos County has been certified as "lagging," a 10% investment tax credit is available as an inducement to industrial expansion and development in the area. To be eligible for the credit, a minimum investment of $25,000 is required, and the project must demonstrate that new jobs will result from the activity. The program does not cause a reduction in local tax revenues.

The "target industries program" is another activity of DED. Its Industrial Development Division has established a list of target industries which are, in turn, recruited to locate in Oregon. The industries are labor intensive, have growth potential, are clean (non-polluting), and are characterized by desirable wage levels. It is believed that all of DED's target industries are well-suited for locating in the area. Their addition to the local economic base would be a tremendous boost for the area. The industries are:

1. Electronics Manufacturing
2. Sports and Recreation Equipment Manufacturing
3. Medical and Dental Equipment Manufacturing
4. Printing and Publishing
5. Secondary Wood Manufacturing
6. Warehouse and Distribution Activities
7. Terminal/Destination Resort Facilities

(Porne, interview, May 24, 1978)

It is felt that the area is particularly well-suited for expanded tourism attraction facilities and secondary wood manufacturing.

In addition to the DED "Target Industries" Program, CCD-BDC attempts to create development of long-term private sector employment. CCD-BDC encourages both start-up and expansion of existing business and industries that are environmentally compatible and will help to diversify and stabilize the local economy (CCD-BDC, September 1988:II-1).

City of Coos Bay Community Development Department

The Coos Bay Community Development Department is not actively involved in economic development/industrial recruitment activities. However, the Department does provide information about the area to prospective businesses and has an extensive data base. The Department's central purpose is to perform the comprehensive planning, zoning, and building code responsibilities of the City.

PUBLIC ATTITUDES REGARDING LOCAL ECONOMIC DEVELOPMENT

Public attitudes about local commercial/economic activities can either stimulate or impede an area's economic growth potential. There are only two ways to determine how the public fees about economic development: (1) a public election can be held to resolve a question about some economic development activity, or (2) an attitude poll can be conducted to sample public opinion about various growth issues. While the latter approach provides a democratic resolution to specific issues, conclusions drawn from public sentiment if voter turnout is low. Many believe for this reason that public opinion surveys provide the most accurate measure of overall public sentiment, as long as the surveys are random, unbiased, and scientifically applied.

Analysis of the public opinion survey conducted in August 1978 by Coos Bay's Committee for Citizen Involvement resulted in several general conclusions: (Appendix)

1. Coos Bay voters definitely support the concept of additional commercial/industrial development in the area, provided it does not contaminate the area's environment. Only 7% responded differently, while 76% agreed.

2. Although 58% of the survey's respondents recognize the need for regulations and controls to guide growth, a substantial 30% believe that growth should not be hampered by regulations and controls.

3. About 62% of the respondents feel that growth should be limited by the City's ability to provide facilities, although 20% feel that growth should occur despite the strain it could place on local government's service and facility capacities. The unmistakable conclusion here is that (1) growth controls and regulations should be applied rationally and sparingly to achieve stated goals, and (2) local governments should strive to economically provide necessary services and facilities so as not to restrain economic growth.

4. Public funds should probably not be used to attract new industries to the area, although 57% favor this approach. About 39% of the respondents disapprove of this tactic, while 20% are undecided. It may be that those disagreeing with the approach are primarily opposed to the use of local dollars for the effort, but would not be against using state of federal grant dollars for the activity.

5. The majority of Coos Bay voters support the concept of industrial development on the North Spit, which is believed to be one of the better industrial development areas on the Bay. Less than one-quarter of the respondents disagrees with this philosophy, although 15% are undecided. A mere 22% favor leaving the North Spit in its present status.

6. Nearly half of the respondents favor more boat moorage facilities in the upper bay (Marshfield side), although 20% do not favor this idea and 30% are undecided about the matter.

7. Local voters support expanded tourism activity in Coos Bay, especially if the economic growth can occur without public investment. About 58% want private enterprise to provide more tourist attracting accommodations to the area. Twenty percent oppose this, however, and other 18% are neutral. Although divided on the question of whether or not a convention center would be desirable here, about 37% support the idea.

A bond election sponsored by the Port of Coos Bay in August of 1978 provides another measure of public sentiment regarding local economic development activities. The election requested authority to issue $10 million in revenue bonds to develop an industrial site on the North Spit. The bonds were to be retired over a 20-25 year period at a local burden of about $1.5 per $1000 True Cash Value of property in the Port District.

The election results were clear; the people's message was perhaps not so clear. Over 7000 voters acted by a three to one majority to deny authority to issue bonds. Some members of the community argue that the election constitutes a clear mandate from local voters that North Spit development, and industrial expansion in general, is not favored. However, this conclusion is not supported by fact. To the contrary, the C.C.I. attitude survey showed that 75% of Coos Bay's voters support local development efforts. The main question resolved by the Port's election seems to focus on the extent of local public investment that area residents are willing to make subsidize industrial expansion.

5.4

HOUSING

INTRODUCTION

The adequate quantity and quality of affordable housing is probably the foremost aspect of this comprehensive plan. Presently, the City of Coos Bay accommodates the living quarters of an ample portion of Bay area residents. Moreover, because of its location and large land reserve, Coos Bay will most likely inherit the housing needs of the majority of prospective inhabitants. Planning for these future needs necessitates a wide range analysis of housing characteristics and support services. The initial step to this process is the detailed identification and analysis of the following existing factors which are contained in this housing inventory:

1. Current housing supply describes the total number of dwelling units, and these units in terms of tenure, type, age and condition.

2. Current housing demand relates the housing situation in Coos Bay to population trends and the cost of marketed housing to family income. The needs of low and moderate income families are also assessed.

3. Current residential land uses relates the numerical distribution of occupied land by the type of residential use.

These assessments will present a total picture of housing in Coos Bay, and will automatically highlight specific housing problems faced by City residents now. Remedies of these critical issues, coupled with recognized future needs, will evolve into the comprehensive plan housing policies.

Housing Supply

Housing Stock

1980 Date

The 1980 U.S. Census disclosed that the City of Coos Bay and former City of Eastside contained a combined total of 6,561 year-round housing units, which by Census definition is "a home, an apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters." (U.S. Department of Commerce, Bureau of the Census 1980) These units, either occupied or vacant, were intended for year-round uses; there was no noteworthy seasonal housing in Coos Bay. The Census date also revealed that only 6,169 of these units were occupied, 3,852 of them by homeowners, 2,317 by renters. The remaining 392 vacant units were distributed with 225 in the owner-occupied category and 167 in the renter-occupied group. These 1980 statistics are assembled in Table 5.4-1.

category and 167 in the renter-occupied group. These 1980 statistics are assembled in Table 5.4-1.

TABLE 5.4-1

HOUSING STOCK, COOS BAY, OREGON 1980

	Occupied Units		Vacant Units		
	Number	% of Total by Tenure	Number	% of Total by Tenure	Total Housing Stock
Total Units	6,169	100.0%	392	--	6,561
Owned Units	3,852	62.4%	225	5.5%	4,077
Rented Units	2,317	37.6%	167	6.7%	2,484

Source: U.S. Department of Commerce, Bureau of the Census 1980.

Vacancy rates are generally accepted indicators of the health of a housing consumer market. To determine these rates, the number of vacant units for each type of occupancy is expressed as a percentage of the total number of units available by each type of occupancy. For instance, the 225 vacant, owner-occupied units were 5.5% of the total available, owner-occupied units of 4,077. Therefore, the vacancy rates of owner and renter-occupied housing in 1980 were 5.5% and 6.7%, respectively. Healthy consumer markets are considered to exhibit vacancy rates of 5.0% or greater. Such overall rates indicate that there is a sufficient quantity of housing to permit families an adequate choice in terms of style, size, and affordability. The vacancy rates extant in 1980 demonstrate that the owner-occupied and rental-occupied domains were generally adequate.

1987 Estimates

There are several methods to compute the current housing stock in Coos Bay. Two are considered herein to estimate the existing housing count: (1) City building permit data complied since 1980 and added to the U.S. Census figures; and (2) Pacific Power and Light Company (PPL) statistics of residential customers. It has been determined, for reasons enumerated below, that the figures derived from building permit data most closely reflects the current housing situation, corroborated by PPL statistics.

Table 5.4-2

NEW RESIDENTIAL HOUSING UNITS, COOS BAY, OREGON, 1980-1987

	1979	1980*	1981*	1982*	1983*	1984	1985	1986	1987
Total Conventional Units	5,895	5,990	5,996	5,986	5,983	5,976	5,957	5,961	5,969
New Housing Starts	--	101	17	1	4	12	3	4	10
Demolitions	--	6	11	11	7	19	22	0	2
Net Change	--	+95	+6	-10	-3	-7	-19	+4	+8
Total Mobile Homes	671			(+20)					691[b]
Total Housing Stock	6,566	--	--	--	--	--	--	--	6,660

Source: City of Coos Bay, Building Permit Data and Oregon Department of Commerce

[a]1980 U.S. Census datum.

[b]Count of mobile homes based on total number of unit spaces in the City of Coos Bay; 20 is the difference between 1980 mobile homes and 1987 information (Pacific Trailer Court added 20 additional spaces in 1982).

*Includes permits issued for the former City of Eastside.

City of Coos Bay, Building Permit Data.--Using the 1980 U.S. Census figure for total housing units (6,566) as a base, housing counts are made for each following year by adding on the net housing change (number of new housing starts minus demolished units). These sums are shown in Table 5.4-2. Mobile homes are listed as a separate item. These data are derived from the number of mobile home placement permits required by the Oregon Department of Commerce; the City currently does not record similar data. The total number of housing units in 1987 determined by this method is 6,660.

Pacific Power and Light Company (PPL) Data.--The total number of residential customers and the number of "idle meters" or vacant housing is forwarded periodically by PPL to the State Housing Division. In December 1987, the PPL figures revealed a total residential customer count of 6,492 which closely validates building permit computations (168 units difference).

Table 5.4-3 summarizes and compares the results of these two sources of data. The figures derived from building permit data and the Pacific Power and Light Company are consistantly close with a discrepancy of 168 units in 1987 and 164 units in March, 1988. These differences are considered statistically insignificant and support the assumption adopted in this inventory that the current total number of 1987 housing units in Coos Bay is approximately 6,660.

Table 5.4-3

TOTAL NUMBER OF DWELLING UNITS:
COMPARISON OF SOURCE DATA

Source	1987	March, 1988
City Building Permits	6,660	6,665
Pacific Power and Light	6,492	6,501

Housing Characteristics by Tenure

1987 Estimates

There are two possible methods to compute the current number of housing units occupied by owners and by renters. First, one can assume that the percentages of occupied and vacant housing prevailing in 1980 remain the same today, and can be applied to 1987 data. In 1980, 94% of all housing was occupied (6,169 units); 62.4% of the occupied housing was owned and 37.6% of the occupied housing was rented.

The second method is to use current Pacific Power and Light (PPL) data. The information gathered by PPL accounts for both the number of residential customers and "idle meters" (vacant units) for single-family dwellings, apartments, and mobile homes, respectively. Percentages derived from these data for vacant and occupied units can then be applied to the building permit data to arrive at current figures.

The latter alternative will portray a more accurate image of current conditions and, therefore, will be more reliable than 1980 percentages. Also, the PPL statistics are comparable to building permit totals. Comparison of PPL percentage statistics as applied to City building permit data appears in Table 5.4-5. (Discussion of PPL statistics and staff computations appears in Appendix F, Table 5.4-4.)

Table 5.4-5

OCCUPANCY CHARACTERISTICS BY TENURE, 1987:
COMPARISON OF PPL AND BUILDING PERMIT DATA

		DATA SOURCE	
		CITY BUILDING PERMITS[1]	PPL
TOTAL HOUSING STOCK	All Units, Owned and Rented	6,660	6,492
	Total Occupied Units	6,447	6,284
	Total Vacant Units	213	208
	Overall Vacancy Rate	3.2%	3.2%
OWNED UNITS	All Units, Owned	4,546	4,431
	Total Occupied Units	4,432	4,320
	Total Vacant Units	114	111
	Owner Vacancy Rate	2.5%	2.5%
RENTAL UNITS	All Units, Rented	2,114	2,061
	Total Occupied Units	2,015	1,964
	Total Vacant Units	99	97
	Total Vacancy Rate	4.7%	4.7%

[1]Coos Bay tenure data based upon Pacific Power and Light (PPL) owner/renter ratios.

Changes between 1980 and 1987

Based upon the preceding conclusions, it is possible to produce rational conclusions about the current housing situation in Coos Bay, particularly in comparison to that situation in 1980. (Table 5.4-6 and Fig. 5.4-1)

1. The seven-year period registered a shift in tenure between owned and rented housing units. Owned units increased from 62.1% of all units in 1980 to 68.3% in 1987. There were 469 owned units added to the City's housing stock from 1980 to 1987, which represents an 11.7% gain. The City's housing stock for rental units declined by 370 during the same period, which represents a -14.9% loss. These characteristics become important later in this inventory when family income is compared to housing rental and purchasing costs.

2. Vacancy rates are computed to show the "elasticity" of the housing market. When vacancy rates are high (i.e., 6%), a healthy, consumer market exists by providing a greater variety of viable housing choices than when rates are low (i.e., 3%). Vacancy rates above 5% are good indicators of a sound housing market. Coos Bay's vacancy rates for owned units has declined from 5.5% in 1980 to 2.5% in 1987, despite gains in the number of new owned units. Rental vacancy rates have also declined from 6.7% in 1980 to 4.7% in 1987 which may be explained, in part, by the decline in the number of rental units available. This situation is substantiated by the negative change in estimated vacant units; that is, there were 392 vacant units in 1980, and only 213 total vacant units in 1987.

3. Coos Bay experienced a slight population decline from 1980 to 1987 despite the incorporation of the former City of Eastside. There was a 10.2% decline in household population during this period. This may explain the decrease in renter occupied units (-13.0%). However, there was a slight overall gain of 4.5% which is the result of owner occupied units increasing by 15.1% The ratio between new housing change and population change (4.5% to -10.2%) suggests there has been a slight improvement in the housing situation. Yet, the vacancy issue does not bear out this assumption. Nor is the assumption substantial when persons per household are considered.

4. In 1980, there was 2.44 persons per household. In 1987, this figure decreased to 2.15. In other words, the general household size is smaller, suggesting a change in the composition of the family unit. It can be inferred that single and two-member families are increasing (perhaps growth in elderly, single, and newly married population). As expected, these smaller family units would use more distinct housing units than larger families. Perhaps this explains in part, the suspected, unimproved housing status.

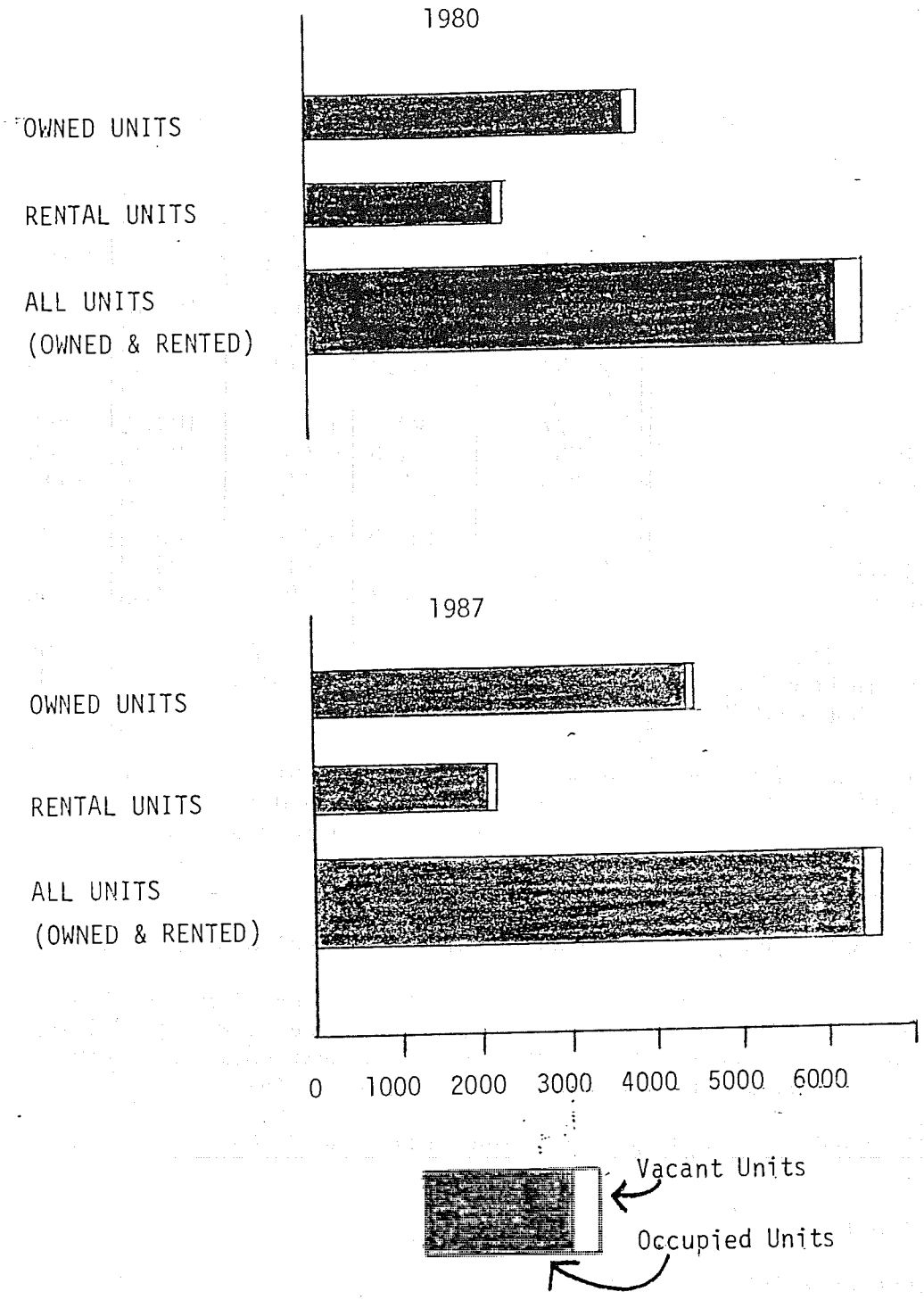


FIG. 5.4-1
COMPARISON OF OCCUPANCY CHARACTERISTICS OF COOS BAY HOUSING STOCK, 1980 AND 1987

SOURCE: 1980 U.S. CENSUS DATA AND CITY OF COOS BAY

Table 5.4-6

COMPARISON OF SELECT HOUSING CHARACTERISTICS FOR THE CITY OF COOS BAY, 1980 and 1988

	1980*		1987		Change: 1980-87	
	Number	%	Number	%	Number	%
All Units, Owned and Rented	6,561[d]	100.0	6,660	100.0	99	1.5%
Owned Units	4,077	62.1	4,546	68.3	469	11.5%
Rental Units	2,484	37.9	2,114	31.7	-370	-14.9%
Owned Units	4,077	100.0	4,546	100.0	469	11.5%
Occupied Units	3,852	94.5	4,432	97.5	580	15.1%
Vacant Units	225	5.5	114	2.5	-111	-49.3%
Rental Units	2,484	100.0	2,114	100.0	-370	-14.9%
Occupied Units	2,317	93.3	2,015	95.3	-302	-13.0%
Vacant Units	167	6.7	99	4.7	- 68	-40.7%
Total Housing Units	6,566[b]		6,660		94	
Population in Households[c]	16,025		14,290		-1,735	-10.2%
Persons per Household[d]	2.44		2.15		- 0.29	-11.9%

[a] 1980 and 1987 data are not entirely comparable. These 6,561 total units in 1980 are based upon U.S. Census data which deletes units counted in the total housing stock (6,566) but which are considered vacant but "unavailable." It is impossible to determine "vacant but unavailable" for the 1987 for the 1987 data.

[b] Includes "unavailable" vacant units, per 1980 U.S. Census definition.

[c] Population in Households based on 1980 Census of Population and 1987 population estimates. Persons in group quarters excluded; 1987 estimate of persons in group quarters is 252 (Coos-Curry Transitional House (10), Life Care Center (100), T.H.E. House (50) and Hearthside (92).

[d] Computed by dividing population in households by total occupied units, e.g., 16,025 ÷ 6,566 = 2.44.

*Includes the former City of Eastside.

Housing Characteristics by Type

Single-family Dwellings

Single-family dwellings are permitted outright in the R-1 (single-family residential), and R-2 (single-family/duplex), and R-W (residential-waterfront) zones. They are permitted as a conditional use in the R-3 (multiple family) and R-4P (residential-professional) zones. Currently, there are approximately 4,456 single-family dwellings in Coos Bay which registers less than a 1% increase over 1980 figures of 4,448 such units. (All data of this section is tabulated in Table 5.4-7 and Figure 5.4-2.)

FIGURE 5.4-2

PERCENT CHANGE IN NUMBER OF
HOUSING UNITS BY HOUSING TYPE

1980 - 1987

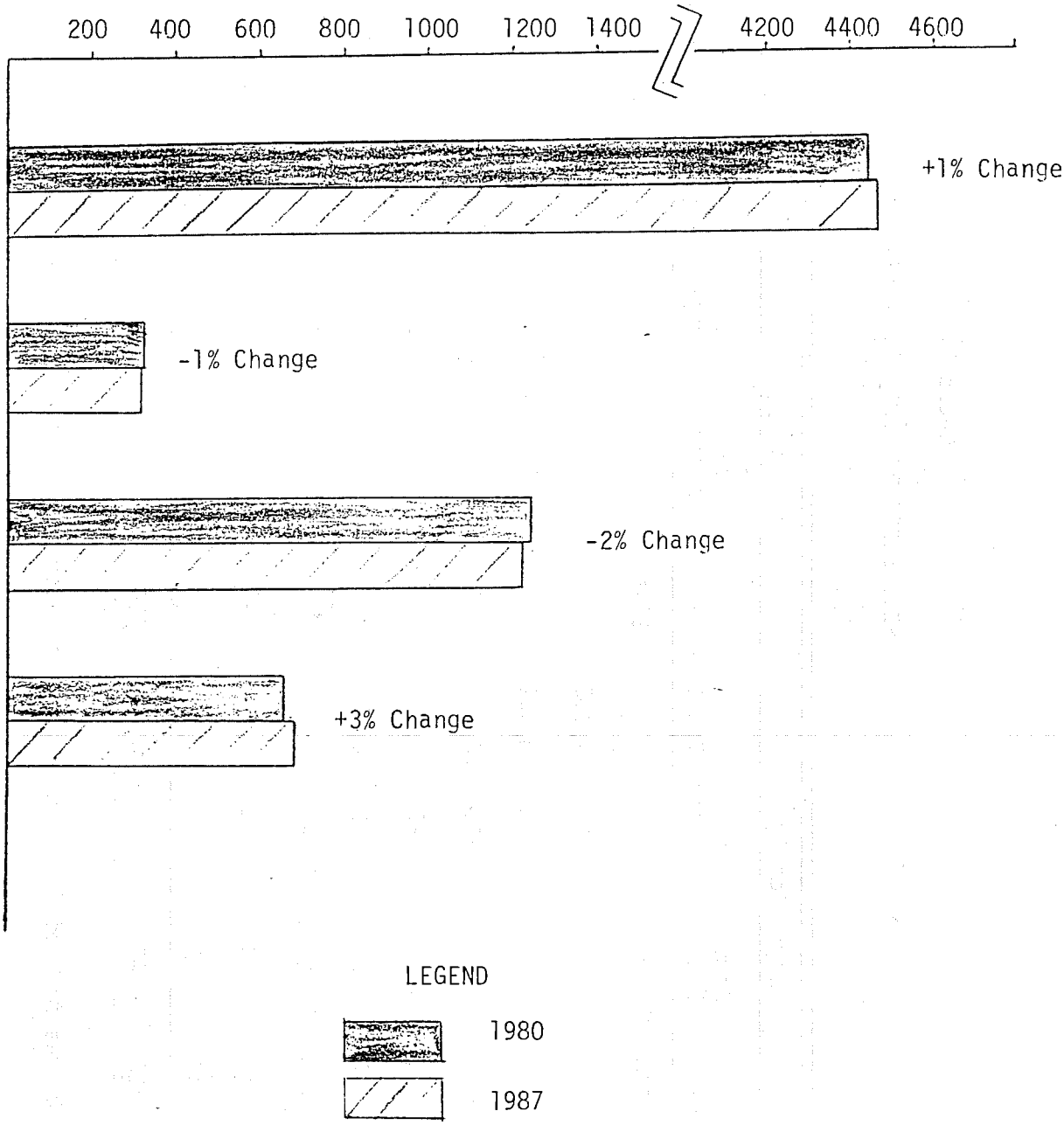


Table 5.4-7

HOUSING STOCK BY TYPE, COOS BAY, OREGON, 1987

Year	Single Family				Duplex				Multi-Family				M/H
	New	Demo-litions	Net Change	Total	New	Demo-litions	Net Change	Total	New	Demo-litions	Net Change	Total	Total
1979**	4,384*				307*				1,246*				671
1980**	70	6	64	4,448	21	0	21	328	10	0	10	1,256	671
1981**	14	0	14	4,462	0	3	-3	325	3	0	3	1,259	671
1982**	1	11	-10	4,452	0	0	0	325	0	0	0	1,259	20
1983**	4	7	-3	4,449	0	0	0	325	0	5	-5	1,254	20
1984	12	11	1	4,450	0	0	0	325	0	8	-8	1,246	20
1985	4	10	-6	4,444	0	0	0	325	0	12	-12	1,234	20
1986	4	0	4	4,448	0	0	0	325	0	0	0	1,234	20
1987	10	2	8	4,456	0	0	0	325	0	0	0	1,234	20
TOTAL	4,503	47		4,456	328	3		325	1,259	25		1,234	691

*1979 Estimates derived from the City of Coos Bay and former City of Eastside Comprehensive Plans as well as 1979 building permits issued for each city.

**Includes permits issued for the former City of Eastside.

Duplexes

Duplexes are permitted outright in R-2, R-3, and R-4P, and R-W zones. Total number of duplexes in 1987 were 325 as opposed to 328 in 1980, indicating a change of -1%.

Multi-Family Dwellings

Multi-family dwellings are only permitted in the R-3, R-4P and R-W zones. Multi-family dwellings decreased slightly by 1% since 1980 when 1.256 such units existed. Currently, there are 1,234 multi-family dwellings in the city.

Mobile Homes

Mobile homes are restricted to mobile home parks and individual lots under the R-5 and R-6 zoning districts. By 1987, there were 691 mobile home spaces distributed among 12 parks and including three mobile homes "grandfathered" on individual lots. The mobile home parks are listed below with the total number of spaces of each.

[Res. 90-32 8/7/90]

Table 5.4-8

Mobile Home Parks, Coos Bay, 1987

Park	Spaces
Alder Acres Mobile Court	48
Bay Way Trailer Park	40
Benshoof's Trailer Park	5
Gateway Trailer Park	18
Lawnridge Mobile Court	39
Pacific Trailer Court	99
Pine Cove Mobile Park	9
Puerta Vista Mobile Home Park	123
Saints Trailer Court	28
Shields Mobile Home Park	5
Shorepines Mobile Lodge	235
Springtide Trailer Park	39
Miscellaneous	3
TOTAL	691

These sites constitute approximately 10% of the housing stock; a figure which is considerably higher than other communities in the bay area. North Bend, for instance, has only five mobile homes (in individual lots). When considering the percentage of housing stock, North Bend's comprise less than a percentage. The North Bend Comprehensive Plan relates this rather disparate situation to the fact that Coos Bay permits such developments outright within certain zones, but North Bend permits mobile homes only conditionally. The Plan concludes that it has been easier for developers to locate parks in Coos Bay.

A 1983 tally of mobile homes in Coos County, reveals that there are 4000 registered with the County tax assessor's office. Approximately 58% of these occur in the unincorporated areas on individual lots as would be expected since the county has not generally restricted the placement of mobile homes. The remaining amounts are in parks, with the slighter percentage occurring in urban areas -- 903 spaces or 54%. (Appendix K)

It is interesting to note that Coos Bay still leads in the development of mobile home parks. If looking at the county as a whole, Coos Bay provides 37% of all the spaces in parks (1668) with Coos County holding 46% and all of the other cities with only 17%.

An analysis of Coos Bay and North Bend makes the distribution look even more apparent. Using the tax assessors' data, Coos Bay and North Bend provide 95% and 0% of the mobile home spaces in parks, respectively. The fact that a handful of mobile homes are scattered throughout each city does not dramatically alter these percentages. Moreover, the land use regulations currently in force in North Bend still permit mobile home parks or subdivisions as conditional uses and in only one residential zone.

It may be concluded that the high percentage of mobile homes is due to the unequal regulation of mobile homes in nearby communities.

* * * * * * *

Table 5.4-9

CHANGE IN HOUSING STOCK BY TYPE, COOS BAY, OREGON

Type	1980		1987		1980-1987	
	# units	% total	# units	% total	# change	% change
Single Family	4,448	66%	4,456	67%	+ 8	+ 0%
Duplex	328	5%	325	5%	- 3	- 1%
Multi-Family	1,256	19%	1,234	18%	-22	- 2%
Mobile Home	671	10%	691	10%	+20	+ 3%
Total	6,703	100%	6,706	100%	+ 3	+ 0%

Other Housing Types

There are four group quarter facilities in the city: (1) Coos-Curry Transitional House -- 10 resident maximum, (2) Life Care Center -- 100 resident maximum, (3) THE House -- 23* resident maximum, (4) Hearthside -- 92 resident maximum.

*Estimated maximum number of residents to be 50 by January, 1988.

Housing Characteristics by Age

Age of the current housing stock can be determined from the 1980 U.S. Census and city building permit data subsequent to that time. A picture of the overall housing age is helpful when ascertaining the condition of the housing for projections of future needs. When a considerable portion of the housing is older than 20-30 years, replacement or revitalization are serious considerations to maintain a viable housing stock. Also, depicting housing by data of constructing easily shows trends in the building industry.

The figures for Coos Bay's age of housing (Table 5.4-10) are computed upon one assumption. Of the current total 6,706 housing stock, 78 new dwellings were added since 1980, and 75 dwellings were demolished since 1980 (derived from building permit data). It is impossible to discover the age of the 75 dwellings destroyed. However, for the purposes of this inventory, it is assumed that the optimal situation occurred; that is, the 75 demolitions were in the oldest housing stock -- 1939 or earlier. Therefore, the total figure in the category -- 1939 or earlier -- reflects this 75 deduction.

Table 5.4-10

ESTIMATED AGE OF COOS BAY HOUSING STOCK, 1987*

Time of Construction	Number Units	% of Total
1939 or earlier	1,361	21%
1940-1969	3,426	52%
1970-3/1980	1,698	26%
4/1980-1987	78	1%
TOTAL	6,563	100.0%

Includes the former City of Eastside

These figures reveal that a total of 52% of all housing units are 18 to 47 years old 26% were built within that last 17 years and 21% are at least 48 years old. Since 1980, only 1% of the housing stock was erected within the last seven years. Again these figures may be even higher since it is assumed that all the houses destroyed since 1980 were of the oldest vintage (Figure 5.4-3).

Housing Characteristics by Condition

Housing conditions are determined by two factors: physical condition of the dwelling and human crowdedness. Each factor can contribute singly to create unsound or substandard housing, or can in some cases occur jointly. This summary of unsou housing is based upon 1980 U.S. Census data.

1980 Data

The figures for the 1980 U.S. Census are determined on the basis of substandard housing conditions. A substandard home due to physical conditions is lacking some or all plumbing facilities; that is; the home is without hot water piped into the structure and lacks toilet or bathing facilities or both. The physical condition figures reflect all existing structures, occupied or not. In 1980, there were 6,561 housing units in Coos Bay including the former City of Eastside. About, 1.8% of these (1/8 units) were substandard due to physical limitations (lacking some or all plumbing facilities).

According to the 1980 U.S. Census data, a substandard home may exist if the physical condition of the dwelling is good. In these cases, if a family has more than an average 1.01 persons per room, the home is considered overcrowded. For example, a family of six living in a 4 room apartment is overcrowded, and subsequently, substandard.

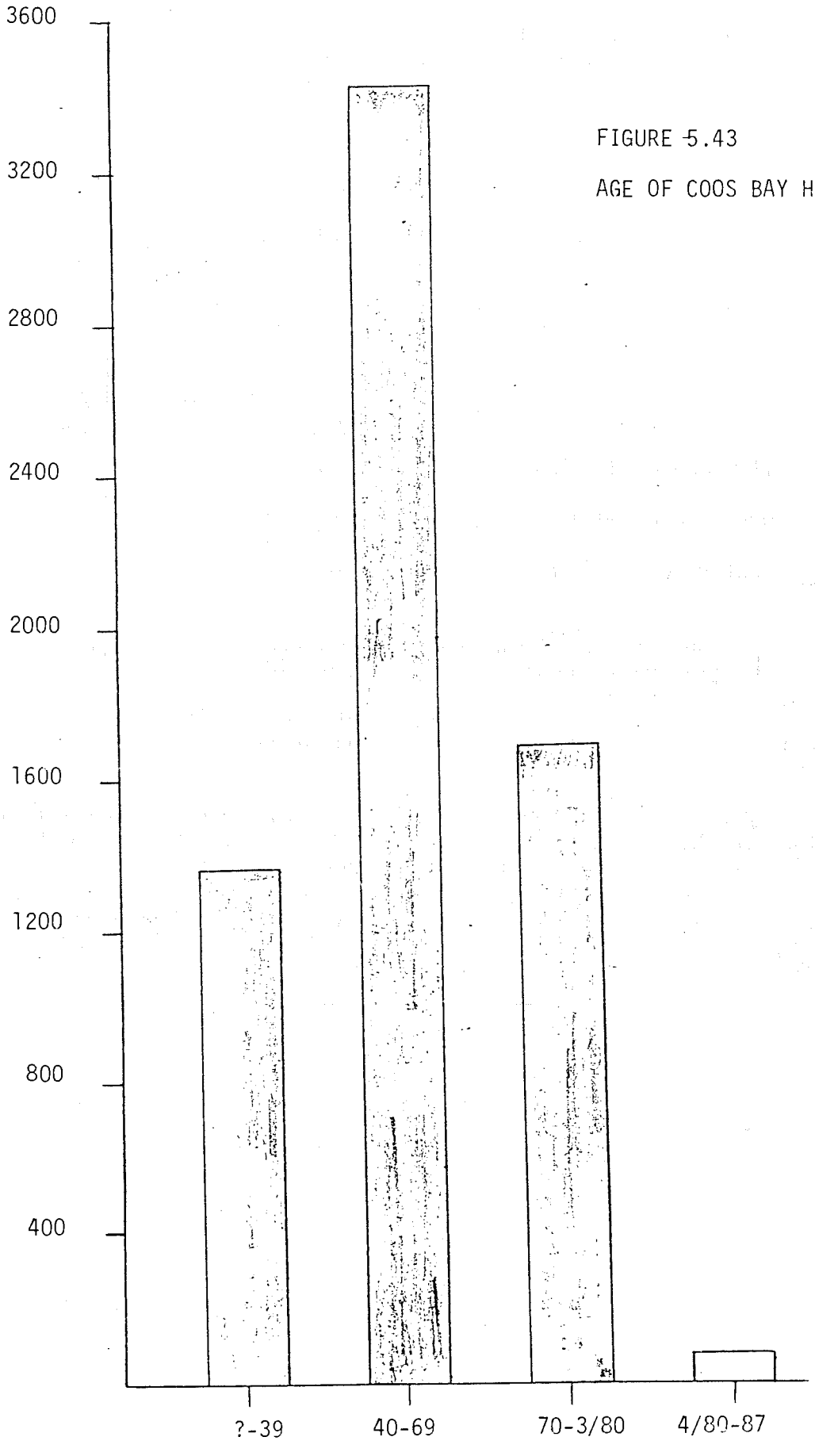


FIGURE 5.43

AGE OF COOS BAY HOUSING

Unlike the physical condition criterion which is combined on total housing stock, the problem of overcrowding is figured on occupied units only. Table 5-4.11, shows overcrowded, substandard housing in Coos Bay. The percentage derived from all occupied housing is applied to owner and renter-occupied units.

Table 5.4-11

OVERCROWDED HOUSING IN COOS BAY, 1980

		Overcrowded Units		
	Total*	Number	% of Total Occupied Housing	% by Tenure
All Occupied Housing	6,169	179	2.9	2.9
Owner-occupied Units	3,852	112	1.8	2.9
Renter-occupied Units	2,317	67	1.1	2.9

Source: U.S. Department of Commerce, Bureau of the Census, 1980.
*Includes the former City of Eastside.

Coos Bay in 1980 had 179 households living in overcrowded conditions, that is, 2.9% of the household population, almost equally distributed between owned units and rented units.

The total number of substandard housing in Coos Bay can be derived by adding non-physically impaired overcrowded units (2.9%) to the physically impaired structures (1.8%) which were provided by the 1980 Census. Thus, substandard housing in Coos Bay in 1980 is comprised of the 2.9% overcrowded, but physically sound dwellings, and the 1.8% physically impaired structures. Hence, there are approximately 297 substandard units or 4.8% of the housing stock.

Housing Rehabilitation

Analysis and evaluation of substandard housing is valuable mainly in assessing usable housing stock. Some of the units labeled as substandard may really be beyond repair and essentially impractical on housing roles. This useless portion must be considered when determining future housing needs.

Another portion of the substandard are those suitable for rehabilitation and, therefore, restorable to qualified housing stock. Housing rehabilitation is a viable tool for enhancing the existing housing stock reserves, especially in areas where large proportions of the dwellings are 25 years or older. In Coos Bay, this is a significant point where 73% of the housing was built before 1969 (refer to Housing Characteristics by Age). In addition, rehabilitation preserves those older housing units that are more economically affordable to lower income families. These dwelling improvements can revitalize blighted areas and efficiently utilize existing municipal facilities and services. Rehabilitation is practical because it makes use of existing development before investing in the expansion of undeveloped lands.

The City of Coos Bay has participated in a Housing Rehabilitation Program since 1975. Supported by Housing and Urban Development, Community Development Block Grant funds, houses owned by low income families are currently eligible for revitalization up to $15,000 of the contracting cost.

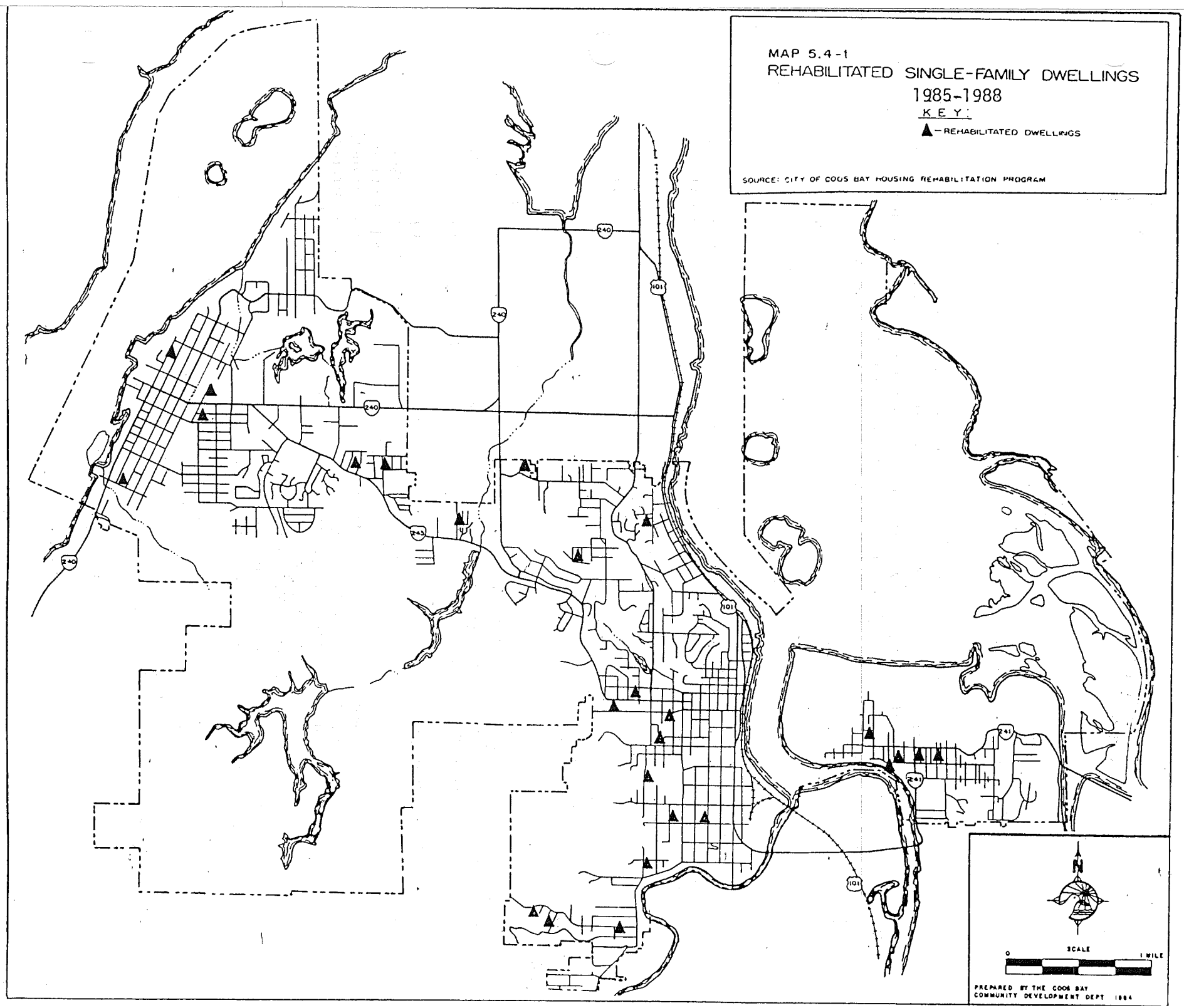
In 1985 the City of Coos Bay identified three "target" areas (North Empire, Lawnridge and Englewood) for the Housing Rehabilitation Program. The program was expanded in 1987 to include the Marshfield area. Once again in 1988 the City expanded the program to include the entire City which is considered more than 517% low to moderate income.

Since 1985 the City's Housing Rehabilitation Program has distributed funds for the rehabilitation of more than 26 homes belonging to low-income families. The locations of housing rehabilitated since 1985 with City assistance is found in Map 5.4-1.

Housing Demand

Introduction

The demand for housing in Coos Bay is influenced by several factors -- trends in population, the economy and employment, and the building industry. The combined population of Coos Bay and former City of Eastside has decreased by 1,690 persons since 1980, effecting a -10.6% change. (Refer to the Urban Growth Management inventory for a detailed population analysis.)


MAP 5.4-1
REHABILITATED SINGLE-FAMILY DWELLINGS
1985-1988
KEY:
▲ - REHABILITATED DWELLINGS
SOURCE: CITY OF COOS BAY HOUSING REHABILITATION PROGRAM
240
101
241
N
SCALE
0
1 MILE
PREPARED BY THE COOS BAY
COMMUNITY DEVELOPMENT DEPT 1988

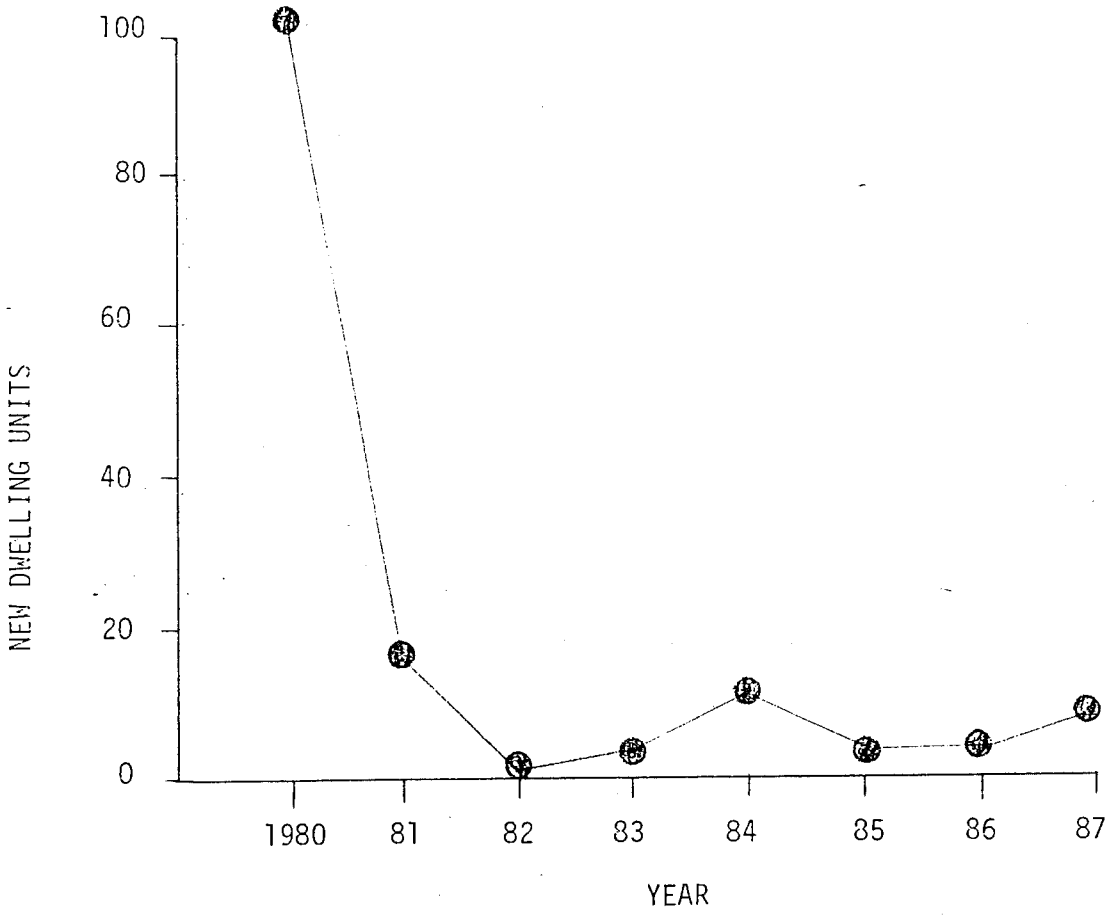
The local economy is an undiversified system, relying heavily on the lumber and wood products industry, commercial trade and service, fishing and fish processing, and tourism. The economic system is highly seasonal and new job opportunities have not grown in proportion to the total labor force. Although wages paid to workers in the lumber and wood products industry are generally high and would indicate an ability to meet housing costs, employment in this sector has declined.

Building activity is slowly providing new housing. Construction of new single family, duplex and multi-family units has totaled 153 since 1980, but the trends show a peak period of construction in 1980 with an extended slump period through 1987 (Table 5.4-13, Figure 5.4-4).

Fig. 5.4-4

CONSTRUCTION ACTIVITY IN COOS BAY SINCE 1980

Year	New Dwelling Units
1980	101
1981	17
1982	1
1983	4
1984	12
1985	4
1986	4
1987	10
TOTAL	153



CONSTRUCTION ACTIVITY IN COOS BAY SINCE 1980

Source: City Building Permit Records

Based upon these facts and the following indepth analysis of housing demand, it can be concluded that unless Coos Bay has an increase in population, there will be little need for additional new housing. The history of housing in Coos Bay has been one of demand with a supply insufficient in number, type of dwelling, and cost to meet the needs of most residents.

Relationship Between Population and Housing

There is a logical, measurable relationship between population magnitude and the number of housing units necessary to accommodate that population. An analysis of the growth in the total number of housing units in Coos Bay since 1980 reveals a strong positive relationship between the City's population decline during the period and corresponding housing starts. There were 6,703 housing units in Coos Bay by the end of 1980 to accommodate 15,980 City residents, while in 1987, there were 6,706 housing units to accommodate 14,290 residents (Table 5.4-13).

Table 5.4-13

POPULATION AND HOUSING IN COOS BAY*
1980-87

Year	Population	Housing Units[a]
1980	15,980	6,703
1981	15,845	6,717
1982	15,210	6,727
1983	15,100	6,719
1984	14,770	6,712
1985	14,695	6,694
1986	14,330	6,698
1987	14,290	6,706

Source: Center for Population Research and Census, Portland State University and City of Coos Bay Building Permit Data

[a]The Building permit data does not include yearly totals of new mobile homes. It is known that 20 mobile homes were sited between 1982 and 1987. The figures above reflect an equal yearly distribution among the seven years.

*Includes former City of Eastside.

As would be expected, the number of housing units in Coos Bay remained virtually unchanged as the population declined. This supports the obvious assumption that lack of growth in local housing units was the result of Coos Bay's population decrease.

Table 5.4-14 indicates estimated future housing needs for Coos Bay based on future population growth and growth trends which occurred from 1970-1978 measured by "regression analysis." The arithmetic equation of the "regression line" in Figure 5.4-5 is:

$Y = 0.48 x - 1577.87$

X = population

Y = housing units

The equation of the "regression line" is used to estimate the future housing needs presented in Figure 5.4-5.

Table 5.4-14

ESTIMATED HOUSING NEEDS BASED ON FUTURE POPULATION GROWTH AND PAST TRENDS

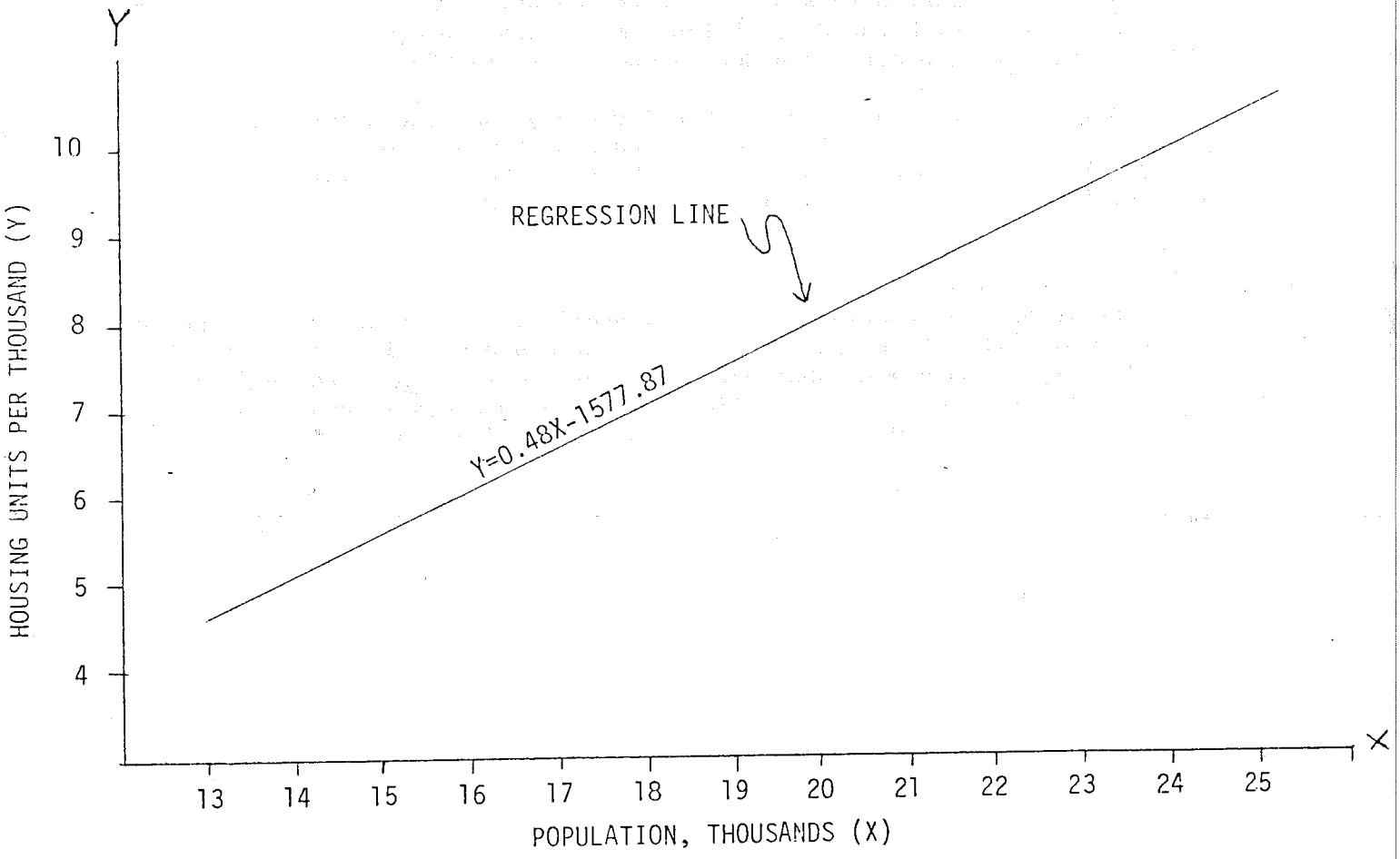
FUTURE POPULATION (X)	ESTIMATED HOUSING UNITS (Y)
15,500	5,862
16,000	6,102
16,500	6,342
17,000	6,582
17,500	6,822
18,000	7,062
18,500	7,302
19,000	7,542
19,500	7,782
20,000	8,022
25,000	10,422

It is essential to note that these figures reflect needs based on 1970-1978 trends. Estimated housing needs are based on trends from the 1970's because Coos Bay experienced population growth during this time. These trends would be more likely to reflect future trends than 1980 to 1987 trends when Coos Bay experienced population decreases.

Application of "regression analysis" enables precise measurement between population and housing variables. The technique measures the degree to which the variables are related to each other by assessing how changes in one variable affect changes in the other. The technique also enables the prediction of future housing needed to support future population, based on the relationship that existed between the two variables from 1970 to 1978. Figures 5.4-5 illustrates the relationship between population and housing in Coos Bay from 1970 to 1978, and also as predicted into the future.

The "slope" of the line in Figure 5.4-5 indicates a strong positive relationship between the two variables during the period from 1970 to 1978; that is, the values represented by the "regression line" document that the number of housing units in Coos Bay grew as increased housing demand was generated by populationn growth. By computing a statistic called the "coefficient of determination" (part of the regression analysis), it was determined that City population growth is statistically related to 90% of the total number of housing units which occurred during the eight year period.

Fig. 5.4-5



ANTICIPATED FUTURE RELATIONSHIP BETWEEN POPULATION AND HOUSING IN COOS BAY, BASED ON 1970-78 TRENDS.

Relationship of Housing Costs to Income

Income levels in Coos Bay and Coos County

Any discussion of demand in housing is inextricably linked to family income. The Statewide Planning Goals and Guidelines are implemented to "encourage the availability of housing units at price ranges and rent levels commensurate with the financial capabilities of Oregon households." (LCDC, n.d.:10) Table 5.4-15 depicts income comparisons for Coos County and Coos Bay between 1979 and 1988. All County statistics are derived from the U.S. Department of Housing and Urban Development Estimated Median Family Incomes for Fiscal Year 1988. Estimates of 1979 family income in Coos Bay are based on the 1980 U.S. Census with staff computations for decile levels (as directed by State Housing Division, Mike Murphy, November, 1988). Projections for 1988 income levels in Coos Bay are based upon the assumption that the percent of change in County statistics would be mirrored in Coos Bay as well. Therefore upon State Housing Division recommendations, the County percent of change is used to devise 1988 City statistics. It must be realized that these are merely projections based on past trends, but are sufficiently accurate for planning purposes.

Analysis of these data reveals that the 1979 median family income in Coos Bay was $26,300 as compared to $18,618 for the County. This trend is assumed to continue in 1988 with the City median family income projected to be $26,921, slightly higher than estimated County median of $19,093.

Therefore, it is assumed in this inventory that the housing, population, and income characteristics of Coos County and Coos Bay are comparable. Moreover, the trends and projections established by the State Housing Division for the County (Murphy, 1988) can be used as indicators for the City.

The income information is shown by decile levels rather than by percent. Understanding the difference between percent and decile is essential. For instance, in referring to Coos Bay 1988 income, 50% of the families earned $26,921 or less a year. Note that 50% of the families did not earn $26,921 some earned considerably less. Of that 50%, 30% earned $17,700 or less and so on.

Table 5.4-15

COMPARISON OF FAMILY INCOME FOR COOS COUNTY
AND COOS BAY, 1979 AND 1988

	COOS COUNTY			COOS BAY		
Decile	1979	1988	% Change 1980-1987	1979	1988	% Change 1979-1988
1	$ 6,177	$ 8,725	41	$ 6,355	$ 8,931	
2	9,531	13,463	41	9,774	13,781	
3	12,259	17,317	41	12,572	17,726	
4	15,517	21,919	41	15,913	22,437	
5	18,618	26,300	41	19,093	26,921	
6	21,561	30,457	41	22,111	31,176	
7	24,894	35,165	41	25,529	35,995	
8	29,068	41,061	41	29,810	42,030	
9	35,980	50,825	41	36,898	52,024	
9.5	44,800	63,284	41	45,943	64,777	
Median	18,618	26,300	41	19,093[b]	26,921	

Estimated to be same as Coos County change.[c]

[a]Prepared by HUD office of Economic Affairs, Economic and Market Analysis Division (CD), October 1987.

[b]Median as published in 1980 U.S. Census which is calculated for both Coos Bay and the former City of Eastside.

[c]The 1988 Coos Bay income is based on the assumption that the percent of change experienced by county families between 1979 and 1988 are the same percentages of change for Coos Bay. The percentages of change for the county were computed by staff and then applied to 1979 income levels for Coos Bay to derive 1988 Coos Bay income levels.

Housing Affordability

The ability to afford adequate housing is dependent upon a family's income. It is generally accepted that a family should not spend more than 25% of its gross monthly income for housing. Any expenditure beyond this amount is considered somewhat of a financial burden, except in the cases where expenditures up to 35% of gross monthly income are consciously being made for investment purposes.

[1]Standard used by the Oregon legislature, the State Housing Division, banks and savings institutions. (Hall 1976)

Table 5.4-16

COMPARISON OF ESTIMATED FAMILY INCOME LEVELS FOR
COOS COUNTY AND COOS BAY, 1988

	COOS COUNTY				COOS BAY			
	Total Families				Total Families			
Decile	Annual Income	Monthly Income			Annual Income	Monthly Income		
		Total	25%	35%		Total	25%	35%
1	8,725	727	182	255	8,931	744	186	261
2	13,463	1,122	281	393	13,781	1,148	287	402
3	17,317	1,443	361	505	17,726	1,477	369	517
4	21,919	1,827	639	639	22,437	1,870	467	654
5	26,300	2,192	548	767	26,921	2,243	561	785
6	30,457	2,538	635	888	31,176	2,598	650	909
7	35,165	2,930	733	1,027	35,995	3,000	750	1,050
8	41,061	3,422	855	1,198	42,030	3,503	876	1,226
9	50,825	4,235	1,059	1,482	52,024	4,335	1,084	1,517
9.5	63,284	5,274	1,318	1,846	64,777	5,398	1,350	1,889
Median	26,300	2,192	548	767	26,921	2,243	561	785

SOURCE: State Housing Division, 1988, and staff computations

A breakdown of yearly income levels for the County and for Coos Bay which appeared in Table 5.4-15 are defined further in Table 5.4-16. Here gross monthly earnings and 25% and 35% of these amounts are calculated. Comparison of these statistics with the relative costs of new and existing homes, of rental units, and of mobile homes will show what percentage of the local population cannot afford suitable housing as it is marketed in Coos Bay.

Cost of Purchasing a New or Used Home.--It is becoming increasingly difficult for families to purchase new or used housing. Rising inflation and interest rates have placed home-owning beyond the reach of many individuals. A basic, 3-bedroom new home (1,200-1,300 square feet) may cost between $45,000 to $90,000, with a typical home costing about $51,000. For comparative purposes, the monthly cost of this average home can be computed and then compared to overall family income. It is generally accepted that a family should spend up to approximately 25% of its monthly gross income on housing. Any expenditure beyond 25%, it not made as an investment, theoretically places some financial burden on the family. The following is a breakdown of costs generally required to purchase this average home based on a conventional loan with a 20% down payment and a term of 30 years.

Table 5.4-17

MONTHLY OF AN AVERAGE NEW HOME

Sale Price	$51,000.00
Less:	
20% down payment	$13,000.00
Closing costs (1.5% of principle)	570.00
Property appraisal	100.00
Credit check	20.00
Realty tax	20.00
Title insurance	100.00
Recording costs	50.00
Principle	$38,000.00
Mortgage Payment (10.5% interest 35 year term)	$347.00
Taxes ($25/thousand)	106.00
Insurance	15.00
Total Monthly Cost	$468.00

This hypothetical house purchase will cost a family approximately $468.00 per month, not including attendant housing costs of utilities and heat, and an initial outlay of $13,800.00 (down payment and closing costs). (Table 5.4.-17) Based on the 25%-of-monthly income guideline, a family would have to earn approximately $2,243.00 per month or $26,921.00 per year to afford this home with relative ease.

Referring to Fig. 5.4.6, a comparison of this monthly mortgage payment and gross monthly earning of Coos Bay residents, approximately 50% of the families could not afford to purchase the average, conventional home. Although these figures are for a new dwelling knowledgeable housing specialists suggest that new and used house costs in this area are fairly comparable. Moreover, much of the older housing in the affordable lower price brackets ($30,000-45,000) often necessitate major repair and maintenance, inherently increasing costs.

Cost of Purchasing a New Mobile Home.-- Mobiles Homes are viewed by many as a likely affordable alternative in the current housing situation. Mobile homes are attractive in that they combine home-owning security with moderate costs. In the City of Coos Bay, mobile homes are restricted to designated parks where occupants locate their own homes on rented space provided by the park owner, and individual lots in some low-density residential areas. Prior to 1990, the siting of mobile homes on individual lots was not permitted. [Res. 90-32 8/7/90]

The approximate cost of an average mobile home (single wide, approximately 1,000 square feet) has risen over the years, roughly by 88% since 1974, and 8% since 1978. (Table 5.4.-18) Figures shown prior to 1978 are taken from Mobile Homes as a Housing Resource for the Portland Metropolitan Area by James E. Hall. As stated in this study, detailed retail cost information is not available for Oregon. However, a consensus of metropolitan dealers discloses that national figures reflect price trends in the state. A local mobile home dealer concurs with this finding (Mix 1979). The dramatic price increment between 1974 and 1978 is claimed to be a response to new safety and construction standards required by the Department of Housing and Urban Development.

Table 5.4.-18

Cost of Nationally Average-priced Mobile Homes, 1974-1987

1974	$ 9,800
1975	11,400
1976	
January	11,500
February	11,900
March	12,100
April	12,500
May	12,500
June	12,800
July	13,200
1978	17,000
1987	18,400

Source: Hall, 1976; Mix, 1979.

1978 figure provided by Lanny Mix, local mobile home dealer, February 20, 1979. Mr. Mix states that mobile homes generally have undergone a 10-12% yearly retail increase. This increase is borne out in the 1978 figure and clearly shows that these average prices are reliable.

1987 figure provided by Don Miner, Executive Director the Oregon Manufactured Housing Association, November 21, 1988.

FIG. 5.4-6

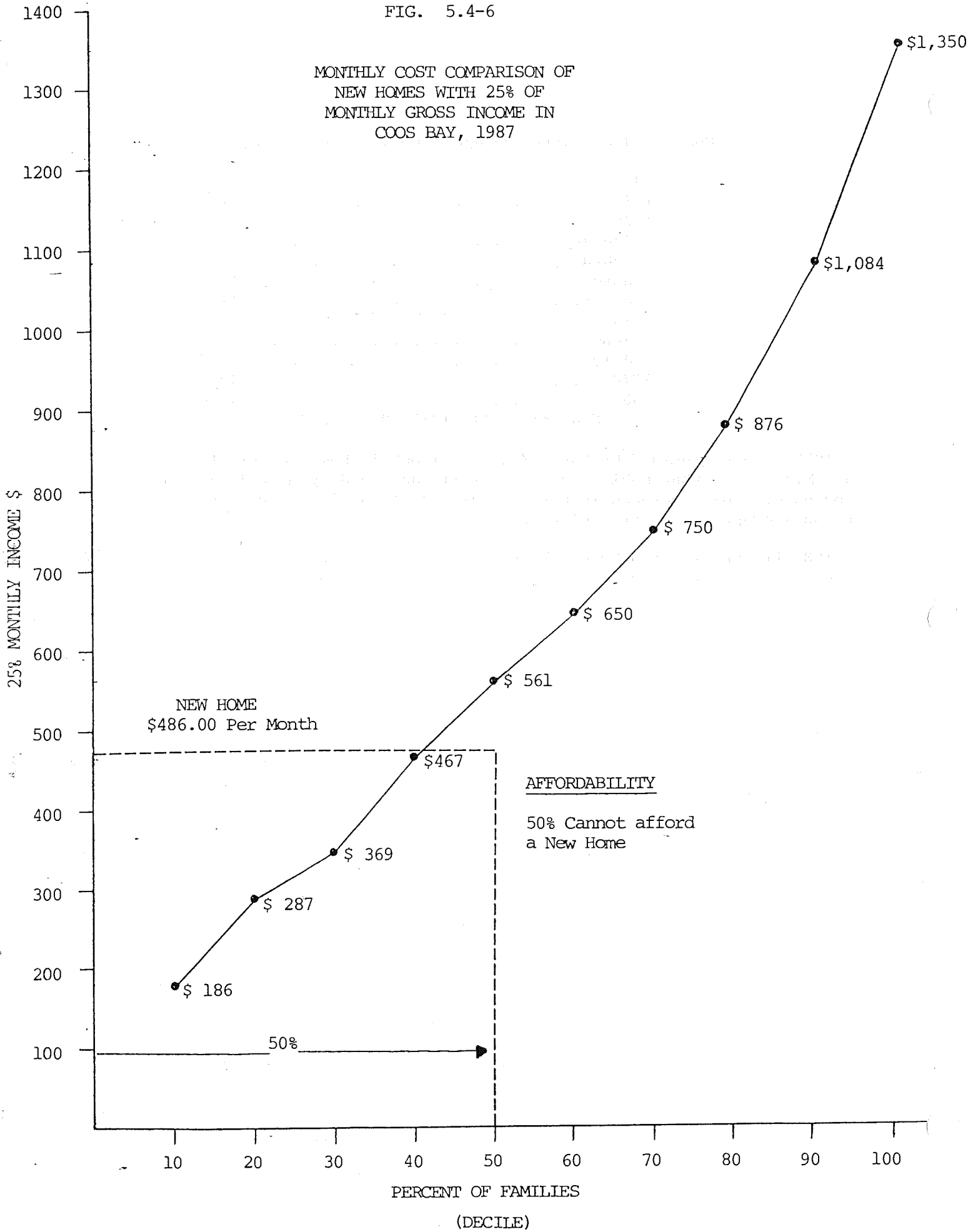
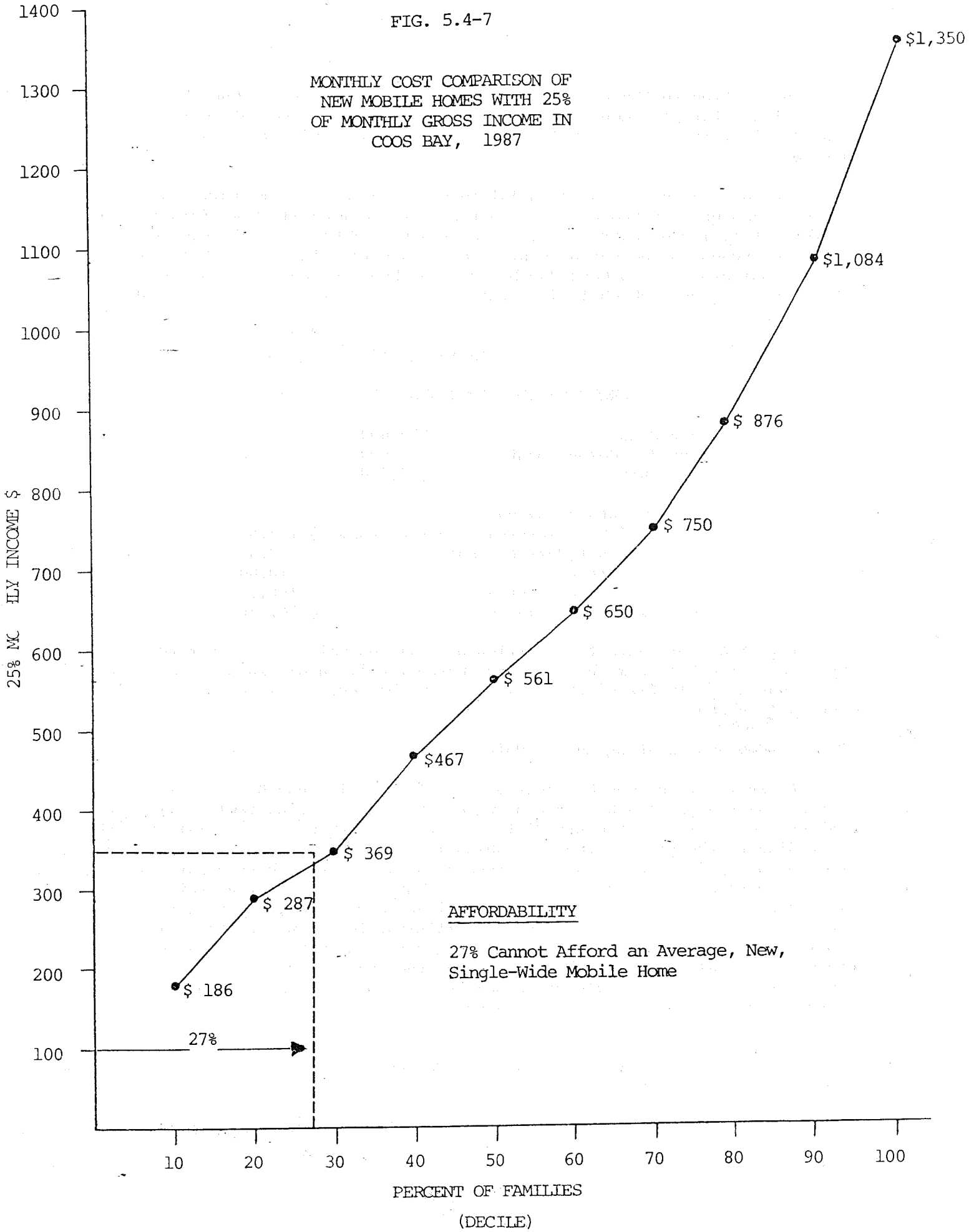

MONTHLY COST COMPARISON OF
NEW HOMES WITH 25% OF
MONTHLY GROSS INCOME IN
COOS BAY, 1987
25% MONTHLY INCOME $
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
$1,350
$1,084
$ 876
$ 750
$ 650
$ 561
$467
$ 369
$ 287
$ 186
NEW HOME
$486.00 Per Month
50%
AFFORDABILITY
50% Cannot afford
a New Home
10
20
30
40
50
60
70
80
90
100
PERCENT OF FAMILIES
(DECILE)

FIG. 5.4-7

MONTHLY COST COMPARISON OF NEW MOBILE HOMES WITH 25% OF MONTHLY GROSS INCOME IN COOS BAY, 1987



In addition to the purchase of a mobile home, owners in Coos Bay must also pay a rental fee for placement within a park. A cursory survey of mobile home parks in Coos Bay indicates that rental rates range from $115 to $175, and average about $88 per month.

Considering these two essential cost considerations, monthly cost to the consumer can be computed on a hypothetical, typical mobile home (single-wide, approximately 1,000 square feet, two bedrooms). Table 5.4-19) Insurance and taxes should be added to the purchase price and space rental rate. Mobile homes are taxed as personal property in Coos Bay because the home is owned separately from the parcel of land upon which it is situated at a rate comparable to stick-built dwellings.

Table 5.4-19

MONTHLY COST OF A SINGLE-WIDE MOBILE HOME

Sale Price	$18,400	
Less 25% downpayment	$ 4,600	
Principle	$13,800	
Mortgage payment (10.5% interest, 15 year term)		$ 152.56
Taxes ($25/thousand)		38.33
Insurance		10.00
Park space rental		146.67
Total Monthly Cost		$ 347.56

Fig. 5.4.7 presents that portion of families which cannot afford this hypothetical mobile home based on estimated family income in Coos Bay. It shows that approximately 27% of the families would be under a financial burden to make such a purchase.

Cost of New and Existing Rental Units.

Analysis of the monthly cost of rental units in Coos Bay is a multi-faceted issue. Many variables have a bearing on the cost of a particular unit making comparative statements difficult at best. Naturally, rental rates vary according to the size of the unit which is determined by the number of bedrooms. Beyond this point, there is a discrepancy between rents charged for existing multi-family units and newly constructed ones. This fact, of course, reflects the increased building costs and the attractiveness of newer, modern apartments. Other amenities, such as garages, laundry facilities, location, and the like, may influence the various rates of rent charged to consumers. Also, a survey of rental rates is not always comparable because of the assorted utilities that may be paid by the tenants and those included in the rent. Rents can include one or all of the water, heat, garbage, and sewer charges each month.

Information obtained from Saints, Puerta Vista, and Shorepines Mobile Home Parks, December 2, 1988

As far as determining current average rental rates, there had been previous studies of the rental market in Coos Bay and Coos County during the late 1970s. Even though these studies are somewhat dated, they remain useful for determining existing rental rates which appear to be about the same today as during the time of the studies. the State Housing Division published results of a housing market analysis for Coos county in 1978 (Smith 1978) and the Coos-Curry Council of Governments (CCCOG) undertook a similar regional study in 1977 (Youst 1977). The review conducted by the state, although more recent than the CCCOG report, was not specific as to market rent values.

The rent values gathered by Youst for CCCOG are now one and one-half years old, and the rate averages are estimated by combining rates for new and existing units. Moreover, in 1977 the City of Coos Bay also attempted as city-specific survey of housing rates (both owners and renters) and comparative monthly income levels. However, the number of renter responses to the questionnaires was considered to be statistically unreliable.

In addition, the Department of Housing and Urban Development produces a rate schedule placing a ceiling on rental rates charged under Federal housing assistance programs. This schedule of maximum rates called Fair Market Rents (FMR) includes the cost of all utilities and is established for both new and existing multi-family dwelling units. As demonstrated by Youst, the Fair Market Rents are not an accurate estimation of actual, average market rent values in Coos County were from 125% to 167% of the Fair Market Rents established by HUD. depending upon bedroom size." (Youst 1977:16) Although the Fair Market Rents have risen since that time, it is generally accepted that these are still not accurate indicators of current market values.

The complexity of rent values makes it difficult to formulate some conclusionary statements about the portion of gross monthly income paid for rent as was done for homeowners and mobile home owners. Rent values change so quickly and are subject to several variables that "average" rents become best guesses. As a result, the figures for average rental rates for new and existing units is based upon previous studies and the estimations of several individuals familiar with the housing situation in the Coos Bay area. Figures presented in Table 5.4-20 are <u>average</u> market rent estimations for new and existing apartments and for rented single-family dwellings. The 1980 median gross rent for the City of Coos Bay and former City of Eastside combined is $250.00 (1980 U.S. Census).

Table 5.4-20

AVERAGE MARKET RENTS, NEW AND EXISTING RENTAL UNITS
COOS BAY, OREGON, 1987

Unit Size	Existing Units	New Units
1 bedroom	190.00	240.00
2 bedroom	220.00	275.00
3 bedroom	280.00	310.00
4 bedroom	350.00+	350.00

Figures 5.4-8 and 5.4-9 graphically depict the percentages of the Coos Bay population who cannot afford new and existing rental units based on the income estimations in Table 5.4-16.

This analysis shows that in comparison to owning a house or a mobile home, a greater proportion of the population can afford paying rent within the 25% limitation.

Affordability falls primarily in the smaller units, however; ;where 11% and 15% of the Coos population cannot afford an average, existing one or two bedroom apartment, and 16% and 19% cannot afford a comparable new unit.

The larger units (three and four bedrooms) are more expensive than a good portion of the population can afford. Another fact about the larger units is that fewer of them exist. In 1977, Youst found that "there are very few of the larger units in Coos and Curry Counties. Although they were found during the Census 1970, they are very difficult to find on either a randum [sic] selective survey." He also discovered that "...too few of the larger units are available...and the few which were found fell into the very highest rent range." (Youst 1977:15)

Low and Moderate Income Housing

Awareness of the housing needs of low and moderate income families become even more apparent in light of the preceding findings concerning the housing market. A method of roughly ascertaining the quantity of low and moderate income families in Coos Bay is to use the eligibility guidelines for federal housing assistance developed by the Department of Housing and Urban Development (HUD). This agency calculates the median yearly income for non-metropolitan areas of the state (all of Coos County), then limits program participation to those families (depending upon size) which earn salaries up to 80% of that median. Family size is an integral factor in determining eligibility (80% of the median is the limitation for a family of six). However, for planning purposes, the City will use the 80% income level to postulate the percentage of low and moderate income families who would possess the greatest housing need in the city.

FIG. 5.4-8

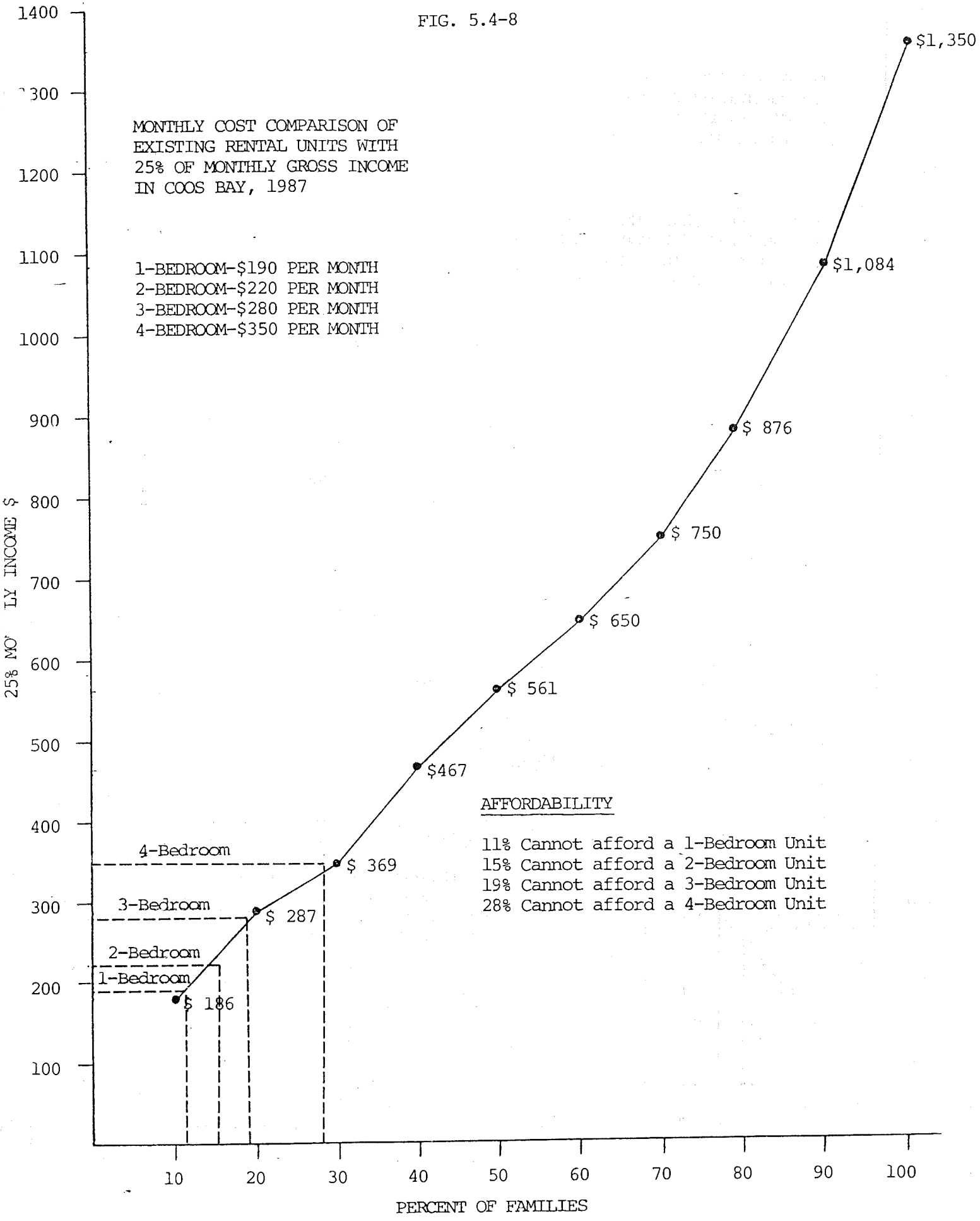
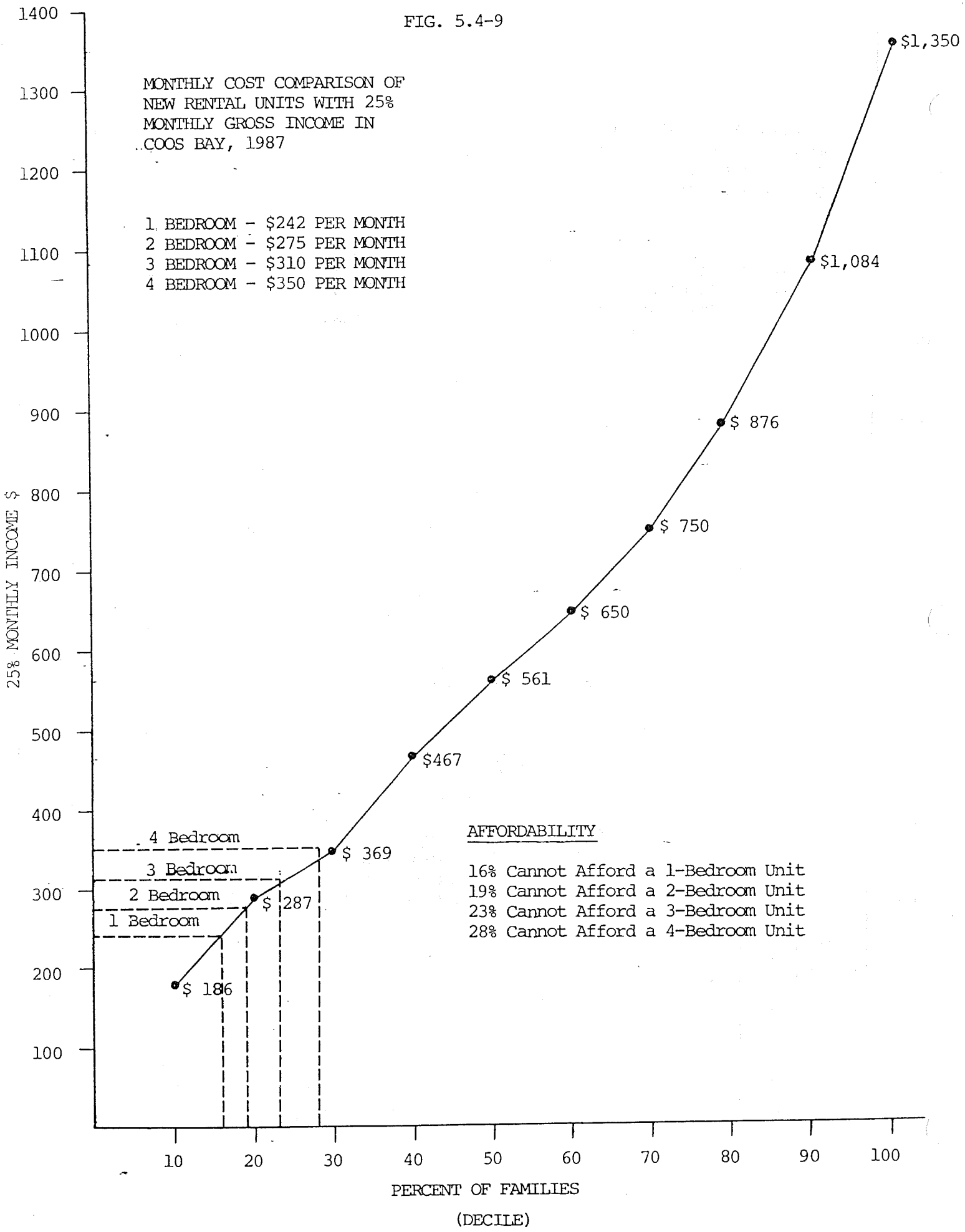

MONTHLY COST COMPARISON OF
EXISTING RENTAL UNITS WITH
25% OF MONTHLY GROSS INCOME
IN COOS BAY, 1987
1-BEDROOM-$190 PER MONTH
2-BEDROOM-$220 PER MONTH
3-BEDROOM-$280 PER MONTH
4-BEDROOM-$350 PER MONTH
25% MONTHLY INCOME $
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
$1,350
$1,084
$ 876
$ 750
$ 650
$ 561
$467
$ 369
$ 287
$ 186
4-Bedroom
3-Bedroom
2-Bedroom
1-Bedroom
AFFORDABILITY
11% Cannot afford a 1-Bedroom Unit
15% Cannot afford a 2-Bedroom Unit
19% Cannot afford a 3-Bedroom Unit
28% Cannot afford a 4-Bedroom Unit
10
20
30
40
50
60
70
80
90
100
PERCENT OF FAMILIES
(DECILE)

FIG. 5.4-9


MONTHLY COST COMPARISON OF NEW RENTAL UNITS WITH 25% MONTHLY GROSS INCOME IN COOS BAY, 1987
1 BEDROOM - $242 PER MONTH
2 BEDROOM - $275 PER MONTH
3 BEDROOM - $310 PER MONTH
4 BEDROOM - $350 PER MONTH
25% MONTHLY INCOME $
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
$1,350
$1,084
$ 876
$ 750
$ 650
$ 561
$467
$ 369
$ 287
$ 186
4 Bedroom
3 Bedroom
2 Bedroom
1 Bedroom
AFFORDABILITY
16% Cannot Afford a 1-Bedroom Unit
19% Cannot Afford a 2-Bedroom Unit
23% Cannot Afford a 3-Bedroom Unit
28% Cannot Afford a 4-Bedroom Unit
10
20
30
40
50
60
70
80
90
100
PERCENT OF FAMILIES
(DECILE)

According to HUD's 1988 guidelines, Coos County's median yearly income was $26,300; 80% of that median is $21,040. Application of this limitation to the income levels of Coos Bay residents shown in Table 5.4.16 attests that approximately 35% of the families earn less than $21,040. per year and presumably would be suffering the most by spiraling housing costs.

Although somewhat outdated, statistics from the City's 1977 Housing Information Survey further substantiates the housing problem in Coos Bay. Questionnaires concerning family, income, and housing characteristics were mailed to a random sample of 10% of the housing units. Returns representing about 4.0% of the housing stock were tallied based upon HUD income guidelines and the amount of rent paid at or above 25% of gross monthly income. These conclusions were made:

All families

1. 55% of the sample spent 25% or more of their monthly income on housing regardless of total income.

2. 20% of the sample were elderly families, 71% of which spent 25% or more of their monthly income on housing regardless of total income.

Low Income Families

1. 31% of the sample was low income (0-80% of HUD's median income for non-metropolitan areas; i.e., earning less than $11,142.00 a year in 1977. This closely corroborates 1978 figure of 35%.

2. 85% of these low income families spent 25% or more of their monthly income on housing.

3. 43% of these low income families were elderly, 90% of which spent 25% or more off their monthly income on housing.

A small portion of families residing in Coos Bay receive some form of rental assistance from HUD. In May, 1979, 261 families participated in three federal programs which enabled these families to pay 25% of their gross monthly income on rent. (Table 5.4-21) The Coos-Curry Housing Authority, administrator of program funds, has placed 249 other families in the city on a waiting list. Although an analysis of these programs indicates that the greatest portion of participants county-wide reside in Coos Bay, these percentages represented only 4% of the city's households and certainly, does not satisfy all the families presumed in need (approximately 35%).

Table 5.4-21

FAMILIES IN COOS BAY RECEIVING RENTAL ASSISTANCE
BY HUD, MAY, 1979

HUD Housing Assistance Programs	Coos County	Coos Bay	
	# Families	# Families	City's % of County
Section 8 existing	260	130	50.0%
Section 23	83	59	71.0%
Section 236	102	72	71.0%
TOTAL	445	261	59.0%

Source: Coos-Curry Housing Authority May, 1979

Includes 28 units to be completed during 1979.

The participants in this program will be phased into Section 8 by the end of the year.

Residential Land Use

Numerical Distribution

In 1977 the City completed a parcel-by-parcel inventory of all existing land use activities in Coos Bay. The inventory enabled the computation of the amount of land used for residences, industry, commerce, schools, recreation and so forth.

Of the approximate total 6,019 acres comprising the City of Coos Bay, 807 acres were used for residential purposes in 1977. This figure has changed slightly by the time of this report due to the addition of subdivisions on previously undeveloped lands.

Nevertheless, the 807 acres in residential use were distributed as follows:

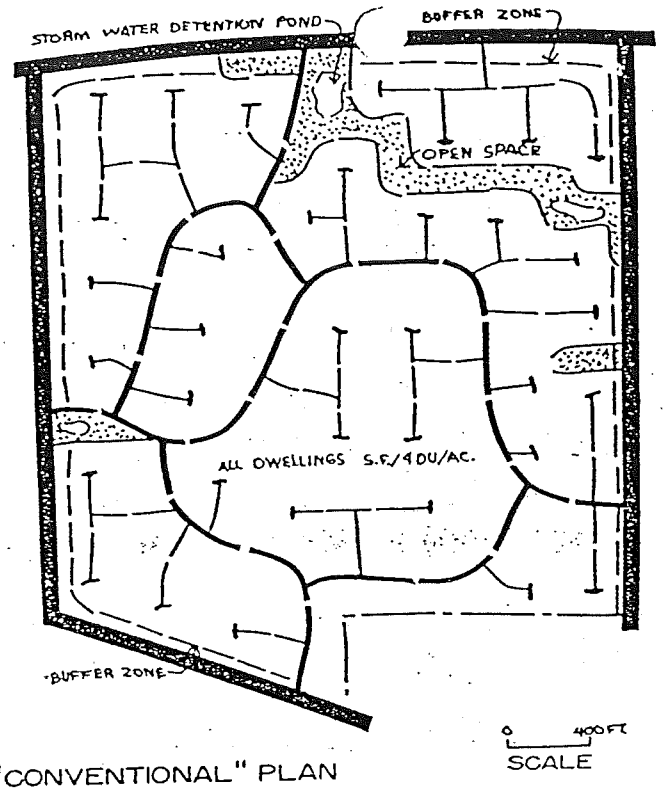
Table 5.4-22

RESIDENTIAL LAND USE, 1977

Housing Type	Acreage	% of Total
Single-family residential	620	76.8%
Duplex	19	2.4%
Multi-family residential	41	5.1%
Mobile homes	127	15.7%
Total	807	100.0%

Land Use Versus Zoning

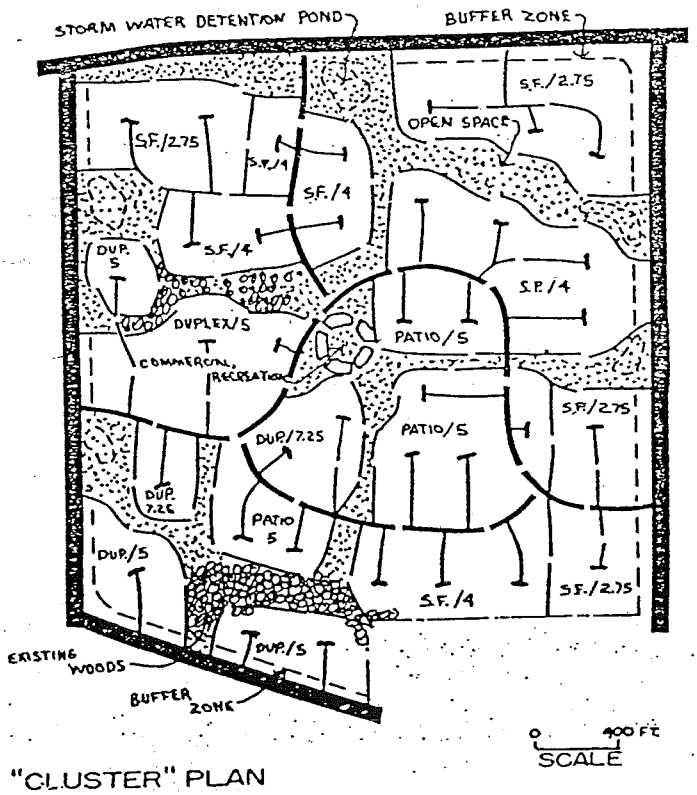
It is important to understand the relationship between the distribution of existing residential land uses as opposed to the distribution of existing residentially zoned land. Current Zoning often permits more than one type of land use activity within a particular zone. Zone "R-2", for example, permits single-family and duplex residences, while Zone "R-4P" permits residences and professional offices. In some neighborhoods, existing zoning does not conform to existing land use. For example, a portion of "old Marshfield" is zoned to allow multi-family residential development (i.e., apartments); however, the area is primarily comprised of single-family dwellings. Other neighborhoods are often zoned to allow duplex construction on 8,000 square feet lots, yet the neighborhoods are also primarily single-family residential areas with lots smaller than 8,000 square feet. Such inconsistencies have caused problems in the administration of equitable zoning regulations.



"CONVENTIONAL" PLAN CONCEPT

Fig. 5.4-10

COMPARISON OF "CONVENTIONAL" VS. "CLUSTER" RESIDENTIAL DEVELOPMENT



"CLUSTER" PLAN CONCEPT

- "OVERALL" DENSITIES ARE THE SAME.
- LAND DEVELOPMENT COSTS ARE SUBSTANTIALLY LOWER USING THE "CLUSTER" PLAN.
- COMPATIBLE USES SUCH AS RECREATION, OPEN SPACE AND CONVENIENT SHOPPING CAN BE INCLUDED IN THE "CLUSTER PLAN WITHOUT LOSS OF DWELLING UNITS.
- THE "CLUSTER" APPROACH PERMITS A WIDE VARIETY OF HOUSING TYPES RESULTING IN WIDER APPEAL AND A BROADER RANGE OF AFFORDABILITY.
- LAND-POSING PHYSICAL DEVELOPMENT CONSTRAINTS CAN BE LEFT AS OPEN SPACE IN THE "CLUSTER" PLAN, WITHOUT LOSS OF DWELLING UNITS.

SOURCE: COST EFFECTIVE SITE PLANNING, NATIONAL ASSOCIATION OF HOMEBUILDERS, 1976

The review and evaluation of local housing needs in conjunction with future land use regulation will require the revision of planned residential densities and zoning requirements. Several existing deficiencies appear evident:

1. The City presently lacks an adequate supply of land upon which multi-family residential development is permitted. While considerable multi-family zoning ("R-3" and "R-4P") presently exist, such areas are primarily developed for other uses.

2. The City's planned unit development (PUD) and subdivision ordinances do not reflect current land development practices. "Cluster-type" residential land development has not occurred in recent subdivision activity in Coos Bay. Cluster developments could result in substantial savings in land development costs thereby containing the spiraling housing costs. In addition, Coos Bay's traditional property development concepts entailing residential density (dwelling units per acre) and setbacks could be reassessed to determine relevancy given the current "state-of-the-art" practices.

3. Coos Bay's existing single-family and duplex Zone (R-2) does land integrity to certain single-family neighborhoods that are generally not suited for duplex construction because of lot size deficiencies or because of public opposition to or covenants against duplexes.

4. Coos Bay's present zoning policies regulating mobile homes need to be reassessed. Prior to 1990, mobile homes were restricted to "parks" within the city. Developers and mobile home dealers have expressed considerable interest in expanding the role of mobile homes in Coos Bay. The City should determine the extent to which this is appropriate and desirable.

[Res. 90-32 8/7/90]

Alternatives in Residential Development

Residential development is generally regulated by density requirements that stipulate either (1) a prescribed minimum lot size per dwelling units (s), or (2) a formula that permits a prescribed number of dwelling units per acre, irrespective of individual lot sizes and dwelling unit types (houses, apartments, etc.). The former approach to regulating density has led to the "conventional" subdivisions developed in American city's for a hundred years. The latter approach represents a more flexible approach to residential land development that maintains the "overall" per acre density of the more traditional conventional approach, but which allows the "clustering" of a variety of housing types on smaller lot sizes within the overall planning area. The clustering approach is commonly referred to as "planned unit developments" (P.U.D.'s), and are capable of producing a higher quality of development that conventional subdivisions while simultaneously offering financial savings to developers, housing consumers, and municipalities, which ultimately must maintain the streets and public facilities within the development. Figure 5.4.10 graphically illustrates the two approaches to regulating density. It also cites comparative advantages of "cluster" versus "conventional" residential approaches.

While P.U.D.'s have been allowed in Coos Bay for several years, they have not been widely used up to this point. However, their economic and environmental appeal should make them increasingly attractive in the times ahead.

> There is a fundamental concern in this country over the ability of the building industry to continue to provide satisfactory shelter to the vast majority of families comprising our "middle class." Both industry and consumers have come to understand the need for land conservation as an economic necessity. (National Association of Home Builders (NAHB) 1976:7)

In recognizing the need to conserve land for economic motives, it is incumbent upon local government to reassess the role that "setbacks" should play in guiding residential development.

> With today's smaller lots the setback criteria imposed on builder/developers and planners are a major deterrent to good planning. Historically, setbacks for front, side and rear yards were such that if one had an acre lot, there would be ample room to lay out a large house. There was even room to work with the topography and save trees. In addition, the front yards could be varied to produce an interesting streetscape of facades. However, <u>with builder houses on lots one-fifth acre (8,700 square feet) or smaller, even the reduction of distances of setbacks can not provide the variety and interest essential in dealing with the higher densities.</u> Other considerations include outdoor utilization of space. There zero lot-line house is a good example of eliminating one sideyard in order to gain one wider sideyard that is <u>usable</u> as a living space. Reduction of site development costs of driveways and utilities can be achieved by using smaller front-yard setbacks. (NAHB, 1976:34)

In short, the city should completely reassess the development policies it has imposed for many years to determine if increased flexibility would be beneficial. Economic benefits clearly exist by using P.U.D. concepts of development. The National Association of Homebuilders has, as an example. cited a $2145 per lot savings by opting for the P.U.D. plan over the conventional plan. (NAHB 1976:119) This generates wider affordability, and also results in lower public maintenance costs as fewer miles of streets and utilities generally exist with the P.U.D.

Conclusion

Housing Supply

Housing characteristics that would have a bearing on present and future living conditions in the city are the total number of units, vacancy rates, dwelling types available, housing age, and housing condition. The preceding analysis of the housing supply points to the following conclusions. The overall vacancy rate and discrete rates in the owner and renter categories are currently acceptable for a healthy consumer market. Therefore, the total housing stock should be sufficient given the existing population and recent population growth trends. Yet, if the population increases the future, the vacancy rate could worsen. Because of the age and condition of Coos Bay's housing stock, it should be expected that a good portion will require refurbishing and a smaller portion may require removal.

Housing Demand

Projected population estimates (see Urban Growth Management inventory) indicate that the city's existing housing supply should be adequate until 1990, but future population growth will turn require additional housing units.

Homeowning, particularly, is unaffordable to many families (50% of Coos Bay residents). Mobile homes provide a more affordable alternative, while most apartments are within affordable reach of an even greater segment of the population.

Residential Land Uses

Revisions of zoning designations, and flexibility in lot and construction design can change current deficiencies in lands available for multi-family dwellings and can also assist developers in lowering housing costs.

5.5
Public Facilities and Services

Introduction

This report focuses on the adequacy of Coos Bay's supporting public facilities and services to meet current and long-range needs. The Statewide Goals and Guidelines state that "urban and rural development shall be guided and supported by types and levels of urban and rural public facilities and services appropriate for, but limited to the needs and requirements of the urban, urbanizable and rural areas to be served." (LCDC n.d.:10) To this end the needs of the following special and municipal services are considered:

1. Coos Bay-North Bend Water Board
2. School District #9
3. Southwestern Oregon Community College
4. Bay Area Health District
5. Port of Coos Bay
6. General Municipal Government
7. Fire Protection Services
8. Police Protection Services
9. Public Library
10. Sanitary and Storm Sewerage System

The Conclusions derived from this assessment of facilities and services will provide direction for future development within and without the city limits.

Coos Bay-North Bend Water Board

Introduction

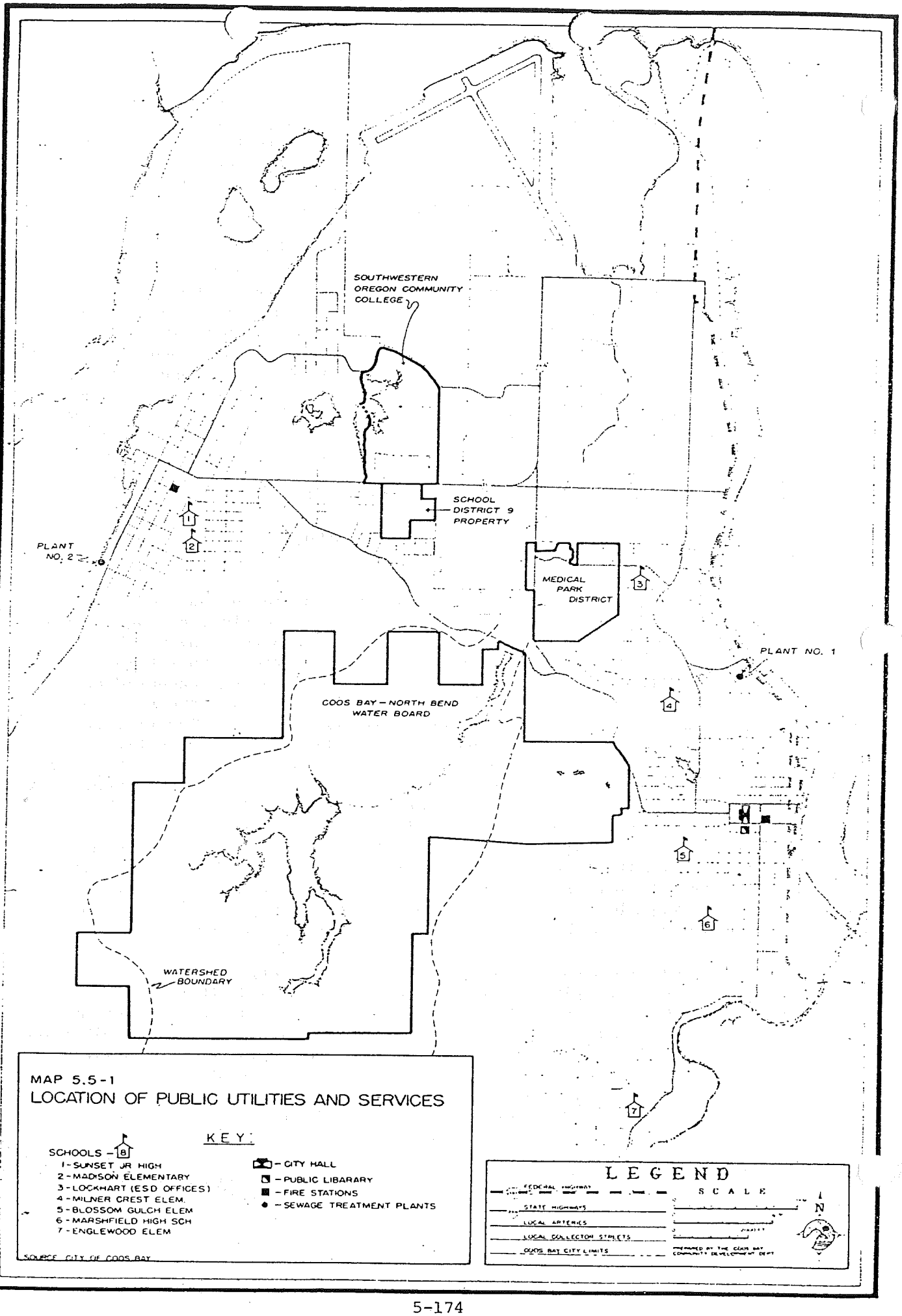
Specific information regarding the Coos Bay-North Bend Water Board contained herein is derived from a letter written by Cal Heckard, Water Board Manager, dated February 21, 1979, and a memorandum also from Heckard, dated May 4, 1979. The Coos Bay-North Bend Water Board is chartered by the two cities to manage the area's water supply and regulate its finances. The Water Boards's area of jurisdiction encompasses 3,025 acres under dual ownership and lying within both the Pony Creek and Joe Ney Creek Watershed. The acreage owned at Pony Creek is greater than the watershed boundaries, while the Joe Ney ownership is only a fraction off the total watershed. Approximately 2,100 acres of Pony Creek are within the city limits of Coos Bay (map 5.5.1).

Ownership comprises those lands owned outright by the City of Coos Bay and those lands owned jointly by the two cities - and, therefore, owned by the Water Board. The water system serves approximately 11,000 users from Shorewood and Glasgow on the north to Shinglehouse Slough and Shoreacres on the south and from the North Spit on the west to the Chandler Bridge over Coos River on the east, consisting of a population of some 35,000 persons.

The basic organization operates under a four-member board with two members appointed by each owner city to four-year staggered terms. The Water Board maintains a staff of approximately 37 employees. Under the present cooperative program, major financing of the water system requires that each owner city sell general obligation bonds or revenue bonds in an amount equaling one-half of the total funding required for the proposed facilities improvement project. These bonds are then amortized through water revenues derived from the sale of water to customers. Annual revenues of the water system amount to approximately $2.9 million which is distributed specifically as directed by provisions of the Cities' charters. Charters of the owner cities specify that revenues first be used for operating and maintenance costs of the system, then for amortization of the existing debt. Residual funds remaining are used for improvement and extension of the water system. Current Board policy calls for maintaining rates sufficient to cover 1.1 times the annual debt retirement plus approximately $400,000 to $500,000 for system improvements.

The Coos Bay-North Bend Water Board has in the past operated a timber management program on lands owned jointly by the Cities, and on lands owned outright by the City of Coos Bay which lie within the Pony Creek Watershed. For various reasons, no activity has been conducted in this timber management program for the past six years. The program was being conducted on 1,000 acres and was aimed toward: 1) Thinning of overstocked areas of conifer; 2) Clearcutting understocked areas and replanting with Douglas Fir; and 3) Clearcutting mature alder stands and replanting with Douglas Fir. Net revenues from timber sales on city-owned land are remitted to the City of Coos Bay. Net revenues from jointly-owned land are retained for the Water Board general fund. The timber management program objectives were two-fold: 1) To complete work within a ten-year period in a manner that does not adversely affect water quality; and 2) To be self-supporting so that no money is required from the general funds of either the Water Board or the City of Coos Bay. When the program is resumed in the future, it is planned to reduce the annual acreage harvested and extend the program over a twenty-to-thirty-year period rather than the ten-year period originally adopted.

Both towns have been served since the early 1900's from this water system. The first pipeline between Marshfield and North Bend (from Front Street to downtown North Bend) was installed by a contract agreement between the Simpson interest and Marshfield Water Company. Prior to acquisition of the water system by the two cities, several different water suppliers existed. The first water system serving this area was the Marshfield Water Company owned principally by James Flanagan. This company began pumping from Pony Creek in the late 1800's and then in the early 1900's from a log-crib diversion structure near the present lower Pony Creek dam. The pump was powered by steam, generated first by wood cut from the water company lands, and later from coal mined from deposits on company lands. Ultimately, the use of coal for generating steam was converted to oil and later to electricity.


SOUTHWESTERN OREGON COMMUNITY COLLEGE
SCHOOL DISTRICT 9 PROPERTY
PLANT NO. 2
MEDICAL PARK DISTRICT
PLANT NO. 1
COOS BAY - NORTH BEND WATER BOARD
WATERSHED BOUNDARY
1
2
3
4
5
6
7
MAP 5.5-1
LOCATION OF PUBLIC UTILITIES AND SERVICES
KEY:
SCHOOLS - 8
1 - SUNSET JR HIGH
2 - MADISON ELEMENTARY
3 - LOCKHART (ESD OFFICES)
4 - MILNER CREST ELEM.
5 - BLOSSOM GULCH ELEM
6 - MARSHFIELD HIGH SCH
7 - ENGLEWOOD ELEM
- CITY HALL
- PUBLIC LIBARARY
- FIRE STATIONS
- SEWAGE TREATMENT PLANTS
SOURCE CITY OF COOS BAY
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
N

In 1924, a water treatment plant was installed by the Marshfield Water Company, who had by then changed its name to the Coos Bay Water Company. This plant is essentially the one that still treats water from the Pony Creek source. Until the termination of private ownership in the 1940's, the water system fell into the hands of several different groups with the last private company headquartered in New York. This particular company was ordered to divest itself of this holding thus creating an opportunity for public ownership. Consequently, in the mid-1940's, voters of the two cities adopted provisions in their separate charters to allow for the joint operation under city law as it now exists.

Likewise, the City of Coos Bay has adopted specific ordinances relating to the operation of the Water Board. Ordinance 2022 provides for the protection of the purity of the city water supply. Ordinance 2580 added approximately 1,700 acres of land to the original 306 acres within the City dedicated to the Water Board. Ordinance 2633, which regulates the use and construction of sewer and waste disposal systems, charged the Water Board with the collection of sewer and water charges payable to the City. The latter ordinance also authorizes the Water Board to construct plants, equipment, and water lines, and charges the Board with the power to stop service to consumers delinquent in payment.

Water presently is supplied from three sources. The Pony Creek source is a four-square-mile drainage basin within which two impoundments have been constructed. It has an expected sustained summer yield in its present stage of development of a total 4.5 million gallons per day (MGD). Full development of Pony Creek would allow a sustained daily usage of 6 MGD. Twenty wells have been constructed at the second source in the Coos Bay sand dunes. This 15-square-mile catchment area now has installed capacity to produce 7 MGD. A third source has been developed on Joe Ney Creek and, although no storage facilities have been installed there as yet, it is currently possible to pump an average 1 MGD from Joe Ney into Pony Creek to supplement that source. Water from all three sources used for drinking water is treated to meet standards established by the Environmental Protection Agency, while industrial water is delivered from the dunes in a raw or untreated state. The treatment process is effected at the sand dunes by removing iron, by softening, fluoridating, filtering, and chlorinating the water. Water from the Pony Creek system is treated by a conventional aluminum sulfate coagulation filtration program which is finally adjusted with the use of lime for pH control, fluoridation, and chlorination. Water from the sand dunes is slightly harder than that from Pony Creek, but the two waters intermix within the distribution system. The water quality program of the Water Board assures compliance with the Safe Drinking Water Act, and all the necessary monitoring and water quality analyses are completed on schedule.

Water "distribution" is the ability of the system to provide adequate amounts for domestic/industrial consumption and for fire fighting purposes as regulated by the City Fire Department. All buildings within residential communities require a water supply of approximately 1,000 gallons per minute (gpm); all residential areas within the City have at least this distribution capacity. The fire flow in commercial and industrial areas depends upon the square footage of the building and other construction practices (e.g., insulation, sprinkling systems, and so forth). Fire flow requirements in these areas range from 1,500 to 3,500 gpm. The water distribution system in Coos Bay is depicted in Map 5.5-2.

Facility Needs

Prudent planning dictates that water sources be identified to meet demands placed on the water supply by growth. The Board has actively pursued a water source development program since 1947. To date, numerous water sources have been identified and assessed. Most recently, the Board has revised this potential source list and prepared long-range and interim programs of water source development.

Long-range Source Program

The long-range program aims for development of a water reservoir on the West Fork of the Millicoma River which has the capacity of supplying all the area's water needs. This source would provide a gravity water supply also capable of producing hydroelectric power. This area was cited as a major water source as early as 1940, and the Water Board has been monitoring its stream flow and water quality, and analyzing the area's topography there since 1950. These records indicate that the source has not only long-range capabilities, but also excellent chemical quality with the domestic water needing filtration and chlorination.

Development of the West Fork as the sole water supply also would free land in the urban center where there is demand for housing, industrial, and other land use. Essentially, the cost of site development is a principal obstacle at this time. Ammortization of development costs through current users' fees will not justify development of this source. Implementation can only be accomplished by the sizeable demand generated by industrial use, presently non-existent but believed feasible in the future.

Interim Source Program

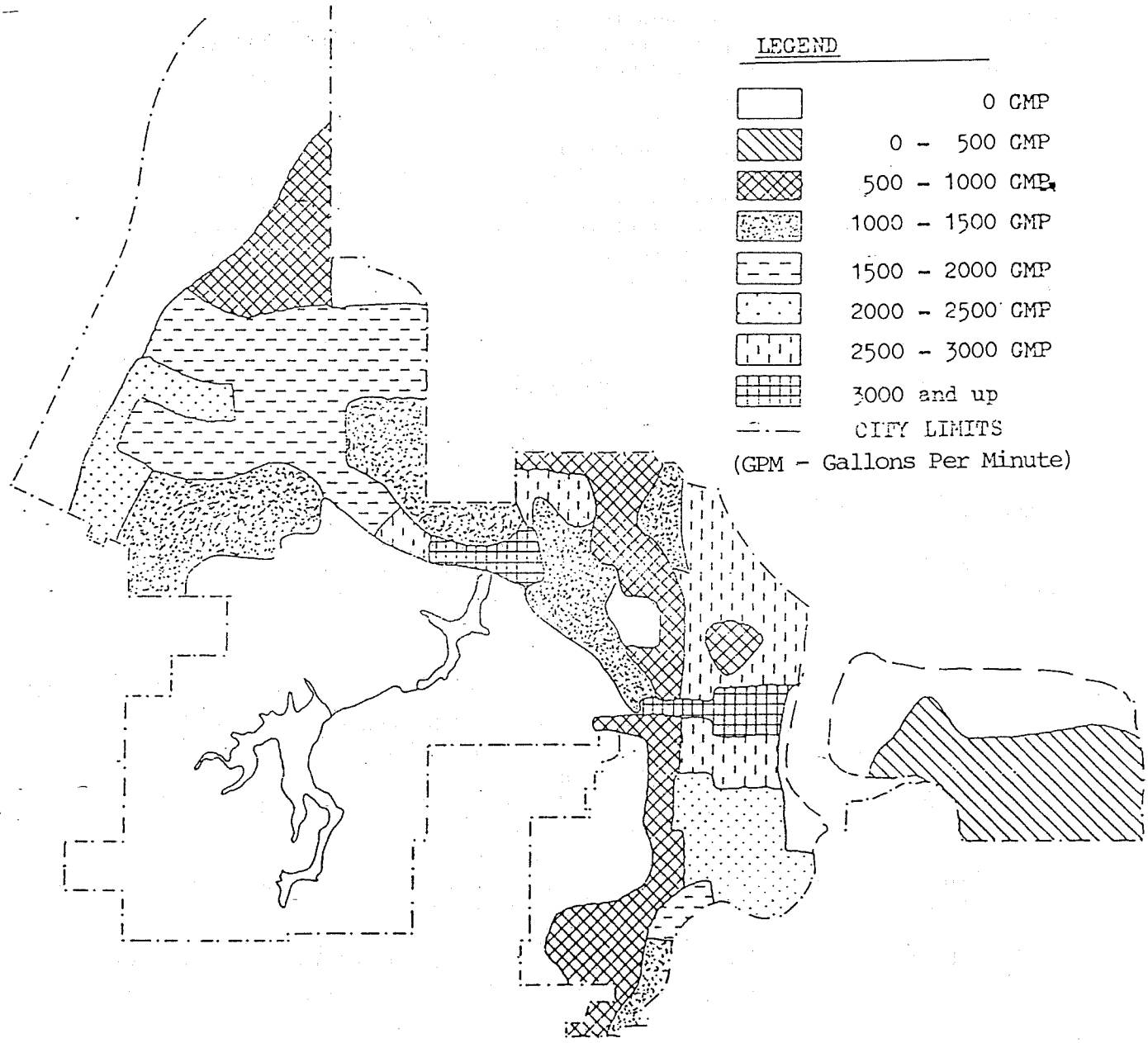
The current interim source program focuses on six sources, two of which (Pony Creek and the Coos Bay sand dunes) are already being used. This program will adequately satisfy projected demand including drought contingencies, until the long-range program may be implemented.

Pony Creek.--The Pony Creek storage area presently accommodates one-half of the water that falls on the watershed during an average rainfall year. Shortages in water supply will continue unless additional storage is provided. By raising the dam on the upper reservoir site, the total water available from Pony Creek could range between 6.5 and 7 mgd.

MAP 5.5-2

WATER DISTRIBUTION SYSTEM

SOURCE: COOS BAY-NORTH BEND WATER BOARD



City of Coos Bay Fire Flows

Joe Ney Creek.--Exploitation of this source could provide as much water as that derived from the Pony Creek basin. Development of Joe Ney Creek as a water source could take two forms. A storage reservoir formed by a dam constructed at the mouth of Joe Ney Slough could provide a sole water source. The Board has established a water right to this source. Majority of the land in the Joe Ney Watershed is privately owned, primarily by one timber company. The Board in the past few years has acquired most of the bottom land which would be needed for a reservoir site, as well as all of the upland holdings of one other timber company which includes the road across to the site. Currently, the Board has been pumping up to 1.2 MGD from the Joe Ney through a temporary pipeline and pump facility. In the future, a dam at the site of the existing dike and tidegate would be required to maximize the potential supply of 6.0 MGD from this source.

Coos Bay Sand Dunes.--Expansion of this existing water source is still being studied with an optimistic prediction of a 20 to 22 mgd production capacity. Water can be extracted from this area without appreciably affecting the water table, however, treatment to remove its iron content would be necessary. In addition, the water source is within the Oregon Dunes National Recreation Area and subject to intensive management for recreation by the federal government.

Winchester Creek.--A reservoir could be constructed on the upper reaches of Winchester Creek, a tributary of South Slough. Water rights to this source were filed by the City of Empire prior to consolidation with Coos Bay. The water rights are presently held by the Water Board.

Big Creek.--The upper reaches of Big Creek which flows into Sunset Bay southwest of Charleston could be impounded as a water source.

North Spit.--The aquifer in the Coos Bay Sand Spit south of the Industrial Waste Lagoon has been found to have potential as a water source.

Conclusions

1. There are three water sources exploited by the Coos Bay-North Bend Water Board - Pony Creek Watershed, the Coos Bay sand dunes, and the Joe Ney Watershed. These sources can meet present demand for water consumption, either for domestic or fire protection uses, barring any extended drought periods.

2. The water systems meet all standards imposed by the Environmental Protection Agency for drinking water quality.

3. The Water Board is devoted to water source development in response to the demand of the community. It has conducted studies on all water sources available in this area.

4. Short-term needs can be satisfied by interim projects involving the expansion of the Pony Creek storage capacities through the raising of the upper reservoir dam; creating a new reservoir in Joe Ney Slough; or pumping water out of Joe Ney Creek. Exploitation of the sand dunes for industrial use of raw water without treatment may not be presently feasible due to water quality problems.

5. A more complete, permanent water source could be developed on the West Fork of the Millicoma River. This source could provide more than enough water for this area's future needs. However, development of this source is economically unfeasible and is predicated on the intensified needs of additional industrial demand.

6. The City can insure the preservation of the water source within it jurisdiction by proper zoning and land use plans within the Pony Creek Watershed.

Public Facilities

Eastside's public and semi-public buildings, including governmental offices, schools, and churches, are discussed in the Land Use section of this chapter. This section describes the City's water and sewerage systems and the fire and police departments.

Water System

Portions of the water system were built by the Works Project Administration during the early 1940's. The system has been modernized over the years through installation of new storage facilities and replacement of older distribution lines with larger ones. New lines have been extended to meet the demands of increased development.

In 1983 when the City of Eastside merged with the City of Coos Bay, the water system in Eastside was acquired by the Coos Bay-North Bend Water Board. The distribution system within the former City of Eastside is primarily a residential system and will require extensive rebuilding if it is to supply water to the proposed industrial development sites located on the west and north areas of the former city. In 1972, a new 12-inch ductile iron water main crossing Isthmus Slough from the Bunkerhill area was installed which greatly increased the volume and reliability of supply to the area.

Southwestern Oregon Community College

Introduction

All information contained herein is derived from the Master Plan: Southwestern Oregon Community College by Balzhizer/HGE, Inc. completed in 1978. At this time, Southwestern Oregon Community College is in the process of updating the Master Plan. This information should be available within the next two years.

Southwestern Oregon Community College is a junior college whose 125-acre campus is located within the City of Coos Bay east of Empire Lakes. The college provides educational and community services to Coos, Curry and Western Douglas Counties, not only through on-campus services, but by outreach to Powers, Reedsport, Myrtle Point, Coquille, Bandon, Lakeside, Hauser, and areas in Curry County. Six educational divisions supplemented by facilities in the study center offer coursework leading to an Associate of Arts Degree. The college also acts as a community-center for both students and unenrolled residents of the counties.

The college opened in 1961, moving to its present site in 1964. On-campus construction continued until 1969, with no additional construction to this date, except for the erection of three temporary metal buildings and the acquisition of the off-campus Annex in Empire. (Map 5.5-3) Enrollment at the college has increased 58% without any substantial building projects to absorb the increase.

Existing Facilities

Existing space inventory is documented in Table 5.5-1, revealing that a total of 143,759 square feet of gross space has been utilized in campus and off-campus/temporary services with 134,451 square feet of the amount as usable space.

Facility Needs

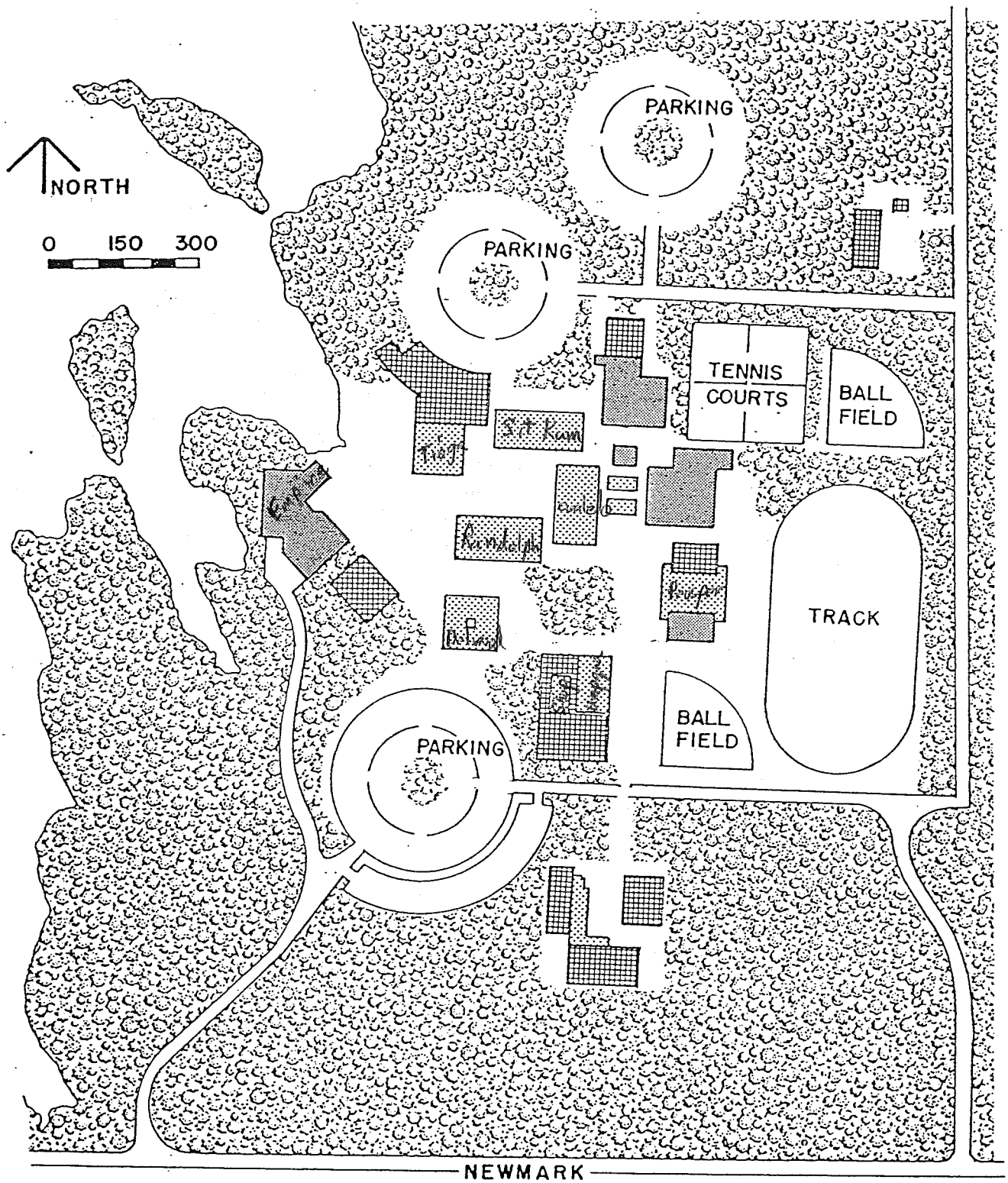
Findings reveal that the current size and configuration of the existing complex in inadequate to meet the program requisites. "While the general purpose space is adequate and adaptable, often the specialized space is inadequate to support college level programs."

A further problem exists with the inadequate amount of space on campus. According to the state building block inventory, the campus is currently at 68 percent of space need for 1977-78 (See Table 5.5-1) This figure does not include temporary or off-campus facilities such as the three metal classroom buildings, the maintenance facility, and the off-campus Annex building. These facilities, if included in the inventory, leave the campus at 77% of space need demonstrating conclusively the obvious necessity for additional building construction on campus to house current enrollments and programs." (Master Plan, 1978:14)

The Southwestern Oregon Community College campus has gross deficiencies both qualitatively and quantitatively, according to their Master Plan. Specific inadequacies and solutions are discussed fully in the Master Plan, However, a list of present needs does not begin to address the future, expected expansion necessitated by augmented enrollments. Enrollment for the 1977-78 academic year amounted to 1,450 students. An estimate of full-time enrollment (FTE) by 1985 may be computed (1) by State Board of Education predictions of 5% increases each year, (total of 34% by 1985), or (2) by the predicted county growth of 3% per year, (total of 23% by 1985). (Figure 5.5-1) To quote the master plan,

> "it is difficult to determine 'exact' growth projections for SWOCC. Any enrollment growth, however, only further compounds the existing space deficiencies which will be documented in this plan." (Master Plan 1978:12)

The master plan for facility expansion at SWOCC extends over a 5-year period and is designed to be completed in four phases. The thrust of the plan is to "adequately house and expand existing program and services." (Master Plan, 1978:221) The plan priorities were developed from input of the SWOCC Board of Education, administration, faculty, student groups, and HGE, Inc.



MAP 5.5-3

EXISTING AND PLANNED FACILITIES, SOUTHWESTERN OREGON COMMUNITY COLLEGE, COOS BAY, 1978

SOURCE: SWOCC MASTER PLAN, 1978.

EXISTING BUILDINGS, 1979

NEW CONSTRUCTION 1979-1985

POSSIBLE FUTURE EXPANSION

Table 5.5-1

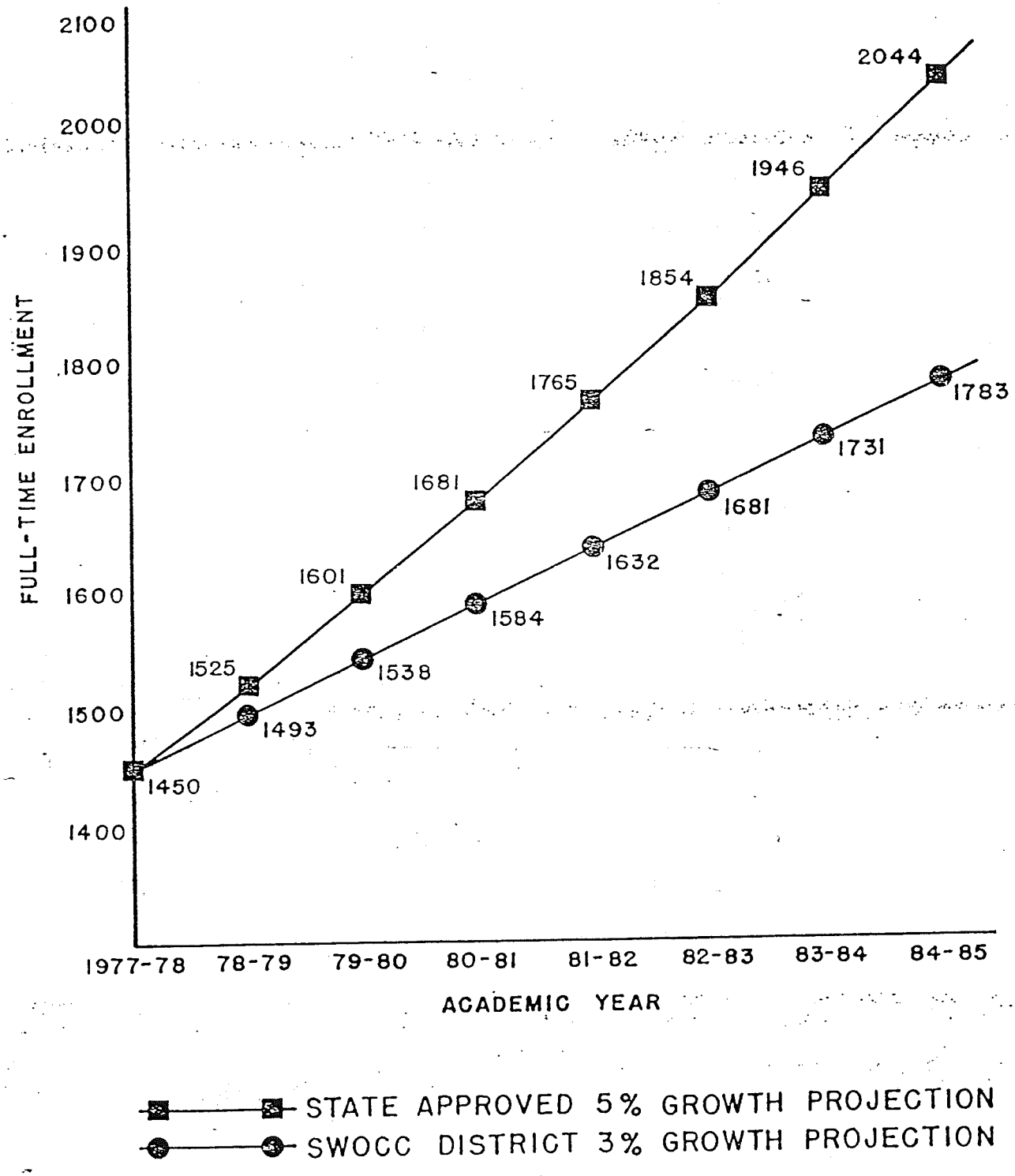
EXISTING SPACE INVENTORY

Existing Facilities	Gross Area	Usable Area
Coaledo Hall	9,800	9,262
Dellwood Hall	8,968	8,228
Prosper Hall	24,487	23,041
Randolph Hall	11,200	10,018
Sitkum Hall	9,600	8,941
Tioga Hall	51,992	47,617
Umpqua Hall	11,200	10,710
Sub-Total	127,247	118,717
Temporary And Off-Campus Facilities		
Maintenance Building	4,712	4,348
Annex	5,000	4,709
B-1	1,800	1,782
B-2	1,800	1,755
B-3	3,200	3,140
Sub-Total	16,512	15,734
Total Inventory	143,759	134,451

Source: MASTER PLAN 1978:15.

FIG. 5.5-1

PROJECTED ENROLLMENT, SOUTHWESTERN OREGON COMMUNITY COLLEGE, COOS BAY, OREGON 1977-1985



SOURCE: SWOCC MASTER PLAN 1978:13

An outline of the specific phases of construction and remodeling appears in Table 5.5-2.

The completion of this master plan will result in the addition of 84,750 square feet of additional gross space, for a campus total of 215,709 square feet, 4,854 square feet more than the state's estimate of the college's expected need by 1983. (Map 5.5-3)

Conclusions

1. Southwestern Oregon Community College has devised a 5-year plan for new construction and facility remodeling aimed toward adequately housing 1977-78 existing programs and services by 1983.

2. The space needed to accomplish these plan goals is more than adequate covered by the total acreage of undeveloped lands within the city dedicated to the College.

3. This plan addresses current needs and offers no specific schemes that would house new programs and services not now offered by the College. The plan states that by completion of phase 3, such predictions could be attempted and a plan revision is then contemplated. At this time, however, future expansion tentatively anticipated (replacement of maintenance building and additional future program facilities) could be accommodated on the remaining undeveloped lands. (Map 5.5-3)

School District #9

Introduction

School District #9 in Coos County is the designated special district providing educational and other services to children in elementary through high school level. The district encompasses the central portion of Coos County and includes Coos Bay, plus a large unincorporated hinterland. (Map 5.5-4) Information on existing facilities and district needs are derived from a letter dated November 14, 1988 from Dave Sullivan, Curriculum Director.

Existing Facilities

Existing school facilities and needs are as follows. (Map 5.5-1)

Elementary (Grades K-5)

Blossom Gulch School.--

1. Description: Wooden building built in 1954; kitchen remodeled in 1978, 23 classrooms; total of 8+ acres.

Table 5.5-2

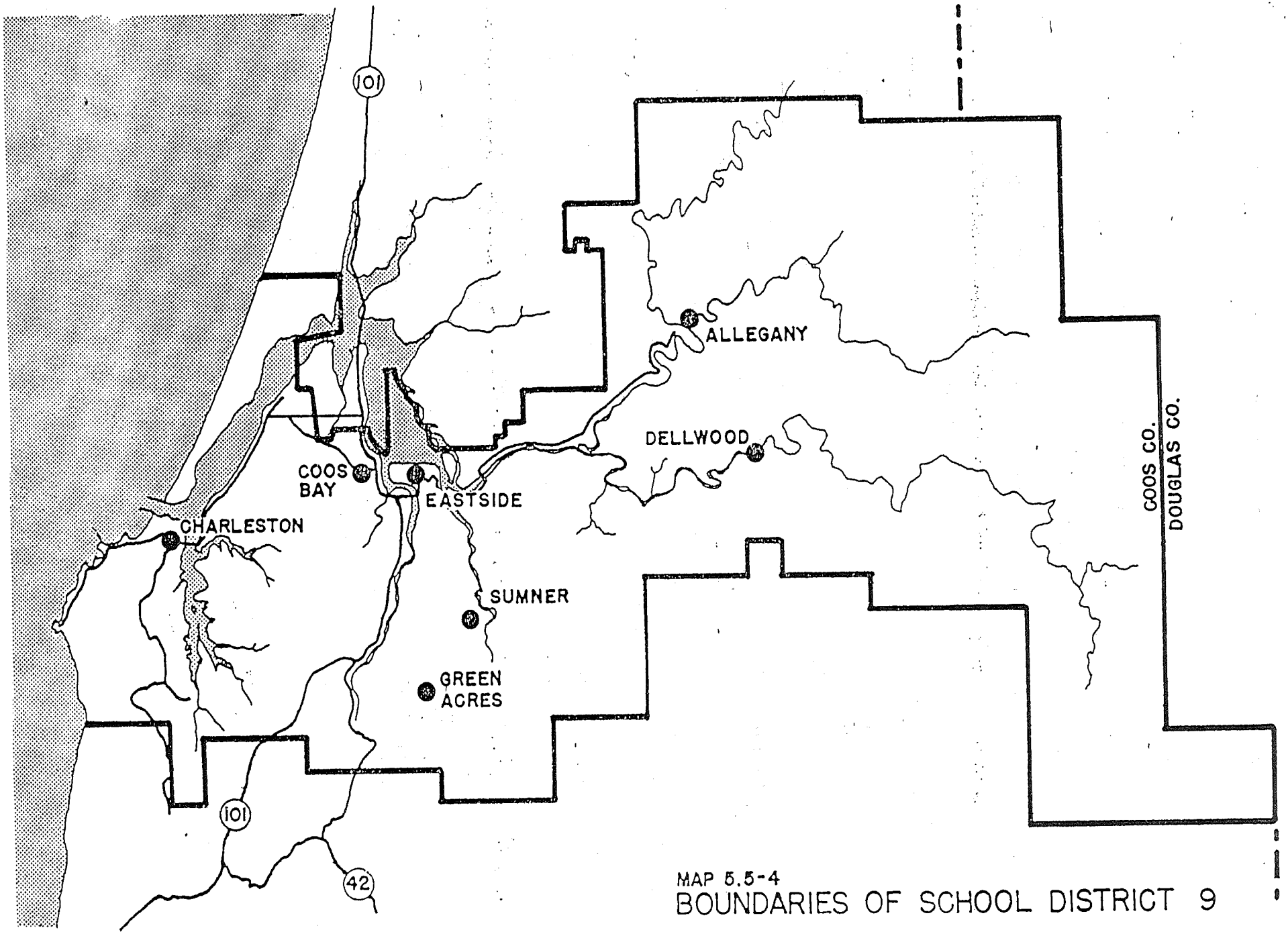
CONSTRUCTION AND REMODELING SCHEDULE
FOR SOUTHWESTERN OREGON COMMUNITY COLLEGE

Phase Year	Project	New Construction	Cost Estimate *
1. 1978-79	College/Community Center	16,750 sq. ft.	1.15 million
2. a. 1979-80	Lab/Shops Complex	42,500 sq. ft.	2.75 million
	Energy Conservation Projects		.025 million
	Water Supply Project		(from Water Board)
	Electrical and Telephone		.3 million
b. 1980-81	Tioga Hall Remodel		1.5 million
c. 1981-82	Prosper Hall Addition	13,000 sq. ft.	1.0 million
	New road and parking		.1 million
	Dellwood Hall Remodeling		.25 million
3. 1982-83	College/Community Center Phase 2	12,500 sq. ft.	1.15 million
	Prosper and Randolph Remodels		.275 million
4. 1983-84	Expanded playing fields, outdoor facilities	84,750 sq. ft.	1.0 million .025 million

The 84,750 square feet of construction can be easily justified using the state space standard.

*Note: The cost estimates are preliminary, include fees, used for planning purposes only; to be revised during building design process.

Source: MASTER PLAN 1978-23,45.



MAP 5.5-4
BOUNDARIES OF SCHOOL DISTRICT 9

2. Location: West of 10th Street between Elrod and Anderson.

3. Capacity: 650 students; 25/classroom.

4. 1988-1989 Enrollment: 567 students.

5. Need: Additional acreage if building is placed to capacity.

Bunker Hill.--

1. Description: Wooden building constructed in 1955; rooms and cafeteria added in 1958-59; 15 classrooms total of 9+ acres.

2. Location: Highway 101, South of Edwards Court in Bunker Hill.

3. Capacity: 370 students, 25/classroom.

4. 1988-89 Enrollment: 334 students.

5. Need: None.

Eastside School.--

1. Description: Wooden structure built in 1949; gym added in 1954 and additional classrooms in 1959; remodeling in 1976-77; 15 classrooms; 4+ acre site.

2. Location: North of D Street between 2nd and 4th Avenue.

3. Capacity: 405 students; 27 per classroom.

4. 1988-1989 Enrollment: 396 students.

5. Need: Additional acreage advantages.

Madison.--

1. Description: Wooden structure built in 1953; remodeled in 1962; portable classrooms moved to site in 1973 and 1978; 19 classrooms; 2 portable units; 6+ acres.

2. Location: West of Madison between Michigan and Garfield in Empire.

3. Capacity: 475 students.

4. 1988-1989 Enrollment: 401 students.

5. Need: None

Milner Crest.--

1. Description: Wooden structure built in 1948; rooms added in 1951 and 1961; 12 usable classrooms; 5 acres in site.

2. Location: South of Hemlock between 10th and 13th Streets.

3. Capacity: 300 students; 25 per classroom.

4. 1988-89 Enrollment: 235 students.

5. Need: Additional acreage would be advantageous.

Middle School (Grades 6-8)

Millicoma.--

1. Description: Wooden and concrete block structure built in 1963; metal shops added in 1974; 26 classrooms; 29+ acre site.

2. Location: East on 2nd Avenue between B and D Streets in Eastside.

3. Capacity: 702 students; 27 per classroom.

4. 1988-89 Enrollment: 522 students.

5. Need: None.

Sunset.--

1. Description: Wooden and concrete structure built in 1949; remodeled after a fire in 1959; 25 classrooms; 12+ acre site.

2. Location: Corner of Michigan and Madison Streets in Empire.

3. Capacity: 675 students.

4. 1988-89 Enrollment: 481 students.

5. Need: Additional land advantageous.

High School (Grades 9-12)

Marshfield.--

1. Description: Main building is a cement structure built in 1938; remodeled in 1951, 1961, and 1972-73; East Branch was built in 1908, remodeled in 1957-58; Harding Annex is a cement structure built in 1923, remodeled in 1951, 1954, and 1963; 93 rooms; 21+ acre site.

2. Location: West of 7th Street between Ingersoll and Ferguson.

3. Capacity: 2,511 students.

4. 1988-89 Enrollment: 1,180 students; 27 per classroom.

5. Needs: None given.

Englewood.--CE_2; Media; Supply Warehouse

1. Description: Wooden building constructed in 1914; rooms added in 1950 and kitchen/cafeteria in 1958; 8 usable classrooms; total 7+ acres.

2. Location: North of Pennsylvania, West of Southwest Boulevard.

3. Capacity: Currently houses CE_2 students (Alternative High School)

4. 1988-1989 Enrollment: 40 students

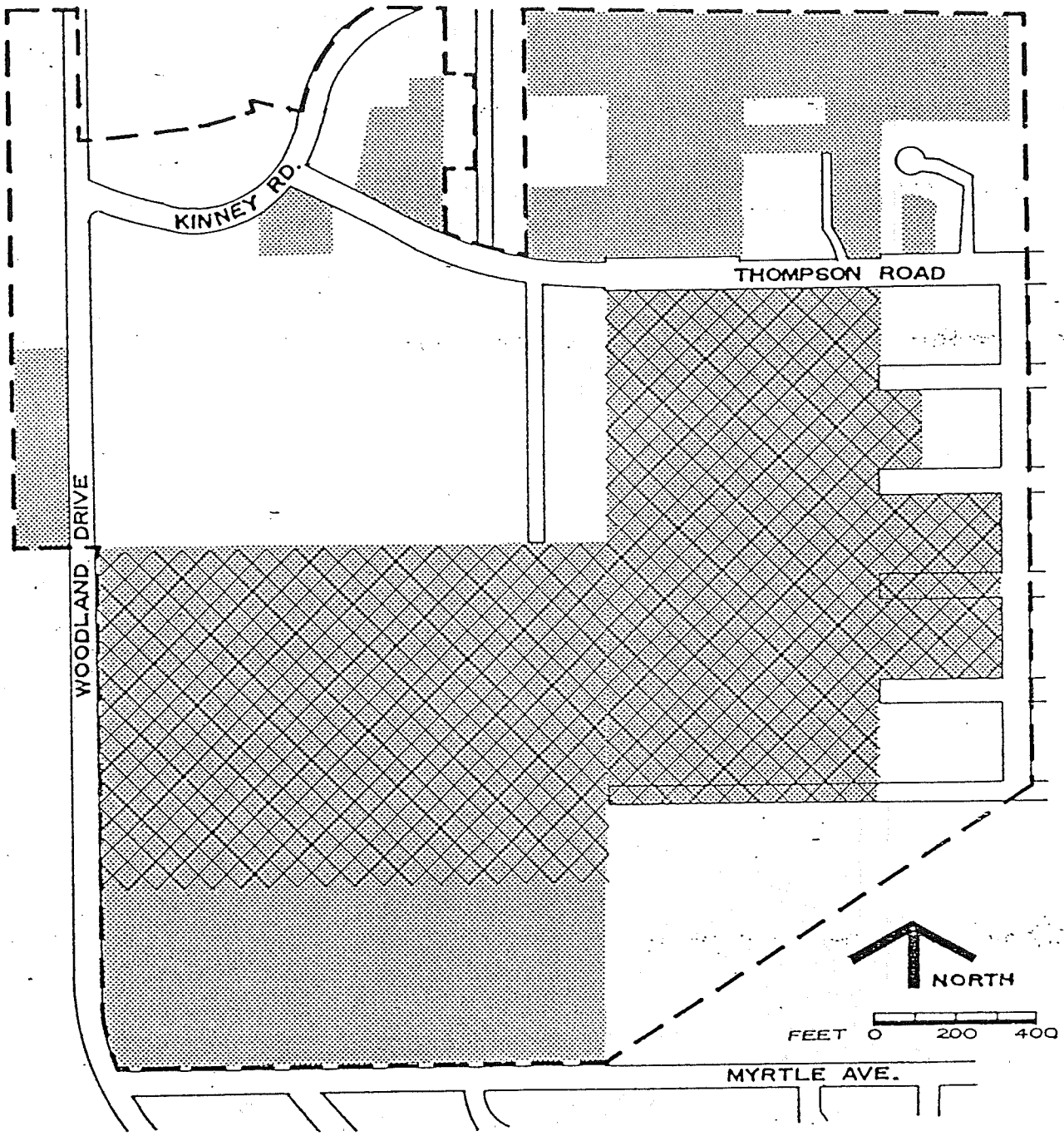
5. Also houses media center and warehouse for supplies.

Service Buildings

Transportation Building.--A wood structure completed in 1972, which serves as the motor pool for district vehicles. The buildings are located north of Newmark between Wall and Marple Streets.

Maintenance Building.--A wood structure completed in 1976, which serves as the storage, work area and dispatch point for maintenance workers into the various buildings operated by the district.

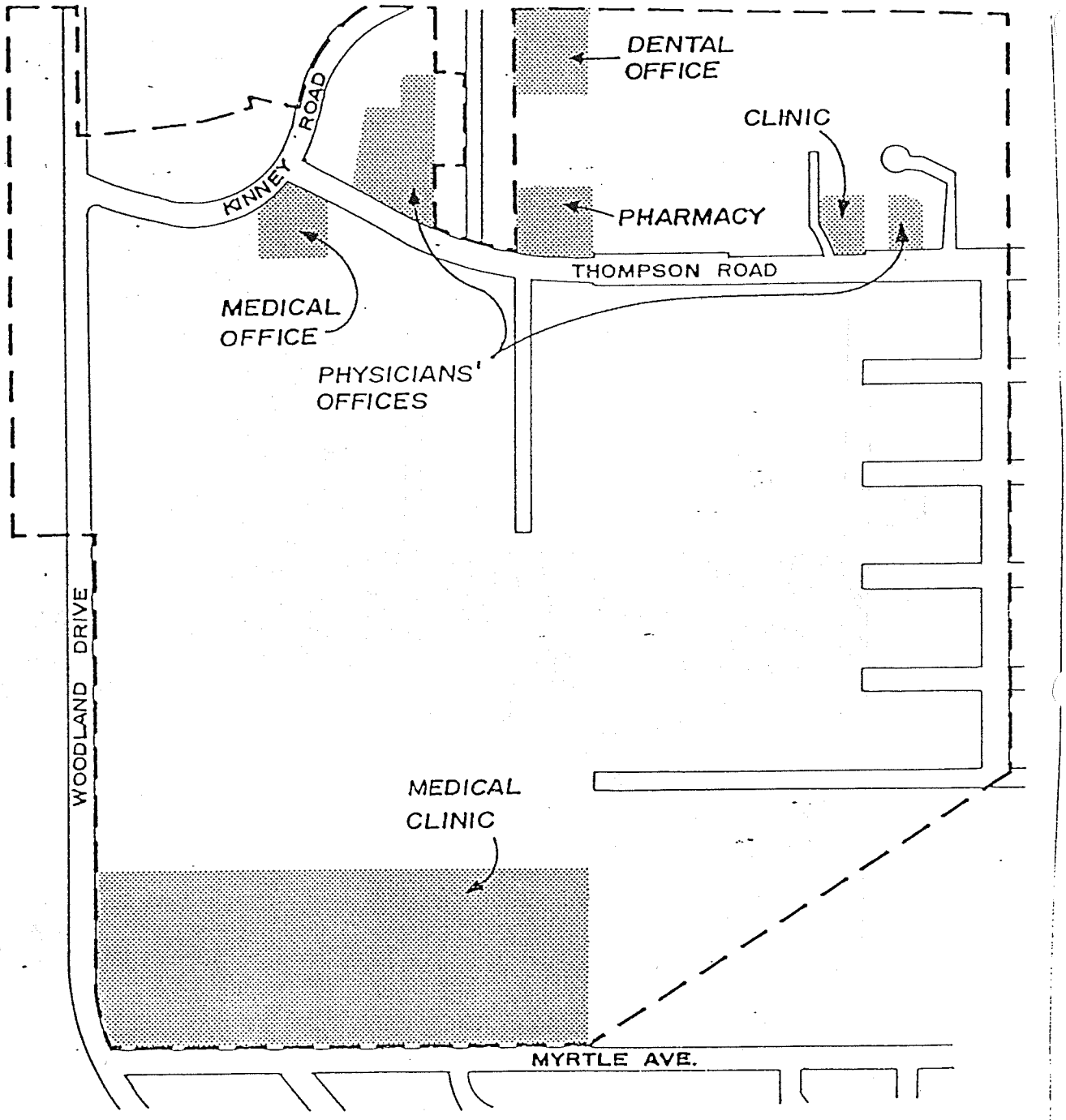
Administration Building.--A wood structure built in the early 1950's used as a residence hall for nuns working at churches and the Catholic school. Remodeled in 1974 by the district to house all central office administrative proceedings.



MAP 5.5-5
LANDS ZONED AND PLANNED FOR MEDICAL PARK DISTRICT, COOS BAY, 1979

BAY AREA HOSPITAL
MP-D ZONED AREA
MP-D PLANNED AREA

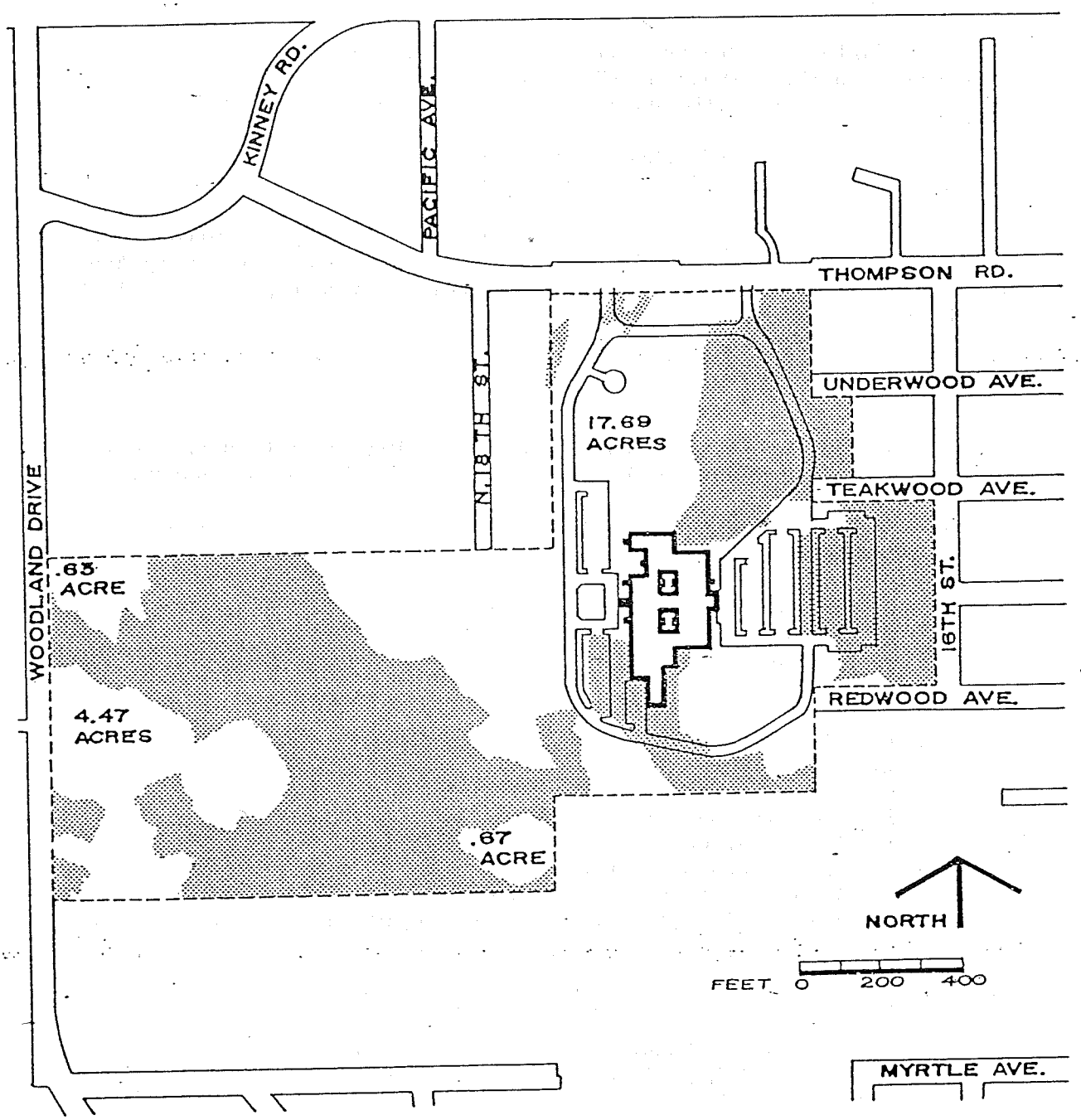
SOURCE: CITY OF COOS BAY



MAP 5.5-6

MEDICAL FACILITIES IN THE MEDICAL PARK DISTRICT

SOURCE: CITY OF COOS BAY



MAP 5.5-7

BUILDABLE PARCELS OF LAND WITHIN THE MEDICAL PARK DISTRICT, COOS BAY, 1979

SOURCE: STEWART, 1979

There is one additional school site outside the city limits.

Charleston (Grades K-5).--A wooden structure built in 1948 with remodeling in 1974, 1956 and 1958 with 17 classrooms and a capacity of 325; 25 per classroom. As of the date of this letter there are 290 students enrolled.

Coos River Water Shed above Coos River School.--The source of water for Coos River School, located east of Solari Lane.

This inventory of school sites would be incomplete without the listing of the undeveloped site of 30+ acres south of Newmark to Lindberg Avenue that the district holds for potential development of some type of school that has not been determined at this time.

Facility Needs

1. Adequate access is requested to existing facilities and to the undeveloped site on Newmark should expansion be necessary.

2. Potential traffic trouble spots due to stop signs, signals, and heavy use:

   a. Pennsylvania Avenue in Englewood
   b. Southwest Boulevard from Highway 101 South
   c. 7th Street
   d. 10th Street
   e. Elrod and 10th Street
   f. 10th and Central
   g. Butler Road
   h. Ocean Boulevard at the Water Board
   i. Colonial Care Nursing Home
   j. Motor Vu, Cemetary and LaClair Street
   k. Radar onto Ocean Boulevard
   l. Pacific onto Charleston Highway
   m. Loop from Taylor Street following Old Rifle Range Road to Oak Street

Conclusions

1. At this time, School District #9 has ample facilities to meet existing and near future needs.

Bay Area Health District

Introduction

As a result of the 1974 Comprehensive Plan adopted by the City of Coos Bay, a medical park district was established. This district designated 140 acres for medical and related facilities presently dominated by Bay Area

Hospital, with smaller, medical-related facilities in the vicinity. (Maps 5.5-1,-5) Of the 140 acres, 67 are undeveloped and 73 are used as residential properties or for medical uses. Presently, only 83 acres are actually zoned as medical park district; the remaining 57 acres are zoned for single-family and duplex residences until such time as zone change applications requesting medical park classification are justified by the Planning Commission and City Council.

The action to create a medical park has several distinct advantages.

1. Centralization of medical and related facilities.

2. Increase efficiency and convenience to users.

3. Aesthetic quality in park-like atmosphere.

Existing Facilities

Bay Area Hospital is the sole provider in the district that administers hospital care. It has developed as a regional facility serving as a major hospital facility for both Coos and Curry Counties. Other facilities located in or adjacent to the medical park are two medical clinics, several physicians offices, a pharmacy, a physical therapy office, dental office, and a psychiatric office. (Map 5.5-6)

Facility Needs

Upon the request of the Bay Area Health District Board, the hospital has presented the City with a plan regarding the future development of land within the district. A study of the firm of Patterson and Stewart (Long-term Land Area Demand for Bay Area Hospital, Coos Bay, Oregon, 1979) concludes the following:

1. Of the 47.59 acres of land held by the Bay Area Hospital District, 30.77 acres or 64.66% of the total acreage is considered buildable in realistic economic terms. (Map 5.5-7) This determination was based upon computing land with slopes of less than 12%. The remaining acreage, consisting of land with slopes greater than 12%, would be extremely costly for construction, especially for large-scale uses.

2. The current capacity of the hospital is 172 beds. Based upon projected population analysis, this limit will be reached by 1984-1985. Although additional beds may be required in the future, the hospital is moving more toward the provision of outpatient care and services that don't require patient status. (Ballantyne, 1988) By converting this bed need to requisite land area (0.1155 acres per bed), Stewart predicts that the hospital will consume 55.7 acres of land (including parking).

This land area will allow for all auxiliary functions of the hospital, including a mental-health facility and detoxification center. In addition, the hospital is now planning for a cancer treatment center on the site. This facility would project to occupy an area of 5,000 square feet (Ballantyne, 1988). Further, it allows for about 30 percent (30%) of the site to be landscaped and for the major natural tree stands to be retained. (Stewart 1979:10)

3. Additionally, Stewart accounts for non-hospital related medical functions that will naturally desire to locate in close proximity to the hospital. It predicts that approximately 40-50 acres will be utilized for these purposes within a one-half mile distance from the hospital. Of this 40-50 acre amount, at least 36.7 acres will be required by medical physicians. It must be assumed that the discrepancy will be required by convalescent facilities and/or other "healing arts professions" which Stewart did not study.

4. Stewart finally concludes:

> The Bay Area Hospital District Board should give serious consideration to purchasing the site immediately south of the present campus, which we calculate to be 17.23 acres. We strongly recommend that no portion of the present 47.59 acre site be used for non-hospital or hospital-related functions. In our opinion, it will be very difficult and very costly for the present site to accommodate the required space for hospital and hospital-related growth over the next forty years. (Stewart 1979:10)

The obvious conclusion from this study is that the hospital district presently has insufficient lands to meet the predicted need. However, greater consideration should be given to a practical utilization of the heretofore unbuildable land rather than to impinge upon the established residential lands surrounding the medical park. Stewart also makes this suggestion. "The 30.77 usable acre constraint can be alleviated by a greater use of taller buildings in future expansion or by the moving of greater quantities of earth in the 12-20% slope areas." (Stewart 1979:10)

Previous information from the Bay Area Hospital District (Mitchell, 1979), indicates the kinds of health care programs the hospital is considering to add to its present facility of acute care. Table 5.5-3 lists these programs and the desired location of each in relation to the hospital facility. It is unclear whether all or part of these services will be placed within the 55.7 acre need as concluded by Stewart. Additionally, this program list make no mention of mental health facilities as did Stewart. Moreover, a time frame to phase to these health programs has not yet been developed.

In addition to this listing of health care needs the Western Oregon Health Systems Agency, (WOSHA), has prepared a Health Systems Plan which includes considerations for Coos County. (WOHSA 1977:VIII-C-5) This plan specifies goals and strategies to improve the level of health and to contain health costs and provide access to services. Those inventoried needs which have a bearing on the City's land use planning area.

1. Lack of alternatives to institutional care (including group care homes, home health agency, homemaker services, foster home services, day care services).

2. Need for information and referral center.

3. Better geographic distribution of general health care through small health centers (this need refers to rural areas as opposed to urban centers).

Table 5.5-3

POTENTIAL HEALTH PROGRAMS AND DESIRED SITING WITHIN BAY AREA HEALTH DISTRICT

Health Program Considerations	Location	Immediately Contiguous To Hospital	Connected To Hospital	Detached From Hospital
Acute Care Expansion		X		
Substance Abuse		X	X	X
Adult Day Care		X	X	X
Nursing Homes		X	X	X
Therapy Services		X	X	X
Physician Office Building			X	X
Education Facility			X	X
Shared Services/Warehousing				X
Housing				X
Psychiatric Facility			X	
Community Health Offices			X	X
Cancer Therapy (Radiation)			X	X

Conclusions

1. A preliminary long-range plan of land needs for the Bay Area Hospital District indicates that the entire parcel of land dedicated to the hospital should be retained for exclusive hospital use in the future. Also, the 17.23 acre tract south of the district be acquired for projected hospital use.

2. Specific plans for the use of this land area by new, hospital-sponsored health programs have not been formulated by the hospital district.

3. The Western Oregon Health Systems Agency identifies the need for medical information services and alternatives to institutional care are lacking in the general urban area.

OREGON INTERNATIONAL PORT OF COOS BAY

INTRODUCTION:

The Oregon International Port of Coos Bay was established as a special district to promote water-related economic development. The District's scope of concern includes the entire Coos River drainage basin, as far north as Lakeside, as far south as Bandon, and the major freshwater streams and tributaries to the east.

EXISTING FACILITIES:

The Port retains ownership of some lands surrounding the estuary. One tract occurs within the city limits which is the eastern side of North Bayshore Drive from approximately Ivy Avenue to Teakwood. Part of this land is leased to the U.S. Coast Guard for boat moorage and to a private firm for in-water loading of logs on ocean-going vessels. Another tract is the 200-acre Eastside Industrial Park. Outside the city limits, the Oregon International Port of Coos Bay owns several dredge spoils islands, portions of the North Spit and its tidelands, the Charleston Marina Complex, and the Charleston Shipyard.

PORT BUSINESS GOALS:

The Port's 1989 Strategic Business Plan identifies the Port's mission and five business goals as follows:

Port Mission: "Promote, in cooperation with other businesses, local governments, and community organizations, the economic development potential of Southwestern Oregon."

Goal #1: Develop a Port management capability that will effectively and efficiently plan, organize, staff, direct, and control Port activities.

Goal #2: Fully develop the North Bay Marine Industrial Park's business potential. (In cooperation with public and private transportation organizations and the Coos County Urban Renewal Agency.)

Goal #3: Promote the full development of the region's maritime capacity. (In cooperation with public and private transportation organizations, the Coos County Urban Renewal Agency, and private sector shippers, traders, and terminal operators.)

Goal #4: Fully develop the commercial fishing potential of the Coos Bay region. (In cooperation with private sector processors and commercial fishing interests.)

Goal #5: Support the full development of the area's marine-oriented recreation potential.

The Business Plan identifies a number of projects and facility needs required to implement those goals.

FACILITY NEEDS:

Three of the Port's special facility needs are of particular relevance to the City of Coos Bay.

1. Channel Deepening: The Port and the Army Corps of Engineers are presently engaged in a two-year feasibility study and engineering design to deepen the federal navigation channel by an additional three feet down to 38 feet MLLW (Mean Lower Low Water). The deeper channel will allow the presence of larger vessels in the bay, should eliminate the occasional temporary groundings experienced by the very largest vessels in the Bay when fully loaded, and will require that the private and public dock facilities adjacent to the channel also be deepened. Current plans call for the deposit of dredged materials into approved offshore (ocean) disposal sites.

2. Additional Off-Street Parking: Additional off-street parking will be required both for the U.S. Coast Guard dock and the Dolphin Terminals Log Export dock along U.S. Highway 101 in this city. This will, of necessity, require that a small portion of intertidal and subtidal lands be filled to provide the required parking areas.

3. Eastside Industrial Park: The Port's development plans for the Eastside Industrial Park are limited by the Coos Bay Estuary Management Plan such that access must be provided through the construction of a new access road as an extension of 6th Avenue. It is expected that the large (approximately $2 million) cost of the 6th Avenue road extension will be supported by funds through the Coos Bay Urban Renewal District, but only when the Port presents a committed industrial client to the city.

Conclusion:

1. The Port of Coos Bay has identified three specific long-range needs for the regional economy: Channel deepening to allow the presence of large vessels in the bay, additional off-street parking to meet the needs of the U.S. Coast Guard and the Dolphin Terminals Log Export dock, and development of the Eastside Industrial Park.

City Hall

The new Coos Bay City Hall, dedicated in December 1978, is situated at the west end of the downtown mall between 5th and 6th streets. It houses the office of the Mayor and City Manager, the departments of Finance, Public Works, and Community Development, and also the Public Safety and Council Chambers. (Map 5.5-1)

Public Safety Services

The City's police and fire departments were merged in 1987 into one public safety department with one common director. The Coos Bay Police Department has 23 officers at present; 16 assigned to patrol functions, two investigators, one working 911 support services and evidence control, two on special assignment developing computer programming and a policy manual, and two management positions.

The fire department has 12 firefighters. Five are assigned to the city's central station and a lone firefighter mans the Empire and Eastside stations (Map 5.5-1). In addition to the 12 paid firefighters, the City has a volunteer staff of 30. Fire protection is also supplemented by emergency medical services. Besides providing fire protection in the city, contracted services are made to Libby and Bunker Hill. Charleston maintains a rural fire protection service of its own.

Crucial to adequate fire protection is the production capabilities of the water system. Adequate fire flow must be available at specific levels depending upon the land use. In the City of Coos Bay, water in all residential areas should be capable of producing 1000 gpm. The flows in industrial and commercial areas are determined by square footage of the structure and can vary between 1500 and 3500 gpm.

During the November 8, 1988 general elections voters in Coos Bay sustained an amendment to the City's charter passed on May 17, 1988 requiring 1.85 sworn police officers and 1.2 firefighters for every 1,000 people in the area. This charter will offset recent Public Safety staff cutbacks related to bugetary constraints. An additional five policemen and five firefighters will be added to the existing staff.

Facility Needs

The present level of fire protection service is adequate to satisfy the City's needs. Areas where fire flows are below accepted levels are being improved. Residential neighborhoods in Empire (e.g., Crocker St.) and Englewood (e.g., Washington, Oregon, California, Idaho, and Pennsylvania Avenues, (are below the 1000 gpm standard but are being improved by replacing existing pipelines with larger ones. Similarly, fire flows in each school facility are being increased with Milner Crest and Englewood schools remaining to be improved.

One difficulty that may affect fire protection response is the location of the central station on 4th Street, a north-south transportation artery in the urban core. Although this is a prime route, the amount of downtown traffic interferes with the prompt performance of the fire department. Moreover, department officials reveal that more fires occur in residential areas, as opposed to the downtown commercial district. In light of both these problems, it may be desirable to abandon the central station and split services north and south of the downtown district. This maneuver would create three fire protection service areas rather than the two existing ones. Such a change would necessitate increased manpower but no other equipment purchases, other than a ladder truck which is already needed. Additionally, any considerable development around the Coos Bay waterfront may necessitate the purchase of a fire boat.

The level of fire protection can also be impaired by the quality of supporting facilities. For instance, water flows may be considerably lower than the desirable 1000 gpm minimum and unpaved, narrow roads can hinder accessibility. Such conditions still exist within the City of Coos Bay in both developed as well as undeveloped areas, (primarily Englewood and Empire), and should be repaired before further expansion may occur. (Anderson 1979)

Conclusions

1. The existing facility presently lacks a single ladder truck, although the remaining apparatus and pumping capabilities are adequate for current needs.

2. Further waterfront development may require acquisition of a water boat.

3. It may be desirable to develop separate facilities, one in the north city and one in the south city to rectify the traffic problem occurring at the central station. Response time to outlying residential areas is encumbered by traffic patterns in the downtown core.

4. All areas within the city should be improved to provide adequate fire flows and accessibility.

5. The request to provide fire protection services to areas outside the city limits would be hampered of these areas were not brought up to adequate standards (fire flows and accessibility).

Coos Bay Public Library

EXISTING FACILITIES

The Coos Bay Public Library building was constructed in 1966 and was remodeled and expanded in 1983. It is located on Anderson between 5th & 6th Streets. The library portion of the building is 11,062 square feet and the adjoining auditorium-cultural center totals 1,728 square feet. The library provides seating for 100 in the reading rooms and for 245 persons in the two meeting rooms. The library houses 55,000 adult and children's books, 4,100 phonograph records and other non-print materials, 7,600 magazines and several thousand pamphlets. The library provides typewriters, a personal computer, microform machines, stereo listening equipment and a photocopier for public use.

The library serves all residents of Coos County through a contractual agreement with the Coos Cooperative Library Service.

FACILITY NEEDS

The library building was originally planned to provide adequate space for ten years. Addition of a 512-square-foot music alcove and expansion of the library into part of the auditorium provided a total new library area of 3,784 square feet. Seating and bookstock areas should be adequate for another 5 years unless usage dramatically increases. Library use has experienced steady growth despite a reduction in population.

The building is currently quite inadequate, however, in staff workroom space. More space is also needed for housing and display of special collections and for children's and young adult activity areas. Any expansion will require reduction of auditorium space since building design will not permit a second floor and parking area is already limited. Parking requirements have been met only by designating spots under city hall as library parking.

Conclusion

1. The Coos Bay Public Library is faced with a current lack of adequate staff work area and with increasing space deficiencies in two portions of the public area. These needs could be partially met by pursuit of federal LSCA grant funding within the next five years.

COOS BAY WASTEWATER TREATMENT, CONVEYANCE SYSTEM AND SOLIDS DISPOSAL SYSTEM

Introduction

The City of Coos Bay Wastewater treatment and disposal system consists of the following major components:

Treatment Plant No. 1 (main plant) is located two blocks west of Highway 101 between Koosbay Boulevard and Ivy Avenue. This Plant serves the Coos Bay city area, the Eastside area (formerly the City of Eastside) and receives wastewater for treatment from the Bunker Hill Sanitary District.

Treatment Plant No. 2 (Empire plant) located west of Highway 240 (Cape Arago Highway) opposite Fulton Avenue in the Empire area. This Plant serves the Empire district of Coos Bay (Western Coos Bay, formerly the City of Empire) and receives wastewater for treatment from the Charleston Sanitary District.

The City of Coos Bay's conveyance system has 20 pump stations to move the Wastewater to the treatment plants. The City also maintains 7 pump stations for the Charleston Sanitary District.

The City of Coos Bay's sludge disposal system consists of sludge pumping station, an under the bay sludge line and a 4.5 acre Facultative Sludge Lagoon (FSL) located at the site of the old Eastside Treatment Plant (9th and C St.)

Presently the entire Coos Bay treatment and disposal system is being expanded and upgraded to accommodate future growth and conform to the latest environmental standards. This upgrade is scheduled for completion by May 15, 1991.

Facility Design Requirements:

Industry practice currently recognizes three stages of wastewater treatment: primary, secondary and advanced or tertiary. Only the first two are in common use in the United States today. Primary treatment depends on physical processes to remove contaminates from the wastewater: processes such as skimming, settling and filtration. These processes typically remove 50 to 60 percent of the suspended solids (SS) and 25 to 30 percent of the biological oxygen demand (BOD). Secondary treatment depends on biological and chemical processes to remove additional contaminates from the waste stream. These processes typically must remove 85% of the suspended solids (SS) and the biological oxygen demand (BOD).

The Department of Environmental Quality standard for the amount of flow and sewage strength vary between the summer and winter months and indicate the efficiency and capacity of each Plant (Table 5.54).

The distinct standards set for the summer and winter seasons are necessitated by the shift in weather conditions that have a dramatic effect on the sewerage system.

This area is subject to frequent periods of rainfall in the months of November through May. The intensity and duration of the storms are prime contributors to the dysfunction at the treatment plants and of the collection structure.

Facility Needs:

The original sewerage system in Coos bay had the role of channeling sewage and storm water runoff simultaneously (combined flow). This technique is no longer acceptable by environmental standards and the separation of storm and sanitary sewer flows has been an ongoing task. However, complete separation has yet to be achieved. During peak storm periods the sewerage system is pressed beyond it's capacity with considerable input of storm water.

TABLE 5.5-4

D.E.Q. Standards For Secondary Sewerage Treatment For The City of Coos Bay, 1989

May 1 - October 31	Coos Bay #1	Coos Bay #2
Sewage Strength		
BOD[1]	20 mg/Liter/Day	20 mg/Liter/Day
TSS[2]	20 mg/Liter/Day	20 mg/Liter/Day
pH	6.0 - 9.0	6.0 - 9.0
FC[3]	Max. 200/100 mg Sample	Max. 200/100 mg Sample
% Removal	Min. 85%	Min. 85%
Effluent Flow	2.90 mgd Max.	1.90 mgd Max.
November 1 - April 30	Coos Bay #1	Coos Bay #2
Sewage Strength		
BOD	30 mg/Liter/Day	30 mg/Liter/Day
TSS	30 mg/Liter/Day	30 mg/Liter/Day
pH	6.0 - 9.0	6.0 - 9.0
FC	Max. 200/100 mg	Max. 200/100 mg
% Removal	Min. 85%	Min. 85%
Effluent Flow	Low as Practical	Low as Practical

[1]BOD - Biochemical Oxygen Demand - Amount of oxygen necessary for aerobic (oxygen-thriving) bacteria to dispose of sewage waste; as strength of sewage increases so does the concentration of bacteria. The BOD is important in relation to the amount of dissolved oxygen (DO) already present in the water. High bacterial counts may demand more oxygen than available, thus depleting the resources and creating a detrimental environment for fish and plant life. (Standard Method 1988).

[2]SS - Suspended Solids - organic or inorganic floating matter that can be removed by sedimentation or filtration. (Standard Methods 1988)

[3]Fecal Coliform - bacteria found in human waste.

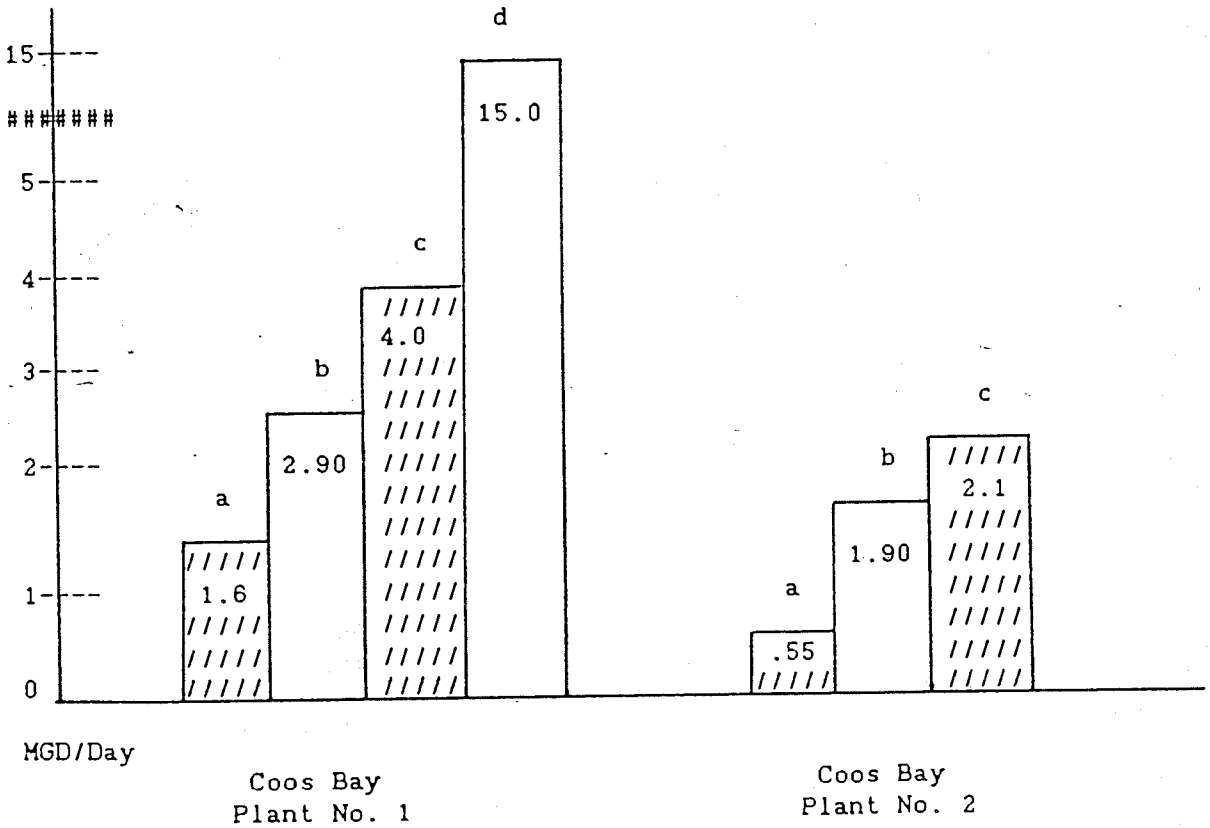
[4]mgd - million gallons per day.

TABLE 5.5-5

Seasonal Sewage Effluent Flows, Coos Bay 1988

Season	Coos Bay #1		Coos Bay #2	
Summer	Actual Flow	Max. Permitted	Actual	Permitted (D.E.Q.)
	1.6 mgd	2.90 mgd	0.55 mgd	1.90 mgd
Winter	4.0 mgd	Low as Possible	2.1 mgd	Low as Possible

FIGURE 5.5-2



a - Summer Flow
b - Treatment Capacity
c - Winter Flow
d - Split Stream Treatment

According to the Public Works Department, Bunker Hill contributes approximately 5% of the flow into CB #1; Charleston 25% of the flow into CB #2. Although these inflow figures are below their average and contractual share, the amount and strength of sewage generated from Charleston cause some concern. If extension of service occurs in Charleston the augmented inflow and strength may drive average monthly usage above the allotted total.

The existing sewerage system as been shown to be inadequate in handling the flow of waste to be treated due to the infiltration and intrusion of storm water. However, some of the system was redesigned to accommodate estimated flows by the year 1995. This sewerage program adopted in 1987 should be capable of:

1. Supplying present and anticipated future sewerage treatment needs to the year 1995.

2. Expansion of proposed construction, or integration with adjacent systems to meet future demands beyond the design period.

3. Interconnection with future proposed regional developments may be feasible at this time.

Further, the 1987 plan estimated the actual flow in 1995 assuming that the maximum wet-weather flows would be treated by Plants 1 & 2. Estimates of 1995 daily flows for residential, commercial and industrial use appears in Table 5.5-8.

TABLE 5.5-8

ESTIMATED SEWAGE FLOWS
BY TYPE OF USE, COOS BAY

1995 Estimated Flows	Gallons Per Day
Residential	130
Motels, Hotels	100/unit
Schools	20 student
Businesses	25 employee
Restaurants	10/meal
Bowling Alleys	10/patron
Laundrymats	9000
Swimming Pools	10/patron
Service Stations	1000
Churches	10/member
Car Wash - Automatic	5000
Car Wash - Manual	3000
Taverns	1000
Hospitals	200/capita

These estimates were then recalculated into an equivalent residential population. "All businesses, commercial buildings, schools and industrial development were considered by the foregoing criteria, totalized and broken down into an equivalent residential population. By this means, a total population equivalent was reached for the area served by each treatment facility." These population equivalents are shown in Table 5.5-9.

TABLE 5.5-9

PROJECTED POPULATION EQUIVALENTS FOR COOS BAY REGIONAL SEWERAGE FACILITIES, 1995

Area Served	Population Equivalents	
	Coos Bay #1 Plant	Coos Bay #2 Plant
Total Area Served	20,500	12,500
Coos Bay	18,000	-----
Bunker Hill	2,500	-----
Empire	-----	8,300
Charleston	-----	4,200

Conclusions

1. A regional sewerage system has been established by the City of Coos Bay providing service on a contractual basis to Bunker Hill and Charleston.

2. The design of the sewerage system causes an overload which can be handled throughout the year. Storm waters from intense and lengthy rainfall intrude the system; ground-water and tidal waters infiltrate deteriorating pipes.

3. The system is adequately designed to handle sewage waste at the present time.

4. The sewerage system has the capacity to meet expected growth needs. If unexpected substantial growth occurs in the areas outside the city limits (Bunker Hill and Charleston), whereby they exceed their allotments, it is the responsibility of these areas to assist in meeting their share of the required expansion.

Replaced by ORD 343 enacted 1.6.04

Keep for Historical Infor.

Dependable systems of transportation are essential to the efficient movement of people and of goods and services. In addition, these systems must ensure the safety of the users while providing the most economical means of reaching a destination. In the Bay area, residents rely upon commercial and personal transportation by means of air, land, and w[illegible] systems have been shaped by the geographical feature[illegible] resources, and related land development. Initially, [illegible]bit the water system as a means of transportation; morec[illegible] continues as an integral component of the area's ecc[illegible] passage of people and other goods is the domain of t[illegible]o some extent, the airplane.

Ignore these pages!

Modes of Transportation

Automobile

The auto is the principle means of transportation for most Coos Bay residents. Due to the current lack of wide-scale mass transit (excepting the Senior Activity Center buses) and the geographical sprawl of the Coos Bay area, reliance on the automobile is mandatory. As one might expect, personal transportation is utilized to commute to the workplace, to commercial and service districts, and to larger urban areas outside the region. The Coos Bay/North Bend area is the largest urban center in the county surrounded by small, residential communities. Historically, these rural communities developed as outgrowths of an agricultural and logging economy, inherently attracted to the "urban" hub for essential goods and services. Dispersed due to the topography, they were linked then by the natural water system. Many steam and paddle-driven boats plied these waters providing transportation and communication. Today these communities are still compelled to resort to the urban center for goods and services but they have replaced the boat with a modern conveyance, the auto. Even the City of Coos Bay has developed so that strict and widespread divisions exist between residential and business/consumer areas. Since walking to these areas is impractical, the auto is the only economical and convenient alternative for personal travel at this time.

Intercity Bus Service

Greyhound Lines, Inc., is the only company providing passenger and express services into and out of the Coos Bay area. Presently, ten buses depart Coos Bay each day under the following schedule:

1. Four buses travel north to Portland via Highway 101.

2. Three buses travel south to San Francisco via Highway 101.

3. Two buses travel over Highway 42 to Myrtle Point, one bus continuing on to Roseburg.

4. One bus travels to Reedsport, there making connections over Highway 38 to Eugene.

Local Public Transportation

Public transportation is defined by the Oregon Department of Transportation as "any form of passenger transportation system which carries members of the public on a regular and continuing basis." (ODOT 1973:7) A small-scale transportation service is offered to the elderly, handicapped, and the general public by a fleet of vans operated by the Bay Area Senior Activity Center. The focus of the system is to service the elderly and physically/mentally handicapped. Although, the Center is licensed as a general carrier, only a small portion of the general public takes advantage of the bus service due to management limitations and adequate overall publicity. Further discussion of this particular public transportation mode can be found in this inventory under "Transportation of the Handicapped."

The establishment of a public transit system in the Bay area can be beneficial on several levels. The dispersal of areas providing employment and services necessitates the exclusive use of the automobile as discussed above. Mass transit could offer a convenient alternative to the general public and to other disadvantaged groups not serviced by the Senior Activity Center buses (low income persons, young persons, persons with suspended licenses, or other persons unable to drive). Use of a public transit system, of course, would reduce the number of automobiles and, thereby conserve expensive and dwindling energy resources, lessen the environmental impacts of gas consumption, and alleviate congestion. The latter is an urgent problem in specific areas around Coos Bay.

However, establishments of public transportation is accompanied by disadvantages which must be weighed against the attractiveness of this kind of service. Although the initial establishment of a transit system is costly, these costs can be offset and even totally absorbed by seed grants and/or loans. The continued maintenance and operational costs, however, become the responsibility of the sponsoring jurisdiction. It has been known that public transit cannot maintain attractive service (inexpensive, frequent runs without delays) based exclusively upon users' fees. The systems ultimately are subsidized, usually by reserves in the general fund sometimes requiring special taxation to augment the reserves. Considering the local and statewide

sentiments regarding added tax burdens, the concept of publicly - sponsored, mass transit in the Coos Bay area might be unfeasible. Public attitudes on this subject were sampled in June, 1977 as part of a survey conducted for the Committee for Citizen Involvement. Residents were asked if public transit, subsidized by public funds, is needed. Results indicated that public feeling was mixed with 26% agreeing and 27% disagreeing; 16% were noncommittal and the remaining 31% fell in other categories.

Sentiments toward public transportation, whether subsidized or not, may have changed considerably since the time of this survey. Gasoline allotments are no longer unlimited, nation-wide conservation measures are being enforced, and the price to operate one's automobile is making its exclusive use an economic impossibility. If a change in public attitude is taking place as a result of the energy situation, the management and fiscal disadvantages of public transportation may wane in importance. Due to this very reason and to the geographic sprawl of the urban and rural areas, some form of transit to serve the general public as well as the transportation-disadvantaged is identified as a specific need. It is also recognized that its solution is predicated upon the widespread support of the entire region.

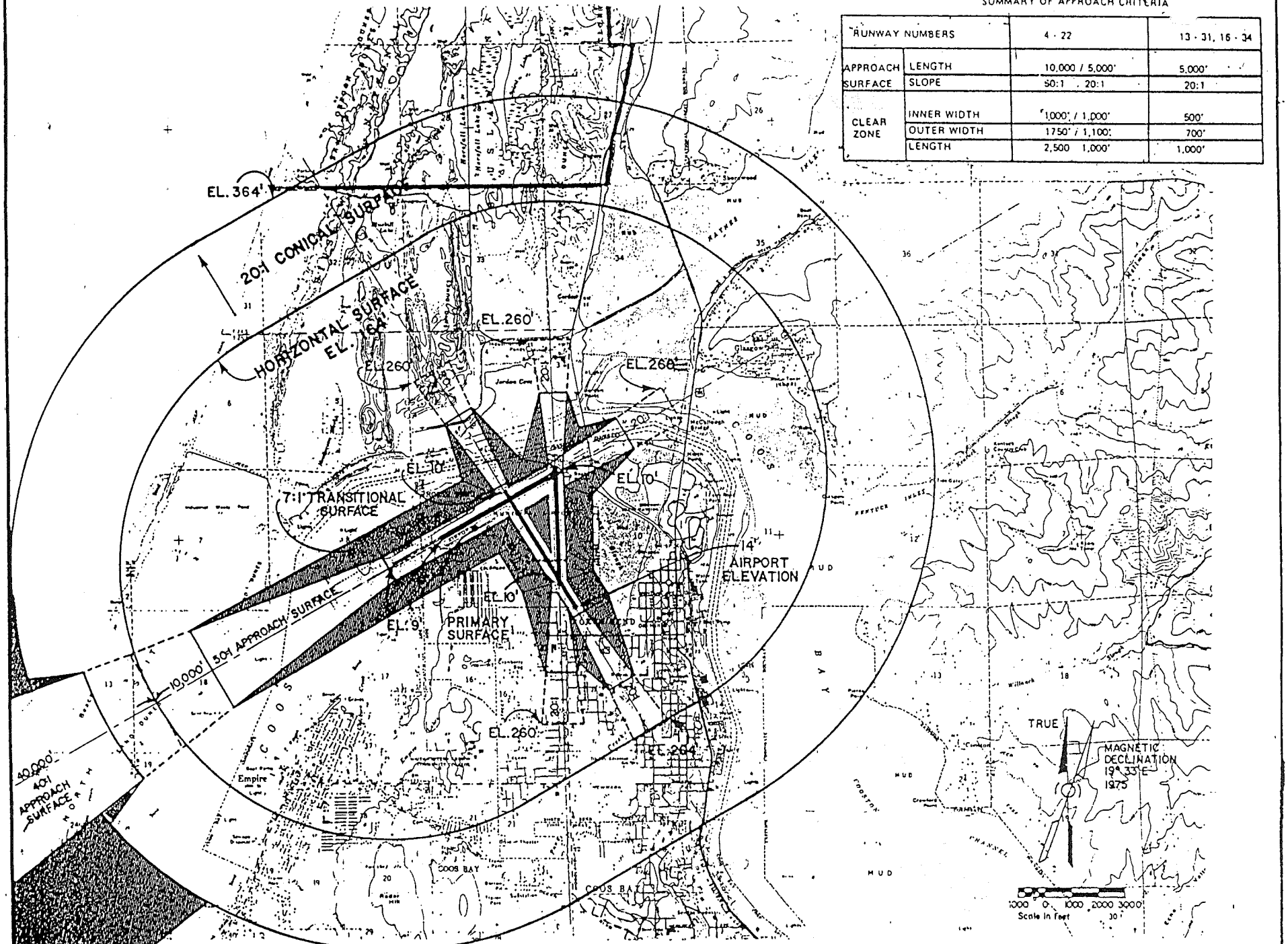
Taxi Cab Service

Commercial taxi service is offered by Radio Cab and Yellow Cab. These companies provide service to North Bend, Coos Bay, and Charleston and also to areas outside the city limits.

Air Service

Air travel for Coos Bay/North Bend residents has long been provided at the North Bend Municipal Airport located on the northern reaches of the North Bend city limits. It provides needed freight and passenger service and is the only airport on the southwest coast providing interstate air travel. The future of adequate air service has been accepted as a regional concern for the economy and well being of county residents. Therefore, in 1978 the jurisdictions of Coos Bay, North Bend, and Coos County combined efforts to design a regional airport element to be included in their respective comprehensive plans. (Proposed commercial airport siting element: An element of the City of North Bend, the City of Coos Bay, and the Coos County comprehensive land use plans, March 1978). This element and exception pertaining to runway extension 4-22 was adopted by Ordinance 2751 by the Coos Bay City Council in March 1978 and is submitted herein as partial fulfillment of the transportation element of the Statewide Planning Goals and Guidelines, (Appendix Vol. III) and as updated by an exception contained in the Coos Bay Estuary Management Plan adopted by the Coos Bay City Council on September 13, 1982.

Although the airport lies wholly in the City of North Bend, some airport-owned property extends southwesterly into the City of Coos Bay. Moreover, any extension of Runway 4-22 in the future would be within the Coos Bay jurisdiction. Obstruction of the airspace required for flight of an aircraft can potentially cause accidents and, therefore, land use and zoning practices within certain areas must be regulated. ORS Chapter 492 authorizes



MAP 5.6-1

NORTH BEND MUNICIPAL AIRPORT, AIR PROTECTION SURFACES

Amended per Resolution 83-11

jurisdictions to adopt airport zoning regulations which may specify land uses permitted and restrict the height of structures or vegetation. Imaginary approach, transitional, horizontal, and conical air protection surfaces all fall within Coos Bay's city limits. (Map 5.6-1) Penetration into these surfaces should be protected by implementation ordinance.

Bay Area Transportation District: Update - 1983

The Bay Area Transportation District was established by the voters in November 1980 and encompasses Coos Bay, North Bend, and Bunker Hill (Precinct 25). Since its inception, the District board members have been preparing a service plan and a capital/operations budget, but has not achieved full funding. In 1981, following adopted policy of the Plan, the City Council did fund a per capital share of local match monies so that the District could be eligible for an UMTA Section 18 grant to complete service planning activities. As a result, the District board has adopted a planned system with three buses in operation. In addition, it was determined that revenues generated by fares, and grant monies for capital expenditures would be insufficient to run the system, therefore, the cost of operations and administration must be shared by local taxes. A tax measure has not yet been approved by the voters.

Trucking Service

Truck transportation of commodities into the Coos Bay area is a vital economic support. Materials carried by trucking operations help sustain the high levels of shipping export through the Port of Coos Bay. It is known that Coos Bay is one of the largest ports exporting lumber products today. A total of approximately 5 million tons were shipped in 1976, an increase of more than 3.5 million tons over the previous decade. (Baldwin 1974:4) The increase in flow is due in large part to products from the hinterland hauled in by trucks. A truck survey, conducted by the Port of Coos Bay and the Oregon Department of Transportation in 1978, concurs with this assumption. "Much of this increase can only be sustained by a flow of commodities from the interior and the flow is primarily over the state highway system." (Oregon DOT 1978:1) The survey sought to identify the interior origins of the commodities handled by the Port and the impact on the overland highway system.

The survey was conducted at nine docking facility sites representing a cross-section of cargo types handled by the Port, i.e., logs, lumber, plywood, wood chips, and petroleum. Although the interviews took place in January and February, conceivably a period of lower volume, substantial conclusions can be made concerning the regional and local transportation networks and identified needs. Specific data can be sifted from this survey to indicate impacts to existing highways and arterials. These impacts are valuable considerations when assessing the carrying capacity and efficiency of the transportation system.

This information is summarized below.

1. Approximately 450 to 700 trucks make daily trips into Coos Bay area carrying wood products. (Figures vary depending upon the statistical source. Interviews from the Port survey indicate 460 daily trips; manual counts at the junctions of US 101/OR 42 and US 101/OR 38 suggest 690 daily trips; tonnage totals furnished by the Port gathered in 1977 denote 570 daily trips, (ODOT 1978:4-5).

2. The majority of docking facilities are clustered along a 3-4 mile strip of US 101 within the cities of Coos Bay and North Bend. Based on survey data, these docks attract 60-70% of the direct daily truck traffic. Also, this area accommodates some of the remaining 30% transient truck traffic destined to the loading facilities north and south of the cities' limits. (Table 5.6-1)

Table 5.6-1

DESTINATION OF TRUCK TRAFFIC
IN THE COOS BAY AREA, 1978

Facility Destination	Number of Trucks	Percentage of Use
Central Docks	92	4.0%
Coos Bay Docks	85	3.0%
Fibrex	474	19.0%
Isthmus	228	8.5%
Ocean Terminal	425	17.0%
Roseburg Lumber	589	24.0%
U.S. Plywood	390	16.0%
Weyerhaeuser	215	8.5%

3. The typical, long-haul truck is a 5 axle, diesel truck with semi-trailer.

4. Out-hauls.

   a. In 90.8% of the cases surveyed, there were no return hauls from the Coos Bay area.

b. The remaining 9.2% of return hauls carried lumber-related products (lumber, shavings, and veneer).

c. Out-hauls originate predominately in Bandon, Coquille, and Lakeside, using highways US 101 and OR 42.

d. Out-hauls are generally destined to the Roseburg/Dillard area, using US 101 south and OR 42.

e. Routes out of Coos Bay, dominated by OR 42 and US 101 south, are ranked in order of use below. (Table 5.6-2 and Figure 5.6-1)

Table 5.6-2

HIGHWAYS USED TO TRAVEL OUT OF COOS BAY, 1978

Highway	Number of Trucks	Percentage of Use
OR 42	1,348	55.0%
US 101S	390	15.9%
OR 38	297	12.1%
US 10IN	245	10.1%
Other	169	6.9%

f. Hauling of the imported petroleum products out of the area was overwhelmingly on OR 42.

5. In-hauls.

a. Routes taken into the Coos Bay area were also dominated by OR 42 followed by US 101 south and OR 38. They are ranked by intensity of use below. (Table 5.6-3) More than half of the total used OR 42; US 101 south and OR 38 each roughly consumed one-sixth of the traffic. (Figure 5.6-2)

b. In-hauls were all carrying wood products.

Figure 5.6-1

Percentage of Use, Highways Travelled Out of Coos Bay, 1978

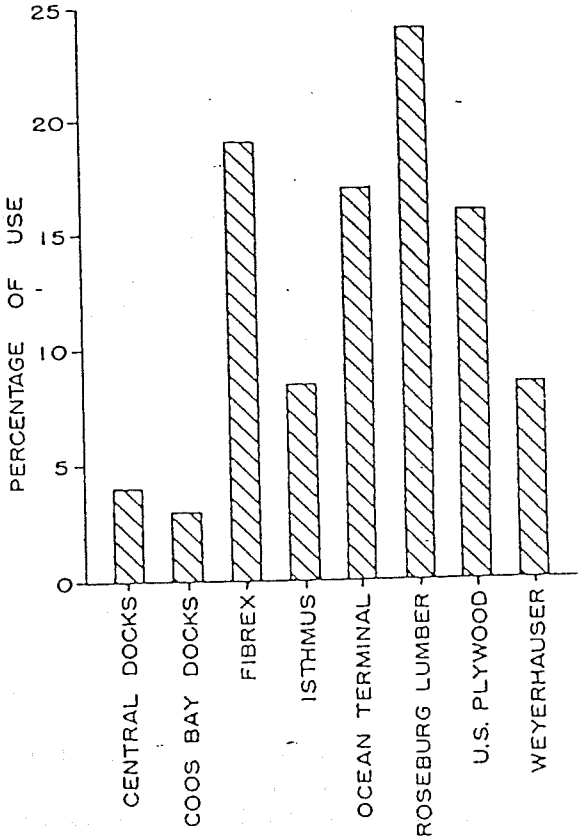


Figure 5.6-2

Percentage of Use, Highways Travelled Into Coos Bay, 1978

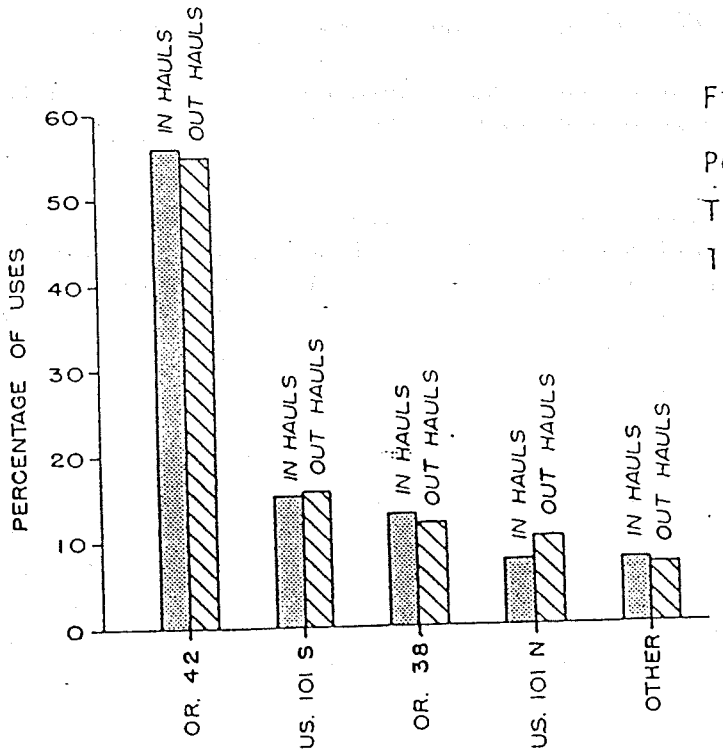


Table 5.6-3

HIGHWAYS USED TO TRAVEL INTO COOS BAY, 1978

Highway	Number of Trucks	Percentage of Use
OR 42	1,378	56.3%
US 101S	371	15.1%
OR 38	322	13.1%
US 101N	191	7.8%
Other	189	7.7%

6. Origins

   a. Roseburg generates most of the shipments than any other single point of origin. This is due to the movement of wood chips, a commodity which dominated most of the Port's exports (3.6 million tons of the total 5 million in 1976).

   b. The City of Coos Bay originates most of the lumber traffic.

   c. Rural Coos County produces the most log shipments.

7. Fifty percent of the trucks were home-based in Coos Bay; 13.8% were home-based in other areas of Coos County, totaling 64$ of the trucks surveyed.

In conclusion, this study of trucking relates very strongly to regional transportation needs. It highlights the necessity of safe, efficient east-west corridors. It also underscores the problem of congestion on US 101 through the city limits that plagues local and transient users.

Waterborne Service

The economic stability of the Coos Bay region historically has been bound to a waterborne transportation system. The early steam and wind-powered ships imported necessary supplies for survival and exited with the forest, mineral, and other resources of the region. The geographic characteristics of an expansive, naturally-deep estuary fed by fingerings of rivers and tributaries coupled with the inland mountainous constraints molded such water dependence. The economy still relies heavily upon water rather than overland freighting, preserving an economic focus on the estuary.

Table 5.6-4

WATERBORNE TRAFFIC OF FOREST PRODUCTS, COOS BAY

Short Tons

Year	Logs	Chips	Products		Total
			Foreign	Domestic	
1966	201,705	372,582	298,117	517,292	1,389,696
1970	512,971	2,308,833	379,113	410,421	3,611,338
1973	695,814	2,822,880	512,633	423,648	4,454,975
1975	565,570	3,079,726	424,567	310,223	4,380,086
1976	574,219	3,668,707	816,493		5,059,419

Source: Baldwin 1977

Table 5.6-5

PROJECTIONS FOR WATERBORNE TRAFFIC
OF FOREST PRODUCTS, COOS BAY

Short Tons

Year/ Source	Logs	Chips	Products		Total
			Foreign	Domestic	
1980					
CoE	350,000	5,000,000	473,000	300,000	6,123,000
GA	700,000	5,100,000	500,000	300,000	6,600,000
1990					
CoE	350,000	5,000,000	473,000	300,000	6,123,000
GA	700,000	6,200,000	500,000	300,000	7,700,000
2000					
CoE	350,000	5,000,000	473,000	300,000	6,123,000
GA	700,000	7,300,000	500,000	300,000	8,800,000

Source: Baldwin 1977

Being located on Coos Bay puts the City at the doorstep of the only deep-water shipping port between San Francisco and the Columbia River. More logs, lumber and other wood products are shipped annually from Coos Bay than from any other port in the world. A limited quantity of petroleum products are imported annually, but this volume may increase.

Its large acreage of developable land adjacent to navigation channels makes Eastside especially important to the water transportation system.

In addition to commercial water transportation, the Coos Bay estuary generates considerable recreational boating activity, especially in connection with sport fishing. There are presently no sport fishing docks or other facilities in Eastside to accommodate recreational boats. However, the City's location at the entrance to Coos River creates a considerable potential for development of such facilities.

The Port of Coos Bay ministers to the Coos River basin are including all of the Coos estuary. Additionally, it serves as a central, domestic and foreign shipping point for much of the hinterland (middle and southern Willamette Valley). Contemporary shipping activity has changed only slightly from its historic beginnings. Coos Bay still exports forest products and is known to handle the world's largest volume of timber products. However, the complexion of the shipping has changed to include not only raw logs and finished products ("manufactured items including lumber, plywood, linerboard, pulp and paper," (Baldwin 1977:3), but also newly-prized wood chips. The tonnage handled through the Port of Coos Bay since 1966 is shown in Table 5.6-4. These data were prepared from several planning studies and compiled in a report, entitled The Feasibility of Port Development on Coos Bay. This report shows that the export of wood chips dramatically increased during the 1970's from a mere 300,000 tons per year over 3.6 million tons per year, and concludes that these exports will steadily increase with world-wide demand (Baldwin 1977:4-6). On the other hand, the traffic of logs and forest products has remained somewhat constant and should remain so. The hopes for log shipments is dwindling and may decline further (Baldwin 1977:5). However, the total forest resource tonnage has definitely increased and despite the debatable future of forest resources, exports are expected to grow. (Table 5.6-5) (Baldwin 1977:4)

The shipping imports are dominated by petroleum products to satisfy consumer demands here and throughout the region. The demands for the petroleum and, therefore, import tonnage are expected to increase (Table 5.6-6) (Baldwin 1977:7)

No other products are imported in substantial quantities through the Port of Coos Bay at this time.

Table 5.6-6

WATERBORNE TRAFFIC OF PETROLEUM PRODUCTS, COOS BAY

Year	Total Petroleum Products (Short Tons)
1966	256,932
1970	261,393
1973	319,562
1975	282,407

Source: Baldwin 1977

The port currently can accommodate cargo shipped by barges or deep-draft vessels, although prior to a recent harbor channelization project by the U.S. Army Corps of Engineers, some of the larger ships were restricted by weight and by the time to enter and travel the estuary. The channel was deepened to 35 feet and widened to 45 feet effectively accommodating the majority of ocean-going ships as they are presently designed. (Table 5.6-7) Ships carrying greater loads can enter the harbor and the waiting time of some vessels is lessened. The port can berth a total of 16 vessels (deep-draft, barge, small coastal ships) at one time. Depending upon the commodity being transported, the number of berths are as follows:

Commodity	Berths
Logs (loading either from water or from land)	3
Wood Chips	5
Lumber Projects (Ships)	5
Lumber Products (barges)	3

The Port of Coos Bay owns and maintains a boat basin in Charleston mooring commercial and sport fishing boats. This facility is now filled to capacity, and the Port is considering an expansion of the basin.

Table 5.6-7

DESIGN VESSELS FOR COOS BAY CHANNEL IMPROVEMENT STUDY
CORPS OF ENGINEERS - 1975 STUDY

Vessel Type	Length	Beam	Draft	DWT
Log Ship	487'	74'	32'-0"	18,000
Chip Ship				
Small	580	82	31'-0"	26,000
Large	648	98	36'-0"	42,000
General Cargo Ship				
U.S. Flag (C-4)	523	72	32'-9"	15,000
Foreign	564	72	34'-7"	27,500
Tankers				
U.S. Flag	650	96	34'-0"	34,000

Source: Baldwin 1977

The Port study by Baldwin concludes that the present size of Port facilities is adequate to meet current demands with perhaps slight growth. "The port, in total, is adequately handling today's demand but has almost no flexibility to respond to either increased demand from new sources, or changes in shipping technology and economics." (Baldwin 1977:99) Consequently, the Port envisions a future need for expansion and alterations in light of long-term goals depending upon the lumber industry and its resources and the burgeoning fish industry. (See also Public Facilities and Services inventory which discusses more specifically the needs of the Port of Coos Bay district.)

Pedestrian and Bicycle Access in the Eastside Area:

Due to a relatively limited number of sidewalks, pedestrian access within Eastside is confined primarily to footpaths and to shoulders of streets and roads. This situation creates serious conflicts between pedestrian and vehicular traffic and endangers the safety of pedestrians. This problem is greatest for school children living in the eastern portion of the City who walk along parts of the Coos River Highway to reach school.

All bicycle access within Eastside is by way of existing streets and footpaths. Conditions for bicycle use are generally poor due to the large number of unpaved streets, which reduce rider comfort and safety. Other factors which tend to limit bicycle use are the large number of hills in the City and also the heavy car and truck traffic on Coos River Highway which is the major paved east-west route through the city.

Access to Tidelands Area

Most of the undeveloped portion of Eastside consists of large areas of tidal marshes and flats, as well as a very large area of fill material obtained from past dredging operations in Coos Bay. These areas are all lower in elevation than the developed portions of the City. At present the only road in the tidelands area is over a rough dirt road which extends west across the old airport site and continues to the bay. Lack of adequate access from the main part of the City poses a major obstacle at present to development of tidelands area for any number of possible uses.

Rail Service

Southern Pacific is the only rail freight line operating in Coos Bay. The service is utilized primarily for the transportation of lumber products out of the area to domestic markets, and the importation of petroleum and lumber products destined to foreign markets through the Port of Coos Bay. One, round trip train is scheduled six days per week to Myrtle Point. A one-way trip is made each day, seven days per week to Eugene, while another one-way trip is made from Eugene to Coos Bay each day.

Presently, there is no rail passenger service emanating from Coos County. The need to institute this service, especially in light of gasoline shortages and energy conservation practices, has not been determined to date. Passenger service to Coos County was discontinued in 1953.

Parking

With the prevalent use of the automobile in the Coos Bay area, serious consideration must be given to offstreet parking facilities, particularly in the downtown core area. A balance should be achieved between the circulation of motor vehicles and the amount of storage space while vehicles are not in use. This balance reduces congestion adversely affecting the circulation system while providing convenience to the users. Since 1955, 11 publicly-owned parking facilities have been developed in downtown Coos Bay providing a total of 685 spaces. (Table 5.6-8)

Table 5.6-8

PUBLIC PARKING FACILITIES, COOS BAY

Lot	Location	Parking Spaces
A	4th - Between Curtis and Anderson	106
B	4th - Between Commercial and Central	37
C	Commercial and Central between 2nd and 3rd	60
D	Curtis at 2nd Court	101
E	Curtis - Behind Post Office	123
F	Behind Payless between 2nd and 3rd (NDP)	27
G	Anderson - Between Broadway and Bayshore	30
H	Central and Commercial between Broadway and Bayshore	79
I	Central - between 5th and 6th	92
J	2nd and Commercial	11
K	Anderson - between Broadway and Bayshore	19
Total		685

TRANSPORTATION CORRIDORS

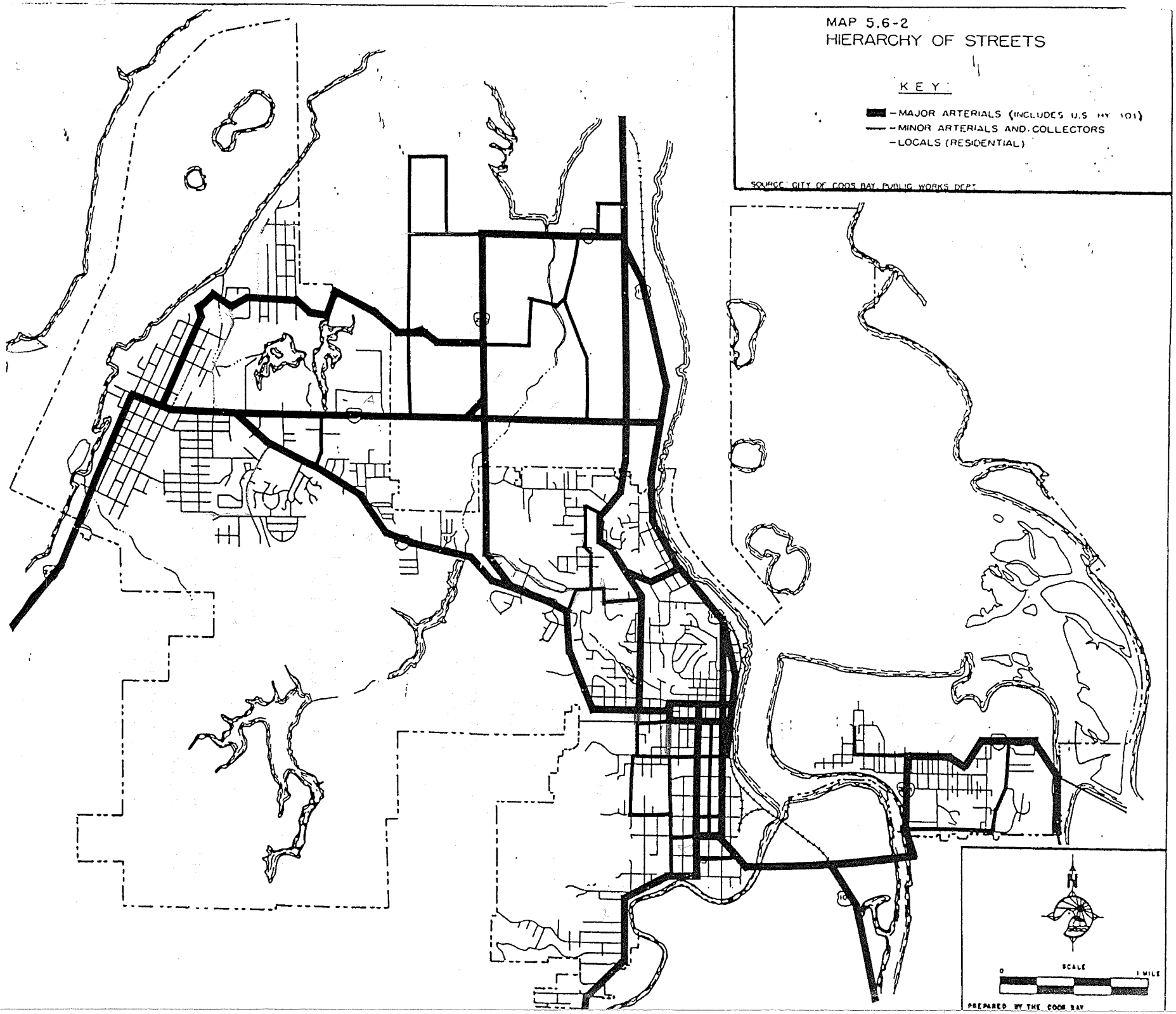
Local Street System

The local street system is separated into three types based primarily on usage -- local, collector and arterial. Arterials route a large volume of traffic usually for long trips and provide limited land access. Collectors conduct traffic from residential areas to these arterials and freeways (there are no freeways in the Coos Bay planning area). Local streets principally provide property access to vehicular and pedestrian traffic. They may also facilitate secondary movement of traffic rather than through traffic. (Goodman 1968:146-148) In addition to establishing traffic patterns, street systems are easements for utilities, provide open space, and can enhance the design of developed areas. The local, collector, and arterial street system within Coos Bay is depicted in Map 5.6-2.

(which are currently often ... is not written in,

Arterial Streets in Coos Bay

US 240 (Cape Arago Highway--Newmark, Broadway and Virginia in North Bend)
US 243 (Ocean Boulevard--Central, Commercial/Anderson)
US 101 (Oregon Coast Highway--Bayshore Drive and Broadway)
Lakeshore Drive
Newmark Avenue
Woodland Drive and Broadway (North Bend)


MAP 5.6-2
HIERARCHY OF STREETS
KEY:
- MAJOR ARTERIALS (INCLUDES U.S HY 101)
- MINOR ARTERIALS AND COLLECTORS
- LOCALS (RESIDENTIAL)
SOURCE: CITY OF COOS BAY PUBLIC WORKS DEPT.
N
SCALE
0
1 MILE
PREPARED BY THE COOS BAY

10th Street
Koosbay Boulevard
Thompson Road
4th Street
Southwest Boulevard

Minor Arterials and Collectors

Fulton Avenue
Radar Avenue
LaClair Street
Seagate Drive
Oak Street (North Bend)
Butler/Juniper/Hemlock Avenues/14th Street
Elrod Avenue
10th and 11th Streets
Anderson Avenue
7th Street
2nd Street
Johnson/Ingersoll/Kruse Avenues

Local/Residential Streets in Coos Bay

All remaining streets

Street Design Standards

The City of Coos Bay has designated specific design standards regarding conventional public streets and those private streets developed in mobile home parks and planned unit developments (PUD's). These standards, such as right of way, parking and paving, provide for uniformity of existing and planned streets.

A street is considered an open rather than unopen thoroughfare if it conforms to certain standards set by policy through the City Public Works Department (Schwarm 1978a).

1. The City accepts responsibility for grading and drainage maintenance. or

2. The street must be an all-weather roadway and in most cases gravelled or strip paved. All-weather roadway means a standard automobile can negotiate the road without difficulty year-round, or

3. The street is paved to city standards with curbs, storm drainage, etc., or meets conventional street standards.

All open streets as acknowledged by the City are not necessarily improved. Improved streets by City definition are those covered with asphaltic concrete or concrete constructed with curbs and/or gutters. Unimproved streets are either strip paved, gravel, or dirt roadways. Except for the Eastside area, Map 5.6-3 depicts all the "open" streets in the City as either improved or unimproved passages.

Map 5.6-3(a) shows the location and type of surface of all streets and alleys in the Eastside area. There are a total of 9.57 miles of roadways in the City, including 7.16 miles of streets, .9 miles of alleys, and 1.51 miles of state highway. It should be noted that many of the alleys (shown on the map by very narrow lines) are the sole means of access to many homes, particularly in the hilly areas east of Tenth Street. As a result, these alleys are "streets" in a real sense and are designated as "courts" in the City's system of street names.

Slightly over half of the total street, alley and highway mileage in the Eastside area is paved with either asphalt or concrete. This includes 3.4 miles of streets, .3 miles of alleys and 1.5 miles of state highway. Of the remaining roadways, 3.36 miles of streets and .6 of alleys are surfaced with gravel, and .4 miles of streets are unimproved. It should be noted that "unimproved" street mileage excludes streets which have been dedicated or platted but which have never actually been built.

Lack of paving on a substantial portion of the streets in the Eastside area presents problems for street users and for the City as well. The rough roads tend to increase wear on automobile tires and suspensions. Dust in hot weather and mud in wet weather also cause inconvenience for users and adjoining residents. Pedestrian safety is greatly hindered along unpaved streets since the streets tend to be relatively narrow and often lack shoulders suitable for foot traffic. Finally, maintenance costs for the City are greater for unpaved streets, which require periodic grading and filling of potholes, and replacement of streets. These maintenance costs vary from one street to another depending on traffic volumes and average vehicle weight.

Conventional and private street standards are established through the Land Development Ordinance #93. Prior to L.D.O. #93, conventional street standards were established through Ordinance 2057, as amended by Ordinances 2527 and 2773. Such streets were dedicated for public use and, thus, differ from those street systems in mobile home parks and in planned unit developments which are privately owned. Different street standards had been established for these private streets through the Zoning Ordinance 2685.

Highways

US Highway 101

US Highway 101 (the Oregon Coast Highway) is a primary state route serving the City of Coos Bay and surrounding area. It runs in a north-south direction along the Oregon Coast and borders the eastern corporate limits of Coos Bay on Broadway and Bayshore Drive for a length of approximately 2.45 miles (Oregon Department of Transportation per letter from John Grassman, 1978). (Table 5.6-9) The highway is expanded to four lanes through the City and encompasses a one-way couplet from the vicinity of Fir Avenue to Elrod through the Coos Bay business district. This highway carries the main flow of local and transient traffic and links the bay area to coastal regions north and south and to the major east-west traffic corridors (OR 38 and 42). The estimated average daily traffic in 1987 for the portion within the City limits was 17,500 vehicles (11,000 to 24,000).

Coos River Highway

The Coos River Highway passes through the Eastside area over 6th Avenue and provides access to U.S. Highway 101 from the Eastside area and communities located along Coos River. The accompanying table shows the average daily traffic (ADT) volumes on the highway at specific points between the east City limits of Coos Bay and U.S. 101 for the year 1987. Total ADT volume on Coos River Highway (measured just east of the junction of U.S. 101) remained almost the same between 1977 and 1987. The high traffic volume on the Highway, the conflict between through and local traffic, and the narrow, winding and hilly nature of much of the highway in the City all contribute to an increasingly hazardous situation for motorists and pedestrians alike.

Table 5.6-9

DESCRIPTION OF HIGHWAY 101 THROUGH COOS BAY, OREGON, 1987

Mile Post	Location	Average Volume of Daily Traffic
236.77	South city limits of North Bend north city limits of Coos Bay	18,900
	On Bayshore Drive	
237.57	0.01 mile north of Hemlock Avenue	20,400
237.59	0.01 mile south of Hemlock Avenue	21,700
	SOUTHBOUND-ONE-WAY TRAFFIC	
	On Broadway	
237.84	0.01 mile south of Fir Avenue	11,000
238.20	0.01 mile north of Empire-Coos Bay Highway, (Westbound)	11,300
238.32	0.01 mile south of Empire-Coos Bay Highway, (Eastbound)	11,900
	NORTHBOUND-ONE-WAY TRAFFIC	
	On Bayshore Drive	
237.84N	0.01 mile south of Fir Avenue	11,000
238.22N	0.01 mile north of Empire-Coos Bay Highway, (Westbound)	11,300
238.33N	0.01 mile south of Empire-Coos Bay Highway, (Eastbound)	11,900
	TRAFFIC TWO-WAY TRAFFIC	
	On Broadway	
238.52	0.01 mile south of Elrod Avenue	23,100
238.83	0.01 mile south of Ingersoll Avenue	22,900
238.85	0.01 mile south of Ingersoll Avenue	24,000
239.22	South city limits of Coos Bay	24,800

SOURCE: Oregon Department of Transportation

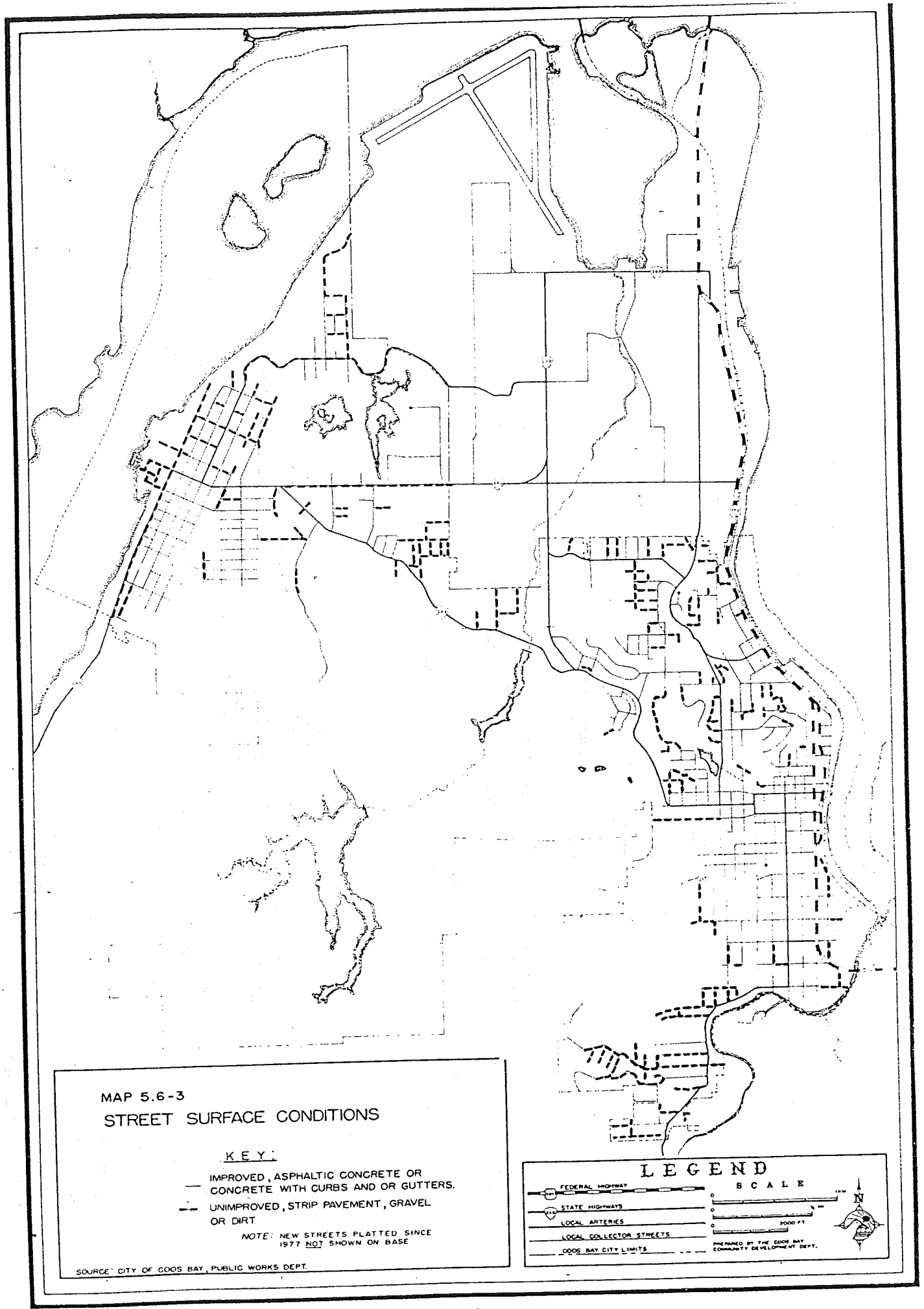
Table 5.6-9(a)

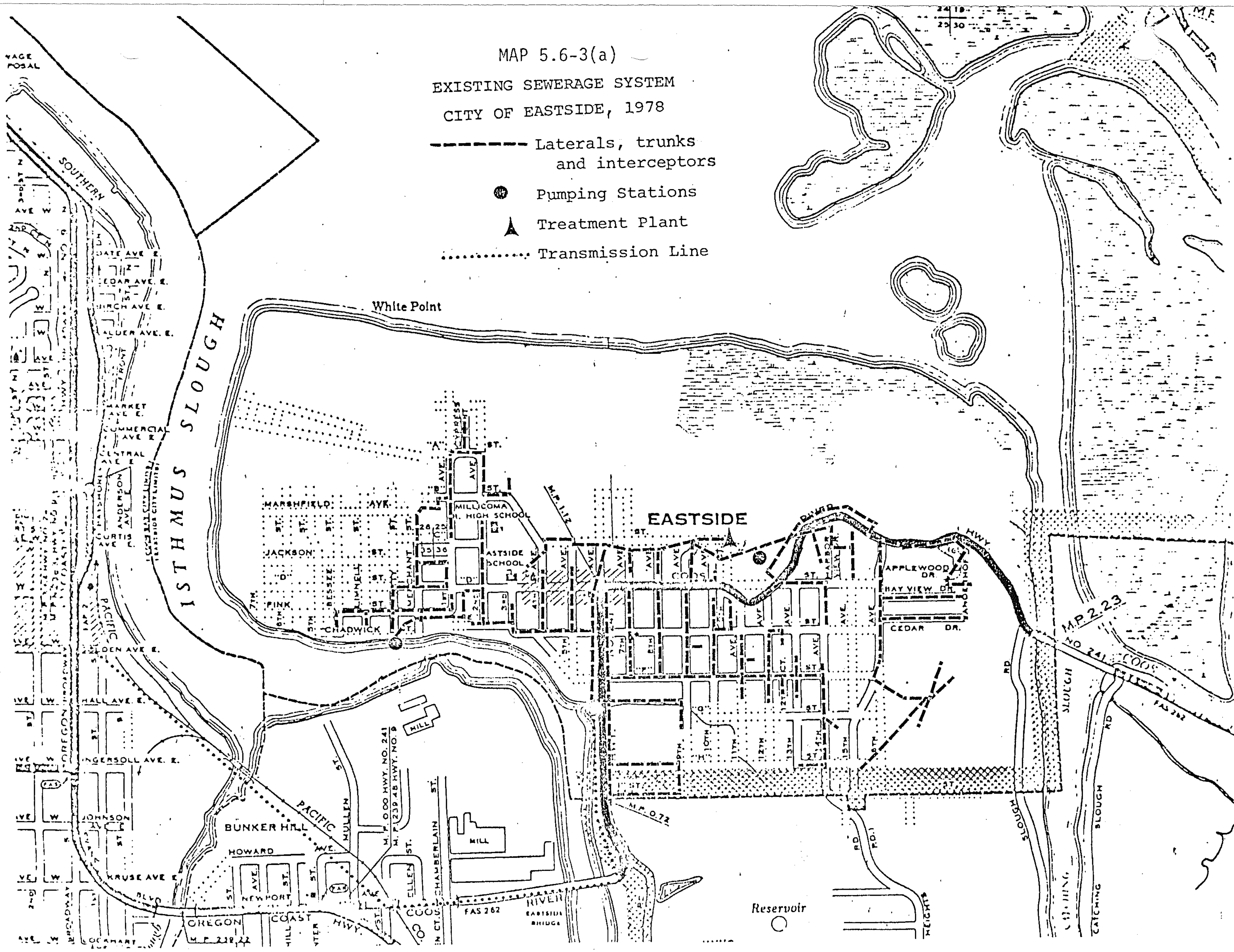
AVERAGE DAILY TRAFFIC (ADT) VOLUMES 1977-1987

Coos River Highway between East City Limits of Coos Bay (Eastside Area) and U.S. 101

Mile Post	Location and Description	1977	1987
0.01	.01 mile east of U.S. 101	11,300	11,000
0.51	Isthmus Slough Bridge	10,400	10,700
0.72	South city limits of Eastside	8,900	8,500
1.11	.01 mile south of "D" Street	6,700	6,500
1.13	.01 mile east of 6th Avenue	5,400	5,600
1.33	.01 mile west of 10th Avenue	5,300	5,100
2.23	East city limits of Eastside	4,100	3,700

Source: Oregon State Highway Division Traffic Volume Tables


MAP 5.6-3
STREET SURFACE CONDITIONS
KEY:
IMPROVED, ASPHALTIC CONCRETE OR CONCRETE WITH CURBS AND OR GUTTERS.
UNIMPROVED, STRIP PAVEMENT, GRAVEL OR DIRT
NOTE: NEW STREETS PLATTED SINCE 1977 NOT SHOWN ON BASE
SOURCE: CITY OF COOS BAY, PUBLIC WORKS DEPT.
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
2000 FT
N
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.


MAP 5.6-3(a)
EXISTING SEWERAGE SYSTEM
CITY OF EASTSIDE, 1978
Laterals, trunks and interceptors
Pumping Stations
Treatment Plant
Transmission Line
White Point
ISTHMUS SLOUGH
EASTSIDE
SOUTHERN
PACIFIC
BUNKER HILL
HOWARD
NEWPORT
OREGON
COAST
HWY
MULLEN
CHAMBERLAIN
ELLEN
MILL
MARSHFIELD
JACKSON
PINK
CHADWICK
MILLICOMA JR. HIGH SCHOOL
EASTSIDE SCHOOL
APPLEWOOD DR.
HAY VIEW DR.
CEDAR DR.
M.P. 2.23
COOS
FAS 262
RIVER
EASTSIDE BRIDGE
Reservoir
CATCHING SLOUGH
HEIGHTS

US Highway 240

Highway 240, the Cape Arago Highway, is considered a secondary, state thoroughfare (Grassman, letter, September 15, 1978). It begins at the intersection of Highway 101 and Virginia Avenue, North Bend and travels in a westerly direction over Virginia, southerly through Broadway and then westerly again over Newmark. It enters the Coos Bay city limits on Newmark traveling toward the Empire district; here the highway extends southerly over Empire Boulevard exiting the city limits near Cameron Road, and eventually deadends at Cape Arago State Park. It extends a total of 14.07 miles and 2.3 miles in the Coos Bay corporate area. This highway serves Bay area traffic journeying to the ocean beach areas and to the state and county parks. However, it is a crucial arterial delivering daily traffic to the North Bend business district and satellite shopping/commercial areas; it is a direct route to Empire and Charleston; and is the sole access to Southwestern Oregon Community College. The highway is four lanes wide through most of its length except for a small two and three-lane portion from Fir Street to Woolridge Street and the remainder of the highway from Cammann Street (Empire district) to its southern terminus (Cape Arago State Park). Average Volume of Daily Traffic for U.S. Highway 240 is listed at Table 5.6-10.

Table 5.6-10

DESCRIPTION OF HIGHWAY 240 THROUGH COOS BAY, OREGON 1987

Mile Post[a]	Location	Average Volume of Daily Traffic
	On Virginia Avenue	
0.01	0.01 mile west of Oregon Coast Highway (US 101)	8,800
0.09	0.01 mile east of McPherson Avenue	8,900
0.16	0.01 mile west of Meade Avenue	17,500
0.43	Pony Slough Bridge	15,600
0.77	0.01 mile east of Broadway	14,300
0.79	0.01 mile south of Virginia Avenue on Broadway	10,900
1.31	0.01 mile north of 16th Street	12,300
1.33	0.01 mile south of 16th Street	13,900
-2.24	West city limits of North Bend, east city limits of Coos Bay	13,300
3.16	0.01 mile east of Empire-Coos Bay Highway	12,300
3.18	0.01 mile west of Empire-Coos Bay Highway	16,200
3.45	0.01 mile west of Main Street	12,400
3.71	0.01 mile east of Empire Boulevard	8,000
3.73	0.01 mile south of Newmark Avenue	7,600
3.92	0.01 mile south of Noble Avenue	7,200
4.12	0.01 mile south of Pacific Avenue	7,800
4.54	South city limits of Coos Bay	7,700

SOURCE: Oregon Department of Transportation

[a]Mile Post indicates distance from Oregon Coast Highway, US 101, in North Bend.

US Highway 243

Highway 243, the Empire-Coos Bay Highway, is an arterial entirely within the Coos Bay city limits linking traffic from the downtown business district to the Empire area. It begins its east-west route at Highway 101 with a seven-block one-way couplet (Commercial and Anderson Streets) ending at 7th Street. Here, the highway joins into a four-lane thoroughfare on Central Avenue, junctures with Ocean Boulevard, and then extends north-southerly to its terminus at Highway 240. US Highway 243 is 3.57 miles in length. Average volume of daily traffic is listed at Table 5.6-11.

Highway 243 functions as part of the circulatory route within downtown Coos Bay and as another avenue to Empire and Charleston. It also provides access to the Coos Bay medical district off Woodland Drive and to a residential area currently experiencing new residential and professional development.

OR Highways 38 and 42

The principle east-west corridors are Highways 38 and 42 which carry traffic from the Coos Bay area over the mountainous Coastal Range to the populous Willamette Valley. These highways unite the rather isolated Coos and Curry Counties with the central markets and population centers of Oregon. Specifically, Highway 38 commences in Reedsport and proceeds along the Umpqua River to Elkton and thence in a northerly direction through Drain to its intersection with Interstate 5. Highway 42, and east-west route farther south, connects the Coos Bay area to Interstate 5 at Winston via the Coquille Valley.

Due to the physical constraints of the mountain regions, both highways are comparatively winding and narrow (two lanes wide in most areas). Hazardous conditions are heightened by frequent landslides caused by the combination of slope and water-saturated soils. Improvements have been made on each highway to widen and straighten inferior segments. Future improvements are planned to make these routes more passable. Better east-west communications is seen as key to full realization of the deep-draft shipping potential of the Port of Coos Bay.

Bridges

Coalbank Slough Bridge

The Coalbank Slough Bridge is the only large bridge within the city limits of Coos Bay and is located south on Highway 101. It was built as a drawbridge in 1940 to serve highway traffic (now four lanes) and boat passage up the Slough. It is constructed primarily of wood on steel reinforced, concrete piers. Due to the age and use of the bridge, it is scheduled to be replaced by 1984 (ODOT 1979). Some of its structural problems include: failure of concrete piers and pilings due to deterioration of steel reinforcements and gribble (marine borers) infestation, unfunctional draw-bridge machinery, and damage to decking and pavement. It requires a full month of maintenance each year.

Table 5.6-11

DESCRIPTION OF HIGHWAY 243 THROUGH COOS BAY, OREGON, 1976

Mile Post[a]	Location	Average Volume of Daily Traffic
0.01	0.01 mile east of Cape Arago Highway	6,700
	On Ocean Boulevard	
0.50	0.07 mile northwest of LaClair Street	7,200
1.31	0.01 mile west of 28th Street	7,400
1.76	0.09 mile west of Woodland Drive	8,300
2.20	0.01 mile west of Butler Road	10,000
2.22	0.01 mile east of Butler Road	10,700
	On Central Avenue	
2.28	0.01 mile east of 14th Street	10,500
3.03	0.01 mile west of 10th Street	11,100
3.15	0.01 mile west of 8th Street	10,700
	EASTBOUND-ONE-WAY TRAFFIC	
	On Anderson Avenue	
3.39	0.01 mile west of 14th Street	6,400
3.41	0.01 mile east of 14th Street	6,400
3.54	0.01 mile west of Oregon Coast Highway (US 101 Southbound)	6,600
3.56	0.01 mile west of Oregon Coast Highway (US 101 Northbound)	2,950
	WESTBOUND-ONE-WAY TRAFFIC	
	On Commercial Avenue	
3.39W	0.01 mile west of 4th Street	5,200
3.41W	0.01 mile east of 4th Street	5,700
3.53W	0.01 mile west of Oregon Coast Highway (US 101 Southbound)	5,800
3.57W	0.01 mile west of Oregon Coast Highway (US 101 Northbound)	3,150

SOURCE: Oregon Department of Transportation

[a]Mile Post indicates distance from Cape Arago Highway in Coos Bay.

South Slough Bridge

Another major bridge serving the Coos Bay planning area but outside the city limits is the South Slough Bridge in Charleston. Built in 1934 as a swing bridge to permit boat passage, it is constructed on a wooden foundation with a steel upper framework covering the swing mechanism. This bridge is also noted to be in poor condition. It is subject to marine borers which undermine its foundation; it requires gear replacement for its turning mechanism, and its steel parts are deteriorating. At the present, no specific plans exist for its replacement by the Oregon Department of Transportation.

Transportation of the Disadvantaged

Introduction

The transportation of the disadvantaged is a problem most recently addressed in a study completed in February 1978 by the Coos-Curry Council of Governments (CCCOG). The report of findings and recommendations is entitled, The Coos-Curry Senior Citizen and Handicapped Transportation Plan, Vol. I. The transportation of the disadvantaged is recognized as an areal problem in scope and not one exclusive to the City of Coos Bay alone. Therefore, the facts for Coos County contained in the above cited study provided the background for the preparation of this inventory.

Attempts to define the transportation disadvantaged have been inconsistent to date depending upon the statistics used and the aim of each study. Essentially, the term applies to members of the population who are less mobile than the general-public. This immobility may be due to their physical, economic or legal inaccessibility to their own vehicles, to physical or financial barriers to other modes of transportation, or to the lack of alternative to privately-owned cars. Generally, those groups identified as transportation disadvantaged are:

1. The elderly over 60 years of age.
2. The poor with incomes below established poverty levels.
3. The handicapped with physical or developmental disabilities.
4. The young aged 6-18 years.

These four groups are studied in the CCCOG report for Coos and Curry Counties.[1] The report describes each group and its respective needs, the current transportation resources, and proposes alternative solutions. Information regarding current transportation resources, particularly the Bay Area Senior Activity Center buses, has been added to this inventory. An important point of fact resulting from the CCCOG study is that a majority of the County's disadvantaged reside in the urban Bay area (CCCOG 1978:57-74)

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[1]The State of Oregon, Mass Transit Division differs with these definitions. They define the elderly as persons over 65, the young between ages 12 and 15, and they include in their statistics legally suspended drivers and those who should not drive -- alcoholics and drug addicts. (ODOT 1977:5)

Elderly

The elderly, those over 60 years of age, are disadvantaged because they have no drivers license. Also, fixed incomes prevent them from operating the vehicles they own or force them to make fewer trips. The CCCOG study reveals that one the basis of the 1970 census, 40% of the elderly in Coos and Curry Counties reside in the Bay area (henceforth defined as Coos Bay, North Bend, Eastside, Bunker Hill, Charleston, and North Bayside). (CCCOG 1978:57)

Handicapped

The handicapped are those physically handicapped or developmentally disabled such that operating of a vehicle is impossible physically or financially due to their inability to gain employment. The handicapped or disabled under age 65 are estimated to be 9% of the bi-county population, with 80% of this group living in Coos County. (CCCOG 1978:61) Table 5.6-12 shows the five service organizations working with the handicapped in Coos Bay and North Bend and the number of clients needing transportation. (CCCOG 1978:63)

Low Income

Individuals below poverty level usually cannot afford private transportation. Yet, in many respects they have a greater transportational need and, therefore, spend a greater portion of their income on transportation than other members of the population. "Indeed, it has been widely demonstrated that the need for transportation is highly correlated to the size of one's income. Individuals who are below poverty, like those who are on fixed incomes, generally spend a higher percentage of their income on transportation than the rest of the population." (CCCOG 1978:65)

Based upon 1970 data on poverty thresholds, 40% of the below poverty level population resides in the Bay area,"...as was true with the elderly, the largest below poverty populations are located in or near the major population centers." (CCCOG 1978:67)

Youth

The young are included in the disadvantaged category because they are dependent upon others for their mobility. Studies have shown that a fairly constant portion of the population are young, fifty-three percent of the Coos/Curry Counties population resides in the Bay area alone.

Table 5.6-12

DISTRIBUTION OF ORGANIZATION WORKING WITH THE HANDICAPPED IN COOS COUNTY, OREGON

Organization[1]	Number of Handicapped and/or Developmentally Disabled in Need of Transportation	Location
Vocational Rehabilitation	28	Coos Bay
Transitional House	10	North Bend
Star of Hope	16-24	North Bend
Goodwill Industries	25	Coos Bay
Coos County Mental Health	110	North Bend

[1]Figures for the Vocational Rehabilitation Division and the Mental Health Departments do not represent the total number served by the agency, but only those in need of transportation as determined by agency directors and department heads. Some of the figures may be partially duplicated since some handicapped and/or developmentally disabled individuals may receive counseling from more than one social agency.

During the day clients are working at the Star of Hope or at the Goodwill. The need for transportation is to and from these sites and for recreation in the evening.

The Star of Hope Activity Center will be adding an additional service unit within 6 months, bringing the total number of clients served to 24. (CCCOG 1978:63)

Transportation Services for the Disadvantaged

In the Bay area, inter and intra-city transportation services are offered by Greyhound Lines, two privately-owned taxi cab companies, and the Senior Activity Center. (Table 5.6-13) Greyhound and the commercial taxi services are discussed in greater detail in other segments of this Transportation inventory as part of service to the general public. However, regarding specific service to the disadvantaged, the taxi companies offer a 30% discount to senior citizens. As far as commercial bus service is concerned the CCCOG study has discovered that Greyhound travel is generally too costly to the disadvantaged, the scheduling may require an overnight stay or a shorter visit, and the buses are inaccessible to the physically handicapped or the homebound individual.

Table 5.6-13

CURRENT TRANSPORTATION SERVICES IN COOS COUNTY
AVAILABLE TO THE DISADVANTAGED, 1978

Agency	Service	Patrons/ Clients	Local Service Area	Number of Vehicles/ Day	Number of Passengers Seats	Number of Days of Operation	Hour of Operation
Greyhound	Inter-city bus	General Public	Cities on U.S. Highway 101 and ORS 42	See List on Page 5-200	33	Daily See Page 5-200	24 hours See Page 5-200
Commercial Taxi Services	Intra-city	General Public (discount to senior citizens)	Cities of Coos Bay/North Bend and 3 mile radius around them	10 sedans 1 limo	5	7 days/ week in Coos Bay & 7 in North Bend	24 hours a day in Coos Bay and North Bend
Senior Activity Center Bus Service	Intra-city fixed route	Elderly and handicapped	Bay Area	1		5	9:00-5:00
	Intra-city Hot meals	Elderly	Bay Area	1		5	10:00-2:00
	Inter-city	Elderly	North Bend to Bandon	1	14	3	
			North Bend Lakeside	1	8	2	

SOURCE: CCCOG, 1978:85

The Senior Activity Center is a non-profit service organization supported primarily by United Way funds and other donations. In addition to community service provided by the organization, the Center operates a county-wide transit system. The center furnishes four, van-type buses seven days per week on scheduled runs and also on an on-call basis. It offers transportation to the elderly, delivers hot meals under the local nutrition program, and contracts to transport clients of various state agencies and non-profit organizations. Moreover, for the past three years, the Center has been designated by the Public Utility Commission (PUC) as a recognized transit carrier and is authorized to carry any individual regardless of age or physical/economic handicap.

Some buses run on a predetermined schedule; others provide hot meal delivery and door to door service. One of the four buses makes daily trips to Bandon and Coquille. The 1978 breakdown for each bus is shown in Table 5.6-14.

Table 5.6-14

NUMBER OF TRIPS MADE BY BUSES OF THE SENIOR ACTIVITY CENTER IN 1978

Bus	Trips to Transport the Elderly	Trips to Transport the Handicapped	Others	Total Miles Driven
1	3,208	621	---	6,371
2	4,326	4,140	2,742	37,456
3	1,545	1,377	---	6,031
4	4,200	1,400	400	26,310
TOTAL	13,279	7,538	3,142	76,168

The program director estimated the cost of service in 1978 to be $.37 per mile. The Center absorbs this cost by United Way contributions, other funding sources, and membership dues from senior citizen participants ($2 per year). In 1978, The Center completed nearly 24,000 round trips.

Many organizations contract for transportation of their clients. These agencies pledge a $.20 per mile subsidy; the Nutrition Program (contracted through the Coos-Curry Council of Governments) reimburses the Center at $.15 per mile. Any additional cost is absorbed by the Center. The agencies and number of clients using this service in 1978 are listed in Table 5.6-15.

Table 5.6-15

ORGANIZATIONS UTILIZING THE SENIOR ACTIVITY CENTER BUS, 1978

Organizations	Number of participants
Star of Hope	22
Seamen's Center	30 +
Coos Transition House	8
Goodwill Industries	3
Adult and Family Services	3
Coos County Mental Health	4
Hot Meals Program (COG) meals (delivered to center and homebound persons)	17,000

SOURCE: Kaeser, 1979

In addition, emergency and special trips are referred by other agencies, such as RSVP, Child care centers, Southwestern Oregon Community Action Programs, Vocational Rehabilitation, hospitals, and so forth. These trips are reimbursed on an individual, on-use basis. Trips made by other residents not classified as disadvantaged are charged a fee of $.35.

Local Transportation Needs

The previous assessment of existing transportation systems and conditions has indicated several needs for improvement on the local level.

Street Improvements and Funding

A map, composed by the City Public Works Department, indicates open streets within the city limits as improved (asphalt or concrete with curbs and/or gutter) and unimproved (strip pavement, gravel, or dirt). (Map 5.6-3) The numerous unimproved streets are targeted for future attention, particularly in the Englewood and Empire neighborhoods and in those areas of recent or proposed expansion.

However, street conditions within the Coos Bay city limits are maintained and improved as prioritized by necessity and funding through the Public Works Department. Funding for this management currently is derived from the following sources:

1. Federal aid to urban areas (FAU)

2. Street levy serial

3. Community Development Block Grant (HUD)

4. Local Improvement District Projects

Federal Aid

The Federal government provides monetary aid for specified road improvements to small urban areas. The small urban classification is based upon a city's population which is greater than 5,000 but less than 50,000; either as an individual entity or as the combined populace of contiguous jurisdictions. The greater Bay area (Coos Bay, North Bend, Eastside) then, is eligible for limited yearly funds based upon the financing ratio of 88% federal, 6% state, and 6% local monies for each requested project. Only major and minor arterials (traffic movers) as specified by the Federal agency are qualified for FAU funding. The funds are strictly reserved for road reconstruction or for new arterial route projects; routine road maintenance is ineligible. Current or planned projects include:

1. Improvement of Wallace Street

2. Improvement of Woodland Drive

3. Installation of signal at Bayshore Drive and Koosbay Boulevard

4. Improvement of 10th Street

Serial Street Levies

In 1977, a street improvement proposal based on property tax assessments over a 10 year period was approved by the voters of Coos Bay. The citizens accepted an overall $108,400 per year tax assessment for the sole purpose of street maintenance ($1,084,000 over 10 years). These monies are earmarked for streets as prioritized in Table 5.6-16. Projects 1-4 were completed in 1978.

Prior to the consolidation of the City of Coos Bay and City of Eastside, Eastside had maintained a policy of paving and otherwise upgrading streets as funds permit. Costs of these improvements have been shared by the City and adjoining property owners. The City is currently preparing a set of standards for construction of new streets and improvement of existing streets. When completed, these standards will be formally adopted by the City Council. These standards will apply not only to streets built and improved by the City, but also to streets built as part of subdivisions for later dedication to the City.

Community Development Block Grant (HUD)

A grant was given to the City of Coos Bay by the Department of Housing and Urban Development (under authorization of the Housing and Urban Development Act of 1974, P.L. 93-383) to be utilized over a five-year period to complete the City Center Tomorrow Plan and other worthwhile projects benefiting low and moderate income facilities. Since 1975, street improvements primarily in Empire and Englewood, have been a consistent recipient of community development funding. Yearly amounts allotted for street improvements since 1975 appear in Table 5.6-17.

Table 5.6-16

TEN YEAR STREET SERIAL LEVY PROJECTS, COOS BAY, OREGON

Priority	Street
1.	South 4th Street - Golden to Johnson Avenue
2.	South 2nd Street - Hall to Kruse Avenue (one block added, Hall to Golden)
3.	South 7th Street - Johnson to Lockhart Avenue
4.	Johnson Avenue - Broadway to Seventh Street
5.	North 10th Street - 8th Terrace to Hemlock Avenue
6.	South 4th Street - Kruse to Lockhart Avenue (one block completed, 10/78)
7.	Hemlock Avenue - 10th Street to 13th Street
8.	13th Street - Hemlock to Juniper Avenue
9.	Pacific Avenue - Shoneman to Filmore
10.	Ingersoll Avenue - 10th Street to 11th Street
11,	Myrtle Avenue - 14th Street to 15th Street
12.	Southwest Blvd. - 7th Street to Minnesota Avenue
13.	Southwest Blvd - Oregon Avenue to City Limits
14.	Wasson Street - Schetter Avenue to Taylor Avenue
15.	Morrison Street - Michigan to Montgomery Avenue
16.	Michigan Avenue - Empire Blvd. to Madison Street
17.	Marple Street - Newmark to Schetter Avenue
18.	South 11th Street - Ferguson to Golden Avenue
19.	South 4th Street - Curtis Avenue to Golden Avenue
20.	Koosbay Blvd. - Thompson Road to City Limits
21.	Wasson Street - Michigan Avenue to Schetter
22.	Ingersoll Avenue - 7th Street to Tenth Street
23.	Juniper Avenue - 13th Street to Butler Road
24.	Fourteenth Street - Myrtle Avenue to Teakwood Avenue
25.	South 11th Street - Elrod Avenue to Ferguson Avenue
26.	Ingersoll Avenue - Broadway to 4th Street
27.	South 2nd Street - Elrod Avenue to Hall Avenue
28.	South 2nd Street - Curtis Avenue to Elrod Avenue
29.	Southwest Blvd. - Minnesota Avenue to Oregon Avenue
30.	Johnson Avenue - 7th Street to 10th Street
31.	Elrod Avenue - 4th Street to 10th Street
32.	South 7th Street - Donnelly Avenue to Ferguson Avenue
33.	South 10th Street - Ingersoll Avenue to Johnson Avenue
34.	South 11th Street - Hall Avenue to Ingersoll Avenue
35.	Marple Street - Schetter Avenue to Grant Avenue
36.	Marple Street - Grant Avenue to Taylor Avenue
37.	Morrison Street - Montgomery Avenue to Pacific Avenue

Table 5.6-16--(Continued)

Priority	Street
38.	Morrison Street - Newmark Avenue to Michigan Avenue
39.	South 2nd Street - Kruse Avenue to Lockhart Avenue
40.	South 4th Street - Johnson Avenue to Kruse Avenue
41.	Elrod Avenue - Broadway to 4th Street
42.	Ingersoll Avenue - 4th Street to 7th Street
43.	Elrod Avenue - 10th Street to 12th Street
44.	Ingersoll Avenue - Broadway to First Street
45.	Michigan Avenue - Madison Street to Woolridge
46.	Taylor Avenue - Wasson Street to Marple Street
47.	Teakwood Avenue - Koosbay Blvd. to 15th Street
48.	Pacific Avenue - Filmore to Empire Blvd.
49.	Koosbay Blvd. - 7th Street to 10th Cutoff
50.	Wall Street - Michigan Avenue to Schetter
51.	Butler Road - Ocean Blvd. to Juniper Avenue
52.	N. 14th Street - Juniper Avenue to Myrtle Avenue
53.	South 7th Street - Ingersoll Avenue to Johnson Avenue
54.	North 10th Street - Central Avenue to Commercial
55.	Johnson Avenue - Broadway to First Street
56.	Cammann Street - Schetter Avenue to Michigan Avenue
57.	Koosbay Blvd. - 10th Street to Cutoff

Table 5.6-17

FUNDS SPENT FOR STREET IMPROVEMENTS IN COOS BAY FROM THE COMMUNITY DEVELOPMENT BLOCK GRANT

Year	Amount	
1975	$ 95,000.00	
1976	95,000.00	
1977	179,000.00	
1978	45,200.00	
1979	85,200.00	(to be granted)

Streets not meeting city standards are normally targeted as priority improvement projects. The list below shows those streets in Coos Bay already improved through HUD funds and those proposed for the upcoming year.

Completed

Shoneman Street (Newmark Avenue to Harris Avenue)
Fenwick Street (Lakeshore Drive to S. John Street)
Radar Road (Compass Circle)
Margaretta Street Storm Sewer
Washington Avenue (Southwest Boulevard to 15th Street)
Thompson Road
Idaho Avenue (Southwest Boulevard to 1369 Idaho Avenue)

Proposed

Oregon Avenue (Southwest Boulevard to 15th Street)
19th Street (California Avenue to Idaho Drive)
16th Street (from California Avenue to 300 ft. north of California)
Motor-Vu
Lakeshore Drive Storm Sewer
California Avenue (Southwest Boulevard to 15th Street)

Local Improvement District Projects

Any citizen may request a street improvement if 51% of the residents on that street agree to pay a specific area property assessment to finance the improvements.

Street Coordination with the City of North Bend

The related urban development of Coos Bay and North Bend demands a coordinated effort to designate and develop arterials connecting both jurisdictions. Mutual agreements will make for effective and safe travel in established traffic routes and in potential areas of new development. Most major, connecting arterials have been established between both cities. These existing arterials are:

1. 10th Street and Koosbay Boulevard in Coos Bay with Sherman Avenue in North Bend.
2. Highway 101 through both cities.
3. Woodland Drive in Coos Bay with Broadway in North Bend.

Since residential growth in the northwest portion of the peninsula has begun and is expected to continue, a road of arterial status should be designated. The two cities have agreed that Virginia Avenue in North Bend will be developed to connect with Seagate Drive in Coos Bay. No other coordination is perceived to be needed at this time.

Overall Economic Development Plan

As a result of an economic study completed by the Coos, Curry, Douglas Economic Improvement Association entitled a Comprehensive Economic Development Strategy, 1978-79 Action Program, certain problems with the local transportation system were identified. These two problems are:

1. Inadequate accessibility to the Charleston boat basin.

2. Congestion and commercial arterials in Coos Bay.

Community Attitudes

In 1978, the Committee for Citizen Involvement mailed a questionnaire to sample citizens' attitudes toward important local issues. Regarding the question "Are local streets and road adequately maintained in general," the majority of residents (65%) overwhelmingly responded that the streets were inadequate regarding maintenance. Only 25% of those polled felt streets were adequate; 1% of that number feeling strongly on the subject. (See Appendix A)

Proposed Street Improvement Projects

One-way Couplet Extension, Oregon Coast Highway (US 101), Broadway-First South Improvement Project.

In 1975, the City of Coos Bay proposed a project to the Federal Highway Administration to extend the existing couplet on US 101 south through the downtown area to the Coalbank Slough Bridge. This couplet would redirect northbound traffic to three traffic lanes on South First Street and maintain the existing highway for southbound vehicles, also with three traffic lanes. The aim of the project was to reduce traffic congestion, improve safety, and enhance the development and redevelopment of "adjacent blighted commercial-industrial lands." (City of Coos Bay 1975:1) The study cited this segment of Highway 101 as having twelve accidents per million vehicle miles, which was three times the average rate for the state's primary highway systems, and twice the average rate for the Oregon Coast Highway in urban areas. The project required acquisition of rights of way, grading, paving, signalization, bikeways, signing, illumination, and removal and relocation of Southern Pacific Railroad spur trackage and depot. The estimated proposed cost in 1975 was $994,600.

Difficulty in acquiring the necessary rights of way made completion of this project impossible at the time of original application to the federal government. Funds earmarked for this project were then reprogrammed to finance other City projects.

Coos Bay Roadway and Traffic Safety Management Plan, 1978

The City of Coos Bay contracted with Transportation Planning and Management, Inc. of Corvallis to study the traffic system in Coos Bay and recommend improvement projects based on these findings. As stated in the study introduction, "the purpose of the Coos Bay Roadway and Traffic Safety Management Plan is to provide a systematic program directed to minimize traffic accidents and fatalities, improve traffic movement and roadway conditions, and relate to traffic law enforcement, safety education, emergency services and to traffic laws and regulations." (Schoolcraft 1978:IX)

The resulting study provided supporting data on necessary street improvements now occurring, such as the widening of Newmark-Hill to the East entrance of Southwestern Oregon Community College, and the Wallace-Ocean to Newmark Project. However, other improvement recommendations made by this study were rejected by the residents under referendum and the merits of the study questioned.

Coos Bay 4th and Alder Intertie Proposal

A proposal was made to create an intertie at 4th and Alder Streets to connect Broadway and Bayshore Drive (US 101 to 4th Street in order to divert local traffic before reaching the downtown core. This proposal resulted from two studies completed by the Urban Studies Unit of the Oregon Department of Transportation and by Schoolcraft's Roadway and Traffic Safety Management Plan. The improvements were to be funded through Tax Increment Funds.

In 1977, the Committee for Citizen Involvement conducted and analyzed a community attitude survey of 15% of the registered voters in Coos Bay concerning this project. Their findings indicated that most voters were aware of the project, and believed there was a serious traffic problem on Broadway; however, a majority of the respondents (47.4%) would not support the project even if rejection cost a tax penalty. Alternative solutions were offered by some of the respondents. Thirty percent felt removal of parking meters on Broadway would alleviate some of the congestion along this segment of US 101. Other uncalculated suggestions were to improve Market, Park and Alder Streets to each feed traffic back to 4th Street, and to reroute traffic to Front Street or to the east side of the bay. These citizen attitudes were reflected in an initiative petition submitted to the voters in March 1978 to delete the intertie proposal from the Coos Bay City Tomorrow Plan. The petition was widely supported and, therefore, ended further consideration of this street improvement plan.

Regional Transportation Needs

As defined by the Coos, Curry, Douglas Economic Improvement Association in their Comprehensive Economic Development Strategy, the following regional needs are discusssed, particularly those that have a bearing on the transportation system of the Bay area.

1. Improvement of the narrow, winding and hazardous feeder highways that connect the Coos Bay estuary to Roseburg, (Highways 38 and 42).

2. Improvement of the seasonal congestion on the Pacific Coast Highway (US 101).

3. Improvement of the local and district transportation systems.

4. Improvement of rail and freight service and the initiation of multiple carrier rail track usage.

5. Promotion of public transit facilities.

6. Harbor improvements in district ports.

7. Improvements in commercial air transport facilities and air service.

State Transportation Needs

State highway needs or those areas designated for improvement are derived from the Six-Year Highway Improvement Program, Fiscal Years 1979 through 1984.

Priorities in this program are based on available funding.

1. Basic improvement project on US 101, Coalbank Slough Bridge.

   To grade and pave the approaches and construct a new structure by 1984 under Federal Aid Primary (FAP) rural funds.

2. Basic improvement project on US 101, Bunker Hill-David Slough.

   To overlay existing pavement with preservation surfacing by 1982 under FAP rural funds.

NOTE PAGE

5.7
Recreation

Introduction

The City of Coos Bay and the coastal county region abound with recreational opportunities. In order to ensure that future demand for these opportunities does not outstrip the supply, Coos Bay and Coos County must plan ahead. The purpose of this recreation element for Coos Bay's Comprehensive Plan is threefold: 1) to make an inventory of the demand and supply of recreational facilities, 2) to identify specific areas that are deficient in, or possess potential for recreational facilities, and 3) to assure provision of desirable open space.

The major sources for identification of these public needs and desires is the Outdoor Recreation Needs Bulletin of the Statewide Comprehensive Outdoor Recreation Plan, (SCORP), and a city-wide survey taken by the Committee for Citizen Involvement in 1978. Such information enables the development of local priorities. Then, through coordination with other governmental agencies, (i.e., the County, State, Bureau of Outdoor Recreation, etc.,) it is possible to satisfy the recreational needs of the citizens of Coos Bay and its visitors.

Standards

A population's needs and wants for outdoor recreation activities are dynamic; that is, demand may increase, decrease, or remain static. In order to identify needs, standards have been developed to help provide direction by suggesting levels of adequate recreation facility development. Standards are an expression of the theoretical relationship between recreation supply and demand. They are used to convert recognized demand for outdoor recreation into units of recreation area and/or facilities as a basis for determining area and/or facility needs. (Oregon. Department of Transportation (DOT) 1977:8)

The problem of effectively establishing needs is one that has been extensively studied by SCORP. Several approaches are possible. The first approach is the most widely used; it relates recreation space to population and is usually expressed in a population ratio, such as acres per 1,000 people. This type of standard is, however, more an arbitrary rule of thumb rather than an accepted recreation standard because it is developed without considering local demand, demographic characteristics, or present recreation facility supply.

The second approach relates a community's total area to the amount of park and recreation land that is in that area. As with the first, this approach is also easy to apply but it too is arbitrary and would be difficult to implement in established communities.

The third approach is the most difficult to use, but the National Parks and Recreation Association states that the "approach is the most relevant to people and their needs and will ultimately be the most flexible and accurate methodology of the future." (DOT 1977:9) Needs in this

approach are determined by: first, determining demand for outdoor recreation activities; second, applying specific user recreation space standards to quantify demand; third, comparing quantified demand for each activity with existing supply inventories. This procedure yields needs based on user characteristics and demand projections, rather than on population or land area. One problem, however, is that demand projections used to plan future recreation needs are everchanging and unpredictable. (DOT 1977:9)

Existing Facilities

To determine local needs, the state has taken the complex formula in the third approach and the population standard of the first approach and has derived specific standards for cities and counties, as shown in Table 5.7-1. Coos Bay's needs are determined by multiplying its estimated population by Coos County's per capita rate for each activity in order to derive its estimated "Activity Occasions (AO)." An "Activity Occasion" is the "participation in a given activity for the duration of that activity." (DOT 1975:23) The total AO's for a year are equal to the annual demand for that activity and related facilities. Table 5.7-2 provides an estimation of Coos Bay's needs based upon the SCORP demand data and the City's supply of a given facility or area. This figure is then subtracted from the gross need, as established by SCORP for the year 1975. That figure remaining, be it a deficit or surplus, is the net need. As these figures are constantly changing, needs have been determined up to the year 1990.

It would appear that the City of Coos Bay, as per state standards is quite deficient in the supply of picnic tables, boat launch lanes, and neighborhood parks. At the same time, a surplus of trails, all purpose courts, and community parks seems to exist. However, the SCORP standards are presented simply as guidelines and are <u>not</u> established requirements. Therefore, discussion of these items is necessary.

<u>Picnic Tables:</u>

See Parks.

<u>Swimming Pools:</u>

The one pool is quantitatively adequate to serve Coos Bay's needs. In 1988, the City completed the modernization of the swimming pool and service building at Mingus Park. This renovation included the replacement of original and outdated pool operating equipment, structural elements, fixtures, and electrical wiring of the service building/bathhouse.

<u>Boat Launch Lanes:</u>

This item is listed high in demand in both the state standards and CCI survey. Two lanes currently exist in Coos Bay with an estimated demand for six more. The strong demand along with the numerous water resources of the area rate this item as a high priority.

TABLE 5.7-1

LOCAL STANDARDS FOR CITIES AND COUNTIES (from SCORP)

Facility	Standard
Picnic Tables	1 site/800 Activity Occasion (AO)
Swimming Pool	1 pool/10,000 Population
Boat Launch Lanes	1 lane/2700 Boating Days
Walking Trails	1 mile/75,000 AO
Biking Trails	1 mile/10,000 AO
Hiking Trails	1 mile/35,000 AOs
Ball Fields	1 field/1,200 Population
Tennis Courts	1 court/2,500 Population
All-Purpose Courts	1 court/2,500 Population
Neighborhood Parks	5 acres/1,000 Population
Community Parks	10 acres/1,000 Population

Source: Oregon, Department of Transportation 1977: 17 & 19.

Population figures are based on 1975 census of 14,000 people.

Table 5.7-2

ESTIMATED RECREATIONAL FACILITY NEEDS FOR THE CITY OF COOS BAY -- 1975, 1980, 1990 -- BASED ON SCORP

Facility	Unit	Supply	Gross Need	Net Need by Year 1975	1980	1990
Picnic Tables	Tables	16	174	158	173	193
Swimming Pools	Pool	1	1	0	0	1
Boat Launch Lanes	Lane	2	8	6	6	7
Walking Trails	Mile	20	5	(15)	(15)	(15)
Biking Trails	Mile	11.9	2	(9.9)	(9.9)	(9.9)
Hiking Trails	Mile	20	5	(15)	(15)	(15)
Ball Fields	Field	12*	12	(0)	(0)	(1)
Tennis Courts	Court	8*	6	(2)	(2)	(1)
All-Purpose Courts	Court	23*	6	(17)	(17)	(16)
Neighborhood Parks	Acres	2.5	72	69.5	72	80
Community Parks	Acres	167	142	(15)	(17)	(1)

* Includes school district facilities and may require official school permission.

() Denote a theoretical surplus.

Pedestrian and Bicycle Paths:

The City's Park system contains several miles of multiple-use trails designed for both the bicyclist and pedestrian. These improved paths are located in lower Mingus Park, and since 1981, throughout the Empire Lakes Park.

The City prepared a bikeway plan in 1974 based upon a proposal from a Marshfield High School class. The Planning Commission approved this plan which is graphically represented on Map 5.7-1. The proposed system consists of paths through Mingus Park which are proposed to connect to a sidewalk path on Ocean Boulevard at Butler Road. This path continues to Newmark where the bicycle route connects with the Oregon Coast Bike Route on Highway 243 (Newmark and Empire Boulevard). The city bicycle plan also proposes connecting routes to the Empire Lakes Park and also a route through north Empire (Lakeshore Drive and Wasson Street). Since the completion of Map 5.7-1 in 1978, only paths throughout Empire Lakes Park have been paved and signed. Other than the route along Ocean Boulevard (Highway 243) the city has not actively pursued designating the bicycle lanes along city streets by erecting signs and striping pavement. Although the 1978 Committee for Citizens Involvement (CCI) survey revealed that the citizens of Coos Bay favor better than two to one, city-wide bikeways, there has not yet been a demonstrated demand from the public that the city pursue implementation of expansion of the current plan.

The City has cooperated with the State Highway Division in the designation of Highway 243 as a continuation of the Oregon Coast Bicycle Route which generally follows U.S. 101 from Astoria to Brookings. The City has endorsed the need for this coastal route and recognizes its benefits to tourism. At one time, the City considered having its own path system designated as an alternate route of the Oregon Coast Bicycle Route since the Coos Bay downtown business district is bypassed, although no progress was made. Further implementation or modification of the bicycle plan will become the task of the newly formed Parks Commission.

Tennis and All-Purpose Courts:

These facilities may appear as an apparent surplus, however, the majority of them are school district facilities and may require official school permission.

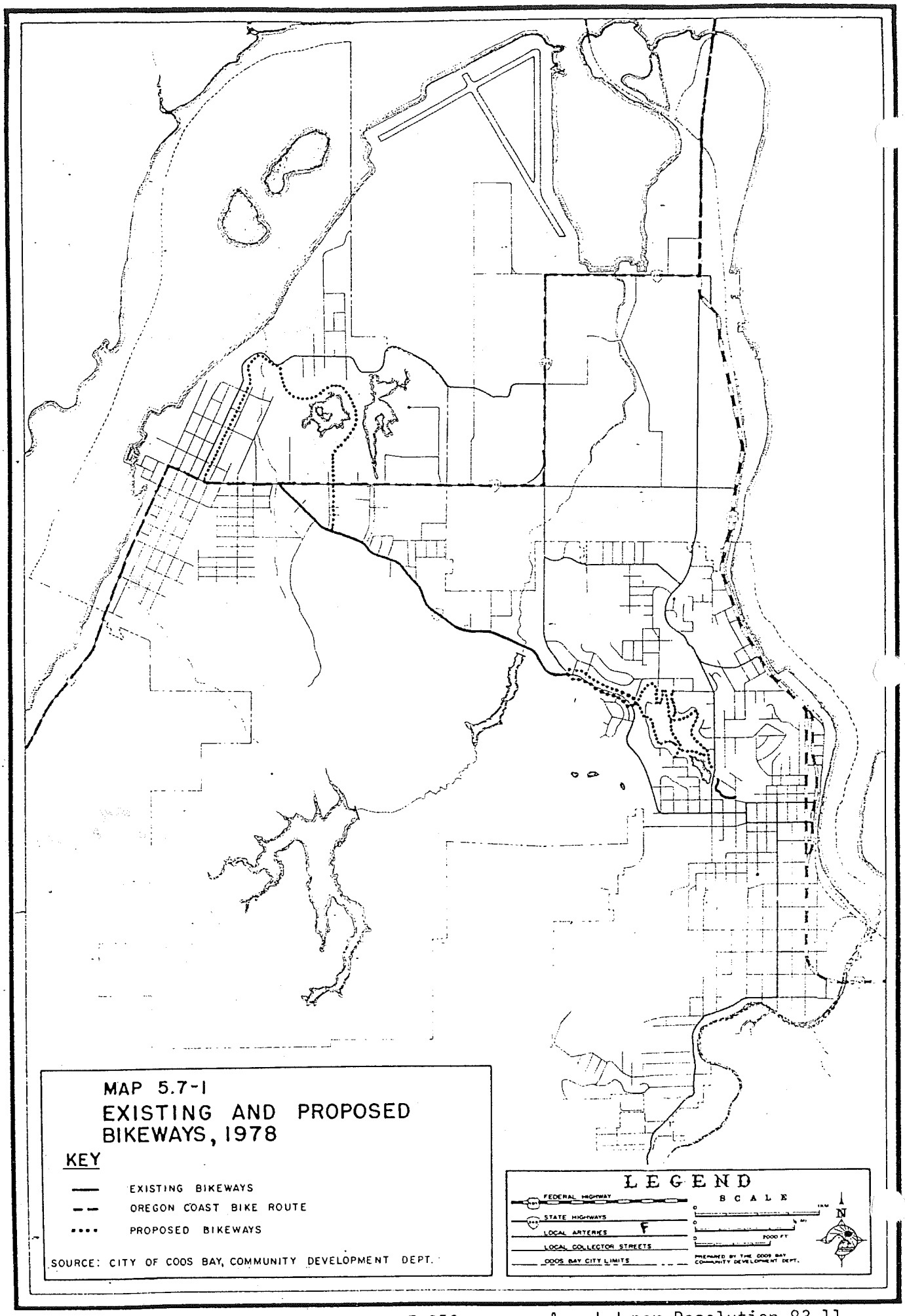
Parks:

Based upon the 1978 CCI attitude survey, no solid public consensus exists as to whether or not new parks and/or park facilities are needed. The survey showed that the citizens of Coos Bay are pleased with their present park system. This attitude may be due, in part, to the close proximity of numerous state, county, and forest service parks. These district parks are listed and shown on Map 5.7-2.

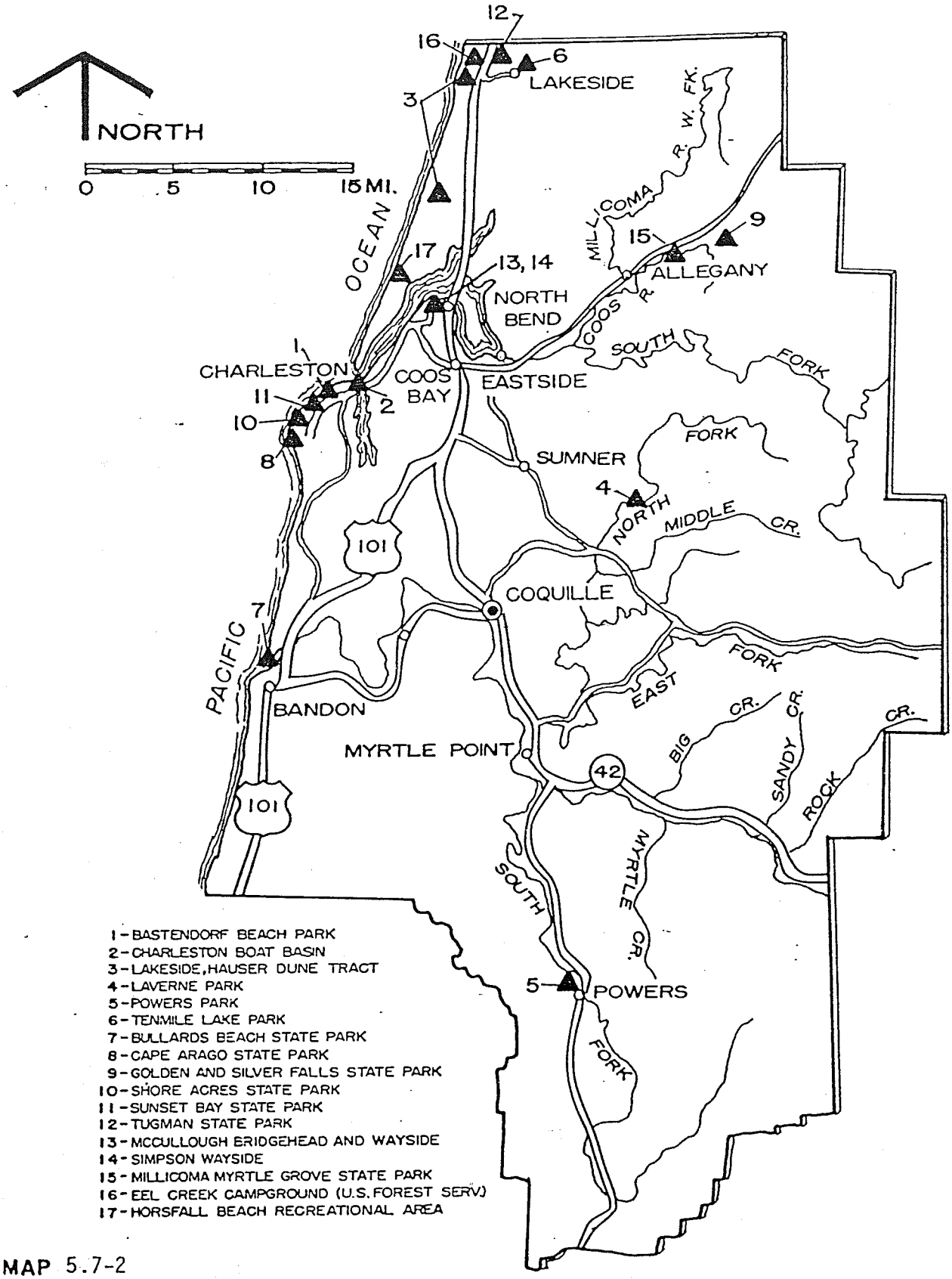
Coos Bay's location on a major coastal estuary affords a wide variety of recreational opportunities to the City's residents. Deep-sea fishing is available at Charleston where the Port of Coos Bay maintains a Small Boat Basin for private boats. The waters of Coos Bay are excellent for clamming and crab fishing. The Coos River and freshwater lakes to the north yield many varieties of fish including trout and bass.

The Oregon Dunes National Recreation Area is located a few miles north of North Bend and continues north into Douglas County. A number of ocean beaches are easily reached from Coos Bay. State and county parks are located at some of these beaches. In addition, an eighteen hole public golf course is located north of Eastside on Kentuck Inlet and a nine hole adjacent to Sunset Bay State Park on Cape Arago Highway.

The City of Coos Bay currently owns and operates five parks, comprising a total area of slightly over 170 acres. Two of these, Mingus Lake Park and Empire Lakes Park, serve as community parks and contain over 98% of the total acreage of the City's parks. The other three are small neighborhood parks. A brief summary of the City's parks follows, while their geographical location is presented in Map 5.7-3.



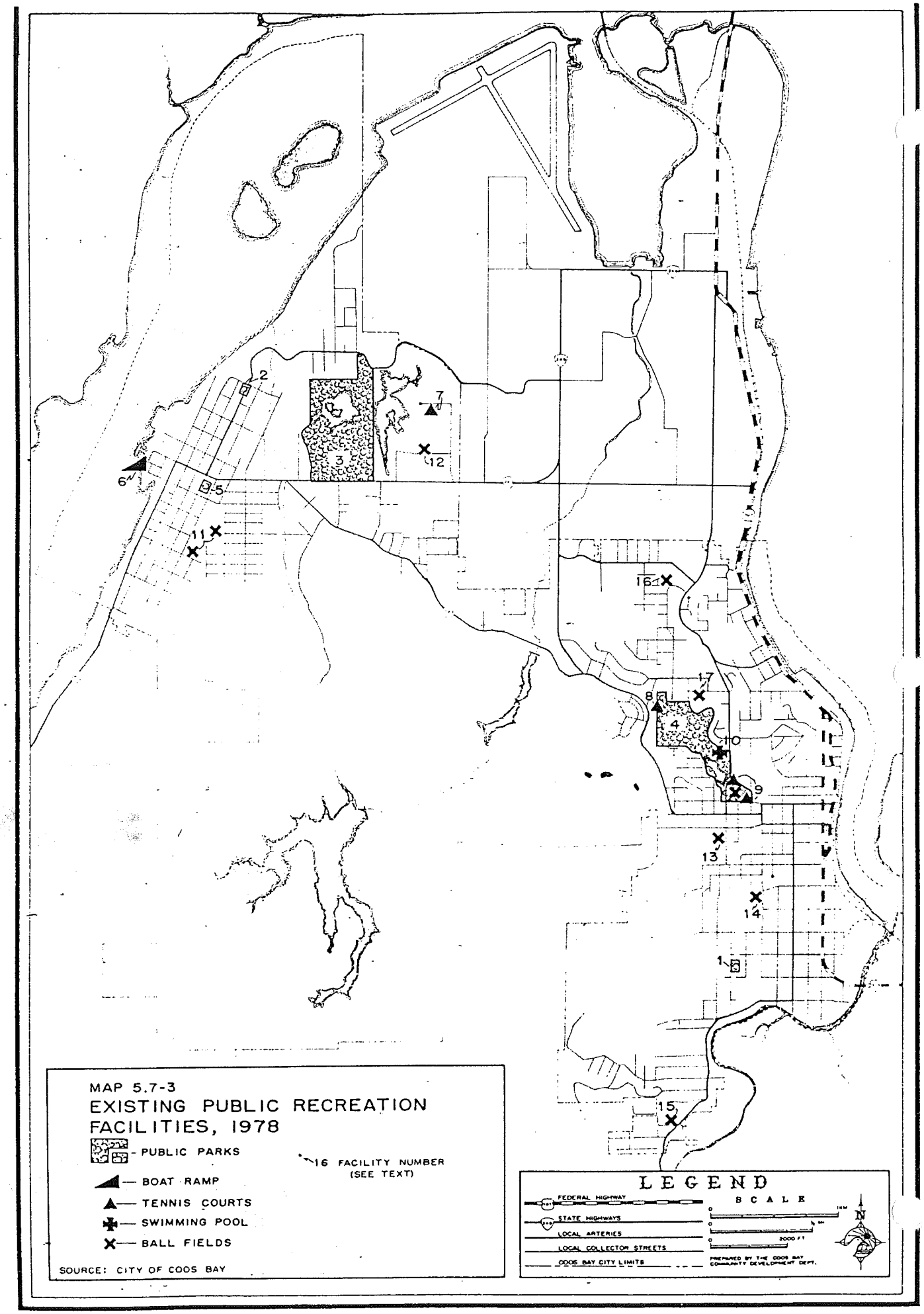
Amended per Resolution 83-11



MAP 5.7-2

LOCATION OF PARKS IN THE COOS COUNTY AREA, 1979

SOURCE: CITY OF COOS BAY


MAP 5.7-3
EXISTING PUBLIC RECREATION FACILITIES, 1978
PUBLIC PARKS
BOAT RAMP
TENNIS COURTS
SWIMMING POOL
BALL FIELDS
16 FACILITY NUMBER (SEE TEXT)
SOURCE: CITY OF COOS BAY
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIES
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
1KM
1MI
3000 FT
N
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

Mingus Lake Park:

10th Street; south of Date Street; 54 acres, 19 acres of which are developed; pre-school playground with play equipment, 4 tennis courts, softball diamond and bleachers, swimming pool, 3-acre lake.

Empire Lakes:

Newmark and Hull Street; 115 acres total, 1 acre developed; some playground equipment, covered picnic shelter, hiking trails around lake, community center building, 50 acres of lake surface.

South 10th Street Park:

10th Street between Kruse and Johnson; 3-acre neighborhood park area is cleared and fenced but no facilities exist at this time.

Ed Lund Memorial Park:

135 South Wasson; rose gardens, picnic facilities, small community building. 110 x 200 Wall

Wasson and Taylor: 110 x 120

Neighborhood park; no improvements.

The following are areas in Eastside which are presently used for recreational purposes as well as sites which were considered by the former City of Eastside for future recreational use and development.

City Parks:

At present there are two public parks in Eastside. The largest park covers a half-block on the west side of Fifth Avenue between "D" and "E" Streets. This park contains a ball field and limited playground and picnic facilities. Access to the park from "D" Street is provided by a landscaped walkway. The second park is located on 14th Avenue adjacent to the water reservoir between "E" and "F" Streets. 40,000 ft 25,000 ft

Proposed Park Sites:

In addition to the two City parks, four sites had been considered for recreational development but no action has yet been taken on any of them. On site lies on the north side of the Coos River Highway between Eleventh and Twelfth Avenues. Recreational development of this area may be precluded because of its low elevation and its proximity to a dangerous curve in the highway. A second site is located in a hillside area between Harbor View Drive and Sixteenth Avenue near the end of "D" Street. Another site is on the east side of Sixteenth Avenue at "G" Street, and a fourth site is at the north end of Second Avenue near "A" Street. These sites have all been considered for use as neighborhood play areas, but development of any or all of them is hampered by lack of sufficient funds available for recreational improvements.

In terms of the total land and water area of Eastside, open space is by far the most abundant physical commodity. The following paragraphs identify the location and types of open space which exist in Eastside and the surrounding area.

Urban development in the Eastside area is presently confined to the terrace which rises from the low-lying tidal flats, marshes, and fill areas which form the outer portions of the peninsula on which this area lies. A band of tidal flats extends around the edge of the peninsula from approximately the end of Bessee Street to a point on Catching Slough about one-half mile north of the Coos River Highway Bridge. A large area of marshland lies between the tidal flats and the upper terrace, extending eastward from a point roughly in line with Ninth Avenue. Extending west from the marsh and continuing along the foot of the terrace around Cypress Point is a large area of fill material which has been built up over a period of years as the result of dredging operations in the Coos Bay Channel. The athletic field for Millicoma Junior High School is located at the foot of the terrace southeast of Cypress Point and is the only part of the fill area receiving regular use at present.

Open space exists in significant amounts in the upper terrace which contains nearly all of Eastside's development. With the exception of parks, most of the remaining open space in Eastside consists of wooded areas. One such area lies between Ninth and Fourteenth Avenues about one block south of "F" Street, extending to the south City limits. Another large wooded ridge is located between Cedar Drive and the south City limits, and is bordered by Sixteenth Avenue on the west and Ross Slough Road on the east.

A substantial portion of the Coos Bay Estuary directly north of Eastside's main peninsula lies within the City limits. The City's east boundary begins in Catching Slough and follows the east shoreline of the bay north to about one-half mile beyond Pierce Point, then extends west to encompass all of the south end of the bay except for the shipping channel along the North Bend waterfront. Amidst this expanse of marine open space are Bull Island and several smaller marshy islands near the east shore. Near the shipping channel on the west side of the bay are three fairly large islands which have been built up by dredge spoil deposits.

Recreation Funding

While local property taxes represent a possible source of funds necessary to support desired recreational facilities, recent budgetary constraints generally preclude this option. State and federal grant programs constitute another funding source. A summary overview of such sources follows:

Bureau of Outdoor Recreation:

The Bureau of Outdoor Recreation (BOR) is the major source of federal planning, financial, and technical assistance for the enhancement of public outdoor recreation. This assistance in Oregon is carried out through the Parks and Recreation Branch of the Oregon Highway Division.

The BOR Land and Water Conservation Fund program finances federal land acquisitions, state recreation planning, and state and local recreation acquisition and development projects. States are now permitted to use up to ten percent of their annual fund allocations to construct sheltered facilities for ice skating rinks and swimming pools when covering the facilities is made necessary by extremely cold climates or snowy conditions.

Department of Housing and Urban Development

HUD has no recreation objectives beyond the fact that parks and recreation facilities may be developed pursuant to creating viable urban communities. HUD is the overseer of community development projects and recreation is a small part of their role. Emphasis is on physical improvements principally benefitting lower-income people.

State Marine Board:

The State Marine Board provides planning and financial assistance to local governments for the acquisition, development, and renovation of boating facilities. The Board acts to coordinate state and local entities to provide the most economical use of Board funds by providing technical resource materials, and information for the preparation of preliminary plans and cost estimates.

Oregon Department of Transportation: Federal and state funding is available through this office for bicycle paths in conjunction with street and highway improvements.

Conclusions

1. The City provides a variety of recreational opportunities to its residents. An assessment of the ability of these facilities to serve the population, based upon state standards, indicates a need for neighborhood parks, boat launch lanes and access to the estuary, and more clearly defined trails for hiking and biking.

2. Funding for recreation improvements projects is available from state and federal sources. However, a commitment from local residents through local taxes would strongly demonstrate a desire for expanded facilities and would confirm a level of continued maintenance.

5.8
Urban Growth Management

Introduction

The recognition of urbanization in the City's comprehensive plan deals with two factors -- the adequacy of existing urban lands and the need and propriety of extending the City's limit of jurisdiction to meet future growth. In essence, the City and County must cooperatively consider what lands, if any, surrounding the City may eventually be considered urban rather than rural. The designation of this area is made by an urban growth boundary line or a zone which distinctly separates and identifies current urban and rural areas. The goal of establishing this Urban Growth Boundary (UGB) is to make an efficient and orderly transition from rural to urban use, that is, to contain urban sprawl and minimize the costs of erratic development. But the decision to design an Urban Growth Boundary (UGB) hinges upon a thorough understanding of urban development and public needs.

An intended effect of a UGB is to prevent urban sprawl by promoting the use of undeveloped lands within the City first, and managing land development outwards as needed. There has been increasing consumption of land outside cities by urban-type development at a characteristically lower density.

> Urban land consumption in this country is increasing faster than population growth. The built up lands in urban and suburban areas increased from 18 to 35 million acres between 1950 and 1970. In the same period the amount of land per person increased from .2 acres per person in 1950 to .4 acres per person in 1970. (Reeder 1977:1)

Such sprawling development increases the cost of services and cost to the environment which is ultimately absorbed by local government and the taxpayer. One must consider that longer utility lines must be built; more roadways must be paved. Police and fire protection services must extend over larger, lower density areas. There are also costs in energy consumption and travel time.

> The biggest disadvantages of the increasing land consumption and decreasing densities are the costs of providing urban services to fewer people in a large area, the loss of prime agricultural lands and other natural areas, and the increasing consumption of energy in transportation of goods and services. (Reeder 1977:1)

S Doty 3/4/04

	total acreage	developed	undeveloped	water area
		1986		
mingus park	57.07	17.27	36.73	3.07
empire lakes	113.0	6.0	57.00	50.0
s 10th st	.72	.72	0	0
taylor-wasson	.3	.0	.3	0
ed lund	.46	.46	0	0
empire water	2.75	1.5	.5	.75
down water	1.5	.2	.9	.4
eastside park	.9	.9	0	0
porterville	.67	0	.67	0
windy hill	.63	.63	0	0
	178.0	27.68	96.1	54.22
		1996		
mingus park	57.07	21.27	32.53	3.27
empire lakes	113.0	8.0	55.0	50.0
s 10th	.72	.72	0	0
taylor wasson	.3	.3	0	0
ed lund	.46	.46	0	0
empire water	3.09	1.71	0	1.38
down water	2.98	1.38	0	1.60
eastside park	.9	.9	0	0
porterville	.67	0	.67	0
windy hill	.63	.63	0	0
	179.82	35.37	88.20	56.25

In 1974, the Real Estate Research Corporation had found that sprawl "is the most expensive form of residential development in terms of economic costs, environmental costs, natural resource consumption, and many types of personal costs." (LCDC 1978:6)

City officials must also consider the costs of upgrading development within the UGB that does not meet City standards at such time these areas may be incorporated into the City. Nor must one overlook the desires of residents living within a potential UGB who may not want added costs and urban regulation, but prefer a rural or suburban setting.

Designation of a UGB involves three elements. One is to determine the amount of land needed for future residential, commercial, and industrial growth and the land currently available within the City for these purposes. If undeveloped urban lands do not satisfy predicted needs, suitable land outside the city may be earmarked within the UGB.

The second element is to assess the suitability of extending the city's limits. Such an assessment considers six factors:

1. Need for housing, economic opportunities, and liveability.
2. Provision for facilities and services in an orderly and economic fashion.
3. Maximum efficiency of land use.
4. Environmental, energy, economic and social consequences.
5. Retention of agricultural lands.
6. Compatibility of urban uses with adjacent agricultural lands.

The third and crucial element is examined, if an extension of the urban boundary is deemed advisable. To implement this third stage, the City and County, as representatives of these urban and rural lands, must prepare a cooperative agreement. This agreement serves to reconcile the sensitive issue of land development within the UGB prior to possible annexation. In other words, it defines whether City or County zoning and land development requirements will apply within the UGB. It also serves to satisfy any other concerns by the City or County.

Estimated Future Land Needs

Population Projections

The estimated population of persons expected to reside in the City of Coos Bay by a specified date is the basic criterion for determining future residential, commercial, industrial, and open space land needs. Population projections are formulated by several agencies in Oregon, each using a variation of a basic statistical method. This method is the cohort-survival

technique (cohort groups are those united by similar age and sex), and it considers fertility, mortality, and net migration rates. The projections are formulated for 5-year intervals, presently calculated from 1980 to 2000. The birth and death rates are computed with adjustments caused by changes in household size. Net migration is assessed by taking into account regional and national economic trends by nationwide shifts in population settlements.

Four agencies publish county-wide population predictions, based on 1980-1987 trends; they are: the Center for Population Research and Census at Portland State University (CPRC), the Bonneville Power Administration (BPA), Pacific Northwest Bell (PNB), and Coos-Curry-Douglas Business Development Corporation (CCD-BDC).

Table 5.8-1 presents CPRC population predictions for Coos County, graphically displayed in Fig. 5.8-1. The CPRC figures represent the population expected to reside in the County by the year 2000.

Table 5.8-1

COOS COUNTY POPULATION PROJECTIONS

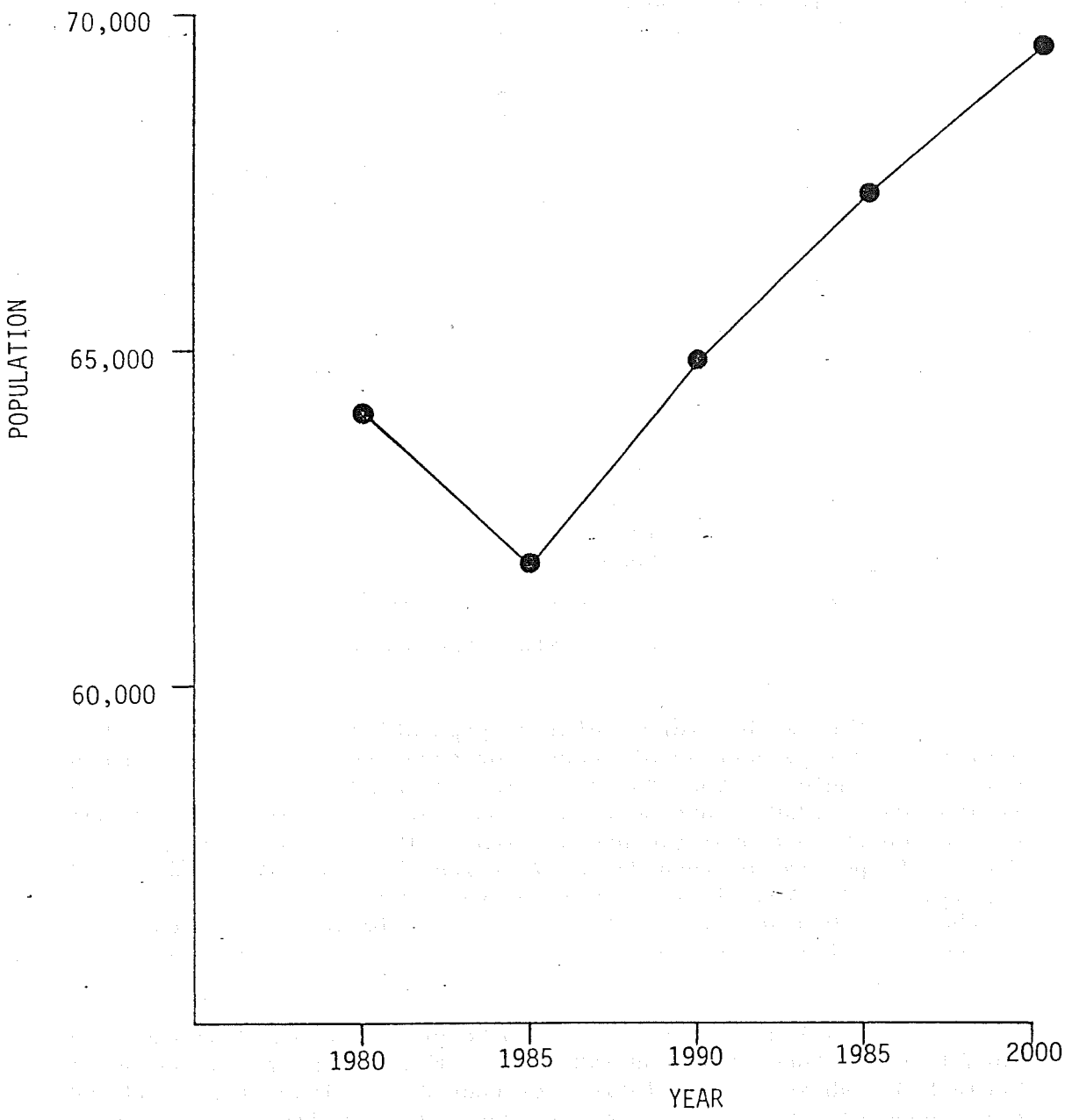
1980-2000

YEAR	C.P.R.C.
1980	64,047
1985	61,900
1990	64,800
1995	67,300
2000	69,500

Coos Bay Population Projections

The estimation of populations in Coos Bay can be computed by "stepping down" from the CPRC County predictions. This method assumes that Coos Bay will continue to capture 25% of Coos County population through the year 2000. As shown in Table 5.8-2, population by 2000 in Coos Bay will approximate 17,375. Graphic comparisons of this population growth is presented in Fig. 5.8-3.

FIGURE 5.8-1
COOS COUNTY POPULATION PROJECTIONS
1980-2000
BY THE CENTER FOR POPULATION RESEARCH
AND CENSUS PREDICTIONS.



Coos Bay Population Projections

The estimation of populations in Coos Bay can be computed by "stepping down" from the CPRC County predictions. This method assumes that Coos Bay will continue to capture 25% of Coos County population through the year 2000. As shown in Table 5.8-2, population by 2000 in Coos Bay will approximate 17,375. Graphic comparisons of this population growth is presented in Fig. 5.8-3.

Table 5.8-2

COOS BAY AND NORTH BEND POPULATION PROJECTIONS,
BASED ON "STEP-DOWNS" FROM CPRC "HIGH" FIGURES
1980-2000

YEAR	COOS BAY
1980	16,012
1985	15,475
1990	16,200
1995	16,825
2000	17,375

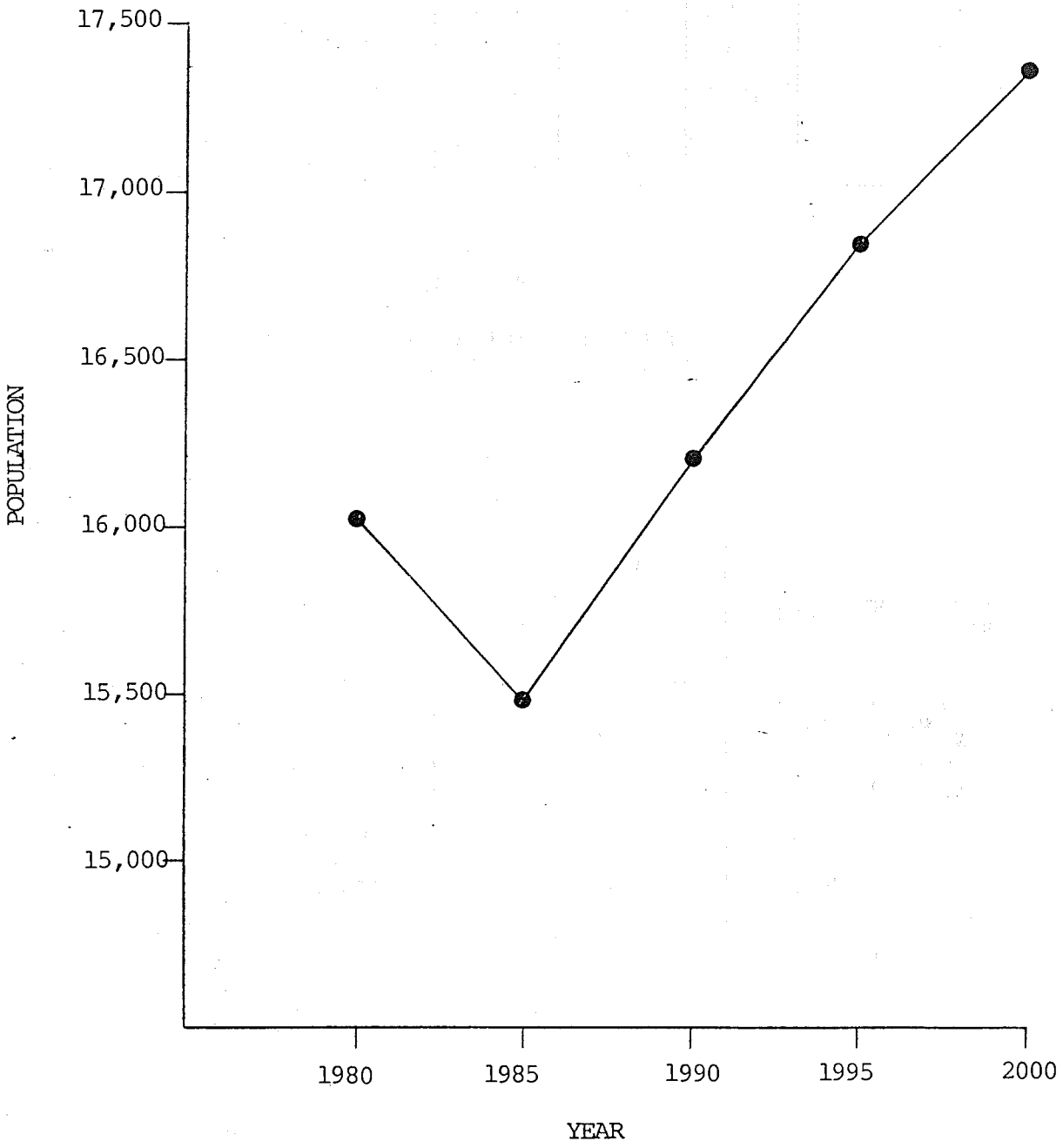
Source: Staff Computations

Another method for predicting population for Coos Bay is based upon an average annual percentage of change for each city rather than on cohart-survival technique. Coos Bay's population in 1980 was 16,012; its population in 1987 was 14,290. This decrease constitutes a total -10.8% change in population or an annual average of -1.5%. Therefore, for a 5-year period, Coos Bay's population recorded a -7.7% loss based on 1980-1987 trends. Applying this 5-year increase percentage, population figures can be projected to the year 2000 at 5-year intervals. It is important to note that this method projects a continuous population decrease, whereas, the CPRC method predicts increases.

Population increases can also be predicted based on the trends established between 1985 and 1987 rather than on the 7-year trend (1980-87). Table 5.8-3 shows the population for Coos Bay in 1980, 1985, and 1987, and the corresponding percentages of change totally, annually, and over a 5-year period. Table 5.8-4 expresses these changes in population projections every 5 years considering both trends. Again, this method projects a continued population decrease which is most unlikely to occur.

FIGURE 5.8-3

POPULATION PROJECTION FOR COOS BAY
BASED ON "CPRC" FIGURES
1980-2000



SOURCE: STAFF COMPUTATIONS DERIVED FROM CPRC COOS COUNTY PREDICTIONS.

Table 5.8-3

POPULATION CHANGE FOR COOS BAY
BASED ON 1980-87 AND 1985-87 TRENDS

CITY	POPULATIONS			PERCENT OF CHANGE		
	1980	1985	1987	TOTAL	ANNUAL	5-YEAR PERIOD
Coos Bay	16,012		14,290	-10.8%	-1.5%	-7.5%
		15,475	14,290	- 7.7%	-3.9%	-19.5%

Table 8.5-4

PROJECTED POPULATION OF COOS BAY
BASED ON AVERAGE 5-YEAR GAINS - 1985-2000

YEAR	COOS BAY	
	1980-1987 trend (-7.5% loss)	1985-1987 trend (-19.5% loss)
1985	15,475	15,475
1990	14,314	12,457
1995	13,240	10,028
2000	12,247	8,072

A comparative study of the CPRC projections and that depicted in Table 5.8-3 based solely on recent settlement trends reveal a substantial similarity for Coos Bay predictions. The CPRC for Coos Bay lies in the mid-range of predictions based on past trends. For the purpose of this plan, the CPRC is considered a more reliable assessment due to its more thorough methodology.

Relationship of Coos Bay and North Bend Populations

The housing needs and buildable lands assessment for the City of North Bend could have an effect on Coos Bay. The city limits of North Bend are unchangeably delineated, for all practical purposes. Its eastern, northern, and western boundaries are surrounded by the estuary; at its southern border lies the City of Coos Bay. Unless North Bend extends its limits beyond the bay to include the north bayside areas, its maximum population is fixed. The maximum land development capabilities of North Bend may affect Coos Bay in what is termed "spillover;" that is, Coos Bay would have to house those persons who cannot settle in North Bend.

North Bend's urbanization element (1980) states that the city population will reach approximately 14,996 by the year 2000 (based upon a step-down method of the PSU "high" prediction). This amount constitutes an additional 4,700 persons over the 1978 population and will require 1,734 more dwelling units with an average household size of 2.71. The element further states that the residential land needs will total 305 acres (comprising 16 acres for multiple density, 289 acres for low and medium density). After analyzing the commercial and industrial land needs and the buildable lands available, it is concluded that the city is short by 120 acres to house the entire prospective population. However, the City of North Bend has used these statistics to justify an urban growth boundary around two unincorporated islands of land lying between both cities, comprising a total of 118 acres, thereby, providing enough residential land.

Based upon this information, it can be assumed for this phase of planning that Coos Bay will not be impacted by an "overflow" North Bend population until post-2000.

Residential Land Use Needs

Relationship between Population and Housing

The relationship between population and housing was discussed in detail in the housing inventory. This discussion concluded that in Coos Bay there is a logical, measurable relationship between population magnitude and the number of housing units necessary to accommodate that population. An analysis of the growth in the total number of housing units in Coos Bay since 1980 reveals a positive relationship between the City's population decline during the period and corresponding housing increases which were virtually insignificant.

Application of a statistical technique called "regression analysis" enables precise measurement between population and housing variables. The technique measures the degree to which the variables are related to each other by assessing how changes in one variable affect changes in the other. The technique also enables the prediction of future housing needed to support future population, based on the relationship that existed between the two variables from 1970 to 1978.*

By computing a statistic called the "coefficient of determination" (part of the regression analysis), it was determined that city population growth is statistically related to 90% of the total number of housing units which occurred during the eight year period. This supports the obvious assumption that growth in local housing units results from Coos Bay's population increases between 1970 and 1978. It is also reasonable to assume that while 90% of local housing stock changes are related to population changes, speculative building activity might account for the remaining 10%. Table 5.8-5 shows the estimated housing units needed to satisfy future population based on 1970 to 1978 housing trends.

Table 5.8-5

ESTIMATED HOUSING NEEDS BASED ON FUTURE POPULATION GROWTH AND PAST TRENDS

FUTURE POPULATION (X)	ESTIMATED HOUSING UNITS (Y)
15,500	5,862
16,000	6,102
16,500	6,342
17,000	6,582
17,500	6,822
18,000	7,062
18,500	7,302
19,000	7,542
19,500	7,782
20,000	8,022
25,000	10,422

*It is essential to note that these figures reflect needs based on 1970-1978 trends. Estimated housing needs are based on trends from the 1970's because Coos Bay experienced population growth during this time. These trends would be more likely to reflect future trends than 1980 to 1987 trends when Coos Bay experienced population decreases.

Population, Housing, and Land Use

Estimates of population growth and the corresponding need for additional housing can be restated in terms of land required to satisfy the projected growth. This is a basic criterion to determine the need for an urban growth boundary. As aforementioned, population and Housing construction in Coos Bay has been closely related, indicating that housing has simply been keeping pace with current needs. Vacancy rates also point toward the same conclusion. Therefore, additional housing is necessary to compete with growth and with endeavors to produce a sound housing market.

Computations for predicting housing and acreage need by the year 2000 must take into account the forecasted population (total population less persons housed in group quarters), anticipated household size, preferable vacancy rates, and the desired mixture of housing by type. By 2000, the housing population for the city will approximate 17,375 persons, assuming that 1.7% of the population will continue to be housed in group facilities. (Appendix I details the computations for these data.) Translating this figure to households and assuming that the trend for smaller households will hold sway, the city can expect a total of 6,822 family units by that time with an average of 2.5 persons in each household.

These additional dwellings required by the turn of the century must be allocated by desired housing type. For instance, in 1987, the housing stock was characterized by 71.3% single-family and duplex dwellings, 18.4% multiple-family and 10.3% mobile homes. Interestingly, this mix is closely correlated with the 1980 housing mix. (Table 5.8-6) The trend in most communities has been and will most likely continue to be a reduction in the single-family housing type (detached, owner-occupied) with an attendant increase in duplexes and apartments (either rented or owned as condominiums). Coos Bay is expected to follow similar trends as its population increases. (Table 5.8-6) With a disproportionately high percentage of mobile homes than other cities in the bay area and the county, a 10% mix is expected to remain, while other communities regain a share.

TABLE 5.8-6

PERCENT OF PROJECTED HOUSING MIX BY THE YEAR 2000: COMPARATIVE DATA

	1980 Coos Bay	1987 Coos Bay	2000 Coos Bay
Single-Family	66.3	66.4	55.0%
Duplex	4.6	4.9	5.0%
Multiple-family	18.9	18.4	30.0%
Mobile Home	10.2	10.3	10.0%

Source: City of Coos Bay housing statistics and Wright, Kim A., 1979:39.

Amended per Resolution 83-11

The number of basic housing units should be adjusted for a normal vacancy rate. Assuming a standard rate of 6% for multiple-family housing and 2% for single-family homes (Housing Division, State of Oregon), the number by unit type can be amended to reflect the number of units required to provide a realistic market. Table 5.8-7 shows the number of vacancy-adjusted units by type for the city by the year 2000. It shows a total number of 6,822 housing units which is 116 more units than the 1987 figure.

Table 5.8-7

TOTAL NUMBER OF HOUSING UNITS BY TYPE -- 2000

Housing Type	Number of Units 1987	Number of Units 2000	Additional Units Required
Single-family	4,456	4,519	63
Duplex	325	331	6
Multiple-family	1,234	1,269	35
Mobile Home	691	703	12

Commercial/Industrial Needs and Land Use.

The character of commerce and industry in Coos Bay was addressed in the Economic Development inventory, Chapter 5.3. The assessment concluded that commercial trade and service activities are by far more important within the commercial support system for the city proper, as opposed to major, diverse industrial activities. The city must rely on the region to provide the wide-range of sites for industrial expansion for several reasons. The city has lacked land properly suited to Industrial development, although a disproportionate amount has been zoned as "industrial land." In addition, commercial uses have been permitted within these zoned industrial lands making them not truly industrial lands but rather commercial with a scattering of industrial uses within them. Because of historical land use and the area's topography, there is not enough land with siting characteristics attractive to industry to provide for a variety of new sites within the city alone. Therefore, any identified sites must contribute a share of the regionally-identified need.

Amended per Resolution 83-11

The economic development inventory also concluded that there is an adequate supply of commercially-suited land if the established land use pattern continues. The city will continue the practice of infilling and will look favorably upon proposals for the redevelopment of underutilized sites or dilapidated structures. Moreover, many of the sites, previously considered for industrial development, are vacant and will serve well for commercial activities.

Sites for the future industrial/commercial need will be considered under the buildable lands assessment later in this chapter.

Open Space Needs and Land Use.

Open space exists within the City in the forms of parks, the watershed, rights of way, and undeveloped land. Parks and rights of way compromise approximately 990 acres of land accessible and used by the public. The watershed adds an additional 2,023 acres of land protecting the area's water supply but prohibits other public use. The remainder of approximately 1,730 acres of undeveloped land exists in Coos Bay. The ultimate use of this land is yet to be determined. However, portions of this land may be left as open space in the light of two criteria. One is the need for additional neighborhood parks as indicated in the Recreation inventory. Another factor may be the unbuildable nature of these undeveloped tracts, perhaps indicating that they are more suitable as open space. The following buildable lands assessment will discuss these factors in more detail. (Appendix I)

Conclusions

1. The population for Coos Bay by the year 2000 is expected to approximate 17,375 individuals.

2. Based on the expected growth of North Bend, that City will not reach its maximum population capacity before the year 2000. Hence, Coos Bay will not experience a greater influx of persons unable to settle in North Bend until that time.

3. Based on these population projections, the City will have an additional housing population of 1,363 persons or set-aside enough land for approximately 116 more housing units.

4. These are sufficient commercially-zoned lands within the city limits but insufficient industrially-zoned lands.

5. The City may need to dedicate some undeveloped land for open space uses to satisfy a need for parks; however, it is envisioned that there are sufficient lands needed for this purpose within the existing city limits.

Amended per Resolution 83-11

Buildable Lands Assessment

In 1977, it was determined that roughly 1,730 acres of land remained undeveloped or vacant in the city either in large tracts or in scattered isolated parcels. However, for future planning needs, only the larger tracts of land are considered herein. (Map 5.8-1) It is assumed that the scattered parcels will be "infilled" by uses compatible with existing zone designations. (Appendix I)

Although there are 1,730 acres of undeveloped lands in the city, not all of this acreage may be suitable for development, and, therefore, will not satisfy future residential, commercial, or industrial needs. Specific land constraints must be assessed before determining the degree to which a piece of land is buildable. In this area, known land constraints are the degree of slope, drainage and flooding, and soils. Other factors which may hinder development is the feasibility of providing supporting facilities, such as water, and sanitary and storm water lines. By applying standards for each of these constraints, parcels of land may be totally excluded from the buildable reserve; other lands may be deemed highly buildable; while still others are buildable but necessitate special construction techniques.

Physical Constraints

Partial determination of buildable lands is based upon assessing the following physical criteria.

Slope--(Map 3.3-2)

1. Land with a 0-12% slope is prime for standard residential development and for most industrial development.

2. Land with a 13-30% slope is buildable but requires more than standard construction techniques.

3. Lands having a slope greater than 30% should be excluded from the building reserve. This criterion is for purposes of inventory only and is not meant to exclude lots of slopes greater than 30% for special construction. In these instances, soils analysis and specially engineered foundations might be required in order to build on the site.

Drainage--(Maps 4.3-2, 4.3-6)

1. Areas with no known drainage problems are prime for standard development.

Amended per Resolution 83-11

2. Areas with known drainage problems such as intermittent standing water, high water table, and so on, are buildable but require additional drainage procedures.

3. Of those lands lying within the 100-year floodplain, building will be prohibited in undeveloped areas of the floodway. However, construction in the flood fringe will be permitted but limited so that the cumulative effect of such construction will not raise the levels of flood water more than one foot. Determination of floodway and flood fringe boundaries will be accomplished by the Department of Housing and Urban Development in the near future.

Soils--(Map 3.3-1)

Unless soil conditions are such that they will not support construction using accepted building practices, they should not be a limiting factor within the urbanization area. Limiting factors would be fill material, extreme erosion hazard, and so forth.

Geology--(Map 4.3-2)

Exclude all lands with known hazardous geological conditions, such as landslides, faults, and so on. This should not be a limiting factor within the city since the only identified fault lies within the watershed.

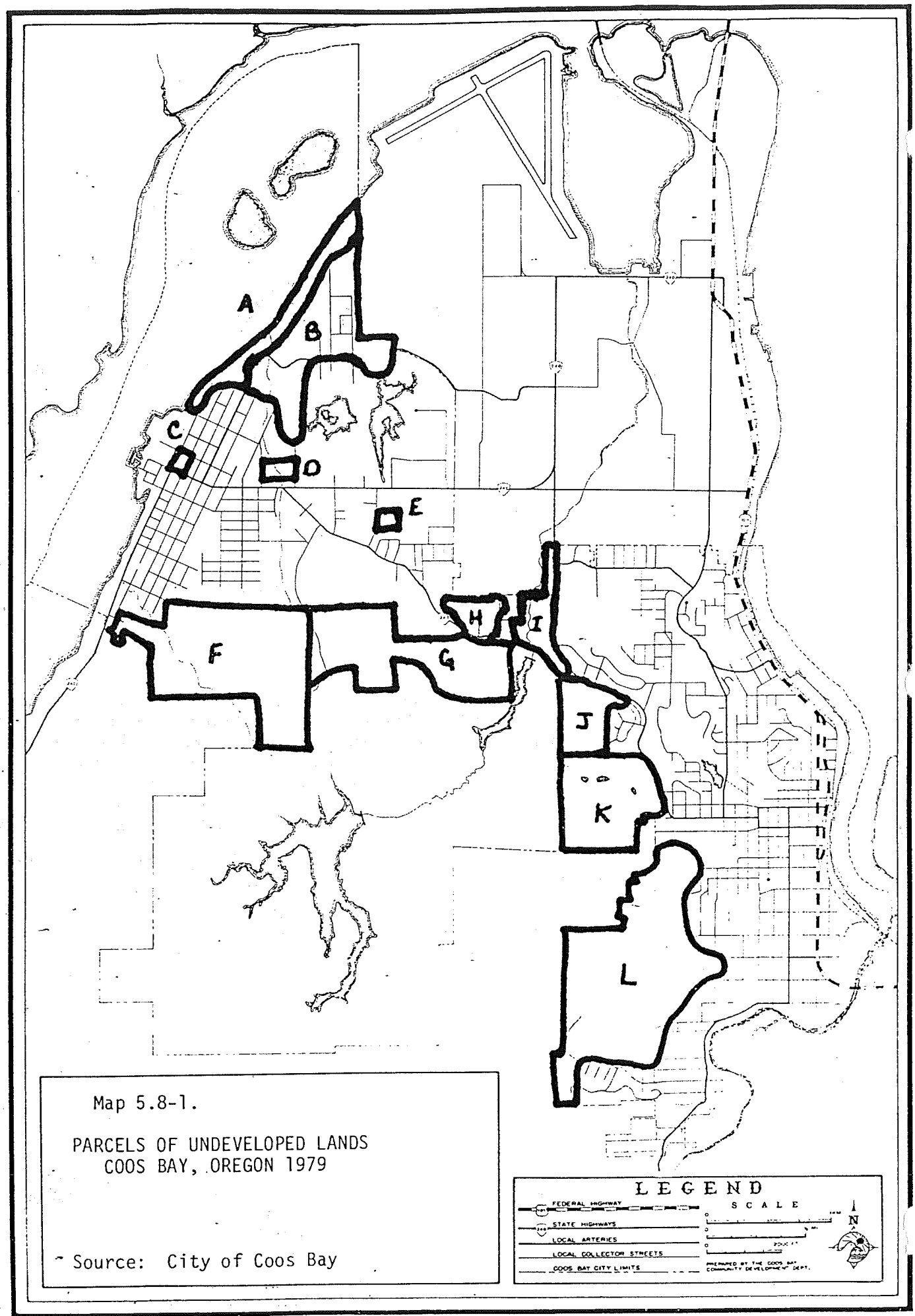
Facilities and Services Constraints

Another factor for evaluating buildable lands is the ability and ease of providing utility services, such as water and sewer lines. The ability to provide service becomes rather undebatable in light of current technological capabilities. However, development constraints may arise when varied costs are considered. For example, it may be possible to extend services but physical land characteristics require uncommon construction techniques and, of course, additional costs. The ability to provide water and sewer service to the undeveloped parcels of land in the city is described below.

Water Service--

According to the Coos Bay-North Bend Water Board, it is possible technologically to provide water as needed for development anywhere within the Coos Bay area. However, other factors may increase the cost or delay the extension of service. The following assessment is based upon both cost and physical constraints.

Amended per Resolution 83-11



Map 5.8-1.

PARCELS OF UNDEVELOPED LANDS
COOS BAY, OREGON 1979

Source: City of Coos Bay

Storm and Sanitary Sewer Service--

As with water service lines, it is technologically possible to provide sewer services to all undeveloped areas in Coos Bay. Similarly, development restraints occur with the relative cost of construction extra lines or pumping stations due to topographic characteristics.

Undeveloped Lands Analysis

The tracts of undeveloped lands, featured in Map 5.8-1, have been assessed according to the aforementioned criteria. The majority of land in these parcels is buildable and has little, if any, constraints imposed by drainage, soils, or geologic problems, or the accessibility of facilities and services. The principal restraining factor is slopes greater than 30%; these lands have automatically been excluded from consideration in the buildable land reserve for the City of Coos Bay. As a result a total of 933 acres of land counted within the parcels in Map 5.8-1 are deemed suitable for future development.

Specific parcel analysis follows below.

Parcel A. North Empire Waterfront Area--

Acreage:	Overall approximately 15 acres.
Slope:	6-15%.
Drainage:	Groundwater within three feet in the northern portion in the vicinity of the city limits and in the southern section of this parcel; the area surrounding Chickses Creek and the low-lying area along the estuary lie within the 100-year floodplain.
Sewer/Water:	Water and sewer lines already exist in the surrounding developed areas.
Present Zoning:	Restricted waterfront residential.
Discussion:	Generally highly buildable, with special consideration given to adequate site drainage and protection of the bankline above the tidelands. The predominant use of surrounding land is residential. Some of this land has scenic value.
Conclusion:	The use of this property should be continued for high density residential development with provisions for projects which will enhance the area's scenic attributes.

Amended per Resolution 83-11

Parcel B. North Empire Area. (Fenwick environs)--

Acreage:	Approximately 100 acres.
Slope:	0-5%.
Drainage:	Groundwater within three feet in the area west of Empire Lakes and along Chickses Creek.
Sewer/Water:	Sewer and water lines already exist in the surrounding developed areas.
Present Zoning:	Single-family and duplex residential.
Discussion:	Committed to low density residential development, buildable but with special consideration given to adequate site drainage. Surrounding uses are all residential.
Conclusion:	This property should continue to be used for low density residential development.

Parcel C. Newmark and Empire Boulevard

Acreage:	Approximately 4 acres.
Slope:	0-5%.
Sewer/Water:	These facilities are readily available.
Present Zoning:	Commercial - waterfront industrial.
Discussion:	This property lies well above the shoreland making any water-dependent provisions unreasonable. The property could be suitable for light industrial uses as well.
Conclusion:	These properties should be given a commercial/ industrial designation.

Amended per Resolution 83-11

Parcel D. Chickses Area--

Acreage: Approximately 9 acres.

Slope: 0-5%.

Drainage: Groundwater within three feet.

Sewer/Water: These facilities are readily available.

Present Zoning: Single-family/duplex residential.

Discussion: This piece lies off Newmark behind existing commercial uses, and would be suitable for a change to commercial or light industrial.

Conclusion: This property should be changed to commercially/industrial designation.

Parcel E. Jensen Area--

Acreage: Approximately 10 acres.

Slope: 0-5%.

Sewer/Water: Sewer and water lines already exist in the surrounding developed areas.

Drainage: Groundwater within three feet of surface of entire area.

Present Zoning: Mobile home park.

Discussion: Revision of zoning to multi-family residential would be more compatible with surrounding property. Street access off Ocean Boulevard is narrower than remaining LaClair right-of-way. Area is buildable but with special consideration given to adequate site drainage. A commercial designation might also be suitable.

Conclusion: Due to the predominance of multiple-family dwellings in the area and due to the limitation of LaClair Street for increased commercial traffic, this property should be planned for high density residential uses.

Amended per Resolution 83-11

Parcel F. South Empire Area--

Acreage: Approximately 283 acres--121 acres 0-5% slope, 162 acres 5-15% slope.

Slope: 0-5%, 5-15%.

Sewer/Water: Sewer and water lines already extend to the boundaries of this parcel either from the Empire Boulevard area or from Terramar subdivision at the higher elevations.

Present Zoning: Single-family/duplex; agricultural residential.

Discussion: Much of the area is highly buildable. The City has traditionally treated these lands as low density residential although its location to public facilities may make them suitable for commercial or industrial development. There are several large parcels under single-ownership. The land at higher elevations has scenic qualities.

Conclusion: The property, particularly that which is in single ownership, would make a suitable industrial site with adequate perimeter buffering. Approximately 126 acres should be used for that purpose. The remainder, especially that at a higher elevation, should continue for low-density residential purposes. 157

Parcel G. Terramar Area--

Acreage: Approximately 179 acres -- 151 acres 6-15% slope. 28 acres 16-30% slope.

Slope: 5-15%, 16-30%

Sewer/Water: Sewer and water lines already extend to the boundaries of this parcel. Sewerage pump station may be required where gravity flow is unfeasible.

Present Zoning: Single-family/duplex; agricultural/residential

Discussion: Highly buildable; some property east of Terramar would be suitable for high density residential development routed from Lindy Lane to Ocean Boulevard. Because of access to Ocean Boulevard and surrounding commercial uses, approximately 40 acres would be suitable for commercial and light industrial.

Amended per Resolution 83-11

Conclusion: Plan 40 acres for commercial/industrial; 40 acres for high density residential; and the remainder for low-density residential.

Parcel H. 28th Street Area--

Acreage: Approximately 3 acres.

Slope: 6-15%.

Sewer/Water: Sewer and water lines exist in surrounding developed area. Pump station would be required where gravity flow is unfeasible.

Present Zoning: Single-family/duplex.

Discussion: Buildable; suitable for residential development.

Conclusion: This property is close to a major arterial and could best provide for multiple-family housing.

Parcel I. Pony Creek, north of Ocean Boulevard--

Acreage: Approximately 12 acres.

Slope: 6-15%.

Drainage: Lies within the 100-year floodplain in low-lying areas.

Sewer/Water: Sewer and water lines exist in surrounding developed area. Pump station would be required where gravity flow is unfeasible.

Present Zoning: Single-family/duplex.

Discussion: Multi-ownership of property may create assemblage difficulties. Alteration of Pony Creek would require special permit approval. Slopes and natural features would make some conventional development costly. If density is increased, the building costs might be offset. The area would be suitable to mixtures of housing design, e.g., PUD, cluster, zero lot line.

Conclusion: This property should be developed for high-density residential uses.

Amended per Resolution 83-11

Parcel J. Undeveloped Westgate Plat--

Acreage:	Approximate 50 acres.
Slope:	0-15% (37 acres); 16-30% (13 acres)
Sewer/Water:	The provision of water and sewer through most of Parcel H would be relatively easy. However, an area adjacent to he watershed would require an additional water storage tank.
Present Zoning:	Single-family/duplex (36 acres); residential professional (14 acres)
Discussion:	Suitable for residential development due to topography and surrounding areas.
Conclusion:	Continuation of current zoning which provides for both low and high density.

Parcel K. Waterboard Area--

Acreage:	Approximately 150 acres.
Slope:	16-30%.
Sewer/Water:	Water service can be provided on the lower portion by the extension of lines from existing development. The upper portion is contiguous with a portion of Parcel H and would also be served by the additional water storage tank. Sewerage service can be made either by gravity flow lines or by a pump station.
Present Zoning:	Watershed.
Discussion:	This area is planned to be sold by the Coos Bay-North Bend Water Board as it falls outside the watershed boundary, although existing water facilities will be retained. It is suitable for low and high density residential development.
Conclusion:	Designate approximately 100 acres for high density residential development (retention of 50 acres for water facilities).

Amended per Resolution 83-11

Parcel L. Englewood-West Marshfield Area--

Acreage:	Approximately 205 acres.
Slope:	Most characterized by 16-30% slopes.
Sewer/Water:	This parcel could be serviced by the extension of existing lines.
Present Zoning:	Single-family/duplex; agricultural/residential.
Discussion:	Slopes would make some conventional development costly. If density is increased, the building costs might be offset. The area would be suitable to mixtures of housing design, e.g. PUD, cluster, zero lot line.
Conclusion:	This land should be zoned for high density residential uses to allow the greatest flexibility in design.

Because some of the land identified for future residential uses has slopes between 15 and 30%, the city should enact regulations, such as cluster housing and zero lot line, to enhance the buildability of these lands and permit higher densities which may then offset the development costs.

Summary and Conclusions.

Large acreages of land were analyzed to satisfy future projected needs considering building constraints and other site suitability factors. Needs were identified for additional housing as the population increases during the planning period and for additional industrial land. A summary of the amount of land expected to be needed and that supplied by the buildable lands analysis is shown in Table 5.8-9. Again, this estimate does not include infilling smaller lots or parcels.

Amended per Resolution 83-11

Table 5.8-8

BUILDABLE LANDS SUMMARY
BY SIZE, PROPOSED USE AND ESTIMATED NEED

Use	Acres Planned
Residential	
low-density	392
high-density	399
Commercial/Industrial	179
TOTAL	970

1. There is a total of 973 acres of buildable land in the City of Coos Bay, not counting numerous small parcels to be infilled.

2. Principal building constraints are minimal drainage problems and excessive slopes.

3. The availability of water and sewer services to undeveloped areas in Coos Bay pose no restraining problems to development. Technologically, service can be provided to all areas.

Amended per Resolution 83-11

Need for an Urban Growth Boundary

The preceding assessment of population growth needs and land suitability provides the background information to evaluate the necessity of extending the sphere of urbanizable lands around the City of Coos Bay. The findings indicate that the city population is predicted to increase by 8.5% as the year 2000 approaches, with a concomitant need for more housing and industry. The amount of vacant, developable lands, estimated to total 970 acres must accommodate this growth, or extending the urban growth boundary must be considered.

Residential. -- The locational and physical characteristics of some of the buildable land prescribe its use as residential. Moreover, its development has been found to have few physical or service impediments. Therefore, the adequacy of this land to handle the population increase is dependent upon the desired mixture of housing and realistic densities of dwelling units per acre.

Based upon computing the number of lots within a net acre (which excludes approximately 25% of a gross acre for public rights of way), the per type and total number of dwelling units required has been determined. (Table 5.8-10) As this table reveals, the city will require an additional 463 acres to house the projected population at the mixture established earlier in this inventory.

A comparison of the 463 acres needed and the 791 acres available indicates that there is 42% more residential property available within the city limits than is predicted to be needed.

Amended per Resolution 83-11

Table 5.8-10

ACREAGE NEEDED TO MEET ESTABLISHED HOUSING NEED -- 2000

Housing Type	Units Needed	Units per Net Acre[a]	Acres Needed	Buildable Acres Available
Low Density				
Single-family	63	5.4	12	↓
Duplex[b] (6)	3	4.0	1	293
Mobile Home	12	6.0	2	99
SUBTOTAL	78		15	392 (+60)
High Density				
Multiple-family	35	13.0	3	399 (+268)
TOTAL			18	791

[a]These figures represent minimum lot sizes on a net acre. Lot sizes are current ordinance requirements -- 6,000 square feet for a single-family unit, 8,000 square feet for a duplex, 2,500 square feet as an average for apartments, and 5,445 square feet for mobile homes. A net acre equals the gross acre less the amount of land needed for public rights of way, generally 25% of gross acre.

[b]One duplex structures requires 8,000 square feet but yields 2 units; therefore, 6 structures are required rather than 3 units.

Commercial. -- Commercial and light industrial lands are adequate with a continuation of past land use trends and redevelopment of underutilized properties to enhance the commercial trade and service component of the city's economy. The evaluation of potential industrial sites (see also Chapter 5.3) resulted in the addition of three sites comprising approximately 53 acres to a mixed use category (Industrial-Commercial Zone). Generally, these sites had not been either commercially or industrially zoned before or had been restricted to very limited commercial activities. (Map 5.3-2A)

Amended per Resolution 83-11

Major Industrial. -- Lands suitable for major industrial uses have been found to be lacking in the city now with little chance for improvement when considering the characteristics of vacant, zoned lands available, and the past tendency for these lands to be used for commercial uses instead. Possible solutions to this problem may come through (1) an extension of an urban growth boundary, although this approach may also entail taking in interfening semi-urban residential development, most of which does not meet city development standards, (2) reassessment of undeveloped lands previously assumed to be unsuitable for industrial uses, or (3) plans for the redevelopment of commercial/industrial lands within the city limits.

The analysis of industrial land presented in Chapter 5.3, Economic Development, and earlier in this chapter demonstrated a need to coordinate the regional industrial land need. The studies completed by Coos County and the Coos-Curry-Douglas Business Development Corporation (CCDBDC), coupled with the city's reanalysis of land use, identified a coordinated need for 293 acres of industrial land outside of the coastal shoreland boundary for the Coos Bay planning area.

The city's analysis showed only one area in the south Empire vicinity which could possibly satisfy the coordinated need. A preliminary evaluation revealed that approximately 323 acres both within and just outside of the city limits could serve as an industrial site. (Approximately 126 acres within the city -- see also buildable lands assessment earlier in this chapter -- and close to 197 acres in County). Sewer and water facilities are readily available, and the site has access to a major arterial.

The County's study showing approximately 293 acres in the Coos Bay Planning area included a seven-acre site in the Millington urban growth area. Since this site is too far from the city's influence to realistically meet any need or receive complete city services, it cannot be used to meet the city's need. However, by combining the two contiguous parcels, the city can provide one site of approximately 286 acres comprising one of the largest sites in the county. Although 323 acres were identified as being suitable in this location, approximately 126 acres within the city and 160 acres in the county will be planned for this industrial site.

It is the long range plan for the County to consider adding the additional 37 acres for industrial purposes when the need is demonstrated. Including the unincorporated acreage in an urban growth boundary would satisfy the city's documented need and assure the implementation of any special regulations. Moreover, acquiring additional industrial land in this way would not mean the acquisition of any intervening residential property. (Map 5.8-2)

To implement the development of this site, it would be appropriate to enact development regulations to preclude commercial activities over the bulk of the site, although a small area to accommodate related commerce would be suitable. It is also necessary to adequately buffer the site from adjacent uses and a mandatory buffer surrounding the perimeter of the site should be included in the ordinance regulations. It is the city's intention to zone approximately 116 acres for use with the possibility of adding 10 acres along the northern boundary between Plymouth and Fulton Avenues for buffering purposes when the need is demonstrated.

Amended per Resolution 83-11

Open Space

The preceding analysis indicated that there was need perceived by the public for neighborhood parks. Large areas for recreation is very easily found in the two large city parks, the accessible waterfront and moorage areas, and in campus-like developments, such as to be found at SWOCC and the hospital. None of the buildable lands demanded special preservation as open space, although the consideration of neighborhood recreation and open space should be made a part of all residential development approval.

The watershed provides a vast expanse of protected open space, although public access is prohibited. Therefore, inclusion of this acreage is usable, developable lands is misleading. Consequently, lands within the watershed should be excluded from the city's future urban growth area until they become available and needed. Two parcels on the western border of the watershed are under the control of the Coos Bay-North Bend Water Board but are not essential to the water resources. However, due to their inaccessibility and topographic characteristics, they are not expected to be needed during the planning period for development.

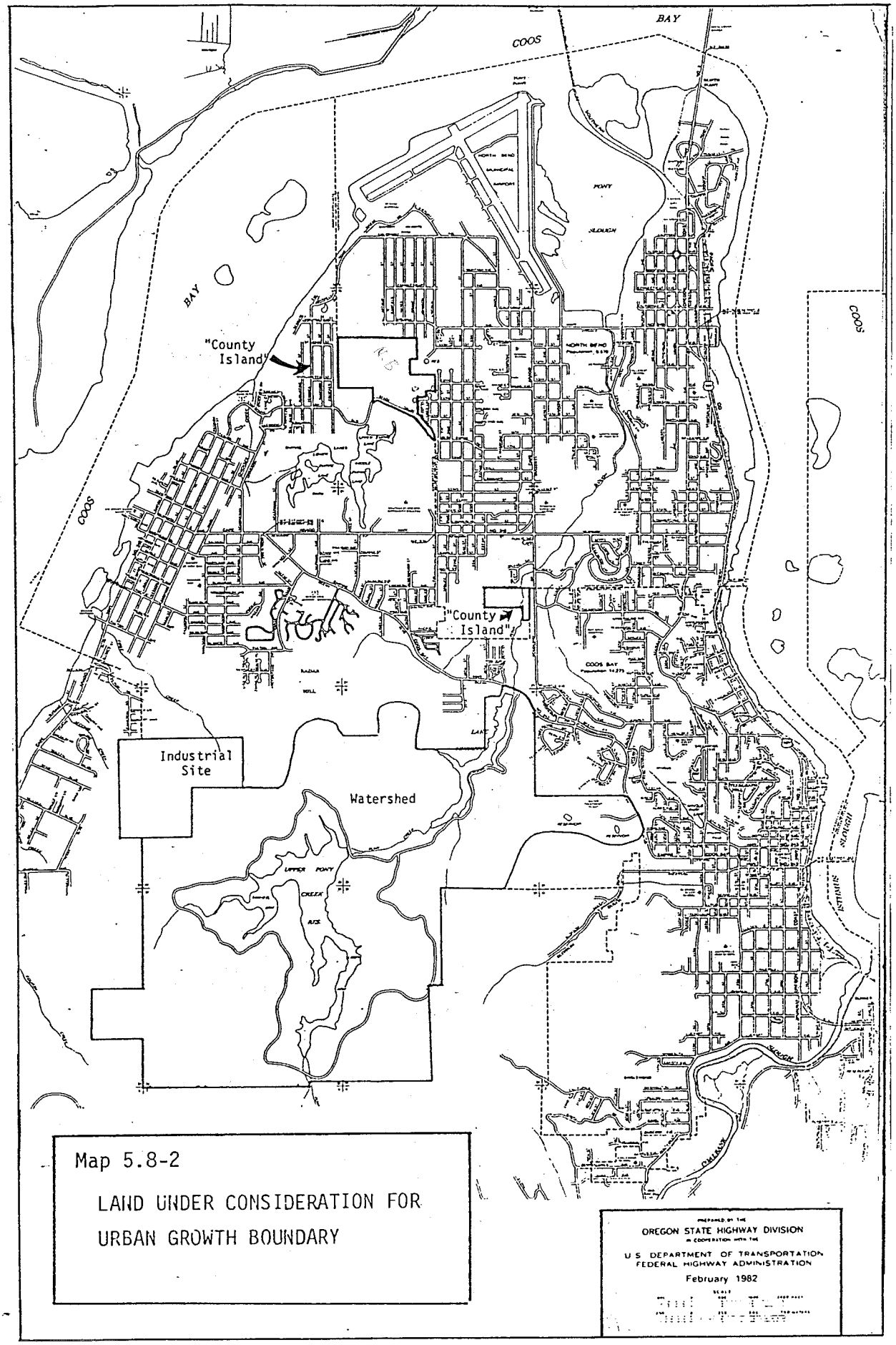
County "Islands."

Two parcels of unincorporated land lie between Coos Bay and North Bend. (Map 5.8-2) Parcel A is approximately 118 acres and is located north of Lakeshore Drive and is adjacent to newly developed residential areas of both cities. It is surrounded by residentially-zoned property in both cities and is presently zoned Interim Rural Residential-5 (IRR-5) by Coos County signifying 5-acre minimum lot sizes for homesites. Although a natural ridge line bisects the parcel, it is possible to serve the property by sanitary sewer from either city; water is available from the Coos Bay-North Bend Water Board, and the land lies within the Coos Bay School District #9.

Parcel B is somewhat smaller, a little over 14 acres, and lies in the Pony Creek drainage. It is currently zoned IRR-5 by Coos County and is surrounded by residentially zoned property and a strip of commercial along Woodland Drive. It is within close proximity to recently developed commercial property at the intersection of Newmark and Broadway, medical offices, and apartments. The City of North Bend already has laid sanitary sewer lines throughout the western portion of the property. Coos Bay's closest line is slightly more than 100 feet from the parcel's eastern boundary. Like the other parcel, city water service is readily available and it also lies within the boundaries of Coos Bay's School District #9.

Due to the unique locations and characteristics of these parcels they should be designated urbanizable by either or both of the cities during the policy-making process after weighing primarily need and the ability to provide public facilities and services.

Amended per Resolution 83-11



Map 5.8-2

LAND UNDER CONSIDERATION FOR URBAN GROWTH BOUNDARY

Amended per Resolution 83-11

Urban Growth Management Alternatives

The outcome of these public policy decisions will either delineate the present city limits as a UGB, or if an extension of Coos Bay's boundary is found to be indispensible to absorb future growth, a precise line will be delineated south of the city limits, or around all or part of the County "islands." In either case, a mutual agreement by Coos Bay and Coos County must be formalized recognizing this UGB designation, also recognizing a reciprocal agreement between Coos Bay and North Bend when the "islands" are involved.

This management agreement is necessary for two reasons: One, it is a prerequisite to acknowledgement by LCDC of Coos Bay's comprehensive plan. Secondly, it is a sensible means to coordinate development within a UGB in the best interests of both jurisdictions. The land within a UGB is targeted to contain urban-type development and will require a certain level of facilities and services to support such land use. Explicit coordination between the County and City regarding land use regulations, special district needs, and the provision of other services will avert potential land development practices that are incompatible with City standards if and when these urbanizable lands are annexed into the city. There are four management alternatives that can be selected within the UGB: (1) the City regulations apply and City provides services, (2) the County regulations apply and the County provides services, (3) a special district can be formed to provide services, and (4) the urban growth area could incorporate and devise their own regulations and service provision.

The questions of whether City or County zoning, subdivision, and property development standards will apply to urbanizable lands is a critical one if the UGB is located outside existing city limits. The County's land use and development policies are less stringent than those endorsed by the City. Development under County guidance will result in costs borne ultimately by the City to amend these inconsistencies. This issue must be seriously considered before a decision to create an urban growth boundary outside the city limits is achieved.

Community Attitudes Toward Growth

A sampling of the residents in Coos Bay were polled in 1977 on many community issues. The statement, "City growth should be limited by the City's ability to provide service," drew overwhelming support by 62%. (Appendix A) This may indicate that residents wish the City to cautiously approach the subject of urban growth especially in relation to the monetary expense involved.

Attitudes or residents living in areas within conceivable UGB'S have not been gathered at this time. This input is crucial in formulating a responsible City and County decision.

Amended per Resolution 83-11

Urbanization-Eastside Area

This section presents an overview of urbanization which has taken place in and around Eastside since the former City's incorporation and prior to the consolidation with the City of Coos Bay.

Urbanization Within the former Eastside City Limits

The urbanized portion of Eastside is fairly compact and covers a relatively small portion of the total area. Virtually all urban development in Eastside has occurred on the terrace which rises from the tidal flats, marshes, and fill areas which ring the area's main peninsula. Urbanization is not yet extensive south of "F" Street, where the land is dominated by wooded hillside terrain.

There appears to be considerable potential for urbanization of presently undeveloped plats within the Eastside area. In order to realize such potential, however, certain improvements will be necessary. In the tidelands and fill areas, for example, adequate road access to and from the upper portion of Eastside area will need to be provided.

Another precaution which will be necessary regarding urban development in the tidelands and fill areas is that proper engineering measures will need to be taken in order to insure the stability of building foundations.

Extension of public facilities including water, sewers, and streets will be necessary in conjunction with urbanization of not only the tidelands and fill areas but also the hillsides south of "F" Street. Particularly in the latter area, topographic limitations may pose problems in the engineering of streets and water and sewer lines.

Urbanization of Unincorporated Areas

The main unincorporated areas near Eastside lie along the east shore of the Bay and in the Isthmus Heights area. Urbanization of these two areas has not been extensive to date and has been limited almost exclusively to residential development in the Cooston area and along Isthmus Heights Road.

Extensive urbanization of the East Bay area does not appear to be likely in the near future for two reasons. First, land which is readily urbanizeable is limited to a relatively narrow area along the shore. The hillsides which rise sharply east of this flat area pose natural barriers to urbanization. More importantly, the location of the East Bay in relation to the presently developed area of Eastside makes the extension of water, sewers, and other urban services extremely difficult. To reach the East Bay area from Coos Bay it is presently necessary to travel over a mile island along Coos River to Chandler Bridge. This situation poses problems in terms of fire and police protection if such protection were to be provided by Eastside. Extension of city sewer lines would similarly have to travel long distances through sparsely developed areas at considerable expense. It should be noted that the difficulty of providing adequate City services was a key consideration in the withdrawal of the Cooston area from Eastside in 1919.

In contrast to the East Bay Area, continued urbanization of the Isthmus Heights area appears both likely and feasible. The proximity of the area to Eastside makes eventual annexation a possible occurrence when development approaches a point at which the extension of sewers and other urban services becomes necessary.

Conclusions

1. Based solely on established need for more residential land, the City of Coos Bay retains a sufficient amount of undeveloped land to absorb housing, commercial, and open space needs by the year 2000.

2. These residential needs can be met without excessive added cost due to land constraints.

3. The watershed will be deleted from the urban growth boundary since the management practices will make it unavailable for development during the planning period.

4. A management agreement will be enacted between Coos Bay and Coos County also involving North Bend to formally designate the city's urban growth boundary and area of mutual interest. This boundary should include justifiable portions of the "islands" and the 160 acre industrial site outside of the city limits. This agreement will also address the management of the urbanizing areas south of the city limits. This agreement will regulate future development within the city's urban growth area and will provide for necessary facilities and services.

5. Citizens of Coos Bay, responding to a community attitude survey, strongly feel that the City's growth should be limited by the City's ability to provide services to the newly developed area.

Amended per Resolution 83-11

APPENDICES

APPENDIX A

RESULTS OF THE COMMUNITY ATTITUDE SURVEY CONDUCTED BY THE COMMITTEE FOR CITIZEN INVOLVEMENT, 1977

CITY OF COOS BAY

INTER-DEPARTMENTAL COMMUNICATION

SUBJECT: Community Attitude Questionnaire Responses

TO: * Committee for Citizen Involvement (C.C.I.)
* Other interested persons

FROM: Planning Coordinator

DATE: August 17, 1978

Attached for your information is a copy of the preliminary findings of the public opinion poll that staff conducted at the C.C.I.'s direction. The questionnaire will provide needed direction in preparing community development policies for the Coos Bay Comprehensive Plan.

Your questions invoked some very interesting responses from the 255 registered voters (3.7% of Coos Bay's 6,886 registered voters) who chose to respond. The 255 responding represented 29% of those voters who were randomly asked to participate.

To refresh your memory, the survey's methodology is summarized as follows:

1. Suggested questions were formulated by staff and presented to the C.C.I. and Planning Commission for review and comment. Appropriate issue statements were selected by the C.C.I.

2. A "stratified-random" sample of 867 registered voters was drawn from City poll books. More specifically, using a table of "random numbers", 867 names were pulled from the list of persons registered to vote in Coos Bay. The 867 names were "geographically - stratified" that is, they were selected by precinct proportionally to the precinct's percentage of total, City-wide registered voters.

3. The 867 questionnaires were mailed to the respective candidate respondents.

4. After 10 days from the initial mailing, a second questionnaire was sent to about 720 candidate respondents who had failed to answer the initial request.

   NOTE: Each questionnaire was numerically coded to avoid the expense of mailing requests to those that answered within 10 days and to observe the geographic distribution of the responses. The coding apparently discouraged many candidates from responding due to concerns that the coding was done to identify respondents, which was not the case.

5. Questionnaire responses were tallied upon receipt, and the attached preliminary analysis was prepared.

6. A statistical "confidence test" was performed to determine the validity and accuracy of the responses; that is, do the 255 responses truly reflect the attitudes of the entire community.

   NOTE: It was statistically determined that the size of the sample was large enough to ensure the accuracy of the estimates (responses) with a precision factor of 94%. (S.E. = ± 0.06)

Additional conclusions can be reached beyond those identified in the attached graphs. Additional tasks required to achieve these results can be discussed at a later date.

I look forward to learning of your thoughts about the responses and to discussing the questionnaire with you at the next C.C.I. meeting. It has been suggested we meet again in September at the end of the summer vacation season.

Sincerely,

Bill Grile
Planning Coordinator

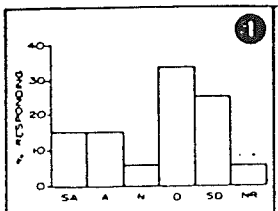
Enclosures

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response
More non-polluting industrial growth is needed.	80(32%)	113(44%)	34(13%)	9(4%)	8(3%)	11(4%)
Mobile homes should be allowed in all residential areas.	22(9%)	28(11%)	18(7%)	70(27%)	105(41%)	12(5%)
Mobile homes should be allowed to locate in single-family residential areas.	23(9%)	48(19%)	23(9%)	70(27%)	82(32%)	9(4%)
Mobile homes should be allowed on individual lots in specially designated areas.	46(18%)	131(51%)	31(12%)	22(9%)	14(6%)	11(4%)
New subdivision development, and not the community-at-large, should pay for water, sewer; road and other services needed for residential growth.	122(48%)	82(32%)	16(6%)	12(5%)	7(3%)	15(6%)
Growth should not be hampered by regulations and controls.	38(15%)	38(15%)	17(6%)	84(33%)	63(25%)	15(6%)
Local streets and roads are adequately maintained in general.	3(1%)	58(23%)	22(8%)	86(34%)	79(31%)	7(3%)
Growth should be limited by the City's ability to provide services.	51(20%)	107(42%)	34(13%)	40(16%)	10(4%)	13(5%)
Public transit, subsidized by public funds, is needed.	20(8%)	66(26%)	42(16%)	70(27%)	45(18%)	13(5%)
Public funds should be expended to attract new industries into the area.	26(10%)	68(27%)	52(20%)	57(22%)	43(17%)	9(4%)
More publicly-assisted housing should be encouraged.	30(12%)	49(19%)	47(18%)	68(27%)	51(20%)	10(4%)
Neighborhood convenience centers, such as small grocery stores, should be allowed in residential areas.	38(15%)	114(45%)	37(14%)	41(16%)	19(7%)	7(3%)
Adequate rental units are available in the area	9(4%)	33(13%)	48(19%)	79(31%)	70(27%)	15(6%)

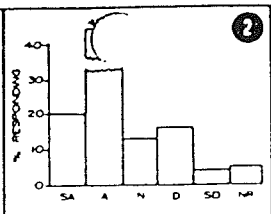
RESULTS OF CITIZEN ATTITUDE SURVEY, COOS BAY, 1978

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response
More neighborhood parks are needed.	27(11%)	64(25%)	80(31%)	57(22%)	15(6%)	12(5%)
A year-round recreation center for all age groups is needed.	74(29%)	68(27%)	46(18%)	33(13%)	24(9%)	10(4%)
A city-wide bike path should be included in the City's transportation plan.	68(27%)	79(31%)	41(16%)	34(13%)	30(12%)	3(1%)
A senior citizens center is needed.	80(31%)	102(40%)	38(15%)	17(7%)	9(4%)	8(3%)
Present location of parks is convenient.	17(7%)	134(52%)	50(20%)	32(12%)	7(3%)	15(6%)
The city needs a covered swimming pool.	74(29%)	51(20%)	39(15%)	37(15%)	46(18%)	7(3%)
More public access to the waterfront is needed.	48(19%)	82(32%)	66(26%)	38(15%)	12(5%)	9(3%)
Small parks along the waterfront should be provided.	21(8%)	81(32%)	50(20%)	67(26%)	23(9%)	12(5%)
Boat moorage facilities should be provided in the upper bay.	25(10%)	91(36%)	77(30%)	39(15%)	11(4%)	12(5%)
Private Enterprise should be encouraged to provide more tourist attracting accommodations and facilities in the area.	54(21%)	95(37%)	46(18%)	31(12%)	19(8%)	10(4%)
Portions of the North Spit should be developed for industrial uses.	70(27%)	78(31%)	38(15%)	24(9%)	35(14%)	10(4%)
A convention center would be desirable in the community.	26(10%)	69(27%)	74(29%)	51(20%)	26(10%)	9(4%)
The North Spit should remain in its present state.	29(11%)	28(11%)	51(20%)	87(34%)	47(19%)	13(5%)

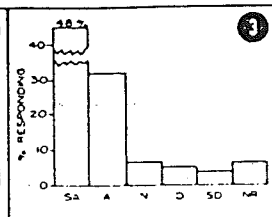
COMMUNITY ATTITUDE QUESTIONNAIRE RESPONSES



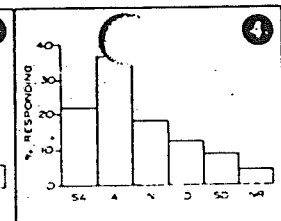
GROWTH SHOULD NOT BE HAMPERED BY REGULATIONS AND CONTROLS



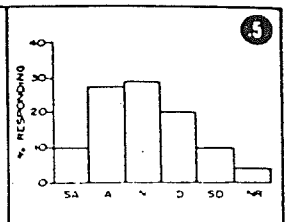
GROWTH SHOULD BE LIMITED BY THE CITY'S ABILITY TO PROVIDE SERVICE



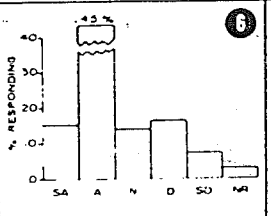
NEW SUBDIVISION DEVELOPMENT, AND NOT THE COMMUNITY AT LARGE, SHOULD PAY FOR WATER, SEWER, ROAD AND OTHER SERVICES NEEDED FOR RESIDENTIAL GROWTH



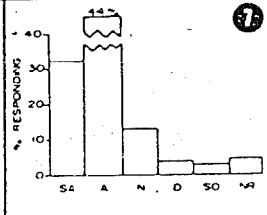
PRIVATE ENTERPRISE SHOULD BE ENCOURAGED TO PROVIDE MORE TOURIST ATTRACTING ACCOMMODATIONS AND FACILITIES IN THE AREA



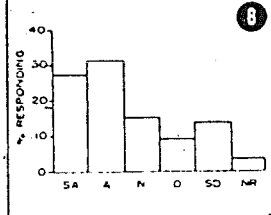
A CONVENTION CENTER WOULD BE DESIRABLE IN THE COMMUNITY



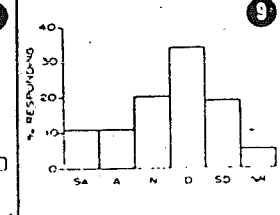
NEIGHBORHOOD CONVENIENCE CENTER, SUCH AS SMALL GROCERY STORES, SHOULD BE ALLOWED IN RESIDENTIAL AREAS



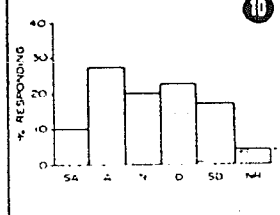
MORE NON-POLLUTING INDUSTRIAL GROWTH IS NEEDED



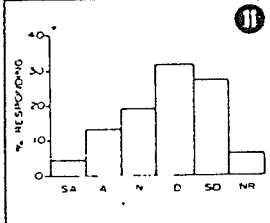
PORTIONS OF THE NORTH SPIT SHOULD BE DEVELOPED FOR INDUSTRIAL USES.



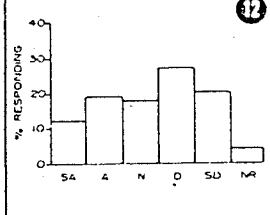
THE NORTH SPIT SHOULD REMAIN IN ITS PRESENT STATE



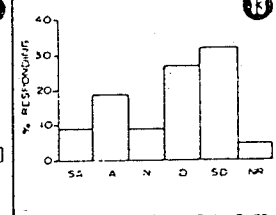
PUBLIC FUNDS SHOULD BE EXPENDED TO ATTRACT NEW INDUSTRIES INTO THE AREA



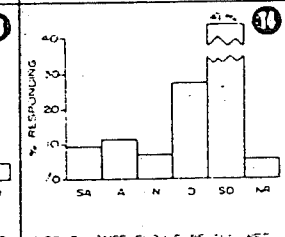
ADEQUATE RENTAL UNITS ARE AVAILABLE IN THE AREA



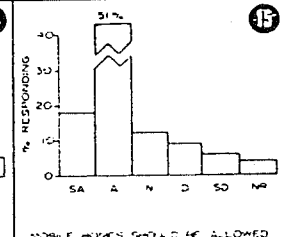
MORE PUBLICLY-ASSISTED HOUSING SHOULD BE ENCOURAGED



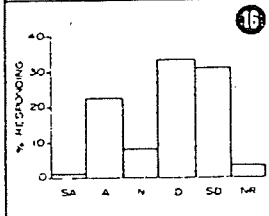
MOBILE HOMES SHOULD BE ALLOWED TO LOCATE IN SINGLE-FAMILY RESIDENTIAL AREAS



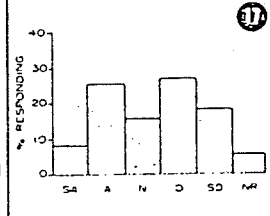
MOBILE HOMES SHOULD BE ALLOWED IN ALL RESIDENTIAL AREAS



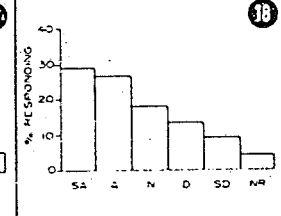
MOBILE HOMES SHOULD BE ALLOWED ON INDIVIDUAL LOTS IN SPECIALLY DESIGNATED AREAS



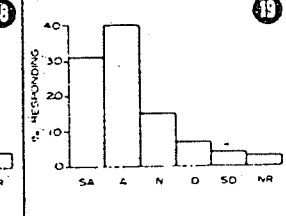
LOCAL STREETS AND ROADS ARE ADEQUATELY MAINTAINED IN GENERAL



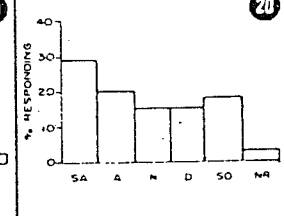
PUBLIC TRANSIT, SUBSIDIZED BY PUBLIC FUNDS, IS NEEDED



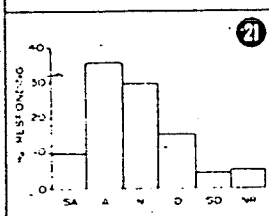
A YEAR-ROUND RECREATION CENTER FOR ALL AGE GROUPS IS NEEDED



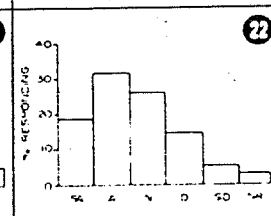
A SENIOR CITIZENS CENTER IS NEEDED



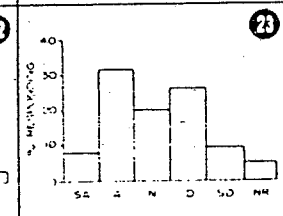
THE CITY NEEDS A COVERED SWIMMING POOL



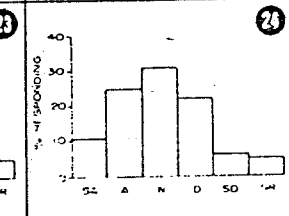
[illegible] FACILITIES SHOULD BE PROVIDED IN THE [illegible] BAY



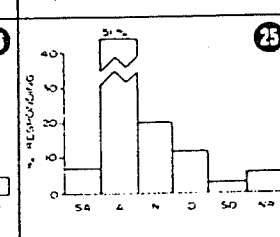
MORE PUBLIC ACCESS TO THE WATER FRONT IS NEEDED



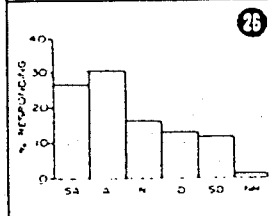
SMALL [illegible] ALONG THE WATER FRONT SHOULD BE PROVIDED



MORE NEIGHBORHOOD PARKS ARE NEEDED.



PRESENT LOCATION OF PARKS IS CONVENIENT



A CITY PARK [illegible] SHOULD BE INCLUDED IN THE CITY'S TRANSPORTATION PLAN

KEY

SA = STRONGLY AGREE
A = AGREE
N = NEUTRAL
D = DISAGREE
SD = STRONGLY
NR = NO RESPONSE

RESPONSES ARE BASED ON A SAMPLING FRAME OF 235 REGISTERED CITY VOTERS

SOURCE COMMITTEE FOR CITIZEN INVOLVEMENT, CITY OF COOS BAY, JULY 1978

APPENDIX B

CITY RESOLUTIONS FOR PARTICIPATION IN THE FEDERAL FLOOD INSURANCE PROGRAM

RESOLUTION 74-3

WHEREAS, certain areas of the City of Coos Bay are subject to periodic flooding from bay waters and periodic mudslides precipitated by an accumulation of water on or above the ground, both causing serious damages to properties within these areas; and

WHEREAS, relief is available in the form of federally subsidized flood insurance as authorized by the National Flood Insurance Act of 1968; and

WHEREAS, it is the intent of this City Council to require the recognition and evaluation of flood and mudslide hazards in all official actions relating to land use in the flood plain and mudslide areas having special flood and mudslide hazards; and

WHEREAS, this body has the legal authority to adopt land use and control measures to reduce future flood losses pursuant to Title 21 of the State of Oregon Revised Statutes, Chapters 221 to 227 inclusive and the Charter of the City of Coos Bay as amended;

NOW, THEREFORE, BE IT RESOLVED, that this City Council hereby:

1. Assures the Federal Insurance Administration that it will enact as necessary, and maintain in force for those areas having flood and mudslide hazards, adequate land use and control measures with effective enforcement provision consistent with the Criteria set forth in Section 1910 of the National Flood Insurance Program Regulations; and

2. Vests City Manager with the responsibility, authority, and means to:

(a) Delineate or assist the Administrator, at his request, in delineating the limits of the areas having special flood and mudslide hazards on available local maps of sufficient scale to identify the location of building sites.

(b) Provide such information as the Administrator may request concerning present uses and occupancy of the flood plain and mudslide area.

(c) Cooperate with Federal, State, and local agencies and private firms which undertake to study, survey, map, and identify flood plain or mudslide areas, and cooperate with neighboring communities with respect to management of adjoining flood plain and mudslide areas in order to prevent aggravation of existing hazards.

(d) Submit on the anniversary date of the community's initial eligibility an annual report to the Administrator on the progress made during the past year within the community in the development and implementation of flood plain and mudslide management measures.

3. Appoints Codes Administration to maintain for public inspection and to furnish upon request a record of elevations (in relation to mean sea level) of the lowest floor (including basement) of all or substantially improved structures located in special flood hazard areas. If the lowest floor is below grade on one or more sides, the elevation of the floor immediately above must also be recorded.

4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the program.

The foregoing resolution was duly adopted by the City Council of the City of Coos Bay, Oregon, on the 14th day of January, 1974, and approved by the Mayor on the 14th day of January, 1974.

Robert Hale
Mayor of the City of Coos Bay
Coos County, Oregon

ATTEST:

Robert A. Wheeler
Recorder of the City of Coos Bay
Coos County, Oregon

RESOLUTION 74-3 (CONT.)

RESOLUTION 74-4

WHEREAS, The City of Coos Bay has adopted and is enforcing the 1970 Uniform Building Code and City of Coos Bay Zoning Ordinance No. 2242 as amended and Subdivision Ordinance No. 2057 and

WHEREAS, Section 302 of the 1970 UBC Chapter 3 as adopted by the City of Coos Bay prohibits any person, firm or corporation from erecting, constructing, enlarging, altering, repairing, improving, moving or demolishing any building or structure without first obtaining a separate building permit for each building or structure from the Codes Director, and

WHEREAS, The Codes Administration Director must examine all plans and specifications for the proposed construction when application is made to him for a building permit, and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Coos Bay as follows:

1. That the Codes Administration Director shall review all building permit applications for new construction or substantial improvements to determine whether proposed building sites will be reasonably safe from flooding. If a proposed building site is in a location that has a flood hazard, any proposed new construction or substantial improvement (including prefabricated and mobile homes) must (i) be designed (or modified) and anchored to prevent flotation, collapse, or lateral movement of the structure, (ii) use construction materials and utility equipment that are resistant to flood damage, and (iii) use construction methods and practices that will minimize flood damage; and

2. That the Codes Administration Director shall review subdivision proposals and other proposed new developments to assure that (i) all such proposals are consistent with the need to minimize flood damage, (ii) all public utilities and facilities, such as sewer, gas, electrical, and water systems are located, elevated, and constructed to minimize or eliminate flood damage, and (iii) adequate drainage is provided so as to reduce exposure to flood hazards; and

3. That the Codes Administration Director shall require new or replacement water supply systems and/or sanitary sewage systems to be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters, and require on-site disposal systems to be located so as to avoid impairment of them or contamination from them during flooding.

The foregoing resolution was duly adopted by the City Council of the City of Coos Bay, Oregon, on the 14th day of January, 1974, and approved by the Mayor on the 14th day of January, 1974.

Robert Hale
Mayor of the City of Coos Bay
Coos County, Oregon

ATTEST:

Robert A. Wheeler

RESOLUTION 74-5

WHEREAS, The City of Coos Bay has adopted and is enforcing the 1970 Uniform Building Code and City of Coos Bay Zoning Ordinance No. 2242 as amended and Subdivision Ordinance No. 2057 and

WHEREAS, Section 302 of the 1970 UBC Chapter 3 as adopted by the City of Coos Bay prohibits any person, firm or corporation from erecting, constructing, enlarging, altering, repairing, improving, moving or demolishing any building or structure without first obtaining a separate building permit for each building or structure from the Codes Director, and

WHEREAS, The Codes Administration Director must examine all plans and specifications for the proposed construction when application is made to him for a building permit, and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Coos Bay as follows:

1. That the Codes Administration Director shall require the issuance of a permit for any excavation, grading, fill or construction in the community; and

2. That the Codes Administration Director shall require review of each permit application to determine whether the proposed site and improvements will be reasonably safe from mudslides. If a proposed site and improvements are in a location that may have mudslide hazards, further review must be made by persons qualified in geology and soils engineering; and the proposed new construction, substantial improvement, or grading must (i) be adequately protected against mudslide damage and (ii) not aggravate the existing hazard.

The foregoing resolution was duly adopted by the City Council of the City of Coos Bay, Oregon, on the 14th day of January, 1974, and approved by the Mayor on the 14th day of January, 1974.

Robert Hale
Mayor of the City of Coos Bay
Coos County, Oregon

ATTEST:

Robert A. Wheeler
Recorder of the City of Coos Bay
Coos County, Oregon

APPENDIX C

WATER QUALITY DATA BASED UPON TEST RESULTS FROM

DEQ WATER SURVEILLANCE STATIONS,

COOS BAY, OREGON

COOS BAY TURBIDITY
ANNUAL MEAN
JACKSON TURBIDITY UNITS (JTV)

Sampling Station	Year								
	1970	1971	1972	1973	1974	1975	1976	1977	1978
1	No Data	No Data	No Data	No Data	1.5	6.0	30.0	4.3	6.1
2	No Data	No Data	No Data	No Data	1.75	7.0	40.0	3.6	7.2
3	No Data	No Data	No Data	No Data	2.25	7.0	40.0	2.7	7.1
4	No Data	No Data	No Data	No Data	2.0	9.0	40.0	3.3	7.4
5	No Data	No Data	No Data	No Data	2.75	No Data	40.0	3.0	7.5
6	No Data	No Data	No Data	No Data	3.75	No Data	40.0	4.0	8.4
7	No Data	No Data	No Data	No Data	3.5	No Data	60.0	4.3	10.9
8	No Data	No Data	No Data	No Data	4.0	No Data	50.0	2.7	9.3
9	No Data	No Data	No Data	No Data	4.3	No Data	50.0	3.7	9.8
10	No Data	No Data	No Data	No Data	4.8	No Data	30.0	2.7	12.1
11	No Data	No Data	No Data	No Data	5.5	No Data	60.0	3.3	11.5
12	No Data	No Data	No Data	No Data	4.3	No Data	50.0	3.5	10.6
13	No Data	No Data	No Data	No Data	4.0	No Data	60.0	4.0	11.0
14	No Data	No Data	No Data	No Data	4.3	No Data	50.0	4.0	9.9
15	No Data	No Data	No Data	No Data	3.3	No Data	50.0	4.7	9.6

Standard: No more than 10% increase in natural stream turbidity

COOS BAY
TOTAL COLIFORM
MOST PROBABLE NUMBER/100 MILLILITERS (ml)
ANNUAL MEAN

Sampling Station	Year								
	1970	1971	1972	1973	1974	1975	1976	1977	1978
1	3.00	7.00	3.30	79.12	19.16	126.84	5.03	7.00	51.24
2	3.00	16.33	3.30	61.14	10.42	69.12	11.67	11.67	32.27
3	3.40	34.43	13.30	51.71	20.02	145.50	9.67	3.67	54.40
4	33.20	52.00	23.30	127.80	51.43	126.36	27.33	9.00	73.65
5	58.03	16.33	231.50	137.04	52.51	124.23	167.53	23.00	101.46
6	53.60	131.33	237.50	166.67	172.70	150.18	90.70	33.67	140.29
7	46.33	198.00	571.50	435.46	158.80	306.88	234.33	59.67	257.55
8	65.33	550.33	625.00	462.57	405.10	314.26	456.00	63.67	357.54
9	402.66	590.00	670.00	520.43	491.60	443.75	526.67	527.67	498.19
10	477.67	600.00	625.00	580.00	743.30	846.33	208.33	747.67	661.77
11	225.20	461.00	124.55	464.71	372.00	545.41	95.33	534.33	403.69
12	673.33	461.00	195.00	636.67	556.60	506.67	526.66	596.50	531.35
13	551.00	596.50	276.50	395.50	499.00	660.83	600.00	813.33	546.48
14	673.33	395.33	240.00	773.28	477.30	588.83	210.00	447.67	529.40
15	337.67	402.67	121.50	228.86	156.22	433.67	141.50	238.33	281.09

COOS BAY
DISSOLVED OXYGEN (DO)
ANNUAL MEAN
MG/L

Sampling Station	Year								
	1970	1971	1972	1973	1974	1975	1976	1977	1978
1	9.03	No Data	11.25	7.07	8.46	8.64	9.23	8.13	8.46
2	9.47	No Data	11.10	8.46	8.54	8.75	9.13	8.16	8.80
3	9.43	No Data	7.95	8.20	8.27	8.80	8.97	8.23	8.54
4	8.30	No Data	9.10	7.64	8.11	8.97	8.90	8.30	8.44
5	7.80	No Data	8.70	7.56	7.84	8.99	8.77	8.50	8.34
6	7.90	No Data	8.35	7.44	7.65	9.12	8.53	8.40	8.23
7	7.90	No Data	10.05	7.06	7.50	9.19	8.33	8.20	8.20
8	7.70	No Data	7.65	6.77	7.19	9.04	8.13	7.97	7.86
9	7.40	No Data	7.50	6.16	6.05	8.82	7.90	7.70	7.54
10	7.17	No Data	7.30	6.07	6.72	8.84	7.87	7.23	7.46
11	6.99	No Data	7.45	6.46	6.68	9.32	8.43	7.83	7.67
12	6.87	No Data	6.60	4.62	5.93	8.51	7.57	8.65	6.92
13	6.99	No Data	6.40	5.13	5.70	8.78	7.67	6.93	6.94
14	6.43	No Data	6.40	4.60	5.27	8.16	7.10	6.77	6.41
15	5.50	No Data	5.85	3.74	3.96	7.41	5.85	5.70	5.43

Standard: Not less than 6 mg/l

ESTABLISHED WATER SURVEILLANCE STATIONS
COOS BAY, COOS COUNTY
ESTUARY AND SHELLFISH SANITATION PROGRAM

Station	Description & Distance	Latitude & Longitude
1	Green Light #7, 1/4 mi. north of Fossil Point	43° 21' 31" N, 124° 19' 12" W
2	Red light #10, 1/4 mi. north of Pigeon Point	43° 22' 08" N, 124° 18' 33" W
3	Red light #12, 1/2 mi. north of Sitka Dock	43° 22' 58" N, 124° 17' 23" W
4	Red light #16, 1/4 mi. north of Empire Dock	43° 24' 02" N, 124° 16' 41" W
5	Green light #23 opposite Henderson Marsh	43° 25' 23" N, 124° 15' 52" W
6	Black can #27, 1/4 mi. west of railroad bridg	43° 25' 36" N, 124° 14' 24" W
7	Green light #35 mouth of Kentuck Slough	43° 25' 24" N, 124° 12' 54" W
8	Red light #36, opposite mouth Cooston-Willanch Channel	43° 24' 25" N, 124° 13' 07"W
9	Coos Bay Yacht Club (opposite McCurdy Marina)	43° 23' 20" N, 124° 13' 04" W
10	Shipping channel opposite mouth of Marshfield Channel	43° 22' 30" N, 124° 12' 28" W
11	Red light 1 mi. up Marshfield Channel	43° 22' 29" N, 124° 10' 56" W
12	Green light #43 opposite Down-stream from Coalbank Slough	43° 21' 51" N, 124° 12' 32" W
13	Coalbank Slough @ Hwy 101 Bridge	43° 21' 37" N, 124° 12' 20" W
14	Isthmus Slough @ Eastside Bridge	43° 21' 24" N, 124° 11' 34" W
15	Isthmus Slough @ Coos City Bridge	43° 18' 05" N, 124° 12' 25" W

Source: Department of Environmental Quality

COOS BAY BIOLOGICAL OXYGEN DEMAND (BOD)
ANNUAL MEAN
MILLIGRAMS/LITER (mg/l)

Sampling Station	Year								
	1970	1971	1972	1973	1974	1975	1976	1977	1978
1	.83	No Data	1.70	76.13	.94	1.17	.96	1.10	16.08
2	1.03	No Data	1.60	1.62	.87	1.03	.93	1.06	1.10
3	1.10	No Data	1.00	1.22	.83	.91	1.00	.93	.97
4	1.46	No Data	1.45	.91	.82	1.24	1.03	1.10	1.08
5	1.17	No Data	1.40	1.13	.80	1.30	.93	1.07	1.10
6	1.06	No Data	1.15	1.00	1.01	1.54	.80	1.07	1.71
7	1.03	No Data	3.35	.76	.94	1.08	.87	1.03	1.09
8	.93	No Data	1.30	.81	1.54	1.13	.83	.80	1.13
9	.93	No Data	1.40	.74	1.26	1.47	.80	.87	1.15
10	.93	No Data	1.50	.82	1.25	1.06	.87	.83	1.05
11	1.07	No Data	1.10	.94	1.13	1.14	.93	1.13	1.08
12	.87	No Data	1.65	.73	.80	.73	2.40	1.20	.97
13	.93	No Data	1.25	.83	1.21	.84	.83	.77	.96
14	.97	No Data	1.05	.66	.78	.79	1.27	.97	.85
15	.60	No Data	1.25	.43	.58	.80	1.20	1.00	.72

COOS BAY FECAL COLIFORM
ANNUAL MEAN
MOST PROBABLE NUMBER PER 100 ml

Sampling Station	Year								
	1970	1971	1972	1973	1974	1975	1976	1977	1978
1	3.00	3.20	3.00	16.61	3.80	15.07	5.03	5.33	8.75
2	3.00	3.00	3.00	5.26	3.32	26.71	3.20	5.00	9.81
3	3.00	3.20	3.30	10.69	4.48	22.58	9.67	3.33	10.06
4	3.20	3.20	13.30	14.17	5.83	63.91	15.00	7.33	23.21
5	4.43	9.67	8.50	75.57	7.35	22.36	15.33	5.33	21.30
6	3.40	11.70	50.15	37.37	46.80	51.93	84.00	7.33	39.23
7	20.40	16.73	76.50	76.60	52.11	85.43	46.33	11.00	56.94
8	13.73	29.67	249.50	95.09	116.70	149.35	114.03	12.00	107.76
9	84.23	69.33	166.50	175.87	434.60	108.91	384.03	48.33	199.18
10	65.33	166.00	925.00	127.00	316.70	135.60	60.10	449.67	248.41
11	56.40	25.30	23.00	181.23	125.10	266.98	90.67	82.00	147.65
12	110.00	85.47	67.99	113.67	223.80	170.93	198.67	109.50	151.62
13	133.03	131.50	23.00	92.50	164.00	191.18	182.00	247.68	150.68
14	29.00	43.67	43.00	96.71	82.10	56.84	102.00	399.33	86.69
15	234.33	31.70	43.00	27.60	24.64	54.27	19.00	157.00	70.62

APPENDIX D

HISTORIC PRESERVATION LEGISLATION AND FUNDING MEASURES

Historical Preservation: Measures and Funding

The following list provides a capsule of select Federal and State laws, statutes, policies, enabling legislation, and tax measures which protect historical and cultural sites, structures, and areas.

1906 - Antiquities Act (P.L. 59-209) Established protection over any "historic or prehistoric ruin or monument, or any object of antiquity situated on government lands..."; required permits for their removal. Secretary of the Interior charged with responsibility.

1935 - Historic Sites Act (P.L. 74-292) Congress declared that "it is a national policy to preserve for public use historic sites, buildings, and objects of significance..." Act empowers the Secretary of the Interior through the National Park Service to conduct surveys, publish studies and otherwise encourage the preservation of historic properties not federally funded.

1966 - National Historic Preservation Act (P.L. 89-665) Established Advisory Council, expanded the National Register of Historic Places, pledged federal assistance to preservation efforts of state and local groups. Advisory Council given responsibility to comment on effect of federal undertakings on properties entered in the National Register.

1968 - Federal Aid Highway Act of 1968 (P.L. 90-495) Amended Section 138 of the Federal Highway Act of 1966 and Section 4 (f) of the Department of Transportation Act, and declared that in the development of federally aided transportation plans and programs special effort should be made to preserve the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

1969 - National Environmental Policy Act (P.L. 91-190) Title 1, Section 101 (b), "...it is the continuing responsibility of the federal government to use all practicable means...to preserve important historic, cultural and natural aspects of our national heritage ..." Under Title 1, Section 102 (2) (c) federal agencies were to prepare environmental impact statements for each major federal action having an effect on the environment.

1971 - Executive Order 11593 "Protection and Enhancement of the Cultural Environment." Charged federal agencies with responsibility to survey all lands and nominate properties to the Register. Requires Secretary of the Interior to advise other federal agencies in matters pertaining to the identification and evaluation of historic properties located on lands in their jurisdictions.

1974 - Archeological and Historic Preservation Act (P.L. 93-291) Amended the Reservoir Salvage Act of 1960. Secretary of Interior to be responsible for coordinating and administering a nation-wide program for recovery, protection and preservation of scientific, prehistoric and historic data.

1976 - Tax Reform Act (P.L. 94-455) Section 2124 provided for changes in federal tax treatment of demolition costs, rehabilitation expenses, depreciation, and charitable contributions of partial property interests when certified historic properties are involved.

Oregon Laws Pertaining to the Preservation of Cultural Resources

Archeology - ORS § 273.705-.742 (1942) governs removal of archeological, historical and other valuable materials from state land. Permits required from Division of State Lands and president of University of Oregon. Provision made for finder's fee for discovery of valuable materials.

Oregon H.B. 2625, 1977 Regular Session. The bill, which provides greater protection for antiquities in Oregon, classifies removal of archeological, historical, prehistorical or anthropological materials from state lands as a Class B misdemeanor. It was signed into law following the last Legislative session.

Oregon H.B. 2626, 1977 Regular Session. The bill prohibiting tampering with Native Indian cairns and graves also was signed into law in 1977. It requires reinterment of discovered Indian remains, while permitting scientific archeological study of such sites and remains.

Archives & Historical Commissions - ORS § 358.110-.770 (1973) governs city and county museums and county memorials, monuments and historical funds.

Historic Preservation - ORS § 271.710-.750 (1974) authorizes state or any county, city or park and recreation district to acquire conservation or scenic easements to preserve or maintain all or part of the natural or existing state of historical or other appropriate places of public significance. Use of power of eminent domain prohibited.

Oregon H.B. 2686, 1977 Regular Session. The Public Buildings Cooperative Use Act insures that the state government will investigate the feasibility of adapting historic properties whenever additional space and facilities are required. The state law, signed by the Governor on July 21, 1977, was a first of its kind at the state level in the country.

Protocol Agreement to Implement the Federal Public Buildings Cooperative Use Act of 1976. In 1977, also, the Governor signed a protocol agreement with the federal General Services Administration. It was the first agreement between the GSA

and a state government to implement the Federal Public Buildings Cooperative Use Act of 1976. The agreement provides that the GSA will notify the State Department of General Services and the State Historic Preservation Office when there is any major relocation of federal facilities in Oregon. The agreement provides that priority consideration will be given to the adaptation of recognized historic properties.

ORS § 390.410-.450 (1973) establishes Columbia River Gorge Commission with power to preserve and protect scenic and historic areas of the Columbia River Gorge.

ORS § 390.805-.990 (1973) establishes scenic waterway system to preserve certain free-flowing rivers and adjacent lands possessing outstanding historical and archeological values.

ORS § 273.562-.597 (1974) authorizes establishment of natural area preserves system, including land and water (although altered in character) important for study of historic and palentological features or appreciation of natural features.

Historic Trails - ORS § 376.220 (1971) authorizes citizens of road district or county to establish trails under control of court of county where located.

ORS § 376.605 (1971) authorizes Department of Transportation to construct public pedestrian trails and bridle paths connecting legally established streets, roads, and public parks with Pacific Ocean Shore.

ORS § 390.950-.989 (1973) authorizes Department of Transportation to establish Oregon Recreation Trails System. Before establishing trail, department to consider at a public meeting areas adjacent to such trails to be utilized for scenic and historical purposes. Right-of-ways to be of sufficient width and so located as to protect natural conditions scenic and historic features and any primitive character of trail area.

Parks and Historic Places - Oregon Constitution, art. IX, § 3 authorizes use of proceeds from tax on motor vehicles or motor vehicle fuel for acquiring, maintaining and publicizing parks and historic places.

ORS § 226.110-.400 (1971) authorizes cities to establish public parks and memorials.

ORS § 226.010-.590 (1973) authorizes communities to establish parks and recreation districts.

ORS § 390.010-.290 (1973) establishes State Parks and Recreation Division with power to acquire and develop scenic or historic places. Establishes state policy to preserve and restore for public enjoyment and education structures, objects, facilities, and resources as examples of state history, archeology, and natural science.

ORS § 377.505-.545 (1974) established Scenic Area Board with power to designate scenic areas, defines as areas adjacent to or along segment of public highway within federal or state park, sites of historical significance or sites affording view of unusual natural beauty.

ORS § 276.001-.108 (1974) establishes Capitol Planning Commission with power to preserve and maintain capitol area in Salem. Executive residence also to be maintained.

Enabling legislation authorizes State Parks Branch, Department of Transportation, to accept conservation or scenic easements on historic property in perpetuity. None have been accepted.

Taxation - ORS § 308.740-.790 (1974) authorizes assessment of land as "open space" to reduce economic pressure and prevent forced conversion of open space land to more intensive uses. "Open space land" defined as any land area preservation of which in its present use would preserve historic sites.

Oregon H.B. 2476, 1975 Regular Session declares state policy to maintain and preserve properties of state historical significance. Owner of property listed in National Register of Historic Places to apply to county assessor for property tax classification, with review of application by State Historic Preservation Officer. Requires county assessor to assess property classified as historic at its true cash value at time of application for next 15 consecutive assessment years.

APPENDIX E

IMPEDIMENTS AND POTENTIALS FOR ECONOMIC DEVELOPMENT

(SOURCE: COOS-CURRY-DOUGLAS ECONOMIC IMPROVEMENT ASSOCIATION 1978a)

CHAPTER VII -

IMPEDIMENTS TO ECONOMIC DEVELOPMENT

Listed below are the major impediments to economic development in the CCD District as identified by the CCD Board of Directors at their May 11, 1978, Annual Meeting. These impediments are based upon the recommendations made by the OEDP Committee in Coos, Curry and Douglas Counties.

IMPEDIMENTS TO ECONOMIC DEVELOPMENT
IN THE CCD ECONOMIC DEVELOPMENT DISTRICT

I. Impediments to Industrial Development

A. Forest Products

1. Overdependence on a single industry which inhibits industrial diversification that could provide employment opportunities to offset the anticipated decline in employment opportunities in that (forest products) industry.

2. The inherent instability of the forest products industry, resulting from seasonality, dwindling resource base, automation and cyclical swings in demand.

3. Allowable cut and harvest cut reductions on public commercial forests due to wilderness withdrawals, sealed bids and other policy decisions without adequate consideration of the socioeconomic impact of these reductions; as well as uncertainty regarding the course of likely future actions.

4. Less than optimal application of reforestation and forest management policies and practices which could increase productivity from all commercial forest lands.

5. The absence of further processing of the District's forest products industry.

6. Inadequate public and private investment in forest management practices and reforestation has prevented the attainment of optimum levels of yield.

7. Log supply problems, which have become critical to domestic lumber mills because of high stumpage prices during period of low demand for lumber products.

8. New wood products development needs to be encouraged to more completely utilize wood fiber, including forest slash residue.

9. The housing policies of the federal government, which inhibit the home construction industry.

10. The lack of knowledge of hardwood industry potentials and marketability.

11. The absence of encouragement and inducements to establish a small wood products industry based on the resources of the area.

12. U.S. Forest Service management policies which restrict harvest of old growth timber on National Forest lands.

13. Export of logs for processing to counties outside the District, which inhibits expansion of existing and potential firms in CCD's member counties.

14. Inadequate water sources to maintain and increase production.

B. Commercial Fisheries

1. Lack of deep water trawler basin, processing and/or related facilities to take advantage of underutilized fisheries along the Coast which could be processed in port communities.

2. Lack of confidence within the financial community to adequately support the developing groundfish industry due to economic uncertainties regarding the marketing and processing of Pacific whiting and other groundfish resources.

3. Lack of adequate air freight transportation service and facilities for fish products in the District.

4. Inadequate commercial fishing moorage accommodations in District Ports.

5. Inadequate boat buildings, repair and maintenance facilities to service the fishing industry at all ports.

6. Inadequate cold storage and ice facilities in some coastal ports.

7. Obsolete fish processing facilities and fishing fleets in some coastal ports.

8. Inadequate surveillance of foreign fishing fleets off the Oregon coast which are depleting certain fisheries resources and possibly upsetting the fisheries ecosystem.

9. Loss of natural spawning areas, which threatens the commercial and sport salmon fishing industries.

10. The seasonality problems of the fisheries industry which are coincidental to those in the forest products industry.

11. Need for expansion of applied fisheries research and educational activities.

12. Inadequate water and sewage facilities for maintenance and expansion of the seafood and fish processing industries.

13. Lack of adequate waste disposal systems for the coastal seafood processing industry, according to present performance levels set by DEQ, which could result in the closing of processing plants.

14. Confusion as to basis and objectives for new comprehensive fisheries management programs.

15. Insufficient production from public hatcheries, together with insufficient incentives and encouragement for development of private hatcheries.

16. Lack of coordinated long range development plans for the fishing and seafood processing and marketing industries.

17. Restrictive regulations which inhibit the financing and development of an efficient and viable fishing and seafood processing industry.

18. Federal and state regulations and permit procedures which inhibit the proper management and development of port facilities in the District.

19. Inadequate road access to the Charleston Boat Basin and Coos Bay North Spit areas.

C. Agriculture

1. Insufficient suitable land of field size, which limits the extent to which the food processing industry can be developed.

2. The seasonality problems of agriculture, which are coincidental to those of the forest products industry.

3. Underutilized grazing land potential, due to a) lack of adequate control programs for Tansy Ragwort, b) lack of adequate predator (coyote) control programs, and c) lack of enough skilled and experienced commercial livestock operators.

4. Underdeveloped truck farm potential in the District, resulting primarily from excessive distances to processors and to adequate markets.

5. The excessive price of fertilizer.

6. The demand for agricultural land for non-agricultural purposes.

7. Federal regulations and lack of a rendering plant have made it nearly impossible for meat processors to operate within the District, causing greater expense to local consumers as well as reducing the profit potential of cattle farming.

8. Inadequate water storage for irrigation.

D. Transportation

1. Inadequate east-west highway access to connect the Roseburg Growth Center and interior Southwest Oregon to the Port of Coos Bay in the Coos Bay/North Bend Growth Center and from the City of Gold Beach to the City of Grants Pass.

2. Inadequate commercial air service and facilities in the Coos Bay/North Bend and Roseburg Growth Centers, and lack of adequate third level commercial air service for the entire District.

3. Lack of a competitive rail system to connect the Port of Coos Bay, in the Coos Bay/North Bend Growth Center, to its hinterland including the Roseburg Growth Center, and lack of any rail service in Curry County.

4. Lack of adequate passing lanes and slow vehicle turnouts to handle heavy traffic volumes along the Coast Highway 101 restricts the ease of movement for commercial and recreational traffic, especially in the summer.

5. Unfinished channel navigation improvements to the authorized Coos Bay Channel Navigation System, which limit the present and potential use of the Port of Coos Bay and its hinterland, including the Roseburg Growth Center.

6. Lack of adequate navigation and channel system improvements for the Ports of Bandon, Umpqua, Port Orford, Gold Beach and Brookings, which limits barge traffic and commercial and sport fishing fleet access in and out of county ports and restricts effective economic development.

7. Lack of an intra-County bus transportation system.

8. Regulated freight rate structure, which discriminates against potential users of truck transportation.

9. Lack of competitive and adequate freight service.

10. Unavailability of adequate dredging equipment to ensure open and safe navigation channels in the District's ports.

11. Inadequate bridge maintenance and replacement.

E. Industrial Recruitment and Other Infrastructure

1. Lack of individual community efforts to promote industrial recruitment and job development.

2. Lack of utilities to service some identified industrial park lands.

3. Inadequate water supply, storage, treatment and distribution, as well as sewerage and waste treatment facilities, which limit the capacity of many areas to sustain increased residential, tourist, recreational, commercial and industrial activities.

4. Lack of vacant and available industrial buildings for new industrial prospects.

5. Lack of economical transportation for goods and services to and from the marketplace.

6. High wage rates in certain forest products industry sectors, which acts as a disincentive to labor to work in lower paying jobs.

7. Unavailability of natural gas in the coastal areas.

8. Lack of means to develop alternative energy sources, including coal, natural gas and other presently underutilized resources.

9. Lack of quality community recreational and convention facilities, which are important considerations in location decisions for business expansion.

10. Lack of certain specialized skills within the existing labor forces.

11. Lack of a single source for information and assistance in dealing with regulating agencies.

12. Lack of risk capital.

13. The negative attitude toward economic development within the State, as perceived by outside industry.

14. The absence of environmental and socio-economic base studies.

15. Unidentified and underutilized mineral resources, and governmental regulations and restrictions that slow development.

16. Regulations of EPA, DEQ, and LCDC, which inhibit the establishment of new enterprises and impede development of industry on estuarine industrial sites.

17. Lack of extensive flood control projects.

F. Environmental Impacts

1. Poorly developed mechanisms for resolving environmental questions.

2. Lack of a balance between economic and environmental considerations for new development project-review process.

G. Energy Shortage

1. Lack of research and development of alternative energy supplies.

2. Undeveloped electrical energy potential on rivers within the District.

II. Impediments to Commercial Development

A. Underdeveloped trade and service facilities in the District, including those in the Coos Bay/North Bend and Roseburg Growth Centers which could stem the continued trade drain to the Eugene area.

B. Lack of land designated for commercial development.

C. Lack of some commercial services (warehousing, cold storage, and other support services) for industry.

D. Incomplete identification of retail and commercial development opportunities.

E. The existence of traffic congestion on major commercial arteries and unattractive mainstreets in the Coos Bay/North Bend and Roseburg Growth Centers.

F. Lack of first class convention/banquet facilities in the Roseburg Growth Center.

G. Lack of adequate mechanisms and incentives to encourage the development of small enterprises.

III. Impediments to Community Services Development

A. Recreational Facilities

1. Underdeveloped water-related recreational facilities and programs in Curry County, particularly in the Port Orford area.

2. Insufficient community recreational facilities in many communities throughout the District, including the Roseburg Growth Center.

B. Health Care

1. Lack of adequate medical services and facilities in rural areas of the District.

C. Waste Disposal

1. Difficulty in gaining approval of sanitary landfill and other sites for solid waste disposal throughout the District, including the Coos Bay/North Bend Growth Center.

2. Lack of adequate sewerage treatment facilities in urban areas and acceptable alternative sewerage treatment facilities for low density areas.

3. Lack of adequate waste disposal systems for the coastal seafood processing industry, which could result in the closing of processing plants, including those in the Coos Bay/North Bend Growth Center, through EPA/DEQ regulations.

D. Community Water Supply

1. Insufficient approved water supply capacity in some residential and commercial areas, including those within the Coos Bay/North Bend and Roseburg Growth Centers.

2. Lack of a new water transmission line to supply the City of Eastside with water.

3. Lack of adequate water filtration facilities in Powers.

E. Pollution

1. Low summertime stream flows contribute to pollution problems in District rivers, particularly in the Coquille, Umpqua and Rogue River Systems.

F. Housing

1. Lack of adequate housing, especially for the low-income, elderly and disadvantaged in the District.

G. Utilities

1. Lack of economical fuel supplies.

2. Underdevelopment of alternative energy supplies.

3. Inadequate telephone service throughout Curry County.

4. Projected shortage of electricity and other industrial energy supplies.

H. Transportation

1. Inadequate facilities to support scheduled commercial air service to and from the Coos Bay/North Bend and Roseburg Growth Centers.

2. Substandard commerce highway access between the Port of Coos Bay and its hinterland including the Roseburg Growth Center, via Highway ORE 42, 38, 138 and 101.

3. Inadequate third level commercial air service within the District.

4. Lack of east-west highway access to the I-5 corridor from Curry County.

5. Lack of an inter-city public transportation system.

(Also refer to Transportation Impediments to Industrial Development, Section I-D above, especially for Coos and Curry Counties.)

IV. Impediments to Human Resource Development

A. Lack of adequate job training programs to train people for existing and projected employment opportunities.

B. Lack of opportunities for female participation in the labor force.

C. The necessity of additional support for public labor exchange facilities supplying workers.

D. Lack of sufficient job opportunities to employ the resident labor force.

E. Lack of financial support for adequate day care facilities.

F. Lack of adequate post-secondary educational opportunities.

G. Closure of major employment enterprises.

H. Restrictive regulations discouraging or prohibiting the employment of young people.

V. Impediments to Tourist/Recreation Development

A. Planning and Promotion

1. Inadequate planning, coordinating and promotion of tourism on a state and regional basis.

2. Lack of funding for development and maintenance of tourist facilities and parks and for promotion of tourism and conventions.

B. Facilities Development

1. Insufficient moorage, launching and support (parking) facilities to accommodate existing and projected sport fishing and transient commercial fishing demand at all coastal ports.

2. Lack of an all-weather facility in Coos County for conventions, horse shows, exhibitions and the like.

3. Lack of small, medium and large first class convention/banquet facilities in the Roseburg Growth Center and Curry County.

4. Underdeveloped parks and recreational programs throughout Coos County.

5. Undeveloped regional winter sports resort complex potentials on Mt. Bailey in eastern Douglas County.

6. Lack of sufficient overnight accommodations to match the growth in tourist and transient traffic.

7. Need for more recreation potential to be built into proposed water impoundments.

8. Lack of social meeting places for youth and senior citizens.

9. Underdeveloped tourist industry potentials.

10. Shortage of commercially developable properties suitable for tourism and recreation facility development.

C. Access to Tourist Recreation Facilities

1. Inadequate and deteriorating highways, which restrict access to the District's existing natural and commercial tourist attractions.

2. Prospects of a repeat of the 1974 gasoline shortage which may force closure of major commercial tourist facilities.

3. Poorly developed instrument landing systems at Roseburg Airport, which restricts regular air service possibilities.

CHAPTER VIII

POTENTIALS FOR ECONOMIC DEVELOPMENT

The economic analyses contained in the District's past OEDPs' and the present CEDS 1978-79 Action Program indicate numerous potentials and opportunities for economic development within the District. Based on the analyses, listed below are summary lists of the major potentials which can significantly contribute to the economic development of the District. Following each list is a brief evaluation summarizing the outlook for the realization of the various potentials and the relationship of the potentials to pending or ongoing District activities.

HUMAN RESOURCES

1. The total population though relatively stable in the past is steadily increasing.
2. The population is shifting toward the major urban centers.
3. The district has a high reserve of labor, especially women, youth and semi and unskilled.
4. The labor force is versatile and hardworking.

Outlook

The existence of trainable labor, available in concentrated areas and in abundant supply, forms the basis of a District labor force capable of providing good workers to existing and new industry. These favorable characteristics are presently being emphasized in promotional material prepared as part of a District-wide economic diversification effort. The CCD Industrial Prospector and Job Development Services Program aimed at attracting and establishing new industry is emphasizing the District's untapped Human Resources as a selling point for industry to locate and expand in the District.

AGRICULTURE

1. There is extensive crop and grazing land that is either idle or underutilized.
2. The soil base is very suitable for a wide range of crops.
3. Waste from milk products and seafood processing may offer an inexpensive animal feed and a viably priced fertilizer.
4. Foreign markets offer new opportunities for agricultural production.
5. Cattle production has considerable commercial market potential.
6. Increased product concentration offers potential for expansion of the food processing industry within the District.
7. Increased feed crop production is possible as a result of dehydration processing of the District's clover resources.

Outlook

The agricultural prospects of the district are expanding. Given the continuously expanding world markets for farm products, and the availability of adequate water for irrigation purposes, the District is well situated for increasing its current level of output. County extension programs to control poisonous weeds affecting the expansion of the cattle industry and possible county projects to study the feasibility of developing an agricultural cooperative and clover dehydration plant are two examples of efforts underway to realize the District's agricultural potentials.

OTHER NATURAL RESOURCES (Fisheries and Minerals)

1. There are considerable undeveloped or underdeveloped seafood resources.
2. Marketing programs being developed by the County extension service could open new markets for the District's seafood.
3. Greater research into fisheries resources and utilization of waste by the County Extension Service, the University of Oregon Institute of Marine Biology at Charleston and by private business offers the potential for new fisheries products.
4. Efforts by the Oregon Fish & Wildlife Department to reclaim spawning areas and to increase hatchery production could support increased levels of commercial and sport salmon fishing.
5. The on-going replacement of obsolete and inadequate fish processing plants and cold storage and ice facilities may result in an expanded fisheries industries.
6. Private salmon aquaculture development in the Coos Bay area promises to expand the available salmon fishery resource.
7. Development of a domestic Pacific whiting (hake) fishery at the Port of Coos Bay could expand fishing and processing activities.
8. The coal and silica sand resources of Coos County may have future energy development possibilities with changing technology.
9. Continuing research and exploration for oil and natural gas may produce future mineral developments.

Outlook

The realization of many of these potentials requires the adequate protection and enhancement of the District's natural resources. Two studies which provide insight and direction for the expansion and vertical integration of the District's fisheries industry are the 1974 Economic Feasibility of a Fishmeal Plant on the Southern Oregon Coast completed by CCD staff and the 1976 Feasibility Study of a Cold Storage Facility in the North Bend/Coos Bay Area funded by an EDA grant. Both studies are presently being utilized to stimulate improvements and growth in the industry throughout the District. Efforts to protect the coastal fishery resources have been enhanced by adoption of the 200-mile fishery conservation zone, which alsohas provided an opportunity for development of the Pacific whiting (hake) fishery.

Funds recently have been awarded by the Pacific Northwest Regional Commission to the Oregon Department of Economic Development to accelerate development of the commercial fishing, processing and sale of Pacific whiting. The program will consist of three parts: a) conduct an economic/fiscal analyses of the Pacific whiting industry; b) conduct demonstration programs; and c) conduct a program of information dissemination. The recent developments to utilize the District's fishery resource capability are the private salmon hatcheries in the Coos Bay area, and the prospect for an artificial reef off Winchester Bay.

MANUFACTURING

1. The forest products industry produces large amounts of waste that could be used for new product developments.
2. Large integrated forest product industry plants are developing that will be able to better compete for resources and markets.
3. New product lines are developing in wood products.
4. Intensive forest management and reforestation is becoming the accepted policy on both public and private commercial forest land which should insure an available log supply to the industry.
5. Technology could reduce environmental problems and expense in the industry.
6. A considerable volume of logs and wood chips are leaving the District unprocessed which could be further processed within the District.

Outlook

Increased county, state and federal attention is being focused on the special concerns affecting the forest products industry. ~~At the county level, development of a forest management program for Douglas County is in progress and a Small Woodlot Owners Committee has been formed which is currently surveying the county's small woodlot owners to determine what direction the program will follow.~~ On the national level the Resources Planning Act which provides for development of goals and objectives for forest resources management has been adopted. These and other current developments are evidence that attempts are being made to improve the timber resource base. This is a strategic step to realizing the many potentials of the industry which in time could provide stable employment opportunities in the forest products industry. The CCD Industrial Prospector Program is engaged in attracting secondary processing industries to locate in the District emphasizing the District's raw material supply and locational advantages.

OTHER MANUFACTURING

1. The District has a central location to serve the entire West Coast market area.
2. The District has good locational factors for industrial groups such as industrial machinery, electrical equipment, and general industrial components.
3. The District has available land zoned for all types of industrial uses.
4. The cities in the two Growth Centers and the other major cities in the District are participating with the CCD District's Industrial Prospector and Job Development Services Program.
5. The port districts in the CCD District are actively engaged in port economic development projects.
6. Local Development Corporations in the Coos Bay/North Bend and Roseburg Growth Centers are actively engaged in establishing new economic activities in their respective areas.

Outlook

These potentials for expanding the District manufacturing sector are being emphasized in the District-wide Industrial Diversification Program along with the Human Resource potential mentioned previously. The CCD Industrial Prospector and Job Development Services Program holds significant potential for realizing the goal of the District for "Greater Economic Diversification." In fact, the strategy being employed to select which industries to recruit is based on matching industry's requirements with the District's locational advantages. The realization of these potentials hinges upon the active participation of the District's local government jurisdictions, private industry and citizens. The CCD District's port districts have played an active role in the past as evidenced by the number of port improvement projects undertaken at all ports as well as the number of port sponsored and EDA financed public works construction projects. This economic development activity is expected to continue. The local Development Corporations will also continue to play an active role in the economic diversification of the District.

NON-MANUFACTURING

1. The population of the District is becoming more urbanized increasing the scale of the local market which will attract additional trade and service industry development.
2. The housing shortages should stimulate new residential construction.
3. The outstanding environmental quality of the District's recreational resources will generate greater tourist industry activity.

Outlook

Progress in realizing these potentials is occurring rapidly. The District has experienced substantial building activity, with both Growth Centers undergoing major retail floor space expansions and the development of new residential areas. The tourist industry is being stimulated by better access to recreational areas and the development of the Dunes National Recreational Area along the coast, ~~and the continued improvements occurring at Wildlife Safari in the Roseburg Growth Center. In addition, the financial feasibility of the proposed Mt. Bailey Ski Development is being updated and re-evaluated. If implemented, this project could further extend the tourist season in the District.~~

COMMUNITY SERVICES

1. The District has a well developed education system offering a wide range of vocational programs.
2. There are a variety of manpower programs to provide training for the District's residents.
3. The District's financial institutions have capacity for greater investment within the area.
4. Water impoundment projects currently under consideration could provide for sufficient water to meet the District's foreseeable needs.
5. Large portions of the District's solid waste could be utilized to produce various forms of additional energy.

Outlook

The realization of these potentials involves extensive coordination between various public and private agencies at the state and local levels, in addition to a basic change in national project funding priorities in some cases. For this to take place will require that informed public pressure be focused on the particular potentials. A major constraint to realizing several of these potentials is that of securing sufficient funding to approach the potential on the proper scale.

APPENDIX F

PACIFIC POWER AND LIGHT

HOUSING DATA, 1987

Occupancy Vacancy Data, PP&L

Table 5.4-5 in text uses Pacific Power and Light meter hookup data to determine occupancy and vacancy rates as of the end of 1987. These rates were then applied to the city building permit information as the basis for the current housing counts.

Pacific Power and Light's raw data are segregated into single-family, apartment, and mobile home categories and then into functioning and idle hookups as shown below per franchise area.

Table 5.4-4a

PP&L USER DATA, DECEMBER 1987

	Single-family			Apartments			Mobile Homes		
	#U	VU	VR	#U	VU	VR	#U	VU	VR
Empire[a]	824	19		95	8		31	1	
Eastside[b]	481	7		96	3		27		
Coos Bay[a]	2,947	50		1,360	77		631	43	
TOTAL	4,252	76	1.9(2)	1,551	88	5.7(6)	689	44	6.4(6)

TOTAL UNITS - 6,700 TOTAL VACANT - 208

[a]Franchise area 22

[b]Franchise area 12

[c]Franchise area 01

These data had to be converted to owner and renter ratio. Based upon a recommendation of the State Housing Division (Clay 1979), it is therefore assumed that 88% of the single-family units are owned, and the remainder are rented. Further, all apartments are assumed to be rented and all mobile homes owned. The same percentages hold for the vacant or "idle" units. The resulting figures are shown below eith the vacancy rate by tenure which was then applied to the city building permit data. (See Table 5.4-5)

Table 5.4-4b

PP&L DATA BY TENURE, DECEMBER 1987

	Single-family (88%)	(12%)	Apartment	Mobile Home	Total	Vacancy Rate
Owner						
# units	3,742			687	4,431	
# vacant	67			44	111	2.5
Renter						
# units		510	1,551		2,061	
# vacant		9	88		97	4.7

APPENDIX H

GENERALIZED LAND USE

1977

.OPOSED CRITERIA FOR DETERMINI
BUILDABLE LANDS IN COOS BAY

A. SUITABILITY

1. Slope

Exclude lands having a slope greater than 25%. This criteria is for purposes of inventory only and is not meant to exclude lots of greater than 25% slope for special construction.

a. Of those available having a slope of less than 25%, consider:

- 0-12% good for standard residential development.
- 13-25% good for residential development requiring other than standard construction techniques.

b. Suggested sources for identifying these lands are:

SCS, USGS, County Engineer

2. Drainage

Exclude lands within 100 year flood plain

a. Of those remaining, consider:

- areas with no known drainage problems good for standard residential development
- areas with known drainage problems (intermittant standing water, high water table, etc.)

b. Suggested souces for identifying these lands are:

SCS, USGS, Corps of Engineers, Bureau of Reclamation, County Engineer, DEQ, HUD.

3. Soils

Unless soil conditions are such that they will not support residential construction using accepted building practices, they should not be a limiting factor within the urbanizable area.

a. Examples of limiting conditions are recent fill, etc.

b. Determinations regarding local soil conditions should be made by the City or County Engineer.

4. Geology

Exclude lands with known hazardous geological conditions.

a. Examples of hazardous conditions are slides, etc.

b. Determinations regarding local hazardous geological conditions should be made by the City or County Engineer.

5. Elevation

Unless elevations are such that they preclude the extension of services (sewer, water) without extra-ordinary means, elevation is not a limiting factor within the urbanizable area.

a. Elevation data can be obtained from USGS, City or County Engineer, etc.

b. Determinations of elevation limitations should be made by the City or County Engineer, in cooperation with local service districts, etc.

B. AVAILABILITY

1. Services (Sewer, Water, Power)

Exclude lands to which the provision of services is not existing, funded, programmed or planned; i.e., exclude lands where there is no existing public committment to providing services.

a. Suggested sources of information include public and private utilities, service districts, DEQ, etc.

2. Public Lands

Exclude public lands such as highway and utility rights-of-way, parks, sewer plants, etc., unless it can be documented such lands can be used for residential use.

3. Private Institutional Lands

Exclude private institutional lands, such as, churches, fraternal organizations, hospitals, schools, cemetaries, golf courses, unless it can be documented such lands can be used for residential use.

4. Other Private Lands

Exclude tax deferred open space lands.

5. Zoning

In considering lands that might be available, present zoning should not be considered as a limiting factor, since zoning will be changed to implement local comprehensive plans when complete.

C. NECESSITY

1. This is an internal check to match land availability with population projections and assumed projected densities. Some of the sources for population figures are Portland State University, Section 208 Water Quality Projections, etc. Based upon local objectives, this would be that amount of land forecast to meet urban population needs for a minimum of 20 years.

2. Methodology

a. Compute amount of buildable land.

b. Subtract land devoted to other non-residential urban uses to get amount of buildable residential land.

c. Divide amount of buildable residential land by density (number of people per acre or square mile) to get population growth capacity.

d. Match population growth capacity with projected population growth.

CITY OF COOS BAY

PREDICTING FUTURE HOUSING NEED AND COMPARISON TO BUILDABLE LANDS

The computations shown below demonstrate the method used to derive the future housing need for the city of Coos Bay and how this prediction compares to the buildable lands available. Each step in the process shows the model used and the comparable data for the city.

Step 1. Housing Population Forecast.

Projected Population	23,000[a]
- Group Quarters	- 391[b]
Housing Pop. Forecast	22,609

[a]PSU "High" figure.

[b]Residential care facilities, etc. which are assumed to remain 1.7% of the total population.

Step 2. Household Forecast.

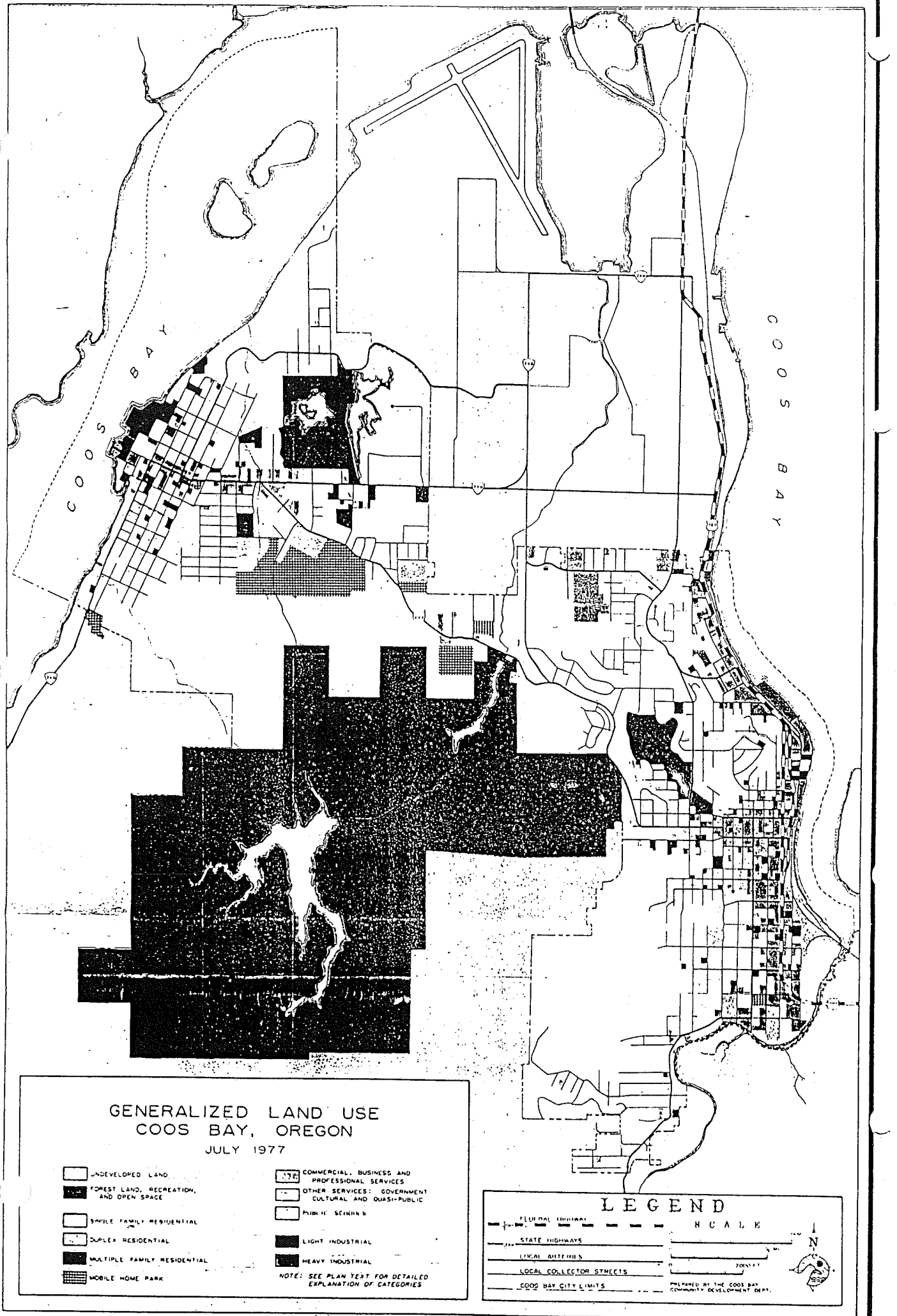
$$\frac{\text{Housing Pop. Forecast}}{\text{Household Size}} = \text{Households Requiring Dwelling Units} \qquad \frac{22{,}609}{2.5^{c}} = 9{,}043$$

[c]The predicted household size is 2.5 persons per household. The household size has been declining due to such things as reduction in birthrate, increases in divorces, single-person households. (1978 rate was 2.72 persons per household.)

Step 3. Predicting Housing Mix by Type Based upon Comparison of 1970 and 1978 Data for Coos Bay and Oregon.

	1970		1978		2000
	Coos Bay	Oregon	Coos Bay	Oregon	Coos Bay
Single-family	73.6%	77.0%	65.7%	69.0%	55.0%
Duplex	4.1%		4.5%		5.0%
Multiple-family	17.0%	17.9%	20.6%	21.6%	30.0%
Mobile Home	5.1%	5.1%	10.1% ~~9.2%~~	9.4%	10.0%

Source: City of Coos Bay housing statistics and Wright, Kim A., 1979:39.


COOS BAY
COOS BAY
GENERALIZED LAND USE
COOS BAY, OREGON
JULY 1977
UNDEVELOPED LAND
FOREST LAND, RECREATION, AND OPEN SPACE
SINGLE FAMILY RESIDENTIAL
DUPLEX RESIDENTIAL
MULTIPLE FAMILY RESIDENTIAL
MOBILE HOME PARK
COMMERCIAL, BUSINESS AND PROFESSIONAL SERVICES
OTHER SERVICES: GOVERNMENT CULTURAL AND QUASI-PUBLIC
PUBLIC SCHOOLS
LIGHT INDUSTRIAL
HEAVY INDUSTRIAL
NOTE: SEE PLAN TEXT FOR DETAILED EXPLANATION OF CATEGORIES
LEGEND
FEDERAL HIGHWAY
STATE HIGHWAYS
LOCAL ARTERIALS
LOCAL COLLECTOR STREETS
COOS BAY CITY LIMITS
SCALE
N
PREPARED BY THE COOS BAY COMMUNITY DEVELOPMENT DEPT.

APPENDIX I

CRITERIA FOR DETERMINING BUILDABLE LANDS AND STATISTICAL ASSESSMENT FOR FUTURE HOUSING NEEDS, 2000

Step 4. Dwelling Units by Desired Mix to Meet Household Need.

Households	x	%	Housing Type	=	Dwelling Units Needed by Type
9,043	x	55%	Single-family	=	4,973 units
9,043	x	5%	Duplex	=	452 units
9,043	x	30%	Multiple-family	=	2,713 units
9,043	x	10%	Mobile Homes	=	905 units
					9,043 total units

Step 5. Household Need Increased to Provide for Vacancy Rate = Total Housing Need.

Vacancy rates recommended by State Housing Division:

2% owner occupied

6% renter occupied

Rates applied to each needed housing type[d]

Single-family	4,973 ÷ 98%	=	5,075
Duplex	452 ÷ 94%	=	482
Multiple-family	2,713 ÷ 94%	=	2,886
Mobile Home	905 ÷ 98%	=	922
	Total Housing Need		9,365

[d]Owner occupied was applied to single-family and mobile homes, renter vacancy rate to duplex and multiple-family units.

Step 6. Number of Additional Housing Units Needed by 2000.

Total Housing Stock Required by Type
- 1978 Housing Stock by Type

Additional Housing Units Needed

	Total Needed by 2000		1978 Stock		Additional Units Needed by 2000
Single-family	5,075	-	3,741	=	1,335
Duplex	482	-	253	=	228
Multiple-family	2,886	-	1,175	=	1,711
Mobile Home	922	-	583	=	339
			TOTAL HOUSING UNITS NEEDED		3,613

Step 7. Number of Acres Needed to Meet Housing Need.

Houses Needed by Type		x	Min. Lot Size[e] (sq. ft.)	÷	Net Acre[f] (sq. ft.)	=	Total Acres Needed
Single-family	1,335	x	6,000	÷	32,670	=	247 acres
Duplex	114[g]	x	8,000	÷	32,670	=	28 acres
Multiple-family	1,711	x	2,500[h]	÷	32,670	=	131 acres
Mobile Home	339	x	5,445	÷	32,670	=	57 acres
					TOTAL ACRES NEEDED		463 acres

[e]Minimum lot size is computed based upon the current ordinance. (#2685) The proposed new ordinance has reduced most lot size minimums which would reduce the number of acres required.

[f]Net acre equals the gross acre less the amount of land needed for public rights of way, generally 25% of a gross acres.

[g]One duplex structure requires 8,000 square feet but yields 2 units. Therefore, 114 structures are required rather than 228 units.

[h]The minimum square footage for apartments is averaged for all types.

DISTRIBUTION OF MOBILE HOME PARKS IN COOS COUNTY, 1983

The following information was received from the Coos County Tax Assessor's Office which lists the park, owner, tax code and lot number.

	NUMBER OF MOBILE HOMES IN PARKS[a]	
Coos Bay	631	
Bandon	38	
Coquille	44	
Eastside	33	
North Bend	0	
Myrtle Point	51	
Powers	43	
Lakeside	63	
	903	
Unincorporated County	765	
	TOTAL	1668

Source: County Assessor, Coos County Mobile Home Courts, October 6, 1982

[a]The exact number per park may vary slightly. Coos Bay staff has accounted for 636 spaces in the city in a recent survey.

MOBILE HOME PARKS DISTRIBUTION, 1983

	1980 population	% of County population	Park spaces in County		% of urban population	% of park spaces in Cities
			#	%		
Unincorporated County	26,240	41%	765	46%	---	---
Coos Bay	14,442	23%	631	37%	38%	70%
North Bend	9,759	15%	0	0%	26%	0%
Eastside	1,590	3%	33	2%	4%	4%
Coquille	4,478	7%	44	3%	12%	5%
Lakeside	1,453	2%	63	4%	4%	7%
Myrtle Point	2,842	4%	51	3%	8%	6%
Bandon	2,308	4%	38	2%	6%	4%
Powers	818	1%	43	3%	2%	5%

APPENDIX J

DEPARTMENT OF FISH AND WILDLIFE

COMMENTS ON SIGNIFICANT HABITATS

VICTOR ATIYEH
GOVERNOR

Department of Fish and Wildlife

P.O. BOX 5430, CHARLESTON, OREGON 97420

RECEIVED FEB 15 1983

February 14, 1983

Ms. Cynthia Hartman
City of Coos Bay
500 Central Avenue
Coos Bay, Oregon 97420

Dear Cynthia:

After discussing habitat considerations with Bill Hines and Pete Perrin, our wildlife biologists, we came to the conclusion that there are two areas within the city of Coos Bay (excluding estuarine areas) that are significant fish and/or wildlife habitats that warrant protection.

The Empire Lakes area and the Pony Creek Reservoirs are considered to be significant habitats. The Empire Lakes area has considerable fishery value as well as wildlife value, and the Pony Creek Reservoir complex has high wildlife value (especially for waterfowl) and some additional value as fish habitat. The riparian areas surrounding these lakes should also be considered as part of the significant habitat. These riparian areas should include a minimum of 50 feet horizontal distance from the water or the extent of riparian vegetation, whichever is greater.

Please don't hesitate to contact me if I can be of further assistance.

Sincerely,

Reese E. Bender

Reese Bender

Planning Coordinator,
Coos/Coquille District

cc: Bill Hines
Ralph Grenfell
Neal Coenen
Glen Hale, LCDC

REB:bkh

VICTOR ATIYEH
GOVERNOR

Department of Fish and Wildlife

P.O. BOX 5430, CHARLESTON, OREGON 97420

RECEIVED MAR 14 1983

March 10, 1983

Ms. Cynthia Hartmann
Planning Department
City of Coos Bay
500 Central
Coos Bay, Oregon 97420

Dear Cynthia:

In reference to your letter of March 9, 1983: the changes in the comprehensive plan (and inventory) that the City made are acceptable to the Oregon Department of Fish and Wildlife with one minor exception. We recommend changing Chapter 3.18 Riparian Vegetation to read: Generally, riparian vegetation shall be left undisturbed to a width of 50 feet back (measured horizontally) from the shoreline or to the width of the entire extent of vegetation, whichever is deemed necessary to protect the water resource.

The reason that we want the distance measured horizontally is that in areas with steep slopes, 50 feet is not enough protection. By measuring horizontally, an adequate riparian buffer should be maintained under all topographical situations.

The City of Coos Bay should be complimented for their efforts to develop a comprehensive plan that not only insures adequate land for development, but also gives consideration to other important values such as natural resources and recreation.

Sincerely,

Reese E. Bender

Reese E. Bender
Planning Coordinator

REB:bkh

APPENDIX K

DISTRIBUTION OF MOBILE HOME PARKS

IN COOS COUNTY, 1983

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