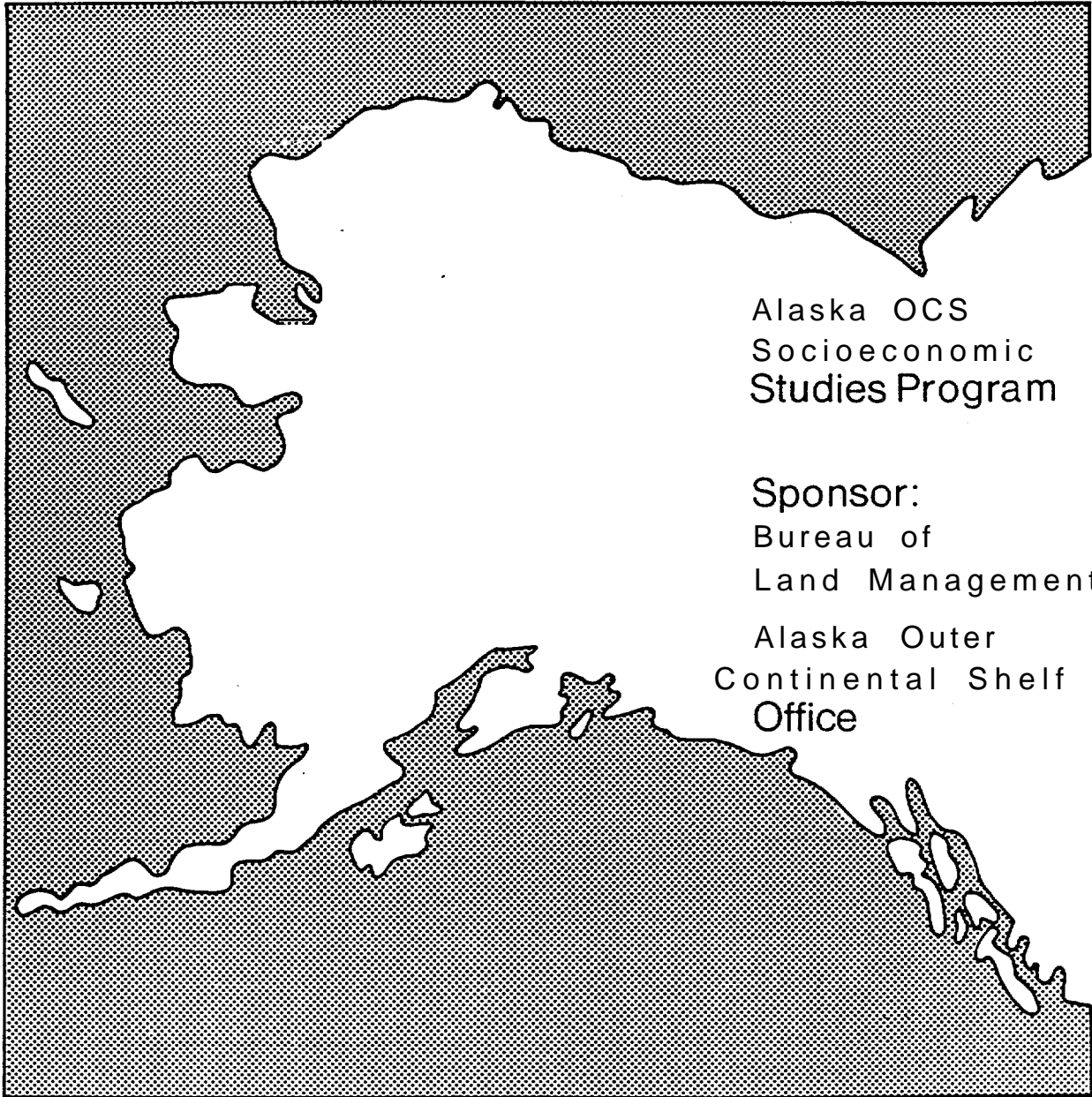


Technical Report
Number 46 Volume 1



Alaska OCS
Socioeconomic
Studies Program

Sponsor:
Bureau of
Land Management
Alaska Outer
Continental Shelf
Office

Lower Cook Inlet
Petroleum Development Scenarios
Local Socioeconomic Systems Analysis

The United States Department of the Interior was designated by the Outer Continental Shelf (OCS) Lands Act of 1953 to carry out the majority of the Act's provisions for administering the mineral leasing and development of offshore areas of the United States under federal jurisdiction. Within the Department, the Bureau of Land Management (BLM) has the responsibility to meet requirements of the National Environmental Policy Act of 1969 (NEPA) as well as other legislation and regulations dealing with the effects of offshore development. In Alaska, unique cultural differences and climatic conditions create a need for developing additional socioeconomic and environmental information to improve OCS decision making at all governmental levels. In fulfillment of its federal responsibilities and with an awareness of these additional information needs, the BLM has initiated several investigative programs, one of which is the Alaska OCS Socioeconomic Studies Program (SESP).

The Alaska OCS Socioeconomic Studies Program is a multi-year research effort which attempts to predict and evaluate the effects of Alaska OCS Petroleum Development upon the physical, social, and economic environments within the state. The overall methodology is divided into three broad research components. The first component identifies an alternative set of assumptions regarding the location, the nature, and the timing of future petroleum events and related activities. In this component, the program takes into account the particular needs of the petroleum industry and projects the human, technological, economic, and environmental offshore and onshore development requirements of the regional petroleum industry.

The second component focuses on data gathering that identifies those quantifiable and qualifiable facts by which OCS-induced changes can be assessed. The critical community and regional components are identified and evaluated. Current endogenous and exogenous sources of change and functional organization among different sectors of community and regional life are analyzed. Susceptible community relationships, values, activities, and processes also are included.

The third research component focuses on an evaluation of the changes that could occur due to the potential oil and gas development. Impact evaluation concentrates on an analysis of the impacts at the statewide, regional, and local level.

In general, program products are sequentially arranged in accordance with BLM's proposed OCS lease sale schedule, so that information is timely to decisionmaking. Reports are available through the National Technical Information Service, and the BLM has a limited number of copies available through the Alaska OCS Office. Inquiries for information should be directed to: Program Coordinator (COAR), Socioeconomic Studies Program, Alaska OCS Office, P. O. Box 1159, Anchorage, Alaska 99510.

Alaska OCS Socioeconomic Studies Program

LOWER COOK INLET
PETROLEUM DEVELOPMENT SCENARIOS
LOCAL SOCIOECONOMIC SYSTEMS ANALYSIS

Prepared for

Bureau of Land Management
Alaska Outer Continental Shelf Office

March 1980

NOTICE

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Alaska OCS Socioeconomic Studies Program
Lower Cook Inlet
Petroleum Development Scenarios
Local Socioeconomic Systems Analysis
Volume 1 of 2 Volumes

Prepared by
Alaska Consultants, Inc. for Peat, Marwick, Mitchell & Co.

March 1980

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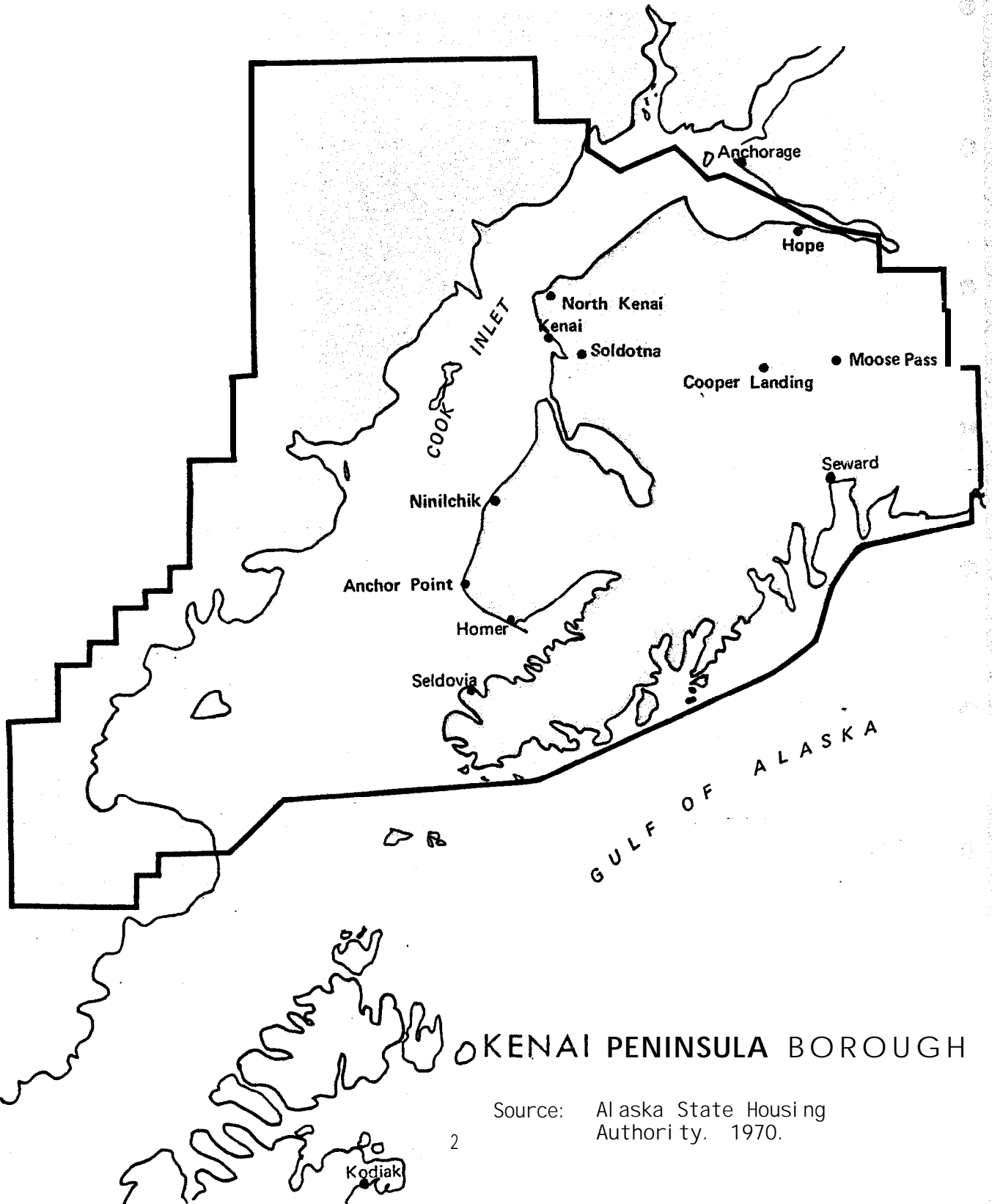
I N T R O D U C T I O N

This report is one in a series of integrated studies sponsored by the Alaska Outer Continental Shelf Office of the Bureau of Land Management to forecast and analyze potential impacts and changes likely to occur at the State, regional and community levels as a **result** of the proposed Lower Cook Inlet OCS Lease Sale Number 60 scheduled to be held in September **1981**. This particular report addresses the economic and community changes expected to occur in Kenai, **Soldotna** and Homer through the year 2000 under a base case without the proposed sale and for three petroleum development scenarios for OCS Sale Number 60.

Volume One of the report reviews existing population and economic conditions in the Kenai Peninsula Borough and the communities of Kenai, **Soldotna** and Homer (see Figure 1). For the communities, the report also presents an overview of land use patterns, land tenure and housing conditions; an outline of specified community facilities and utilities **serv**ces; and a review of local government powers and the financial **cond**ition of each locality. The information presented has been derived from a wide variety of sources, supplemented by informal interviews with persons in government and industry in each of the communities under study. Factual data in this report is current as of June 1979 unless otherwise noted.

The decision to restrict the detailed baseline analysis and the subsequent impact analysis to these particular communities was governed partly by

FIGURE 1



Source: Alaska State Housing Authority. 1970.

the location of the communities in relation to the petroleum development scenarios prepared by Dames and Moore in another study in this series and partly by an analysis of the **role** these and other Cook Inlet coastal communities have played in over two previous decades of oil and gas exploration and development in the Cook **Inlet** region. Presumably, historic decisions about industrial development and settlement patterns responded to the opportunities and constraints presented by the region's natural assets, location and labor market. Under similar circumstances, future decisions should tend to reinforce and not conflict with established patterns. The **Kenai-Nikiski** area and, to a lesser degree, **Soldotna** have grown rapidly in recent years as a consequence of oil and gas development in Cook **Inlet** and, to **all** appearances, **will** continue as the primary support areas for oil and gas activities in the **OCS** sector of Cook **Inlet**. Homer was mostly bypassed by earlier oil and gas activities. However, it is relatively nearer to the tracts leased in the October 1977 Lower Cook Inlet OCS sale and to the tracts proposed for OCS Sale Number 60. Thus, Homer has the potential to emerge as a forward support base for offshore industries, depending on the geography of exploration interest and the location of any commercial **oil** or gas funds pursuant to OCS Sale Number 60.

Volume Two of the report estimates potential impacts on population, employment, housing, selected community facilities and utilities and **fiscal** conditions for the communities for a base case without consideration of OCS **Sale** Number 60 and for several development scenarios for the **sale**. In order to assess the range of possible community impacts over

two decades, the scenario method was used to construct and compare four different growth cases.

To identify the significant community impacts of the different petroleum scenarios, this logical sequence of analyses was followed, proceeding from the baseline data previously presented:

- First, using techniques of economic base analysis and employment and population multipliers, local forecasts of future annual employment by economic sector and of future population were prepared for the base case and for each of three OCS petroleum development scenarios. These scenarios were prescribed by Dames and Moore, based on oil and gas reserve estimates supplied by the **U.S.** Geological Survey. The specific forecasts of **OCS-related** employment used in the present study, from which indirect employment and future population estimates were derived, were adopted directly from Dames and Moore's petroleum scenarios.
- Second, a set of uniform standards and assumptions was developed for forecasting. For a given population, future public service and facility requirements and local governmental revenues and expenditures to facilitate comparisons among the different communities and alternative scenarios projected.

KENAI PENINSULA BOROUGH

Population and Economy

POPULATION

Past Trends

Since 1960, the population of the **Kenai** Peninsula Borough has nearly tripled from **9,053** residents to about 25,335 in August 1978 (see Tables **1 and 2**). Most of this growth has occurred on the western portion of the Peninsula in the Kenai-Cook Inlet Census Division.

The Seward Census Division is a distinct economic and demographic subregion within the Borough. It is not closely linked to and has not benefited from oil and gas-related economic development in the **Kenai-Cook Inlet** region of the Borough, nor is it **likely** that the Seward area would be a significant participant in any economic or population growth stemming from further Cook **Inlet oil** and gas lease sales.

On the other hand, the Seward Census Division could experience impacts as a result of scheduled OCS oil and gas lease sales **in** both the Northern and Western Gulf of Alaska. The range of baseline topics and estimates of possible impacts which such OCS sales **could** have on Seward are outlined in the following reports prepared by Alaska Consultants, **Inc.** for the Alaska OCS Socioeconomic Studies Program Technical Report Number **32**,

TABLE 1
 POPULATION TRENDS
 KENAI PENINSULA BOROUGH AREA a/
 1960 - 1978

	<u>1960</u>	<u>1970</u>	<u>1978</u>	<u>Percent Change 1960-1978</u>
<u>Kenai-Cook Inlet Census</u>				
<u>Di vi si on</u>	<u>6,097</u>	<u>14,250</u>	<u>22,271</u>	<u>265.3</u>
Homer <u>b/</u>	1,247	1,083	2,054	64.7
Kenai <u>c/</u>	1,778	3,533	4,374	462.2
Seldovia	460	437	485	4.3
Soldotna <u>d/</u>	332	1,202	2,368	613.3
Remai nder	3,280	7,995	12,990	296.0
<u>Seward Census Di vi si on</u>				
Seward	<u>2,956</u>	<u>2,336</u>	<u>3,064</u>	3.7
	1,891	1,587	1,778	- 6.0
Remai nder	1,065	749	1,286	20.8
<u>TOTAL KENAI PENINSULA BOROUGH</u>	<u>9,053</u>	<u>16,586</u>	<u>25,335</u>	<u>179.9</u>

a/ Kenai Peninsula Borough incorporated January 1, 1964. Boundaries coincide with combination of Kenai-Cook Inlet and Seward Census Divi si ons.

b/ Homer incorporated as a city on March 18, 1964. The 1960 Census figure takes in a **larger** area than Homer's corporate **limits** which were estimated to include 800 people at the time of incorporation.

c/ Kenai incorporated as a city on May 10, 1960.

d/ Soldotna incorporated as a city in July 1967.

Sources: U.S. Department of Commerce. 1960. U.S. Census of Population: 1960, Number of Inhabitants, Alaska. Final Report **PC(1)-3A**. Washington, D.C., U.S. Government Printing Office.

U.S. Department of Commerce, Bureau of the Census. 1971. U.S. Census of Population: 1970, Number of Inhabitants, Final Report **PC(1)-A3**, Alaska. Washington, D.C., U.S. Government Printing Office.

Kenai Peninsula Borough, Growth Monitoring Program Advisory Committee. March 1979. Kenai Peninsula Borough: Special Census of the Population. Soldotna, March 1979. (Special Report Number 1).

TABLE 2
 CENSUS OF POPULATION
KENAI PENINSULA BOROUGH
 JULY, 1978

Census Precincts	Population
<u>Election District #9</u>	
C ity of Seward Precincts	1,778
B ear Creek Precinct	688
Cooper Landing Precinct	238
Moose Pass Precinct	268
Hope Precinct	92
Total Election District #9	<u>3,064</u>
<u>Election District #10</u>	
City of K enai Precincts	4,374
N ikiski Precinct No. 1	1,481
Ni ki ski Precinct No. 2	2,004
City of S oldotna Precinct	2,368
Ri dgeway Precinct	1,473
K alifonsky Precinct	1,707
T ustumena Precinct	881
Sterling Precinct.	1,384
N inilchik Precinct	470
Anchor Point Precinct	1,447
Fritz Creek Precinct	876
Diamond Ridge Precinct	433
City of Homer Precinct	2,054
Halibut Cove Precinct	85
S eldovia Precinct	584
English Bay Precinct	110
Port Graham Precinct	230
Tyonek Precinct	310
Total Election District #10	<u>22,271</u>
TOTAL KENAI PENINSULA BOROUGH	<u>25,335</u>

Source: Kenai Peninsula Borough, Growth Monitoring Program Advisory Committee. March 1979. Kenai Peninsula Borough: Special Census of the Population. Soldotna, March 1979. (Special Report Number 1).

Technical Report Number 33 and Technical Report Number 40. For the purposes of this report, however, discussion of the **Kenai** Peninsula Borough deals only with the Kenai-Cook Inlet Census Division.

The **Kenai-Cook** Inlet Census Division has maintained a rapid average rate of population increase since 1960, growing from 6,097 residents in 1960 to 14,250 in 1970 to 22,271 by **1978**. This is equivalent to a 265 percent increase in total population in less than two decades. In absolute terms, essentially all of the growth which has taken place in the **Kenai** Peninsula Borough since 1960 has occurred in the **Kenai-Cook Inlet** Census Division. The basic stimulus for this growth has been oil and gas development, both onshore and offshore, and the emergence of a diversified petrochemical industry in the **Nikiski** area of North **Kenai**.

Among the dozen or so settlements in the Kenai-Cook Inlet Census Division, the most rapid growth has occurred at settlements in the vicinity of intensive oil and gas-related industrial activity. For example, the City of **Kenai** grew by 462 percent from 778 residents in 1960 to 4,374 by **1978**; the City of **Soldotna** grew by 613 percent from 332 to 2,368.

Because the **Nikiski-North Kenai** area is unincorporated, there is unfortunately no historic population count for the district which has been the geographic center of the oil and gas industry in Cook Inlet. However, that area was virtually unsettled into the mid-1950's and so has grown from at best a few hundred residents in 1960 to about 3,485 in **1978**, counting the population of the two **Nikiski** precincts of Election District #10.

Additional population growth has **also** taken place in the remainder of the Census Division, **but** not at the spectacular rate of the communities which have grown in step with oil and gas development. **It** would appear that the **fishing** and fish processing industry and the tourism and recreational industries provided the economic impetus for most of the growth outside the Kenai-Nikiski-Soldotna concentration. Probably, too, some of the population growth in the unincorporated area within daily commuting distance of the **Nikiski** area is related to that employment center.

The City of Homer has exhibited a steady growth history. **At** the time of its incorporation in March **1964**, it claimed 800 residents. By 1970, its population reached **1,083**. This growth trend accelerated in the 1970's, most especially **in** recent years, and by 1978, Homer's population had risen to 2,054, a 65 percent increase over 1960.

Population Composition

Throughout most of urbanized **Southcentral** Alaska, the ethnic composition of the population has become increasingly white due to the immigration of large numbers of new white residents. This trend is readily apparent in the **Kenai-Cook** Inlet Census Division. In **1970**, according to the U.S. Census, the ethnic breakdown for the Census Division's total population of **14,250** persons was as follows: White - **13,047** persons or **91.6** percent; **Black** - **105** persons or 0.7 percent; and Indian and Others, a category which mainly made up of Alaska Natives, **1,098** persons or **7.7**

percent of the total population (see Table 3). For comparison, by 1978, the number of white residents had grown to 21,085 persons or 94.7 percent of the Census Division's total population, while the count of Alaska Natives and others rose slightly in number to **1,144** persons but declined in proportion to about 5.1 percent (see Table 4).

Most of the Census Division's Alaska Native population continues to reside at or near traditional settlements. Thus, the predominately Native traditional villages of Tyonek, Port Graham and English Bay account for a substantial share of the Census Division's Native population, as also do Kenai and **Seldovia** which were originally Native settlement sites.

Typical of Alaska as a whole, the sex composition of the Kenai-Cook **Inlet** Census Division is weighted in favor of males who made up 53.8 percent of its population in 1970 compared to 46.2 percent females. Between 1970 and 1978, the male share of the Census Division's population fell slightly to 53.2 percent, with the female share rising to **46.8** percent. For comparison, at the national level, females tend to be slightly more numerous (51 percent) than males (49 percent) (see Figure 2).

The age distribution of the **Kenai-Cook** Inlet Census Division's population in 1970 resembled fairly closely that of the State as a whole. In **1970**, the median age of males and females in **Kenai-Cook** was 24.4 and 22.2 years respectively, compared with 23.3 years for **males** and 22.2 years

TABLE 3

COMPOSITION OF POPULATION BY RACE AND SEX
KENAI-COOK INLET CENSUS DIVISION, ALASKA
 1970

<u>Race</u>	<u>Sex</u>			<u>Percent of Total</u>
	Male	Female	Total	
White	7,019	6,028	13,047	91.6
Negro	65	40	105	0.7
Indian	259	219	478	3.4
Other	325	295	620	4.3
<u>TOTAL</u>	<u>7,668</u>	<u>6,582</u>	<u>14,250</u>	<u>100.0</u>

Source: University of Alaska, Institute of Social, Economic and Government Research. September 1973. Age and Race by Sex Characteristics of Alaska's Village Population. *College*. (Alaska Review of Business and Economic Conditions. Vol. X, No. 2.)

TABLE 4

COMPOSITION OF POPULATION BY RACE AND SEX
KENAI-COOK INLET CENSUS DIVISION, ALASKA
 1978

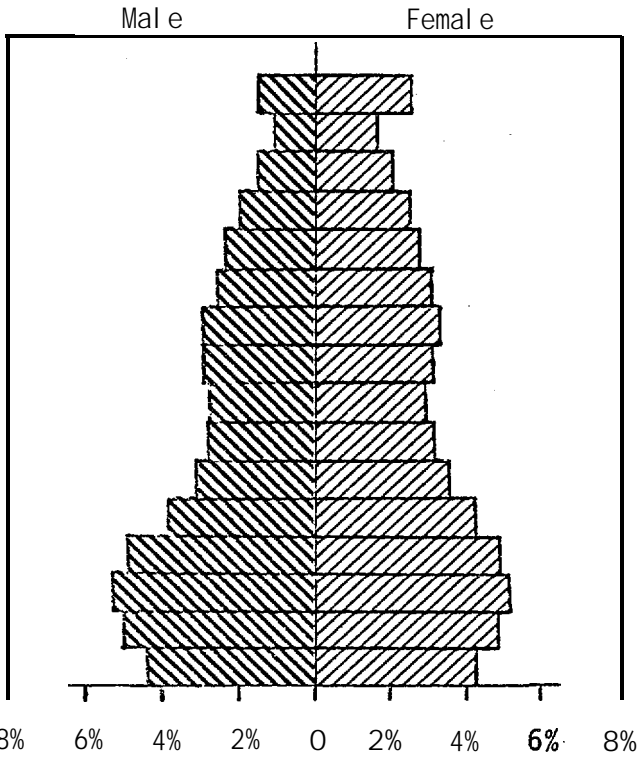
<u>Race</u>	<u>Sex</u>			<u>Percent of Total</u>
	Male	Female	Total	
White	11,255	9,828	21,083	94.7
Black	27	17	44	0.2
Other Races	563	581	1,144	5.1
<u>TOTAL</u>	<u>11,845</u>	<u>10,426</u>	<u>22,271</u>	<u>100.0</u>

Source: Kenai Peninsula Borough, Growth Monitoring Program Advisory Committee. March 1979. Kenai Peninsula Borough: Special Census of the Population. Soldotna, March 1979. (Special Report Number 1).

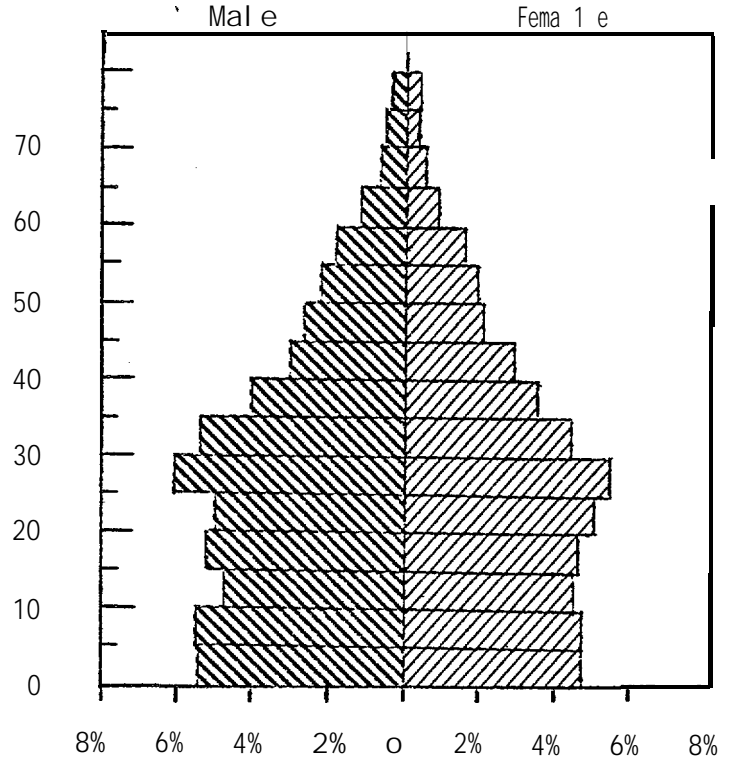
FIGURE 2

COMPOSITION OF POPULATION
KENAI - COOK INLET CENSUS DIVISION

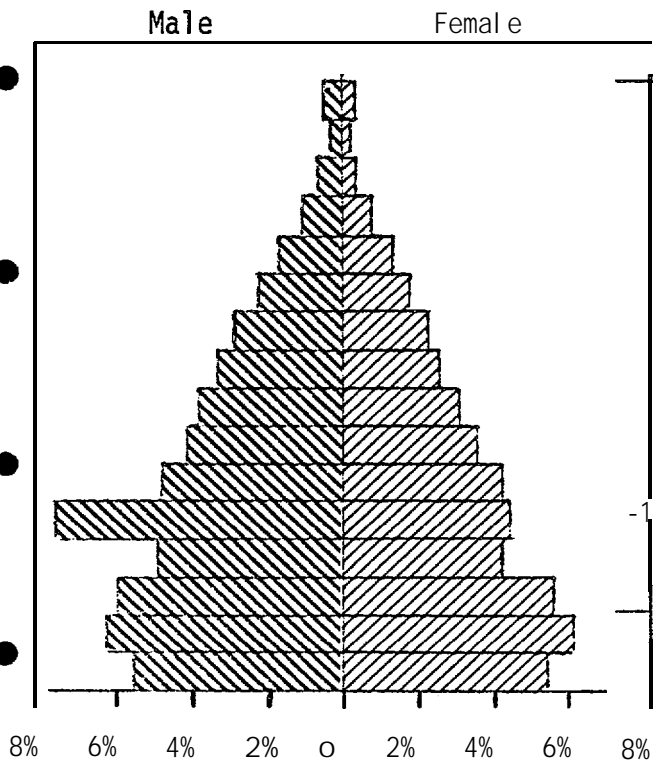
United States 1970



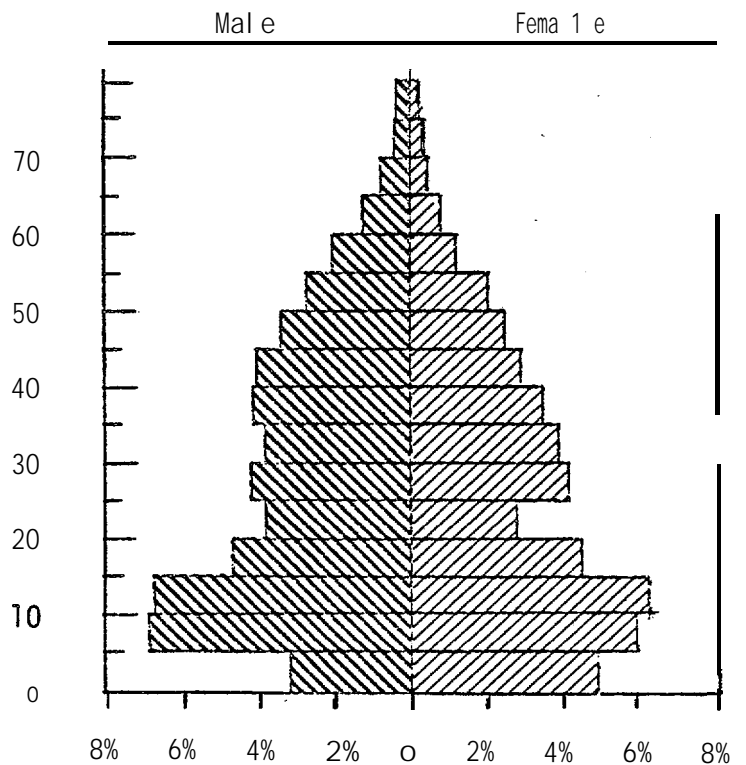
Kenai - Cook Inlet Census Division 1978



Alaska 1970



Kenai - Cook Inlet Census Division 1970



Source: U. S. Census Bureau, 1970 & 1978

for females Statewide. The proportion of persons aged 65 years or more accounted for an identical 2.2 percent of the total population for Kenai-Cook Inlet and for the State. This was well below the 1970 national average of about 9.8 percent of the population in the 65 years or older age group. At the other end of the age scale, the Kenai-Cook Inlet region had a slightly higher proportion (36.4 percent) of its population in the under 15 age group in 1970 than did the State (32.3 percent).

Since 1970, there has been some shift in the age composition of the Kenai-Cook Inlet population toward a higher proportion of older residents. According to the 1978 Special Census, the median age for males and females here rose to 26.0 and 24.9 years respectively. On the other hand, the proportion of residents aged 15 years and under declined to 29.3 percent, whereas the proportion of residents in the 20-34 age group climbed from 23.2 percent in 1970 to 30.9 percent by 1978. This trend suggests a pattern of heavy selective in-migration of young men and women into the Kenai-Cook Inlet region since 1970, most likely for purpose's of employment. This is consistent with the strong increase in job opportunities in the Kenai-Cook Inlet region since 1970.

Growth Prospects

The Kenai-Cook Inlet region appears to have the potential for solid growth in its basic economy which will sustain steady population increase.

In the past two decades, exploration and development of oil and gas resources, both **upland** and offshore, in the Cook Inlet Province have been the main stimulus for economic expansion. The extraction and transport of these energy resources has also supported the development of a diversified petrochemical industrial base in the Niki ski area. **While** the yield from existing oil and gas fields has peaked, there is reasonable hope of further discoveries from continuing exploration to supply the region's refineries, LNG plant, petrochemical plant and power production for a few decades. Both the federal and State governments are planning lease sales of additional offshore tracts in the Cook Inlet basin in the near future. Exploration of these tracts will generate employment in the oil service **industries**. If commercial finds are made, then development, production, processing and transport of oil and/or natural gas will continue to engage a sizable workforce for many years.

At present, two petrochemical projects are under consideration for the **Niki ski** area. Pacific-Alaska LNG is proposing an \$830 million LNG **plant** to liquefy natural gas for shipment to California markets. Final decision **to proceed** on the project awaits the obtaining of various permit approvals from federal and state governments and securing a sufficient long-term supply of natural gas in Cook Inlet. Also, the **Tesoro-Alaska** Refinery is planning a **lesser** project to **install** a hydrocracking unit at its refinery in 1980 or 1981 to broaden its product output. Each of these projects entails a major construction program and a lasting addition to the Niki ski region's manufacturing employment base.

A second sector of potential economic growth is the fishing and fish processing industry, particularly in **the** towns of Homer and **Seldovia**. There is at present intense State and **local** interest in the development of a **bottomfishery** based at Homer. **If** a bottomfish **industry** became established at Homer, it would **substantially** enhance and stabilize that community's economic base by providing more year-round employment.

Sport fishing, boating and other outdoor recreational attractions of the western **Kenai** Peninsula have become important economic assets, drawing thousands of visitors in season, mainly from the Anchorage area, to the Peninsula's beaches, streams and lakes. **In all** likelihood, the tourist and recreation industries in the **Kenai-Cook Inlet** region will grow in step with general population growth in the Anchorage area.

ECONOMY

The economic base of the Kenai-Cook Inlet Census Division of the **Kenai** Peninsula Borough is built primarily upon the oil and gas industry, fishing and fish processing, and the tourism and recreational industries. Over the past two decades, the expansion of these basic industries has greatly broadened the region's economic base, although the course of expansion has not been smooth. **In particular**, the **labor intensive** character of the construction of key industrial facilities has made the **Kenai-Nikiski** area prone to repeated boom-bust **cycles** through successive stages of economic expansion.

The best source of series data for economic and employment analyses for Alaska communities is the Alaska Department of Labor, Employment Security Division, which publishes monthly data on nonagricultural wage and salary employment by economic sector for every census division.

(Nonagricultural wage and salary employment is reported by place of work; self-employed workers, including many fishermen, are not included).

The Department of Labor also publishes monthly estimates of total employment and unemployment. Finally, the Department also compiles, but does not ordinarily publish, insured employment data (i.e. employment covered under the State Unemployment Insurance Law) by geographic subareas, usually adjacent cities and towns within census divisions. For this report, unpublished data were obtained for three critical subareas within the **Kenai-Cook** Inlet Census Division: the Kenai Labor Area, including the City of Kenai, and the surrounding areas of Nikishka, **Nikiski**, Red Mountain, Swanson River and **Wildwood** Station; the **Soldotna** Labor Area, including the City of **Soldotna**; and the Homer Labor Area which includes the cities of Homer and Kachemak and the unincorporated areas of Anchor Point, Diamond Ridge and Fritz **Creek**.

In use of Department of Labor employment data, two important caveats must be kept in mind: First, a significant part of the local **workforce** is self-employed and not included in the State's unemployment insurance program and is, therefore, not counted.

Second, insured employment is geographically assigned to census division and labor areas by the location of the reporting employer and not by the

location of the job or by residency of the employee. Thus, for example, **it** appears that all **Kenai** Peninsula Borough employees living and working in the Kenai-Cook Inlet Census Division and even those living and working in the Seward Census Division are reported as employed in the **Kenai-Cook** Inlet Census Division, more specifically, in the **Soldotna** Labor Area which contains the central administrative offices of the borough government. By the same token, offshore workers in upper Cook Inlet, many of whom live in the **Kenai** area, are allocated to the reporting area in which their employer's headquarters are located, which may be Anchorage or elsewhere in the **State**. The loss in local employment due to these reporting factors is suggested by the findings of a study conducted in 1976 by the Anchorage Urban Observatory for the **Kenai** Peninsula Borough. A **field** survey of a sample of the workforce found that, of employed adults resident in the City of **Kenai**, 65.7 percent worked in **Kenai**; 25.8 percent worked elsewhere in the Borough, and 8.4 percent worked outside the Borough altogether (see **Table 5**). For City of **Soldotna** residents, the comparable figures were 60.8 percent working in **Soldotna**, 30.8 percent elsewhere in the Borough and **7.7** percent working outside the Borough. **Thus**, a substantial number of local residents appear to be commuting or on rotation to jobs outside the region. Still, there are no data to indicate what portion of **local** jobs may be filled by residents from outside the region.

Between 1970 and 1977, Alaska Department of Labor nonagricultural wage and **salary** employment data indicate that employment in the **Kenai-Cook Inlet** Labor Area doubled from 3,640 to **7,332**. Within the **Kenai-Cook**

TABLE 5
 WORKPLACE LOCATION OF
 ALL EMPLOYED ADULTS
 CITIES OF **KENAI** AND **SOLDOTNA**
 1976

	Percent City of Kenai	Distri buti on City of Soldotna
Local ly	65.7	60.8
Wi thi n Kenai Borough	25.8	30.8
Outsi de, i n Anchorage	2.3	3.5
North Slope	2.8	--
Valdez	0.5	0.7
Other pi pel i ne	1.4	--
Other	1.4	3.5
<u>TOTAL</u>	<u>100.0</u>	<u>100.0</u>
N =	(213)	(143)

Source: Bureau of Management and Urban Affairs, and Anchorage Urban Observatory, University of Alaska. **1977**. Profile of Fi ve **Kenai** Peni nsul a Towns. Anchorage.

Inlet Labor Area, the Department of Labor collects insured employment data for local subareas, three of which (the Kenai Labor Area, the **Soldotna** Labor Area and the Homer Labor Area) are important for this baseline analysis.

Over recent years, the geographic distribution of employment in the region has become steadily more concentrated in the **Kenai-Nikiski** industrial area. In **1970**, about 1,723 jobs, or 47.3 percent of the region's total, were located in the Kenai Labor Area; by 1977, the corresponding figures were 4,150 jobs and 56.6 percent of the **total**. The Homer Labor Area's share of the region's total employment declined from 11.5 to 10.0 percent. The **Soldotna** Labor Area's share was reported by the Department of Labor **to have** grown from 10.3 to **13.1 percent**; however, it appears that **all** Kenai Peninsula Borough government employees, whether stationed at **Soldotna**, other localities in the **Kenai-Cook Inlet** Census Division or **in** the Seward Census Division, were tallied in the **Soldotna** area, a discrepancy which would materially overstate the total employment count in the **Soldotna** Labor Area. Significantly, by far the slowest rate of employment growth occurred in the residual area outside **Kenai-Nikiski**, Soldotna and Homer. That is to say, employment is becoming steadily more concentrated in the larger population centers. These three settlement areas together accounted for 2,514 jobs in **1970** or 69.1 percent of the Kenai-Cook Inlet Labor Area's total employment; by 1977, they accounted for 5,843 jobs or 79.7 percent of the **total** (see **Table 6**).

TABLE 6

GEOGRAPHIC DISTRIBUTION OF EMPLOYMENT
KENAI-COOK INLET LABOR AREA
1970 AND 1977

	1970		1977		Total Increase 1970 - 1977	
	Number Employed	%	Number Employed	%	Number Employed	%
Kenai Labor Area	1,723	47.3	4,150	56.6	2,427	65.8
Soldotna Labor Area	374	10.3	958	13.1	584	15.8
Homer Labor Area	417	11.5	735	10.0	318	8.6
Remaini ng Kenai-Cook Inlet Labor Area	1,126	30.9	1,489	20.3	363	9.8
<u>TOTAL</u>	<u>3,640</u>	<u>100.0</u>	<u>7,332</u>	<u>100.0</u>	<u>3,692</u>	<u>100.0</u>

Source: Alaska Department of Labor, Employment Security Division.
Unpublished insured employment data.

Composition of Employment

The composition of employment in the **Kenai-Cook** Inlet Census Division reflects the strong role that the **oil** and gas industry, petrochemicals, and fish processing play in the region's economic base. In 1977, the most recent year for which complete nonagricultural wage and salary employment data are available, about 721 jobs or 9.8 percent of the total were in mining, mostly in oil and gas extraction; and another 1,015 jobs or 13.8 percent were in the manufacturing sector (see Table 7). For comparison, mining provided only 3.0 percent of Statewide employment and manufacturing **only** 6.6 percent. Thus, the prominence of extractive and manufacturing activities lends a decidedly industrial quality to the **Kenai-Cook Inlet** region's economy which is uncharacteristic of most regions in the State.

The largest single economic sector in **1977** was contract construction, in which **1,808** jobs, or 24.7 percent of **total** nonagricultural wage and **salary** employment here were reported. However, 1977 set an all-time high for construction activity in the region as the Union Oil Company's Collier Carbon and Chemical Corporation's ammonia-urea plant, Alaska's first and largest petrochemical plant, undertook a major expansion program during this period. Other private and public construction activities were **also** abnormally **high**. As a result, the 1977 job **level** was not at **all** representative of historic or expected future levels of employment in the region's construction industry. For example, data for the first three quarters of 1978 show that average monthly employment in

TABLE 7
NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT DISTRIBUTION
KENAI-COOK INLET LABOR AREA
1970-1977

	1970		1971		1972		1973		1974		1975		1976		1977		1970 - 1977 % Change		
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%			
Mining	652	17.9	525	14.9	528	13.8	560	13.8	503	11.2	790	14.1	571	11.5	721	9.8	2.7	10.6	
Contract Construction	354	9.7	390	11.3	433	11.3	343	8.5	442	9.9	821	11.1	405	16.3	24.7	71.1	410.7	84.2	
Manufacturing	551	15.1	524	14.9	553	14.5	629	15.5	716	16.0	956	15.3	960	14.8	1,015	13.8	5.7	84.2	
Transportation, Communications and Public Utilities	293	8.0	254	7.2	200	7.3	296	7.3	404	9.0	519	9.3	549	8.5	562	7.7	0.2	91.8	
Trade	507	13.9	466	13.2	502	13.1	503	12.5	627	14.0	894	16.0	948	14.7	1,053	14.4	11.1	107.7	
Finance, Insurance and Real Estate	*/	*/	79	2.1	01	0.0	01	2.0	90	2.0	131	2.3	157	2.4	186	2.5	18.5	142.8	
Service	339	9.3	338	9.6	446	11.7	596	14.7	611	15.0	642	11.5	774	12.0	823	11.2	6.3	142.8	
Miscellaneous	*/	*/	55	1.4	90	2.2	90	2.2	89	2.0	131	2.3	157	2.4	186	2.5	18.5	142.8	
Government Federal State and Local	750 (119)	20.6 (3.3)	873 (123)	24.8 (3.5)	946 (85)	24.8 (2.2)	947 (80)	23.4 (2.0)	945 (82)	21.1 (1.8)	1,051 (83)	18.8 (1.5)	1,176 (83)	11.2 (1.2)	1,140 (77)	15.5 (1.1)	1,140 (77)	52.0 (35.3)	101.4
TOTAL	3,640	100.0	3,518	100.0	3,822	100.0	4,049	100.0	4,487	100.0	5,586	100.0	6,465	100.0	7,232	100.0	13.4	101.4	

*/ Employment figures withheld to comply with disclosure regulations.

Sources: Alaska Department of Labor, Employment Security Division, 1970-1977.
Jumanu. Alaska Labor Force Estimates by Area and Employment by Industry.

contract construction fell to 481 jobs or about one quarter of the previous year's average. This precipitous decline in construction employment upon completion of a major project is typical of the pattern of boom-bust **cycles** to which the region's economy has proven susceptible.

If allowance is made for the extraordinary share of jobs engaged in construction in 1977, the profile of the remaining sectors of the region's economy (trade; services, transportation, communications and public utilities, and finance, insurance and real estate) closely approximates the Statewide economy, with the noteworthy exception of government employment. Compared to the State as a whole, where government provided 29.7 percent of all jobs, only 15.5 percent of jobs in the **Kenai-Cook** Inlet region were in the public sector. This can be attributed **almost** wholly to the negligible number of federal employees who comprise only about 1.1 percent of employees in the region compared to 10.8 percent statewide.

From **1970** to 1977, it would appear that the overall structure of the region's economy has been relatively stable, despite the rapid pace of economic growth which **has** seen employment more than double in that time. Again making allowances for the unusual **role** of the construction sector in **1977**, some sectoral trends can be discerned. There has been a relative strengthening of the trade and service sectors as it became feasible to provide more goods and services locally. Government and mining employment, on the other hand, have diminished in importance, growing more **slowly** than the other sectors of the region's economy. Finally, manufacturing

and transportation, communications and public utilities maintained a constant share of employment through the 1970's.

Unemployment and Seasonality of Employment

Historically, the **Kenai-Cook** Inlet Labor Area has experienced a high unemployment rate, generally about 50 percent higher than the Statewide rate which, in turn, is usually one of the highest in the nation. Over the 1970-1976 period, according to the Alaska Department of Labor's "unofficial" unadjusted employment data, the **Kenai-Cook** Inlet region's average annual unemployment rate has ranged between 13.5 percent and 17.3 percent, despite the rapid economic and employment expansion which took place during those years. During the same period, the highest Statewide unemployment rate was 10.8 percent in **1973** (see Tables 8 and 9).

The **Kenai-Cook** Inlet region has also exhibited large seasonal swings in **employment** levels and in its unemployment rates (see Figures 3 and 4). The number of employees rises to a seasonal peak and the unemployment rate bottoms out in mid-summer. Then, this relationship reverses itself in late fall and winter. An examination of employment data since 1970 shows that the **Kenai-Cook** Inlet region is subject to much wider seasonal fluctuations in employment levels than the State as a whole. Related data show that over the course of a typical year, the regional unemployment rate during the high month is often double or more the rate during the low month. Again, this is a more pronounced seasonal swing than is experienced Statewide.

TABLE 8

TOTAL CIVILIAN UNEMPLOYMENT RATES a/
STATE OF ALASKA AND KENAI-COOK INLET LABOR AREA
1970 - 1976

Year	Percent Unemployment					
	State of Alaska			Kenai-Cook Inlet Labor Area		
	Annual Average	High Month	Low Month	Annual Average	High Month	Low Month
1970	9.0	11.6	6.4	15.4	18.6	11.2
1971	10.4	14.5	7.1	17.3	24.8	11.8
1972	10.5	14.7	8.0	15.8	20.5	10.0
1973	10.8	13.2	8.2	16.0	20.1	11.8
1974	10.0	14.0	6.7	15.7	23.7	9.6
1975	8.3	11.2	6.0	13.5	19.2	9.9
1976	10.5	12.8	8.4	16.1	21.0	11.6

a/ Since 1974, the Alaska Department of Labor has published two sets of employment data. Beginning 1974, the "official" figures are adjusted to conform with uniform federal reporting standards. However, for the sake of valid trend analysis, the above table reports unadjusted employment data compiled consistent with the earlier methodology.

Source: Alaska Department of Labor, Employment Security Division. 1970-1976. Alaska Labor Force Estimates by Area and Employment by Industry. Juneau.

TABLE 9
 TOTAL CIVILIAN EMPLOYMENT AND UNEMPLOYMENT a/
 KENAI-COOK INLET LABOR AREA
 1970 - 1976

<u>Year</u>	<u>Total Civilian Resident Labor Force</u>	<u>Total Employment b/</u>	<u>Total Unemployment</u>	<u>Percent Unemployment</u>
1970	5,200	4,399	801	15.4
1971	5,131	4,244	887	17.3
1972	5,452	4,589	863	15.8
1973	5,748	4,831	917	16.0
1974	6,179	5,375	970	15.7
1975	7,686	6,652	1,034	13.5
1976	9,168	7,694	1,474	16.1

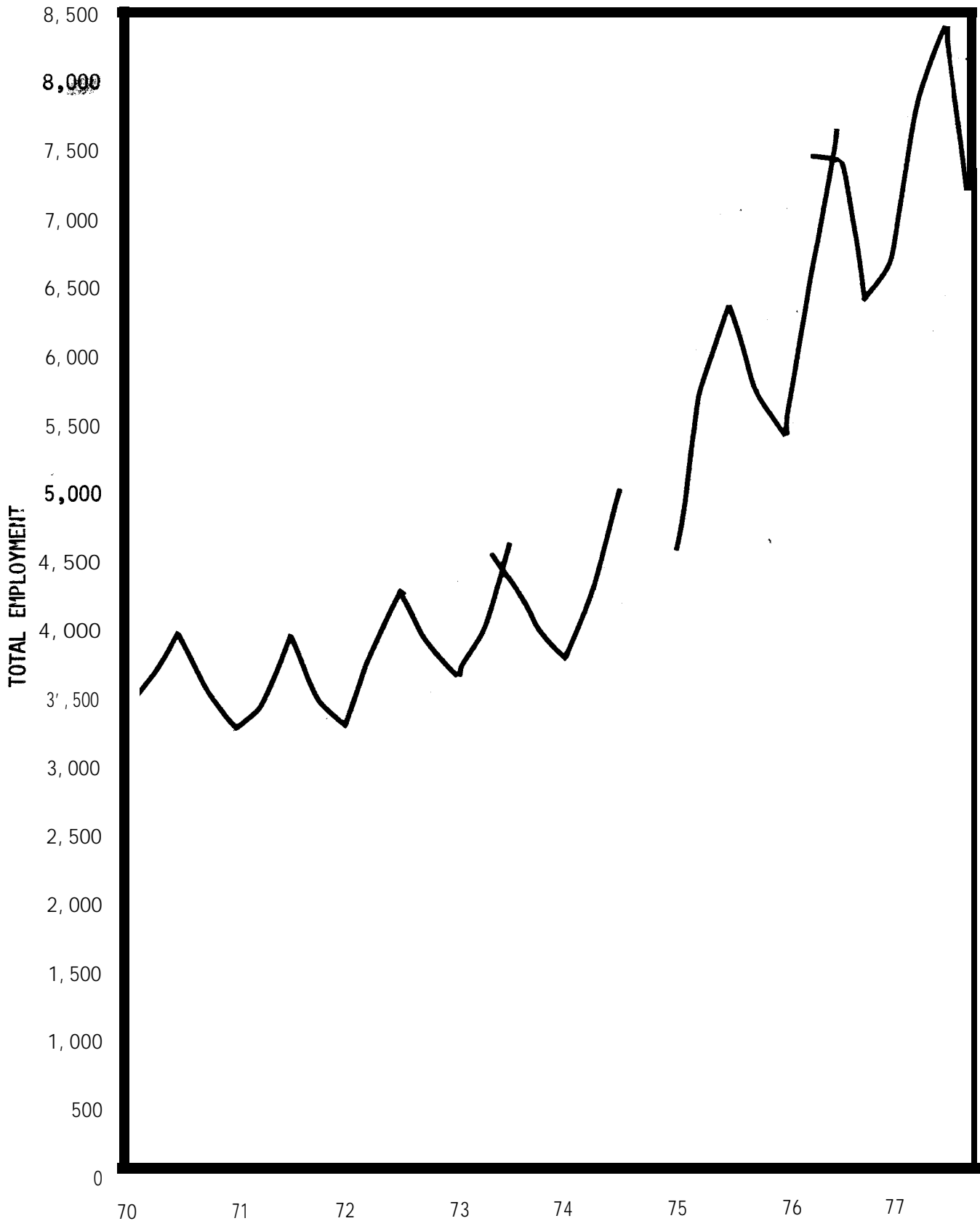
a/ Since 1974, the Alaska Department of Labor has published two sets of total employment data. Beginning 1974, the "official" figures are adjusted to conform with uniform federal reporting standards. However, for the sake of valid trend analysis, the above table reports unadjusted employment data compiled consistent with the earlier methodology.

b/ Total employment includes fishermen, self-employed persons and others not included in nonagricultural wage and salary employment.

Source: Alaska Department of Labor, Employment Security Division. 1970-1976. Alaska Labor Force Estimates by Area and Employment by Industry. Juneau.

FIGURE 3

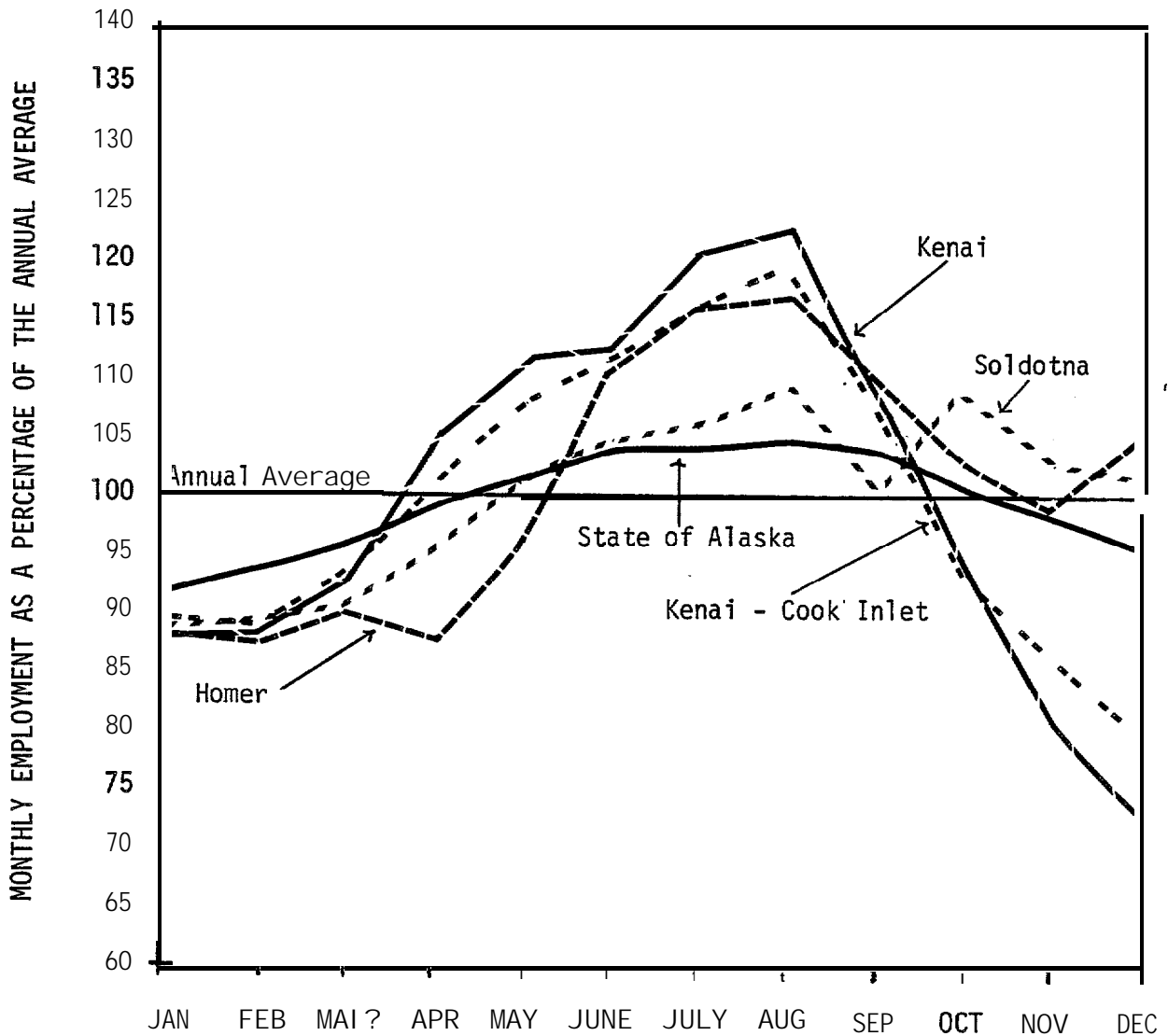
TOTAL NONAGRICULTURAL WAGE & SALARY EMPLOYMENT BY QUARTER
KENAI - COOK INLET DIVISION
1970- 1977



Source: Alaska Department of Labor. **Alaska** Labor Force Estimates by Area and Employment by Industry. Annual Report.

FIGURE 4

SEASONALITY OF EMPLOYMENT
KENAI - COOK INLET CENSUS DIVISION AND
KENAI, HOMER AND SOLDOTNA LABOR AREAS
1977



Source: Alaska Department of Labor, Employment Security Division.
1978. Statistical Quarterly.

Paradoxically, it appears that the region's long-term high unemployment rates and the extreme seasonal oscillations in employment are caused by the region's rapid economic growth. First and foremost, since population and labor force growth has greatly outpaced the rate of natural population **increase, it** can be inferred that the region's new job opportunities have drawn job hunters to the region **well** in excess of available employment. Beyond that, the cyclic character of the region's economic expansion, particularly in the construction projects sponsored by the petrochemical industry, has also tended to accentuate employment fluctuations. The **Kenai-Cook Inlet** region has seen a series of major industrial facility improvements, engaging large construction **workforces**. For the duration of the construction project (which itself tends to follow a seasonal cycle), direct employment is high, boosting the **local** secondary economy, especially trade and service employment. **However,** as the construction stage phases into plant operation, construction payrolls shrink, though this may be offset to some degree by a lesser expansion in plant workforce. However, this change in the mix of local jobs has implications for unemployment rates. The plant operation jobs demand occupation skills that do not match closely the job **skills** and preferences of the unemployed construction **workforce** and thus do not **well** serve to offset the loss in construction jobs. The persistent high unemployment in the **Kenai-Cook Inlet** region, despite its strong and growing basic economy, suggests that newcomers attracted to the region's **workforce** during good times are, as a group, slow to react to declining employment opportunities with such traditional responses as migration to more promising labor markets. This is indicated by the persistent rise in unemployment and

unemployment rates in the **Kenai** region after 1977. As shown in Table 10, the unemployment rate in the Kenai region climbed from 9.8 percent in 1977, to 14.9 percent in 1978, to 15.0 percent for the first five months of 1979. (It **should** be noted that these are "official" figures and are not directly comparable with the data for earlier years presented in Tables 8 and 9 which was compiled by a different methodology).

Another component of the region's basic economy contributing to **long-term** and seasonal variations in employment levels is the fishing and fish processing industry. For example, corresponding with seasonal fluctuations in the fisheries harvest, 1977 monthly employment in food processing, mainly fish processing, ranged from a summer high of 1,118 employees to an off-season low of 109 employees, **with** an annual average of 406 employees (see Table 11). As the seasonal cycle for fishing and fish processing **activities coincides** rather closely with the cycle of construction industry employment and also the cycle of dependent secondary economic activities, the cumulative effect is an exaggerated pattern of **seasonality** of local employment.

Recent Trends and Changes

The years from 1970 through 1977 cover a period of rapid economic expansion in the **Kenai-Cook** Inlet region as employment more than doubled from 3,640 jobs in 1970 to 7,332 jobs by 1977. Associated with this expansion were certain significant economic trends, some of which have already been noted.

TABLE 10
 TOTAL CIVILIAN EMPLOYMENT AND UNEMPLOYMENT a/
 KENAI-COOK INLET LABOR AREA
 1975 - 1979

<u>Year</u>	<u>Total Civilian Resident Labor Force</u>	<u>Total Employment b/</u>	<u>Total Unemployment</u>	<u>Percent Unemployment</u>
1975	8,701	7,948	753	8.7
1976	11,107	10,113	994	8.9
1977	10,236	9,229	1,007	9.8
1978	9,996	8,504	1,492	14.9
1979 <u>c/</u>	9,883	8,404	1,479	15.0

a/ The source for this table is the "official" employment data series published by the Alaska Department of Labor according to federally prescribed uniform national standards. Due to methodological differences, this data does not agree with the "unofficial" data series presented in Table 9. However, only "official" data is available on a consistent basis for portraying recent employment trends.

b/ Total employment includes fishermen, self-employed persons and others not included in "wage and salary" employment.

c/ Average for first five months of 1979 only.

Source: Alaska Department of Labor, Employment Security Division. 1970-1976. Alaska Labor Force Estimates by Area and Employment by Industry. Juneau. Also, unpublished data for 1978-1979.

TABLE 11

MONTHLY EMPLOYMENT IN FOOD PROCESSING INDUSTRIES
KENAI-COOK INLET CENSUS DIVISION
 1977

<u>Month</u>	<u>Employment.</u>
January	177
February	151
March	169
April	321
May	399
June	441
July	1,118
August	1,075
September	599
October	111
November	109
December	201

Average Annual : 406

Source: Alaska Department of Labor.

Geographically, employment has become steadily more concentrated in the **Kenai-Nikiski** area which alone accounts for 65.8 percent of the region's additional employment since **1970**. This increasing concentration is primarily attributable to the expansion and **diversification** of the petrochemical industrial base in the **Nikiski** industrial complex.

Related **to** the extremely capital intensive nature of the Nikiski industrial plants is the strong **cyclic** pattern which has characterized the region's economy for the past two decades. Typically, job growth has not occurred at an even pace. Instead, new plant construction or expansion usually results in a brief, furious construction boom and then a retrenchment to a **new average employment level**, well below the boom peak but somewhat above previous average levels.

This exaggerated expansion-contraction cycle and the high job turnover it causes is probably an important factor in the high unemployment rate which has afflicted the region, without regard for permanent employment **gains**. Thus, in 1978, the unemployment rate was substantially higher than in 1970.

The gains of economic growth have not greatly moderated the long-term or seasonal fluctuations in economic activity levels which prevailed decades ago when commercial fishing was the region's main economic base.

Instead, growth in the **stable** core of permanent employment has been offset by the erratic course of the construction industry and related secondary economic activities, with the net result that the region's

economy is still routinely subject to notable year-to-year and seasonal swings in employment.

Consistent with the above analysis, it would appear that the overall **sectoral** emphases of the region's economy have been relatively unchanged since 1970, despite rapid growth in scale. Making allowance for the atypical prominence of the construction sector in 1977, some weak trends can be discerned through comparison of that year's employment structure with the 1970 baseline. There has been a relative strengthening of the trade and service sectors, presumably because it has become advantageous to supply more goods and services locally. On the other hand, public sector and mining employment have diminished in relative importance, growing more slowly than the other sectors of the region's economy. The sectors of manufacturing and of transportation, communications and **public** utilities have maintained a fairly constant share of employment through the decade.

Within the more recent frame of reference 1977-78, spanning the construction of the addition to the Union Oil Company petrochemical **plant**, available economic data reveals a sharp recessionary trend. This trend is evident in the parallel movements of employment levels and payrolls. In the six months between the third quarter peak of 1977 and the first quarter of 1978, employment declined by 31 percent from 8,370 jobs to 5,789. As might be expected, the bulk of this decline took place in the construction sector which fell from 2,243 jobs to 364, a decline of 84 percent. In the same period, total payrolls shrunk by 36

TABLE 12

NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT DISTRIBUTION
KENAI-COOK INLET LABOR AREA
FIRST THREE QUARTERS, 1978

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>Average Three Quarters</u>
Mining	742	711	771	918	928	867	804	780	782	811
Contract Construction	389	344	358	431	480	558	584	629	560	481
Manufacturing	580	624	663	823	1,021	1,443	1,405	1,824	1,307	1,077
Transportation, Communications and Public Utilities	556	572	578	507	586	590	570	598	590	572
Trade	1,010	1,037	1,024	1,122	1,175	1,255	1,416	1,410	1,265	1,190
Finance, Insurance and Real Estate	179	165	164	193	192	194	225	208	217	193
Service	767	793	790	865	886	961	863	863	890	853
Miscellaneous	*/	*/	*/	*/	*/	*/	103	56	50	*/
Government	1,432	1,495	1,509	1,514	1,493	1,289	868	925	1,523	1,338
Federal	(80)	(83)	(84)	(84)	(92)	(87)	(92)	(91)	(94)	(87)
State and Local	(1,352)	(1,412)	(1,425)	(1,430)	(1,401)	(1,202)	(776)	(834)	(1,429)	(1,25?)
<u>TOTAL</u>	<u>5,689</u>	<u>5,778</u>	<u>5,900</u>	<u>6,432</u>	<u>6,813</u>	<u>7,214</u>	<u>6,837</u>	<u>7,293</u>	<u>7,184</u>	<u>6,571</u>

*/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. 1978. Statistical Quarterly. Juneau.

percent from \$49,302,000 in the third quarter of 1977 to \$31,566,000 in the first quarter of 1978 (see Table 13). Again, the construction sector stands out with a stunning loss of 82 percent of its share of the region's payroll from \$19,126,000 in the third quarter of 1977 to \$2,255,000 in early 1978. It should be noted that the apparent rise in public sector, specifically local government, payrolls over this time may largely be spurious due to a change in the method of reporting of State and local government employment data.

Occupational Skills

In general, the occupational **skills** of the Kenai-Cook Inlet labor area may be expected to reflect the dependence of the region's basic economy on oil and gas related industries and the fish processing and construction industries. The 1970 Census is still the most comprehensive statistical survey of the occupational characteristics of the region's labor force compared to other areas of the State. The Statewide economy has grown and changed in fundamental ways since 1970, most obviously due to the **trans-Alaska** oil pipeline project. The Kenai region, however, was relatively unaffected by the pipeline project compared to **Southcentral**, Interior and Northern Alaska. The Kenai region's economy grew in scale but, as was noted previously, appears to have changed little in its basic structure. Thus, though dated, the 1970 occupational data are assumed to still describe with reasonable accuracy the occupational skills of the **Kenai** region's **labor** force.

TABLE 13

TOTAL PAYROLL BY INDUSTRY SECTOR
KENAI-COOK INLET DIVISION
1975 - 1978
(in \$1,000s)

	1975				1976				1977				1978	
	1st Qr	2nd Qr	3rd Qr	4th Qr	1st Qr	2nd Qr	3rd Qr	4th Qr	1st Qr	2nd Qr	3rd Qr	4th Qr	1st Qr	2nd Qr
TOTAL NONAGRICULTURAL INDUSTRIES	\$19,711	\$26,138	\$28,410	\$27,184	\$26,599	\$25,279	\$38,495	\$38,014	\$38,942	\$46,465	\$49,302	\$36,754	\$31,566	\$35,674
Agriculture, Forestry & Fisheries	\$ 149	\$ 279	\$ 388	\$ 582	\$ 247	\$ 486	\$ 776	*/	*/	\$ 6	\$ 3	\$ 2	*/	*/
Mining	\$4,500	\$6,121	\$6,059	\$5,502	\$5,749	\$5,675	\$5,393	\$6,455	\$4,876	\$5,742	\$5,865	\$6,209	\$6,019	\$7,277
Construction	\$2,340	\$4,485	\$5,354	\$4,440	\$3,441	\$6,338	\$10,022	\$10,723	\$13,079	\$18,993	\$19,126	\$8,911	\$2,255	\$2,723
Manufacturing	\$2,313	\$3,284	\$4,372	\$2,976	\$2,929	\$4,087	\$6,488	\$4,108	\$3,701	\$5,218	\$7,004	\$4,410	\$3,825	\$5,279
Transportation, Communications & Public Utilities	\$2,868	\$3,492	\$3,249	\$3,413	\$3,769	\$3,839	\$3,919	\$3,709	\$4,322	\$3,872	\$4,384	\$4,015	\$5,525	\$4,690
Wholesale Trade	\$ 754	\$1,052	\$1,230	\$1,462	\$1,290	\$1,502	\$1,435	\$1,616	\$1,395	\$1,589	\$1,316	\$1,328	\$1,330	\$1,345
Retail Trade	\$1,295	\$1,501	\$1,734	\$1,735	\$1,617	\$1,787	\$2,060	\$2,070	\$1,929	\$2,071	\$2,464	\$2,545	\$2,336	\$2,607
Finance, Insurance & Real Estate	\$ 291	\$ 306	\$ 343	\$ 416	\$ 379	\$ 416	\$ 483	\$ 582	\$ 593	\$ 606	\$ 665	\$ 772	\$ 621	\$ 649
Services	\$1,669	\$1,913	\$2,739	\$2,565	\$2,543	\$3,061	\$3,433	\$3,246	\$4,010	\$3,341	\$3,643	\$3,423	\$3,143	\$3,527
Government	\$3,532	\$3,692	\$3,543	\$4,288	\$4,631	\$4,806	\$4,459	\$4,829	\$4,817	\$4,969	\$4,723	\$5,105	\$6,394	\$7,421
Federal	(341)	(325)	(338)	(313)	(313)	(387)	(353)	(430)	(352)	(394)	(377)	(428)	(410)	(439)
State	(655)	(843)	(1,003)	(987)	(1,027)	(1,184)	(1,438)	(1,219)	(1,288)	(1,374)	(1,526)	(1,443)	(1,481)	(1,632)
Local	(2,536)	(2,524)	(2,202)	(2,917)	(3,291)	(3,235)	(2,668)	(3,179)	(3,177)	(3,201)	(2,820)	(3,234)	(4,500)	(5,350)
Nonclassifiable Establishments.	--	--	--	*/	4	11	29	*/	*/	1	1	*/	*/	*/

*/ Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. 1975-1978. Statistical Quarterly. Juneau.

According to the occupational groups used by the U.S. Census Bureau, as of 1970 the Kenai-Cook Inlet Census Division's employed labor force included a significantly larger percentage of operatives (19.7 percent); craftsmen, foremen and kindred workers (**18.1 percent**) and managers (1.3.5. . percent) than the State's workforce as a whole (see Table 14). These three occupational groups accounted for better than half of **Kenai-Cook Inlet's** workforce, which would be consistent with the prominence of the oil and gas, fish processing and construction industries at that time. On the other hand, the groups of clerical and sales workers (16.9 percent); professional, technical and kindred workers (**13.5 percent**) and service workers (11.3 percent) were relatively under-represented in **Kenai-Cook Inlet's workforce**. In view of the fact that the service and trade sectors of the region's economy have exhibited above average employment growth between 1970-1977, it is plausible that the categories of service and clerical and sales workers may have enlarged their share of the total workforce during that period.

Income Levels

Kenai-Cook Inlet region residents appear to be better off economically than residents of most other areas of the State. U.S. Census data show that the mean household income in **Kenai-Cook** Inlet was \$14,150 in 1969 compared with \$13,856 for the State as a whole.

More recent payroll data from the Alaska Department of Labor suggest that the income gap between Kenai-Cook Inlet and Statewide averages may

T A B L E 14
 OCCUPATION OF EMPLOYED PERSONS
 KENAI-COOK INLET CENSUS DIVISION
 AND STATE OF ALASKA
 1970

Occupation	Kenai-Cook Number	Inlet %	State of Alaska Number	%
Professional, technical and kindred workers	574	13.5	17,373	19.5
Managers and administrators	573	13.5	10,291	11.5
Sales and clerical workers	717	16.9	21,643	24.3
Craftsmen, foremen and kindred workers	770	18.1	13,437	15.1
Operatives	837	19.7	8,239	9.2
Laborers	280	6.6	5,233	5.9
Farmers	15	0.4	134	0.2
Service workers	479	11.3	12,886	14.4
<u>TOTAL</u>	<u>4,245</u>	<u>100.0</u>	<u>89,236</u>	<u>100.0</u>

Source: U.S. Department of Commerce, Bureau of the Census. 1971.
 U.S. Census of Population: 1970, General Social and Economic
 Characteristics, Final Report. PC(1)-C3, Alaska. Washington,
 D.C. U.S. Government Printing Office.

have widened. In 1977, the average monthly wage for covered employees in Kenai-Cook Inlet was \$1,949, compared with \$1,781 for all employees in the State. **Kenai-Cook** Inlet ranked sixth among 29 Census Divisions in average monthly wage, exceeded only by those **census divisions whose** work forces were heavily engaged in high-wage pipeline project jobs. The relatively high wages in **Kenai-Cook** Inlet can be attributed in part to the strong position in the region's economy of the well-paid construction and mining sectors, with a smaller proportion of jobs in the less well-paying sectors.

In 1977, the construction and mining sectors had the highest average annual payroll per employee, \$33,246 and \$31,429 respectively followed by \$29,525 per employee for the transportation, communications and public utilities sector (see Table 15). The average wage level in other economic sectors lagged far behind, ranging from \$19,589 in manufacturing down to \$13,899 in trade. For total nonagricultural wage and salary employment, the average annual wage was \$23,386 for **Kenai-Cook** Inlet and \$21,373 for the whole State, a difference of 9.4 percent in favor of **Kenai-Cook** Inlet.

SECTOR ANALYSIS

The Cook Inlet commercial fishery can be dated back to the late 1800s and for many years fishing was the chief basic industry for the small coastal towns of the western Kenai Peninsula. That changed after the mid-1950's. First the completion of the Sterling Highway opened the

TABLE 15
 PAYROLLS FOR COVERED NONAGRICULTURAL
 WAGE AND SALARY EMPLOYMENT
 KENAI-COOK INLET DIVISION
 1977

	Total Payroll (\$1,000s)	Average Employment	Average Annual Payroll per Employee (\$1,000s)
Min ing	\$22,692	722	\$31,429
Constructi on	60,109	1,808	33,246
Manufacture ng	20,333	1,038	19,589
Transportati on, Communi cation, Public Utilities	16,593	562	29,525
Trade	14,637	1,053	13,899
Fi nance, Insurance, Real Estate	2,636	186	14,177
Servi ces	14,417	823	17,519
Mi scel laneous	*/	*/	*/
Government	19,615	1,140	17,206
<u>TOTAL</u>	<u>\$171,463</u>	<u>7,332</u>	<u>\$ 23,386 a/</u>

a/ Average annual payroll.

*/ Data withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Statistical Quarterly.

TABLE 16
 AVERAGE MONTHLY WAGE BY INDUSTRY SECTOR
 KENAI-COOK INLET DIVISION
 1975 - 1978

INDUSTRIES	1975				1976				1977				1978	
	1st Qr	2nd Qr	3rd Qr	4th Qr	1st Qr	2nd Qr	3rd Qr	4th Qr	1st Qr	2nd Qr	3rd Qr	4th Qr	1st Qr	2nd Qr
TOTAL NONAGRICULTURAL INDUSTRIES	\$1,434	\$1,521	\$1,489	\$1,599	\$1,651	\$1,639	\$1,687	\$1,988	\$1,950	\$1,970	\$1,963	\$1,903	\$1,818	\$1,744
Agriculture, Forestry & Fisheries	\$1,039	\$1,152	\$1,187	\$2,320	\$1,142	\$1,156	\$1,901	*/	*/	\$1,696	*/	*/	*/	*/
Mining	\$2,131	\$2,315	\$2,417	\$2,482	\$2,790	\$2,617	\$2,607	\$2,440	\$2,636	\$2,660	\$2,726	\$2,706	\$2,682	\$2,682
Construction	\$2,000	\$2,172	\$2,327	\$2,317	\$2,180	\$2,176	\$2,440	\$2,621	\$2,992	\$2,705	\$2,841	\$2,495	\$2,067	\$1,853
Manufacturing	\$1,513	\$1,099	\$1,091	\$1,283	\$1,978	\$1,432	\$1,370	\$2,105	\$1,646	\$1,705	\$1,447	\$2,172	\$2,048	\$1,606
Transportation, Communications & Public Utilities	\$1,911	\$2,212	\$2,160	\$2,067	\$2,284	\$2,312	\$2,366	\$2,287	\$2,376	\$2,311	\$2,674	\$2,490	\$3,238	\$2,786
Wholesale Trade	\$1,319	\$1,165	\$1,918	\$1,921	\$2,002	\$2,186	\$2,088	\$2,537	\$1,969	\$2,276	\$2,059	\$2,231	\$2,062	\$1,970
Retail Trade	\$746	\$751	\$753	\$779	\$828	\$789	\$841	\$1,007	\$879	\$836	\$906	\$954	\$967	\$908
Finance, Insurance & Real Estate	\$822	\$831	\$839	\$936	\$917	\$944	\$888	\$1,212	\$1,106	\$1,094	\$1,166	\$1,348	\$1,222	\$1,121
Services	\$996	\$921	\$1,032	\$1,236	\$1,252	\$1,281	\$1,315	\$1,718	\$1,656	\$1,419	\$1,494	\$1,337	\$1,300	\$1,300
Government	\$1,153	\$1,159	\$1,177	\$1,292	\$1,292	\$1,290	\$1,309	\$1,421	\$1,365	\$1,392	\$1,448	\$1,541	\$1,441	\$1,739
Federal	(1,395)	(1,309)	(1,310)	(1,541)	(1,383)	(1,530)	(1,348)	(1,726)	(1,333)	(1,539)	(1,527)	(1,658)	(1,668)	(1,668)
State	(1,334)	(1,368)	(1,180)	(1,343)	(1,330)	(1,383)	(1,431)	(1,694)	(1,619)	(1,610)	(1,738)	(1,779)	(1,810)	(1,810)
Local	(1,089)	(1,087)	(1,158)	(1,249)	(1,273)	(1,237)	(1,247)	(1,308)	(1,268)	(1,269)	(1,309)	(1,452)	(1,341)	(1,693)
Nonclassifiable Establishments	--	--	--	*/	\$1,088	\$791	\$1,020	*/	*/	\$521	\$997	*/	*/	*/

*/ Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division, 1975-1977. Statistical Quarterly. Juneau.

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area's varied recreational assets to **Anchorage** area residents. Then, the discovery of commercial oil and gas resources in the Cook Inlet Basin transformed the **Kenai-Nikiski** area into the center of a major oil and gas producing and processing industry.

As the process of economic diversification progressed, a definite geographic differentiation in economic functions among the main towns in the western peninsula has evolved. The City of Kenai and its neighboring **Nikiski-North Kenai** area have become the heart of oil and gas related industries and a center of trade and commerce for the western peninsula. **Soldotna**, the seat of the Kenai **Peninsula** Borough, has become the center for government and educational **services**, as well as a bedroom community for other employment centers **within** commuting distance. In the Lower Cook **Inlet** area, Homer and **Seldovia** have remained strongly tied to the fishing industry, with Homer also becoming a **popular** destination for recreational visitors and tourists.

Oil and Gas

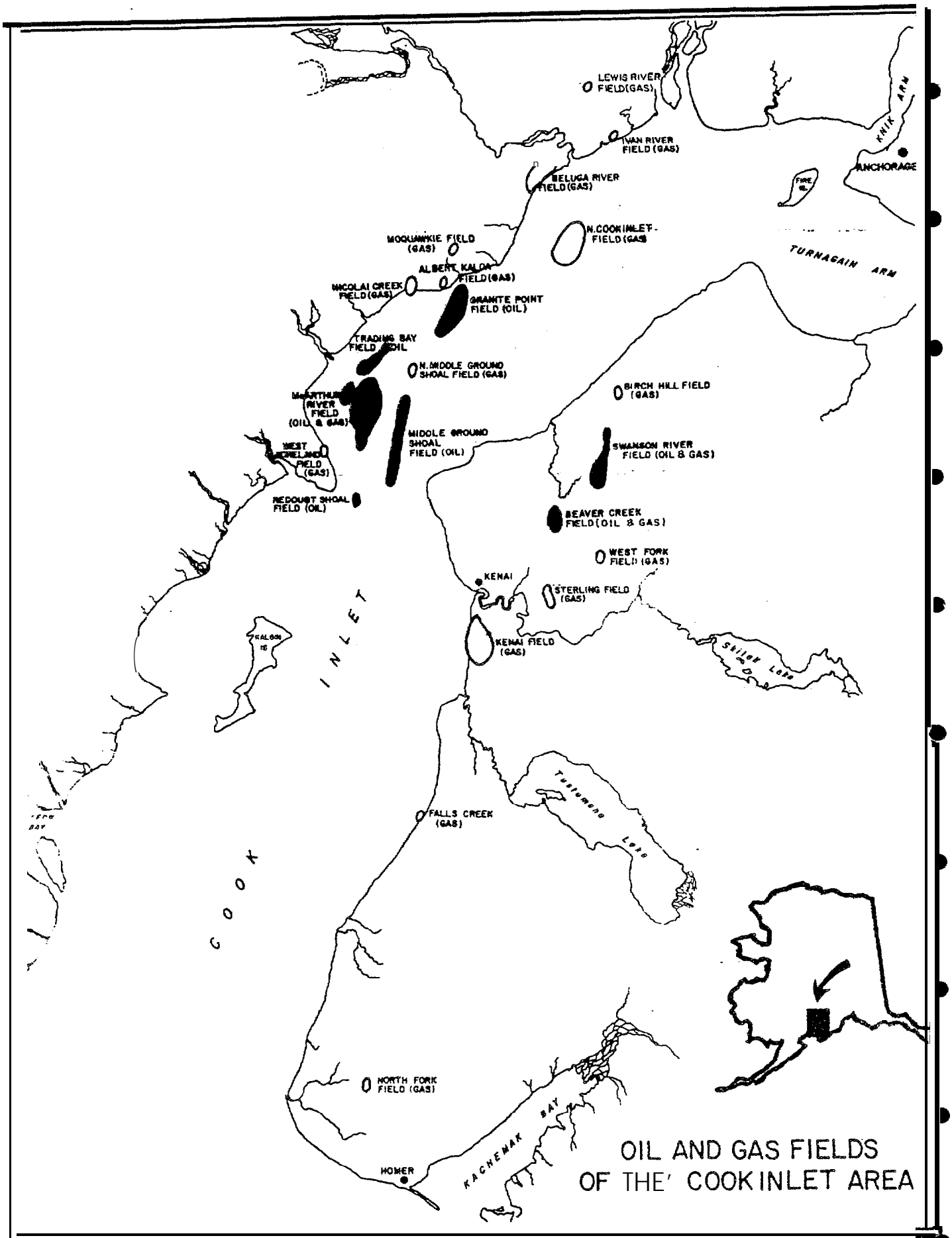
When the Richfield Oil Corporation discovered natural gas in the Swanson River area in 1957, the Kenai area was launched upon the path to its singular role as the center of Alaska's oil and gas industry. The **Prudhoe** Bay fields now produce far more oil and have far greater natural gas reserves than the Cook **Inlet** Basin. The **Valdez** terminal for the **trans-Alaska** pipeline ships more crude oil and Anchorage has become the managerial headquarters for the oil industry in Alaska and for its

counterpart governmental bureaucracy. But no region of Alaska has achieved the diversity of oil and gas related economic development that the Kenai-Nikiski area has attained (see Figure 5).

The **Kenai** oil and gas region has grown to become the focus of a mature oil and gas industrial complex. It hosts a full range of oil field service and supply industries. It is at the heart of a far-flung network of pipelines for collection of crude oil and natural gas production. It harbors treatment facilities, refineries, a petrochemical plant, an LNG plant and marine facilities for transfer of crude oil and LNG and for support of offshore oil operations. It is the source of product pipelines to Anchorage area utilities and consumers of Cook Inlet hydrocarbon energy production.

In short, the **Kenai** vicinity possesses a representative array of oil and gas industrial facilities. The cumulative production of hydrocarbons in the Cook Inlet basin through 1976 amounted to 755 million barrels of oil, over 2 billion cubic feet of casinghead and dry gas and over 5 million barrels of natural gas liquids. Annual oil production peaked in 1970 at 84 million barrels. Annual natural gas production first exceeded 200 million cubic feet in 1970 and has continued to rise, attaining a new peak in 1976 of 271 million cubic feet. Despite the decline in oil production, the oil and gas industry and federal and State landlords are optimistic that the **Kenai** region still has a solid future in production and processing of oil and gas reserves imputed to tracts recently leased and to those anticipated to be soon leased for exploration.

FIGURE 5



Source: Alaska Department of Natural Resources, Division of Oil and Gas Conservation. 1977. Statistical Report for the Year 1976. Anchorage.

Since 1957, the **Kenai-Cook** Inlet area's economy has moved in response to oil and gas development decisions. Development and production of the onshore and offshore **oil** and gas fields represented, of course, a major addition **to** the region's previously slight economic base. However, far more consequential than mere oil and gas production was a series of entrepreneurial choices about product processing and marketing that fostered **Kenai's** emergence as an industrial center.

In the case of oil, the significant choice was the decision to retain some crude oil for refinement into products for Alaskan-markets. **In** the case of natural gas, it was the decision to convert gas in excess of the region's needs into exportable products. The outcome of these choices led to the construction of four major industrial plants in the **Nikiski** area in a brief few years. The construction of these **plants** and subsequent plant additions imposed on **Kenai** the cycle of boom growth and faltering readjustment that it has repeatedly undergone in the past fifteen years.

The first major hydrocarbon facility to be completed was the SOCAL (now Chevron) oil refinery completed in 1963 at **Nikiski**. This plant produces asphalt, heating and diesel oil, jet fuels and other products for Alaska consumption, with a processing capacity of 22,000 barrels of oil per day. At present, the plant has 21 full-time employees.

The Drift River crude **oil** storage and loading facility on the west shore of Cook Inlet was completed in 1967, along with oil treatment facilities at Trading Bay and a network of gathering pipelines and stations. These

facilities collect offshore production for export. The Drift River terminal currently employs about 17 workers and the Trading Bay treatment facility about 60 persons. Because these facilities are at remote sites on the west shore, their construction and operation- have had relatively .. little direct impact on the **Kenai** area.

Limited amounts of Cook Inlet Basin natural gas production are consumed in the region for power production and other purposes. However, natural gas production potential is far in excess of **Southcentral** Alaska demand. Since the remoteness **and scale** of the Cook **Inlet** gas ' fields precluded the economic feasibility of delivery to markets by a conventional pipeline, producing companies adopted two other alternatives for realizing the economic value of Cook Inlet **gas** finds. The Collier Carbon and Chemical Corporation, a subsidiary of Union **Oil** Company, built a petrochemical complex designed to use natural gas to manufacture **ammonia-**urea fertilizers which, **unlike** natural gas, could be economically transported in bulk carriers to distant markets. Phillips Petroleum Company and Marathon **Oil** Company, on the other hand, jointly built and operate a plant to liquefy natural gas for shipment by LNG tanker to Japan.

Upon its completion in 1968, the Collier ammonia-urea plant at **Nikiski** was Alaska's largest petrochemical plant and one of the largest of its type in the **world**. **In 1977**, two additional **plant** units were added which doubled the plant's capacity and employment. The facility now is able **to** produce 725,624 metric tons (800,000 tons) of urea and 997,732 metric

tons (1,100,000 tons) of ammonia fertilizers annually. Reportedly, most of the output is destined for West Coast markets. The plant now has about 315 full-time employees.

The Phillips-Marathon LNG plant was built and on stream by 1969. This plant liquefies natural gas by chilling it to -162°C (-260°F).

Liquefaction reduces the product volume by a factor of 600. The liquefied natural gas is then shipped by specially designed LNG carriers to Japan. Plant operation employs 41 persons.

Also completed in 1969 was the **Tesoro-Alaska** refinery. This plant has a capacity of 45,000 barrels a day and produces gasoline, diesel oil, jet fuels and a variety of other end products for Alaska consumption. Its current employment is 48 persons.

Cumulatively, the above industrial facilities directly account for over 500 permanent, non-seasonal manufacturing jobs in the **Kenai-Cook** Inlet region, mostly in the **Nikiski** area. This does not include employment in oil and gas exploration, development and production activities. As of 1978, these activities accounted for an estimated further 750-800 jobs in the region in the mining sector. This is up by about one hundred jobs over 1977, possibly due to new offshore exploration efforts following the federal Lower Cook Inlet OCS lease sale in October 1977. The first exploratory well in that lease area was spudded in July 1978 by Marathon Oil Company's drill ship, Diamond M. Dragon on the premier tract for which Marathon and its partners bid \$77 million (see Table 17). That

WELLS DRILLED FOR PETROLEUM
OUTER CONTINENTAL SHELF
LOWER COOK INLET

<u>Company, Name of Well and Drilling Rig</u>	<u>Spud Date</u>	<u>Completion Date</u>	<u>Total Depth (feet) a/</u>	<u>Results</u>	<u>Location b/</u>	<u>American Petroleum Institute Number</u>
Marathon Oil Co. OCS Y-0086 #1 Diamond M. Dragon	7/2/78	2/22 78	3,315	Abandoned. Dry Hole.	OCS Block 318 12 miles SW of Anchor Point	55-220-00003
Marathon Oil Co. OCS Y-0168 #1 Diamond M. Dragon	1/11/79				OCS Block 2 68 miles SW of Homer	55-220-00003
Phillips Petroleum Co. OCS Y-0124 #1 Ocean Bounty	10/0/78				OCS Block 668 33 miles SW of Homer	55-220-00004
Atlantic Richfield Co. OCS Y-0097 #1					OCS Block 401 38 miles E of Homer	55-220-00002
Phillips Petroleum Co. OCS Y-0136 #1					OCS Block 798 41 miles SW of Homer	55-220-00005

a/ Multiply feet by .3048 to obtain meters.

b/ Multiply miles by 1.6093 to obtain kilometers.

Source: Petroleum Information, Alaska Report, Vol. 24-25.

well has since been abandoned as a dry hole but a number of additional wells have been started or are in the planning stage.

Oil field service and supply industries also contributes significant share of employment to the transportation, service and other economic sectors. A review of telephone listings for the Kenai-Nikiski-North **Kenai-Soldotna** area indicates that there are between 65 to 75 local firms engaged in a wide range of oil and gas industry support functions, but there is no count of the number of individuals these firms employ.

Fishing and Fish Processing

The main fish and shellfish species harvested in the Cook Inlet management areas include salmon, king crab, tanner crab, dungeness crab, halibut, shrimp and herring. This diversified harvest supports a large fishing fleet and fish and shellfish processing plants in five western Cook Inlet towns: Homer, **Seldovia**, Kenai, **Ninilchik** and Port **Graham**.

Cook **Inlet** is divided into two management areas: Lower Cook Inlet and Upper Cook Inlet. These management areas are, in turn, subdivided into districts. The Lower Cook Inlet area includes the Southern, Kamishak, Outer and Eastern districts. The Upper Cook Inlet area, consisting of that part of Cook Inlet north of Anchor Point, includes a Northern and Central district. The districts most relevant to an economic assessment of commercial fishing for this report's study area are the Southern and **Kamishak** districts in Lower **Cook Inlet** and the **Central** _ ,

district in Upper Cook Inlet. The Outer and Eastern districts are more oriented to the Seward-based fishing industry.

Commercial fishing in Cook Inlet has always been subject to changing fortunes since it first began in 1882. Year to year variations in the harvest of various species and changes in market conditions influence the degree of effort and success of the fishermen and the profitability of the processing industry and other related economic activities.

A measure of the dollar value to fishermen of today's Cook Inlet fisheries can be gauged from Alaska Department of Fish and Game data. The Department reports that in 1976, income to fishermen from the salmon and shellfish commercial catch in the Cook Inlet management area was \$22,098,169 (see Table 18).

The commercial fishery in the Central district of Upper Cook Inlet is almost exclusively a set and drift gill net salmon fishery and accounts for roughly 90 percent of the Upper Cook Inlet salmon catch. All five salmon species, are harvested in Upper Cook Inlet, with reds (40 percent), pinks (31 percent) and chums (22 percent) accounting for a 25-year average of 93 percent of this management area's salmon catch (see Table 19).

Upper Cook Inlet is a far more productive salmon area than Lower Cook Inlet, averaging an annual harvest about fourfold that of the latter area. The last three years, 1976-1978, have seen above-average harvests

TABLE 8

1976 SALMON AND SHELLFISH HARVEST FOR COOK INLET MANAGEMENT AREA
/TANAINNE PENINSULA BOROUGH

Species	(pounds) a/					Total
	King	Red	Cobna	pink	Chum	
Number of F sh	1,400	1,728,000	2,380	392,000	525,000	
Pounds of F sh	305,000	11,789,000	1,372,000	5,628,000	4,228,000	23,322,000
Price Paid to Fishermen	\$1.00/lb.	\$.77/ b	\$.84/ =	\$.58 lb.	\$.62/lb.	
Value to Fishermen	\$ 305,000	9,077,530	1,152,480	3,264,240	2,621,360	\$16,420,610
Species	Trawl Shrimp		King Crab	Dungeness Crab	Tanner Crab	Total
Number			603,000	36,900	2,307,000	
Pounds	6,443,000		4,954,000	119,300	5,935,000	12,451,300
Price Paid to Fishermen	\$.11/lb.		\$.65/lb.	\$.63/lb.	\$.26/lb.	
Value to Fishermen	\$ 740,945		3,220,100	75,159	543,100	\$ 5,677,559 b/

a/ Multiply by .1536 to obtain kilograms.
b/ Includes 322,000 pounds of pot shrimp, price \$.42/lb. - value is reflected in total for shellfish - \$ 35,303.

Sources: Data from Alaska Department of Fish and Game, Juneau, Soldotna and Homer.

Table from Kenai Peninsula Borough, Overall Economic Development Program Staff. February 1978.
A Profile of the Commercial Fishing Industry, Kenai Peninsula Borough. Soldotna.

TABLE 19
SALMON CATCH BY SPECIES-
UPPER COOK INLET
1959 - 1978
(numbers of fish)

Year	Salmon Species					Total
	Kings	Reds	Cohos	Pinks	Chums	
1959	32,651	612,676	106,312	12,527	300,319	1,064,485
1960	27,512	933,539	311,502	1,423,699	659,997	3,356,249
1961	19,737 a/1,	162,303	117,778	34,017	349,628	1,683,463
1962	20,210 ⁻¹	1,147,573	350,324	2,711,689	1,007,934	5,237,730
1963	17,536	942,980	197,140	30,436	387,027	1,575,119
1964	4,531	970,055	453,641	3,231,961	1,079,086	5,739,274
1965	9,741 b/	1,412,187	153,469	23,897	316,313	1,915,607
1966	8,525	1,852,499	289,903	2,006,376	532,821	4,690,074
1967	7,859 1,	380,062	177,729	32,229	296,837	1,894,716
1968	4,536 1,	1,104,896	468,760	2,276,993	1,107,903	4,963,088
1969	12,398	692,254	100,952	33,422	269,855	1,108,881
1970	7,947	729,034	271,910	777,526	775,959	2,562,376
1971	19,765	636,303	100,636	35,624	327,029	1,119,357
1972	16,086	879,824	80,933	628,580	630,148	2,235,571
1973 c/	5,194 d/	670,025	104,420	326,184	667,573	1,773,396
1974	6,671	524,181	203,135	494,827	399,553	1,628,367
1975	4,790	685,818	227,372	336,359	951,796	2,206,135
1976 e/	10,200	1,644,000	217,000	1,259,000	474,000	3,604,200
1977 e/	13,300	2,025,000	187,000	546,000	1,249,000	4,020,300
1978 e/	17,631	2,613,374	221,019	1,656,548	568,266	5,076,838

20-YEAR TOTAL						
	57,786	22,618,533	4,340,935	17,877,894	12,351,044	57,246,192
Even Years Total	34,502	12,398,925	2,868,127	16,467,199	7,235,667	39,004,420
Odd Years Total	23,284	10,219,608	1,472,808	1,410,695	5,115,377	18,241,772
20-YEAR AVERAGE						
	9,631	1,130,927	217,047	892,995	617,552	2,862,315
Even Years Average	11,501	1,239,893	286,813	1,644,920	723,567	3,900,442
Odd Years Average	7,761	1,021,961	147,281	141,070	511,538	1,824,177
PERCENT OF TOTAL						
	0.4	39.4	7.6	31.1	21.5	100.0

- a/ Opening date moved from late May to end of first week in June.
- b/ Opening date moved to third week in June.
- c/ Opening date moved to late June in Central, early July in Northern District.
- d/ First year of fishing only on late king salmon run. Averages and totals for kings 1973 and 1978 only.
- e/ Preliminary figures.

Source: Alaska Department of Fish and Game, Division of Commercial Fisheries. December 1978. 1978 Upper Cook Inlet Salmon Management Report to the Alaska Board of Fisheries. Juneau.

in Upper Cook Inlet. The 1978 total catch of **5,076,838** salmon was the highest since 1964, while the red salmon catch of 2,613,374 fish for the **1978 was** also an all-time high. In addition, the 1977 season yielded the highest odd-year harvest on record, **totalling 4,020,300 salmon** of all species (see Table 19).

A noteworthy feature of the Upper Cook Inlet salmon fishery is the strong periodic cycle in its salmon runs. On average, all five species are more numerous in even years, especially pink salmon, and this exaggerates the alternating pattern of high and low runs in successive years.

Historically, the Lower Cook Inlet commercial salmon fishery has overwhelmingly been a pink salmon harvest, with chum salmon a distant second (see Table 20). Over the 25 year period 1954-1978, the average annual salmon catch was 703,496 fish in the following species ratio: pink (77 percent); chums (16 percent); reds (6 percent); and **cohos** and kings (less than 1 percent). During the last half-dozen years, the average yield has been about equal to the long-term average. However, due to annual fluctuations in pink runs, there is a significant **year-to-year** variation in the area's total commercial salmon harvest. In recent years, the pattern has favored higher catches in the odd years and lower in the even years (see Table 20).

According to the Alaska Department of Fish and Game, the value to fishermen for the total salmon harvest in Cook **Inlet** in 1976 was \$16,420,610,

TABLE 20
 SALMON CATCH BY SPECIES
 LOWER COOK INLET a_/
 1954 - 1978
 (numbers of fish)

Year	Salmon Species					Total
	Kings	Reds	Cohos	Pinks	Chums	
1954	1,545	39,626	15,159	270,744	265,591	592,665
1955	573	36,600	9,675	1,184,328	68,710	1,299,886
1956	333	36,306	9,345	207,920	88,218	342,122
1957	419	26,917	1,765	285,613	206,450	521,164
1958	120	19,450	1,796	949,766	124,482	1,095,614
1959	135	27,417	9,815	124,401	121,324	283,092
1960	27	14,501	2,651	599,602	116,082	732,863
1961	41	22,776	1,619	303,377	55,593	383,406
1962	60	25,286	7,727	2,248,341	-141,907	2,423,321
1963	96	15,121	6,736	203,616	138,510	364,079
1964	91	20,604	9,473	1,055,417	323,333	1,408,918
1965	10	14,002	744	115,598	27,608	157,962
1966	62	14,923	5,139	579,240	129,062	728,426
1967	175	29,045	2,726	375,488	85,445	492,879
1968	64	95,242	4,883	585,441	75,134	760,764
1969	64	122,800	4,624	198,746	60,946	387,180
1970	07	21,077	4,860	574,863	223,410	824,317
1971	73	22,234	4,561	392,871	148,602	568,341
1972	88	57,897	2,234	28,663	75,543	164,425
1973	45	29,136	2,101	307,403	115,513	454,298
1974	83	27,428	6,514	50,601	19,210	103,936
1975	43	28,142	6,211	1,063,432	21,646	1,119,574
1976	50	58,159	3,216	136,445	50,822	249,092
1977	217	100,058	2,872	9,292,153	145,778	1,541,078
1978 b/	1,584	156,377	5,929	353,573	69,872	587,335
<hr/>						
25-YEAR TOTAL	6,805	1,069,124	132,375	13,487,642	2,898,791	17,586,737
25-YEAR AVERAGE	272	42,445	5,295	539,506	115,952	703,469
PERCENT OF TOTAL	0.04	6.04	0.75	76.69	" 16.48	100.00

a/ Includes Southern, **Outer**, Kamishak and Eastern districts.
 b/ Preliminary data.

Source: Alaska Department of Fish and Game. Personal Communication.

Red salmon, which had an above average run that year, accounted for \$9,077,530 of the total (see Table 18).

The king crab resource in Lower Cook Inlet has supported a profitable harvest for many years, with a 20-year average annual catch of over 1,814,400 kilograms (4,000,000 pounds). However, the harvest for the 1977-78 season was a much lower 771,120 kilograms (1,700,000 pounds) while in 1978-79 less than 544,320 kilograms (1,200,000 pounds). This sudden sharp fall-off in the catch may indicate that the Lower Cook Inlet king crab fishery is on the verge of a period of decline (see Table 21).

Since the Lower Cook Inlet commercial tanner crab fishery was instituted in 1968, that species has assumed economic significance. The tanner harvest has averaged about 1,950,480 kilograms (4,300,000 pounds) over the past decade. With the exception of 1978-79 when the catch fell off to about 1,224,720 kilograms (2,700,000 pounds), the tanner crab resource has supported a fairly stable year-to-year harvest (see Table 22).

The Dungeness crab harvest, usually a minor component of the shellfish catch, abruptly rose in 1978 to its highest level in fifteen years. For the first time, at over 544,320 kilograms (1,200,000 pounds)-, the Dungeness crab harvest exceeded the king crab catch in weight. The Department of Fish and Game reports that the exceptional Cook Inlet harvest was in part a response to an attractive market created by an unusually poor Dungeness crab season in the Pacific Northwest. Consequently, future

TABLE 21
 KING CRAB CATCH BY DISTRICT
 COOK INLET FISHERIES AREA
 1960/61 - 1978/79
 (pounds) a_/

Year	Fishes District			Total
	Southern <u>b/</u>	Kamishak/ Barren Islands <u>c/</u>	Outer <u>c/</u>	
1 960/61	2, 699, 680	986, 551	118, 067	3, 804, 298
1961/62	1, 619, 642	3, 642, 500	368, 909	5, 631, 051
1962/63	2, 763, 343	5, 509, 708	343, 505	8, 616, 556
1963/64	1, 960, 426	4, 915, 303	59, 352	6, 935, 081
1964/65	1, 892, 479	1, 850, 572	963	3, 744, 014
1965/66	1, 948, 012	1, 684, 346	14, 491	3, 646, 849
1966/67	1, 397, 904	1, 386, 008	89,510	2, 873, 422
1967/68	1, 117, 397 <u>d/</u>	1, 883, 605	239, 518	3, 240, 520
1968/69	750, 906	1, 711, 296	87, 302	2, 549, 504
1969/70	1, 465, 261	1, 688, 803	73, 644	3, 227, 708
1 970/71	1, 540, 018	2, 115, 991	9,468	3, 665, 477
1971/72	1, 992, 225	2, 868, 315	12, 657	4, 873, 197
1972/73	1, 391, 024	2, 756, 023	1,966	4, 149, 013
1 973/74	1, 971, 841	2, 236, 131	5, 613	4,213,585
1974/75	1, 816, 512	2, 954, 488	2, 035	4, 773, 035
1975/76	1, 674, 602	1, 839, 349	45, 293	3, 559, 244
1976/77	1, 035, 316	3, 103, 895	16, 384	4, 155, 595
1977/78 <u>e/</u>	588, 686	1, 099, 014	1, 350	1, 689, 050
1978/79 <u>e/</u>	670, 181	480, 261	1, 096	1, 151, 538
<u>TOTAL</u>	30, 301, 295	44, 712, 159	1, 491, 123	76, 504, 577
<u>AVERAGE</u>	1, 594, 805	2, 353, 272	78, 480	4, 026, 557

a/ Multiply by .0004535147 to obtain metric tons.

b/ In the Southern district the season began in August and ended in the following July during 1960/61 through 1966/67. Since 1967/68 the season is from August to December and from January to March.

c/ The season lasts from August until March.

d/ Includes 5,840 pounds caught in April, 1968.

e/ Preliminary data.

Source: Alaska Department of Fish and Game -- Homer. Personal Communication.

TABLE 22

TANNER CRAB CATCH BY DISTRICT
 COOK INLET FISHERIES AREA
 1968/69 - 1978/79
 (pounds) a/

Year	F i s h e r i e s D i s t r i c t			Total
	Southern	Kami shak/ Barren Island	Outer/ Eastern	
1968/69	1,388,282	12,398	816	1,401,496
1969/70	1,147,154	71,196	104,191	1,322,541
1970/71	1,046,803	541,212	3,000	1,591,015
1971/72	2,462,956	974,962	804,765	4,242,683
1972/73	2,935,662	3,361,023	1,266,937	7,563,622
1973/74	1,387,535	4,689,251	1,891,021	7,967,807
1974/75	967,762	3,150,462	656,660	4,774,884
1975/76	1,339,245	3,281,084	850,964	5,471,293
1976/77	2,009,633	1,765,926	824,520	4,600,079
1977/78 <u>b/</u>	2,806,568	2,077,092	502,049	5,385,709
1978/79 <u>b/</u>	2,323,420	300,000	40,000	2,663,420
<u>TOTAL</u>	19,815,020	20,224,606	6,944,923	46=984,549
<u>AVERAGE</u>	1,801,365	1,838,601	631,357	4,271,323

a/ Multiply by .0004535147 to obtain metric tons.

b/ Preliminary data.

Source: Alaska Department of Fish and Game - Homer. Personal Communication.

Levels of fishing effort and yields for the **Lower Cook Inlet Dungeness** crab fishery are not easy **to** forecast. On the historic record, **Dungeness** crab has been one of the most erratically harvested species in Cook Inlet (see Table 23).

Trawl and pot shrimp harvests, primarily centered in Kachemak Bay, have been relatively stable since this fishery was reinstated in 1969. In 1978, the preliminary shrimp catch was reported at 2,804,660 kilograms (6,183,113 pounds), the highest catch on **record**.

The halibut fishery is unique in that it is regulated by the International Pacific Halibut Commission. The Commission collects and reports statistical data on the halibut fishery for **its** own management areas **which** are much more expansive than State management areas. For example, Cook Inlet is **only** a minor sector of **IPHC** management Area 3A which stretches for 1,609.3 kilometers (1,000 miles) across the entire Gulf of Alaska coastline from Cape Spencer in Southeast Alaska to Kupreanof Point on the lower Alaska Peninsula. As statistical data are grouped for all of Area 3A, the usefulness of IPHC data for assessing the economic importance of the halibut fishery to the Cook Inlet fishing industry is limited.

The total commercial halibut catch in Area 3A between 1960-1974 averaged 13,018,320 kilograms (**28.7** million pounds) annually, with a **low** of 4,354,560 kilograms (**9.6** million pounds) caught in **1974**. However, perhaps 30 percent to 50 percent of the halibut caught in Area **3A** is

TABLE 23

OTHER SHELLFISH CATCH BY SPECIES
 COOK INLET
 1961 - 1978
 (pounds) a/

<u>Year</u>	<u>Dungeness Crab</u>	<u>Shrimp b/</u>	<u>Razor Clams</u>
1961	193,683		
1962	530,770		
1963	1,677,204		
1964	423,041		
1965	74,211		
1966	129,560		
1967	7,168		
1968	487,859		
1969	49,894	2,985,505 <u>c/</u>	
1970	209,819	5,299,360 <u>c/</u>	
1971	97,161	4,459,636 <u>c/</u>	
1972	38,930	5,091,559 <u>c/</u>	
1973	310,048	5,626,280	
1974	721,243	5,202,034	
1975	362,815	4,793,542	
1976	119,298	5,251,030 <u>d/</u>	
1977	74,705	5,624,336 <u>d/</u>	1,762 <u>e/</u>
1978	1,214,716 <u>d/</u>	6,183,113 <u>d/</u>	45,931 <u>d/</u>

a/ Multiply by .0004535147 to obtain metric tons.

b/ Shrimp catches for Southern district only. Trawl shrimp season - lasts from June 1 to October 31 and from November 1 to March 31. Pot shrimp season lasts from June 1 to September 30 and October 1 to May 31.

c/ Catches do not include April and May landings.

d/ Preliminary data.

e/ Previous years razor clams catch statistics not available.

Source: Alaska Department of Fish and Game - Homer. Personal Communication.

landed at ports outside the area (as far away as Seattle). Thus, total harvest data do not support inferences about the Cook Inlet halibut fishery. For some years (1970-1978), IPHC has reported information on halibut landings at central Alaska ports, including **Homer** for 1973 to **1975**. Halibut landings at Homer were very stable for those years, **totalling** 178,718 kilograms (394,000 pounds) in 1973, 195,502 kilograms (431,000 pounds) in 1974 and 187,790 kilograms (414,000 pounds) in 1975. **If** these years are **typical**, then in an average year about 181,440 kilograms (400,000 pounds) of halibut may be landed at Homer for processing (see Table 24).

It is only recently that Homer has replaced **Seldovia** as the dominant fish and shellfish processing port in the **Homer-Seldovia** area. **Before 1975**, about 80 to 90 percent of the seafood products in the area were processed at **Seldovia**. The recent change is believed to be due primarily to Homer's attractiveness as a base for **local** fishermen, to the presence of a larger resident **workforce** available for fish processing equipment and to Homer's more convenient road-connected location.

Homer has two major processing plants, one operated by Seward Fisheries (a subsidiary of New England Fish Company/Icicle Seafoods) and the other by **Whitney-Fidalgo** Fisheries, Inc. Both plants are year-round operations, purchasing and processing all major species landed at Homer: salmon, king crab, tanner crab, Dungeness crab, halibut and shrimp. The Seward Fisheries plant freezes its product **while** the **Whitney-Fidalgo** plant ices and ships out its product for final processing at other company plants

TABLE 24

HALIBUT LANDINGS a/
 CENTRAL ALASKA PORTS b/
 1970 - 1978
 (000' s of lbs) c/

Year	Central Alaska Ports					Total
	Kodi ak	Seward	Homer	Yakutat	Other	
1970	8,697	4,046	<u>d/</u>	<u>d/</u>	1,803	14,816
1971	9,217	3,611	<u>d/</u>	<u>d/</u>	1,369	14,197
1972	8,707	5,136	<u>d/</u>	<u>d/</u>	1,986	15,829
1973	6,592	3,971	394	228	977	12,162
1974	3,742	1-,930	431	155	435	6,693
1975	4,209	3,936	414	128	946	9,633
1976	4,414	3,418	<u>d/</u>	<u>d/</u>	1,557	9,389
1977	4,665	3,149	<u>d/</u>	cl /	1,391	-9,205
1978 e/						12,272

a/ Including landings by Canadian vessels.

b/ Central Alaska coincides with Area 3 which extends westward from Cape Spencer out along the south side of the Aleutians.

c/ Multiply by .0004535147 to obtain metric tons.

d/ Landings at Homer and **Yakutat** included in Other Ports category.

e/ 1978 landings figures are preliminary. No breakdown by port yet available.

Sources: International Pacific Halibut Commission. 1977. The Pacific Halibut Fishery: Catch, Effort and CPUE, 1929-1975. Seattle.

International Pacific Halibut Commission. Annual Report. Seattle. (for years 1973-1977).

International Pacific Halibut Commission. Personal Communication (1978 data).

TABLE 25

HERRING CATCH BY, DISTRICT
 COOK INLET FISHERIES AREA
 1961 - 1978
 (tons) a/

Year	Fishes District					Total
	Southern	Kamishak	Outer	Eastern	Central & Northern	
1961				0.6		0.6
1962						
1963	0.8					0.8
1964	0.2					0.2
1965	1.6					1.6
1966				6.6		6.6
1967						
1968	20.0					20.0
1969	550.5		38.0	758.0		1,346.5
1970	2,708.7			2,100.3		4,809.0
1971	12.5			831.0		843.5
1972	1.0			30.0		31.0
1973	203.8	243.1	300.5	830.8		1,578.2
1974	109.7	2,113.7	384.0	47.2	36.7	2,691.3
1975	24.4	4,118.6			6.2	4,149.2
1976		4,842.2			5.8	4,848.0
1977	291.0	2,907.5			17.3	3,215.8
1978	16.6	401.9			60.8	479.3
TOTAL	3,940.8	14,627.0	722.5	4,604.5	126.8	24,021.6

a/ Multiply by .907 to obtain metric tons.

Source: Alaska Department of Fish and Game - Homer. Personal Communication.

in Anchorage and Seattle. Both plants also **process** herring roe and purchase clams and other bait fish.

Plant **officials** report that employment at Seward **Fisheries peaks** in July-August and December at about 125 workers and averages about 60 for the rest of the year. The Whitney-Fidalgo **plant** employs a peak of about 60 workers for four months and an average of 20 for the rest of the year.

Whitney-Fidalgo reports that all of its plant-employees are local residents. The Seward Fisheries plant regularly employs about 50-60 local workers, with transients making up the rest of its **workforce**. The same **firm indicated that retaining** a full workforce through the winter-months has proven difficult.

According to plant officials, there are about 300 boats delivering fish and shellfish to their plants, nearly all (95 percent to 100 percent) being owned by locally resident fishermen. The processors do not own any fishing boats themselves. Seward Fisheries states that it charters about 8 fish tenders to collect and deliver salmon to its plant while **Whitney-Fidalgo** charters between 15 and 20 tenders for the same purpose.

Both plants have plans for some future expansion. Seward Fisheries planned to add a new fish house in the summer of 1979 to increase its salmon processing capacity and the company **anticipates** some future involvement in bottomfish processing. Whitney-Fidalgo is tentatively

planning to install a freezer to acquire the capability to freeze locally some of the salmon it processes but the firm has, for the time being, taken a more skeptical position on the prospects for a Homer-based **bottomfish** processing industry.

The City of Homer, on the other hand, has adopted a positive attitude toward **bottomfish** development. The City is pursuing a port improvement program designed to capitalize on the City's potential to attract and service a new **bottomfishery**. At the same time, a local entrepreneur is proposing to develop a **26.3** hectare (65 acre) **fisheries industrial** park on Homer Spit. The industrial park is aimed at meeting the demand for waterfront industrial sites, marine repair and service facilities and **moorage** anticipated to arise from expansion into groundfish. As of summer 1979, the project was under review for compliance with federal and State regulatory standards.

In the City of **Kenai**, there are two salmon processing plants located near the mouth of the Kenai **River**. The plants are operated by **Kenai Packers** and **Salamatof Seafoods, Inc.** respectively and purchase and freeze salmon harvested by Upper Cook Inlet fishermen. In the past, **Salamatof Seafoods, Inc.** has also processed salmon caught in Northwest Alaska after the peak of the Cook Inlet run and flown to **Kenai** for processing. Because of their concentration on salmon processing, employment generated by these plants is highly seasonal and partly dependent upon a transient workforce.

Participation in the commercial fisheries by **residents** of the three towns under study can be determined approximately from records of the Commercial Fisheries Entry Commission. In 1976, there were 364 **commercial** fishing permit holders in Homer, 309 in **Kenai** and 142 in **Soldotna**.

However, these figures alone do not reflect the relative economic value of commercial fishing to the respective areas. A recent study entitled "A Profile of the Commercial Fishing Industry, **Kenai** Peninsula Borough", prepared by the Overall Economic Development Program Staff, concluded that the financial returns to commercial fishermen are directly related to the capital investment in boat and gear required to participate in the various fisheries. Those fisheries, such as salmon purse seining, which call for a large capital investment, yield the best financial return. Conversely, the drift gill net fishery requires only a modest commitment of capital and time but also tends to produce only modest income. Furthermore, the large fishing boats with expensive gear tend to be owned and operated by full-time locally resident commercial fishermen, while the fisheries with low entry costs seem to attract many part-time and non-resident fishermen. The corollary is that the salmon fishery of Upper Cook Inlet attracts a large proportion of non-local, part-time fishermen in contrast to the **Homer-Seldovia** based fleet which is dominated by **local** fishermen for whom commercial fishing is a primary occupation.

Tourism and Recreation

The tourism and recreation industry has grown to **be, after oil** and gas and fishing and fish processing, -the most important-component of the .. ---- **Kenai-Cook** Inlet region's economic base. The coastal strip of the western Kenai Peninsula between **Kenai** and Homer is reported by the State Division of Parks **to** be the most intensively used outdoor recreational area in the state.

The economic impact of the visitor industry is **highly** concentrated at Homer on the Homer Spit and, secondly, at **Kenai**, the point of access to the recreational areas of the northwest section of the Peninsula. Otherwise, the economic impact is scattered at points along the Sterling Highway where service stations, road houses and other highway oriented businesses catering to visitors are located. These **local** commercial impacts can be distinguished from the recreational **user** impacts which tend to concentrate at **public** campgrounds, **clamming** beaches, **creeksides**, lake fronts, trails and other points or corridors **with exceptional** public recreational **value**. Only at certain spots, as on the intense'ly used Homer Spit, do the focus of recreational activity and **commercial** impact coincide.

A brief profile of the outstanding features of the visitor industry in the western **Kenai** Peninsula will help clarify the nature of its economic impact upon the study **area**.

Most visitors to the Kenai Peninsula arrive by **road**. According to a tourism survey conducted in the summer of **1973** by the Kenai Peninsula Borough, visitors from other areas of Alaska travelled here almost universally by automobile or recreational vehicle, **while** about 75 percent of out-of-State visitors also **travelled** by one of those modes. As these figures suggest, the sightseeing and pleasure driving afforded by the scenic wealth of the Kenai Peninsula is a large element of the recreational experience sought.

The region's visitor attractions and the **type of** visitor they tend to draw are reflected in various surveys of the type of activities most commonly engaged in by visitors. Over recent years, various public agencies have sponsored numerous surveys, the results of which **are** useful in defining the economic character of recreational and tourist visits to the Kenai Peninsula. While the surveys have often been undertaken for different purposes and are not uniform in their content or results, they nevertheless yield a consistent picture of the basic economic characteristics of this industry.

The 1973 Tourism Survey of summer tourism conducted by the Kenai Peninsula Borough concluded that the most popular visitor activities were camping, fishing, canoeing and wildlife observation. A 1975 analysis (Draft Statewide Comprehensive Outdoor Recreation Plan) of outdoor recreational activities of residents of **Southcentral** Alaska, the source of most Kenai Peninsula visitors, found that the most favored activities were, in order, trail-related activities, pleasure driving, sightseeing, picnicking

and fishing. Recent annual surveys of recreational uses of the Kenai National Moose Range consistently ranked non-consumptive wilderness uses (i.e., hiking, camping, canoeing) at the top, followed by fishing and hunting.

Although the specific findings of these surveys differ, they are consistent in the theme that the primary pursuit of visitors to the Kenai Peninsula is an outdoor recreational experience of a sort that does not entail, and may even be adverse to, expenditure of large sums for local goods and services.

The type of visitor activities which seem to be favored, considered in conjunction with the most common means of travel (auto and recreational vehicle) indicate that the demand for lodgings, food services, retail goods and cultural activities is weak in relation to the volume of visitors which the region receives. It is probable, given the purposes and travel modes of visitors, that visitor purchases are heavily concentrated in the category of highway-related services and those specific services otherwise instrumental to the recreational objective. There are some data to support this supposition in the 1973 Kenai Peninsula Borough Tourism Survey, which found that service stations and grocery stores accounted for better than half of the dollar value of visitor expenditures.

The same survey found that the average daily expenditure per visiting party was \$13.54 for Alaska residents and \$21.44 for out-of-State

visitors, a very low sum even in 1973. A 1972 survey of selected recreational vehicle travelers entitled "Tourism, the Recreation Vehicle and the Kenai Peninsula Borough, done for the Borough OEDP study, found that the average party spent roughly \$20 per day during its stay on the Peninsula. This is well below the State Division of Tourism's estimated average daily expenditure of \$38.50 per motor party across the State as a whole, cited in the same study.

Regardless of average expenditures, the volume of visitors to the Kenai is such that its quantitative contribution to trade and services in the region's basic economy is impressive. According to a 1972 study of the economic impact of visitors published by the OEDP Committee, a sample survey of businessmen estimated that the visitor industry accounted for about 31 percent of all retail trade in the Kenai Peninsula. If this is accepted as a valid ratio, a rough estimate might be that about 582 of the average annual figure of 1,876 persons employed in trade and services in the Kenai-Cook Inlet area in 1977 could be attributed to the visitor industry.

Another important feature of the visitor industry in the Kenai Peninsula is that it is highly seasonal. Since outdoor recreational activities are the prime attraction, summer is the time of peak activity. This seasonal cycle comes through clearly in employment data for the Homer Labor Area, the area proportionately most impacted by the visitor industry. Trade and services are the two economic sectors which best show the effect of the visitor industry. In 1978, Homer area employment

in trade in the high summer month was **50 percent** above the low winter month; in the services industry, the spread was nearly 150 percent. Besides the seasonal **cycle**, summertime visitor traffic from the Anchorage area is heavily skewed toward weekends, when people- ~~are most often free~~ ... for recreational pursuits.

Other

Apart from the oil and gas, fishing and fish processing and visitor industries, a variety of other economic activities **make minor** contributions to the **Kenai-Cook Inlet** area's basic economy.

In the years since the western Kenai **Peninsula** was made accessible by the completion of the Sterling Highway, the agricultural potential of the region has been tested by extensive homesteading. While there are tracts which are physically suitable for agriculture and livestock, particularly in the Homer area, economic conditions have not proven favorable enough to promote any extensive agricultural development. Also, the economic feasibility of agricultural enterprises has been adversely affected by the effect of competing uses on land values and land use patterns. Consequently, agriculture has remained a marginal economic endeavor and can perhaps most realistically be considered as a transitional land use.

The timber resources of the **Kenai-Cook Inlet** area are currently supporting a commercial harvest. The major milling operations are at Tyonek on the

west shore of Cook Inlet and at **Jakolof** Bay on the south side of Kachemak Bay. (However, most timber processed at Jakolof Bay presently comes from Icy Bay, outside the Kenai Peninsula Borough region). Small mills are also in occasional operation-at Soldotna, **Anchor Point** and Homer producing sawtimber for local use. Of the three latter towns, Homer is best situated to serve as a yarding, milling and shipping point for wood products. However, the potential competition for space and available **labor** between the wood products industry and the economically more important fishing industry, especially since there is already a scarcity of good sites for waterfront industrial use, have **inclined** the City of Homer to downplay development of a local wood products industry in favor of continued **emphas**'s on fisheries development and the visitor industry.

Until the early 197 's, the military was a significant element in the population and economy of the City of Kenai vicinity. As of 1970, there were 750 military personnel, including dependents, stationed at Wildwood Station, just north of the City. However, now that the station has been closed and the facilities transferred to the Kenai Native Association, the economic role of the military is negligible.

CITY OF KENAI-NORTH KENAI AREA

Population and Economy

POPULATION

Past Trends

The **Kenai-North Kenai** area was the scene of a half-dozen **Kenaitze** Indian **villages** prior to the establishment of a Russian military outpost called Fort St. Nicholas at the mouth of the Kenai River in **1791**. Except for fisheries, the Kenai area offered few economic attractions for permanent non-Native settlers. In fact, as recently as **1950**, Kenai with a population of 321 was the **only** town in the area; another **169** residents were counted scattered along what has become the route of the **Kenai Spur** and **Kalifonsky Beach Roads** (see **Table 26**). **North Kenai**, located north of the City of Kenai outside its corporate limits, was virtually unpopulated at that time. (See **Figure 6** which indicates the relative locations of the City of Kenai and **North Kenai**).

Since the mid-1950's, the Kenai-North **Kenai** area has experienced a series of economic stimuli which have promoted rapid economic and population growth. In the early 1950's, the U.S. Army established a communications center, **Wildwood Station**, a few miles north of the City of **Kenai**. A few years later, completion of the Sterling Highway, linking Kenai and the west side of the Kenai Peninsula to Anchorage and Seward,

made the Kenai-North Kenai area conveniently accessible to the Anchorage area. This overland connection grew in consequence as Anchorage grew to become the dominant population and economic center of the State and began to support a growing recreational and **tourism industry** on the Kenai Peninsula.

However, the key economic event was the 1957 discovery of commercial oil and gas reserves on the western lowlands of the Kenai Peninsula and offshore in Cook Inlet. Exploration and development of these oil and gas resources stimulated economic growth in the **Kenai** area and Anchorage as well. Most important for the growth and settlement patterns of the **Kenai-North** Kenai area was the construction of four petrochemical facilities in that portion of North **Kenai** area known as **Nikiski**. The SOCAL (now Chevron) Refinery was built in 1963, followed over the years by the Collier Carbon and Chemical Corporation ammonia-urea plant, the Phillips-Marathon liquefied natural gas plant and the **Tesoro-Alaska** refinery.

For the past two decades, settlement of the City of **Kenai**, North Kenai and surrounding areas has progressed in spasms corresponding to the start and completion of these major construction projects, with each project adding to the area's permanent employment and population base.

The cumulative effect of these activities as well as other economic events has been to expand the City of Kenai's population from 778 residents in 1960, to 3,533 in 1970 and 4,374 in 1978, representing an increase of

460 percent in 18 years. As the North **Kenai** area is unincorporated, historic population data can provide at best an approximate population count for that area. In 1969, the Alaska State Housing Authority estimated the population of the North **Kenai** area to be **2,500**. According to the recent special census, 3,485 persons were counted as **living** in the two precincts in the unincorporated area north of the City of Kenai.

Population Composition

In 1970, key features of the population composition of the City of **Kenai** generally resembled the State's population as a whole. Despite the settlement's Native origins, the population in the **Kenai** area has become almost overwhelming white in racial composition over recent decades as a result of the influx of new residents. As of 1970, the component of **Alaska** Natives had dwindled to about 4.2 percent of the City of **Kenai's** total population and by the 1978 census, this figure had fallen further to **3.8** percent (see Tables 27 and 28). Although no 1970 statistics are available specifically for North **Kenai**, the Other Races category (assumed to be almost entirely made up of Alaska Natives) accounted for a similarly **small** portion of this area's total population in 1978 (see Table 29).

According to the 1978 **special** census, there are more males (**53** percent and 54 percent of the total population respectively) than females in both the City of **Kenai** and in the two North **Kenai** precincts. This imbalance is typical of Alaska communities where selective in-migration and out-migration has tended to produce a surplus of males, but contrary to the national pattern in which females slightly outnumber **males**.

TABLE 27
COMPOSITION OF POPULATION BY RACE AND SEX
CITY OF KENAI
1970

Race	Sex			Percent of Total
	Male	Female	Total	
White	1,723	1,594	3,317	93.9
Negro	10	15	25	0.7
Indian	55	39	94	2.7
Alut	16	23	39	1.1
Eskimo	6	8	14	0.4
Other	26	18	44	1.2
<u>TOTAL</u>	<u>1,836</u>	<u>1,697</u>	<u>3,533</u>	<u>100.0</u>

Source: University of Alaska, Institute of Social, Economic and Government -- Research. September 1973. Age and Race by Sex **Characteristics of Alaska's Village Population**. College. (Alaska **Review of Business and Economic Conditions**. Vol. X, No. 2.)

TABLE 28
COMPOSITION OF POPULATION BY RACE AND SEX
CITY OF KENAI
1978

Race	Sex			Percent of Total
	Male	Female	Total	
White	2,218	1,975	4,193	95.9
Black	8	5	13	0.3
Other Races	69	99	168	3.8
<u>TOTAL</u>	<u>2,295</u>	<u>2,079</u>	<u>4,374</u>	<u>100.0</u>

Source: Kenai Peninsula, Growth Monitoring Program Advisory Committee, March 1979. Kenai Peninsula Borough: Special Census of the Population. **Soldotna**, March 1979. (Special Report No. 1).

TABLE 29
 COMPOSITION OF POPULATION BY RACE AND SEX
 NORTH KENAI a/
 1978

<u>Race</u>	<u>Sex</u>		<u>Total</u>	<u>Percent--of-Tots%</u>
	<u>Male</u>	<u>Female</u>		
White	1,815	1,526	3,341	95.9
Black	10	5	15	0.4
Other Races	66	63	129	3.7
<u>TOTAL</u>	<u>1,891</u>	<u>1,594</u>	<u>3,485</u>	<u>100.0</u>

a/ North Kenai area represented by Nikiski precincts 1 and 2.

Source: Kenai Peninsula, Growth Monitoring Program Advisory Committee. March 1979. Kenai Peninsula Borough: Special Census of the Population. Soldotna, March 1979. (Special Report No. 1).

In 1970, the median age of the City of Kenai's population was 22.6 years for males and 21.8 for females, nearly identical to the corresponding Statewide figures of 23.3 years and 22.2 years respectively. In the intervening years, according to the 1978 special census, the median age has risen to 25.9 years and 24.7 years for males and females respectively (see Figures 7 and 8). This upward shift in median age mainly reflects a steep fall in the overall proportion of residents under 15 years of age from 38.1 percent in 1970 to 27.7 percent in 1978 and a rise in the proportion of people in the 15 to 34 years age bracket from 33.7 percent to 40.9 percent. The North Kenai area had a similar proportion of people in the 15 to 34 age range in 1978 (41.0 percent) but had a slightly higher proportion of younger people, with 30.8 percent of this-area's population being under 15 years of age. This redistribution of population toward the prime working years may correspond to the creation of new job openings which attract young persons to the local labor market.

Except as noted above, the North Kenai area exhibited essentially the same age characteristics as the City of Kenai in 1978. The median age for residents in the two Nikiski precincts making up the North Kenai area was 25.0 for males and 23.8 for females.

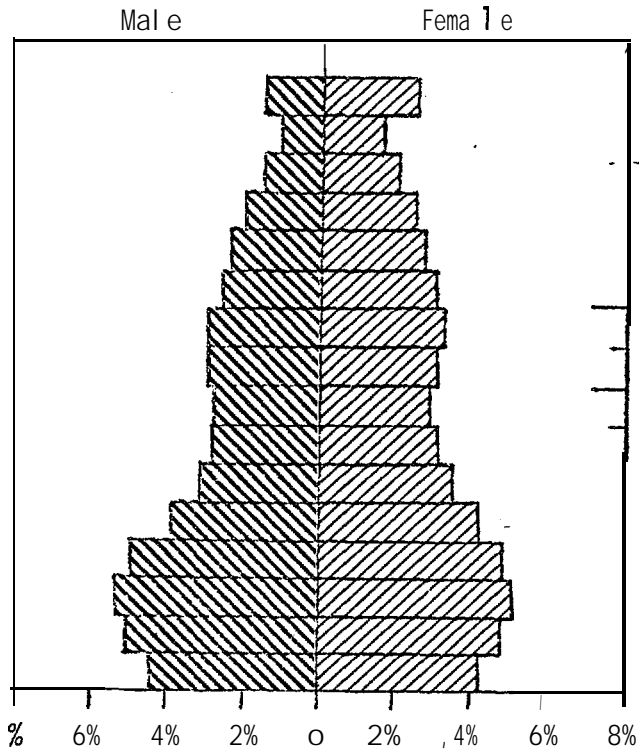
Growth Prospects

The growth prospects for the Kenai-North Kenai area in the near future appear positive, based mainly on the favorable outlook for continued hydrocarbon energy resource development. On the horizon is continued

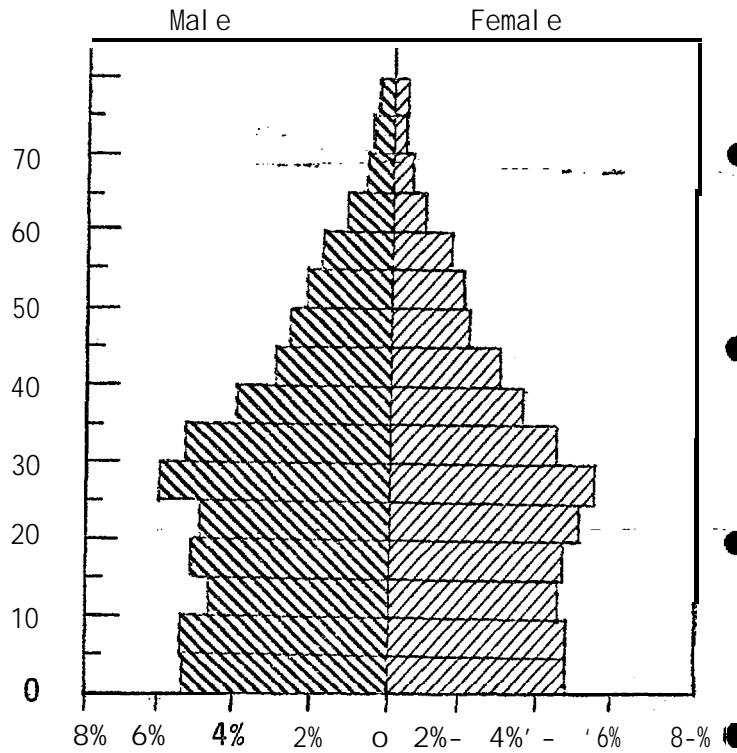
Figure 7

COMPOSITION OF POPULATION
CITY OF KENAI

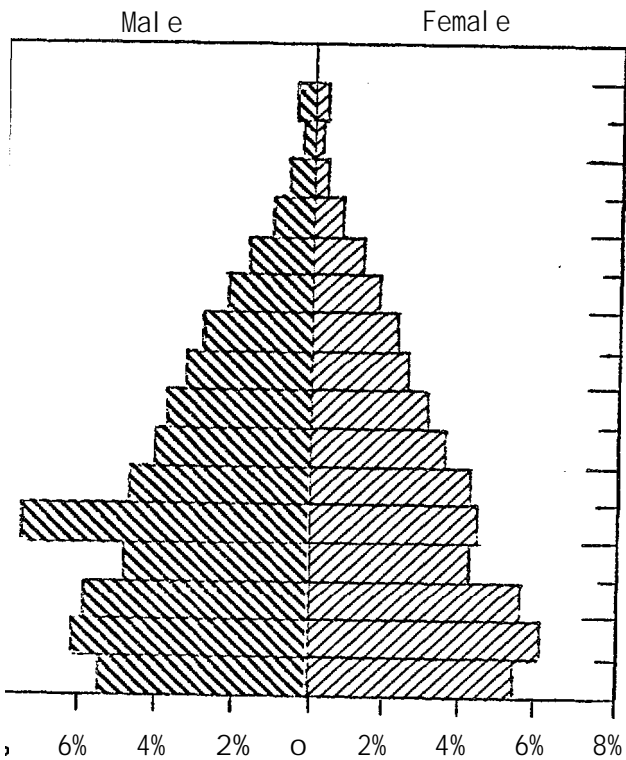
United States 1970



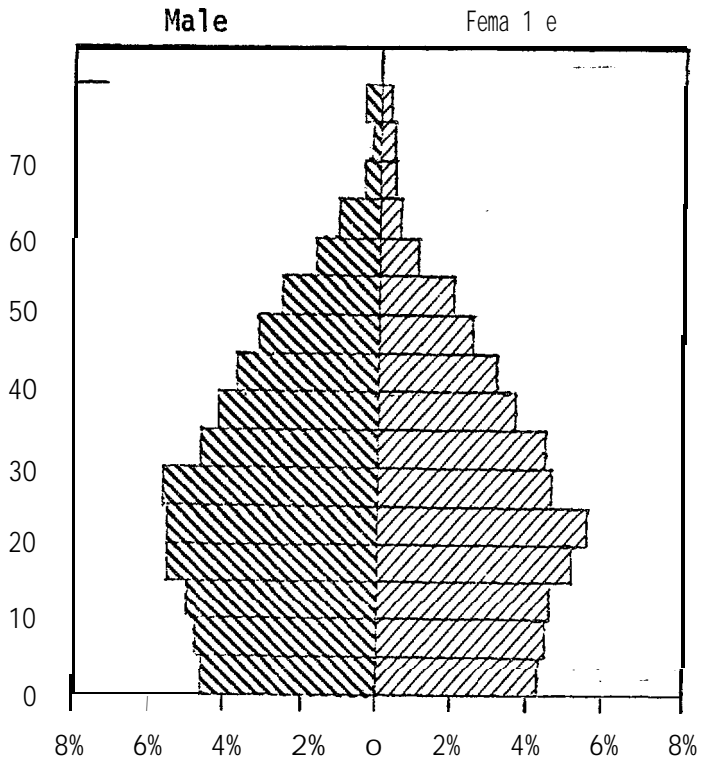
Kenai --Cook Inlet Census Division 1978



Alaska 1970



City of Kenai 1978



Source: U. S. Census Bureau, 1970 & 1978

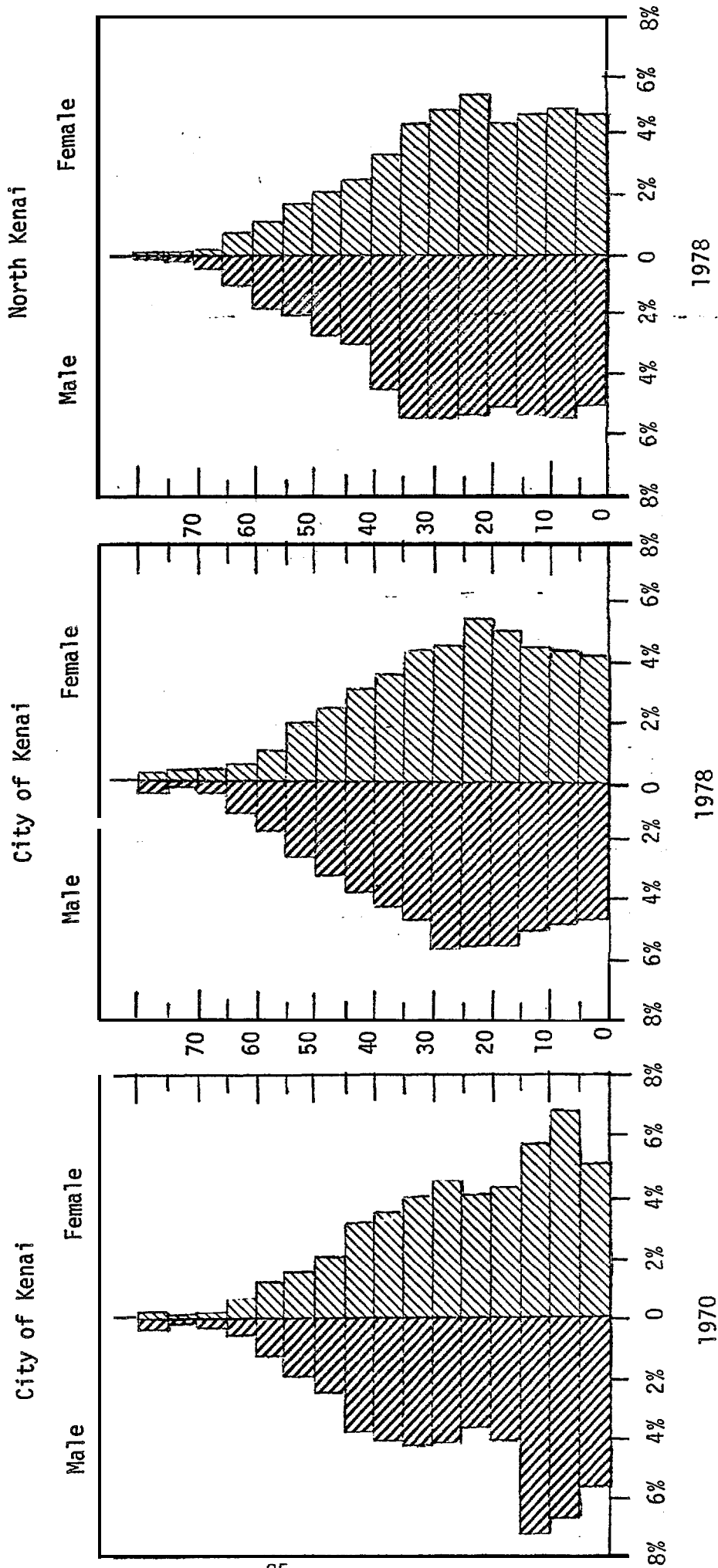
exploration for oil and gas on federal and State offshore tracts in Cook Inlet with the needed logistic and service support probably being supplied from the Kenai-North Kenai vicinity. If additional commercial reserves of oil and gas are found, then it is likely that existing rig-facilities in the **Nikiski** industrial area for treatment, transport and processing of oil and gas will be used and expanded, if at all feasible. Construction and operation of the proposed Pacific-Alaska LNG plant in **Nikiski** will, if the project proceeds, promote another round of boom growth in the region while expansion of the **Tesoro-Alaska** refinery proposed for 1980 or 1981 would lend a lesser boost to the economy. Even if the **Alpetco** royalty oil refinery project, for which **Kenai** was once a candidate site, is eventually constructed at Valdez, **Tesoro-Alaska** should be able to maintain its competitive marketing advantage in supplying fuels to the **Southcentral** Alaska market.

Apart from its access to oil and gas resources, the Kenai area is not well endowed with the natural resources or other economic which would support strong diversified growth in fisheries, tourism, agriculture, non-petrochemical manufacturing industries or public sector employment. The basic sector of **Kenai's** economy does include significant fishing and fish processing and tourism-related activities. However, despite some growth, **Kenai's** position in these industries has not altered radically in recent years and does not appear susceptible to major changes in the foreseeable future.

Figure 8

COMPOSITION OF POPULATION

CITY OF KENAI - NORTH KENAI



Source: U.S. Census Bureau, 1970 & 1978.

In the overview, it appears that **Kenai's economic** and population dynamics will remain closely linked to the fortunes of the oil and gas industry. For the long run, the area's growth will depend heavily on the success of the search now underway for additional offshore oil and gas reserves and upon the outcome of future federal and State oil and gas **lease** programs.

ECONOMY

Composition of Employment

In 1970, the Kenai Labor Area which includes Niki shka, Niki ski, Red Mountain, Swanson River and **Wildwood** Station "was already the primary employment center in the **Kenai-Cook** Inlet region with 47.3-percent of the region's total employment. The Kenai Labor Area has since become increasingly dominant. By 1977, it provided 56.6 percent of the region's jobs.

Because of the impact of two large industrial construction projects in the Niki ski area, 1977 was not a "typical" employment year for the Kenai Labor Area. Indeed, no single year can be typical in such a volatile local economy. Nevertheless, the 1977 data do illustrate to-an exaggerated degree the distinctive features of the local and regional economy. It was previously noted that the construction, mining and manufacturing sectors employ a larger share of the work force in the **Kenai-Cook** Inlet region than they do in the State as a whole. In the smaller **Kenai** Labor

Area, a sub-unit of the **Kenai-Cook** Inlet Census-Division, the concentration of employment in these three sectors was even more intense. In **1977**, the Kenai Labor Area provided 84.9 percent of the region's mining employment and 84.3 percent **of its** construction employment.

Within the Kenai Labor Area, these same three sectors, construction (37.0 percent), mining (14.7 percent) and manufacturing (14.2 percent) accounted for almost two-thirds of total insured employment in 1977 (see Table 30). On the other hand, there was an unusually low percentage of government workers (9.1 percent) and **transportation, communications** and public utilities employees (5.0 percent). Keeping in mind that the **Kenai** Labor Area's 1977 employment pattern was highly distorted by heavy industrial construction, the 1977 data reflect the extraordinary impact upon the **local workforce** of periodic industrial development projects, a tendency which will continue until the area's employment base becomes larger in scale and more diverse in its makeup.

The Anchorage Urban Observatory conducted a **sample** survey of adult employment by economic sector in the City of Kenai (see Table 31). A comparison of these figures with 1976 Department of Labor employment data for the entire **Kenai Labor Area**, suggests that employment patterns in the City of **Kenai** are not radically different from the Kenai Labor Area as a **whole**, including the unincorporated North **Kenai** area to the north of the City.

TABLE 30
 NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT DISTRIBUTION
 KENAI LABOR AREA #/
 1910 1911

	1970		1971		1972		1973		1974		1975		1976		1977		1970 - 1977	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	% Change	% Change
Agriculture, Forestry, & Fisheries	455	26.4	399	26.1	393	23.5	414	24.0	338	17.2	610	25.0	649	20.1	612	14.7	- 5.7	34.5
Mining	282	16.4	272	17.8	315	18.7	226	13.1	16.7	44.7	458	17.1	770	23.8	1,535	37.0	99.4	444.3
Contract Construction	271	15.7	260	11.0	272	16.3	276	16.0	310	15.8	352	13.1	461	14.3	588	14.2	27.5	117.0
Manufacturing	271	15.7	260	11.0	272	16.3	276	16.0	310	15.8	352	13.1	461	14.3	588	14.2	27.5	117.0
Transportation, Communications and Public Utilities	134	7.8	95	6.2	113	6.0	113	6.5	127	6.5	174	6.5	201	6.2	206	5.0	2.5	53.7
Trade	271	15.7	228	14.9	250	15.0	227	13.1	315	16.1	506	18.9	576	17.8	584	14.1	1.4	115.5
Finance, Insurance and Real Estate	46	2.7	44	2.9	48	2.9	49	2.8	52	2.6	64	2.4	77	2.4	92	2.2	19.5	100.0
Service	190	11.0	156	10.2	229	13.7	370	21.4	425	21.7	377	14.1	424	13.1	430	10.4	1.4	126.3
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Government, Federal, State & Local	70	4.1	70	4.1	70	4.1	70	4.1	70	4.1	70	4.1	70	4.1	70	4.1	0	0
TOTAL	1,723	100.0	1,527	100.0	1,722	100.0	1,728	100.0	1,982	100.0	2,679	100.0	3,231	100.0	4,150	100.0	28.4	140.9

#/ Includes Nlksika, Nlksiki, Red Mountain, Swanson River and Wildwood Station.

*/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. Unpublished data.

TABLE 31
 DISTRIBUTION OF TOTAL ADULT EMPLOYMENT
 BY ECONOMIC SECTOR
 CITY OF KENAI
 1976

	<u>Percent</u>
Agriculture & Commercial Fishing	4.2
Mining, Oil & Gas Production	20.5
Construction	14.0
Manufacturing (lumber & fish processing, oil & gas refining)	11.6
Transportation, Communications, and Public Utilities	4.7
Wholesale, Retail Trade	10.7
Finance, Insurance, & Real Estate --	1.9
Services: Medicine, Law, Hotel, etc.	16.3
Government	16.3
Other	--
<u>TOTAL</u>	<u>100.0</u>
N =	(215)

Source: Bureau of Management and Urban Affairs, and Anchorage Urban Observatory, University of Alaska. 1977. Profile of Five **Kenai** Peninsula Towns. Anchorage.

Since many commercial fishermen are **self-employed** persons, nonagricultural wage and salary employment data published by the Alaska Department of Labor fail to reflect fully the economic contribution of this industry. However, some indication of the extent to which **Kenai** area residents participate in the Cook Inlet commercial fishery can be obtained from the records of the Commercial Fisheries Entry Commission. Based upon the addresses given on permit applications, 272 persons resident in the **Kenai-North** Kenai area obtained a total of 309 commercial fishing permits in 1975. The number of permit holders does not equal the number of fishermen partly because the number of **permit holders** does not include additional crew members on fishing boats and also because permit holders operating out of the **Kenai-North** Kenai area do not necessarily list this area as their residence. On the other **hand, given** the concentration on the salmon fishery in Upper Cook **Inlet**, fishing is an extremely seasonal source of employment in this area. However, if the count of permit holders is accepted as approximately representing the number of active resident fishermen, then commercial fishermen increased the cited employment figures for the Kenai Labor Area in 1975 by about 10 percent.

In weighing the local importance of the commercial fisheries, it should be kept in mind that most (230 of 309) permits issued to Kenai area residents were for set nets (127) and drift nets (103) the small scale gear. Thus, the **Kenai-based** fishing industry is strongly oriented to the highly seasonal Cook Inlet commercial salmon fishery. In effect, commercial fishing is a part-time livelihood for many if not most participants, often supplemented by sources of income from other occupations.

Unemployment and Seasonality of Employment

There are no sources of unemployment data specifically for the Kenai Labor Area or the City of Kenai. However, the basic similarity in composition of the Kenai Labor Area's workforce to that of the Kenai-Cook Inlet region supports the inference that unemployment trends in Kenai and North Kenai resemble regional trends. That is, unemployment rates in the Kenai-North Kenai area are well above Statewide and national rates. Also, due to the dominant basic role of the Nikiski industrial area in the region's economic fortunes, it is likely that unemployment rates in the Kenai-North Kenai area fluctuate more violently than those for the region's as a whole.

The Kenai Labor Area is definitely subject to large seasonal swings in employment. The seasonal employment data for 1977 displayed in Figure 4 indicate that employment patterns are seasonally more variable in the Kenai-North Kenai area than in the rest of the region, and far more variable than Statewide norms. Again, this reflects the important roles of the construction industry and the fish processing industry, both of which are major seasonal employers in the Kenai-North Kenai area.

Recent Trends and Changes

The Kenai Labor Area has effectively become the bellwether for economic trends in the Kenai-Cook Inlet Census Division. Following the Collier Carbon and Chemical Corporation's plant expansion Project in late 1977,

the Kenai-North Kenai area (and the **Kenai-Cook** Inlet region) experienced a sudden steep slide in employment. In the Kenai Labor Area, employment fell from the 1977 annual average of 4,150 workers to an annual average of 3,169 over the first nine months of **1978**. It is important to note that this was not an across-the-board decline. It was almost solely attributable to the dropoff in construction employment from 1,535 jobs in 1977 to a mere 197 in 1978, an almost instantaneous loss of 1,338 jobs (see Table 32). Many of these construction workers undoubtedly left the **Kenai-North** Kenai area, while other economic sectors showed strength and took up some of the overall employment slack. Most notably, manufacturing employment rose significantly with the addition of new jobs at the Collier plant to the permanent local workforce. Mining employment has also risen recently, probably due to ongoing oil and gas exploration in the Cook Inlet basin following the Lower Cook Inlet **OCS sale**. Other sectors of the economy have been holding fairly steady after 1977, suggesting that the period of post-construction project adjustment is over and that the local economy has temporarily stabilized in wait for the next surge of growth.

While separate unemployment data are not compiled for the Kenai Labor Area, that area presumably was hit hardest by the employment declines in 1978 noted above. This presumption is based on the Kenai Labor Area's previous heavy reliance on construction employment as a source of livelihood.

TABLE 32

NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
KENAI LABOR AREA
FIRST THREE QUARTERS, 1978

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>Average Three Quarters</u>
Mining	648	615	670	817	786	729	686	667	674	699
Contract Construction	187	158	161	187	182	197	214	257	233	197
Manufacturing	456	464	488	541	645	820	978	1,234	862	721
Transportation, Communications and Public Utilities	159	157	174	192	205	224	191	185	185	186
Trade	564	572	566	598	599	618	747	722	640	625
Finance, Insurance and Real Estate	77	75	76	86	85	88	99	91	95	86
Service	418	422	408	434	436	444	401	417	417	422
Miscellaneous	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>
Government	255	294	298	300	256	254	135	117	145	228
Federal	(35)	(37)	(37)	(37)	(41)	(36)	(*/)	(*/)	(*/)	(*/)
State and Local	(220)	(257)	(261)	(263)	(215)	(218)	(*/)	(*/)	(*/)	(*/)
<u>TOTAL</u>	<u>2,767</u>	<u>2,761</u>	<u>2,845</u>	<u>3,159</u>	<u>3,197</u>	<u>3,377</u>	<u>3,470</u>	<u>3,693</u>	<u>3,254</u>	<u>3,169</u>

* / Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. Unpublished data.

Occupational Skills

From the sketchy occupational data available, it appears that the Kenai-North Kenai area's labor force is made up in large part of persons with skills as fishermen and laborers plus those in the building trades and in professional and technical occupations. According to the Anchorage Urban Observatory's survey, these occupational groups accounted for almost 60 percent of all employed adults in the City of Kenai in 1976. If these survey findings are valid, the City of Kenai's workforce is distinguished by a relatively large share of persons with these particular occupational skills (see Table 33).

Some information on the occupational skills of unemployed persons in Kenai-North Kenai-Soldotna area is available from Kenai Job Service registrants data (see Tables 34 and 35). It should be noted that this occupational information pertains to unemployed rather than employed persons and only to those persons registering at the Job Service program. Thus, the data are not necessarily representative of the local workforce nor even of all unemployed persons in the area. With these qualifications in mind, the Job Service data do suggest those occupational groups which may be most prone to unemployment in this area. In 1978, the occupational skills most heavily represented among the Kenai Job Service registrants were clerical and sales workers (25.6 percent); service workers (16.9 percent); and structural workers (16.7 percent), a group which mostly includes construction workers.

TABLE 33
 OCCUPATION OF ALL EMPLOYED ADULTS
 PERCENT DISTRIBUTION
CITY OF KENAI
 1976

	Percent
Professional, Technical	18.3
Managers, Officials, Proprietors	10.3
Clerical and Sales	11.3
Crafts, Foremen	20.7
Operative Workers	11.7
Service Workers	7.5
Laborers, Fishermen	19.7
Farmers, Farm Managers	0.5
<u>TOTAL</u>	<u>100.0</u>
N =	(213)

Source: Bureau of Management and Urban Affairs, and Anchorage Urban Observatory, University of Alaska. 1977. Profile of Five Kenai Peninsula Towns. Anchorage.

TABLE 34

OCCUPATIONAL SKILLS
KENAI JOB SERVICE REGISTRANTS
FY 1978

<u>Occupational Category</u>	<u>Number</u>	<u>Percent of Total</u>
Professional /technical /managerial	153	8.5
Clerical and sales	463	25.6
Clerical	(378)	(20.9)
Sales	(85)	(4.7)
Services	305	16.9
Farming, fishery, forestry	19	1.0
Processing		4.1
Machine trades	11	5.9
Bench work	14	0.8
Structural work	301	16.7
Miscellaneous	139	7.7
Unskilled	231	12.8
<u>TOTAL</u>	<u>1,806</u>	<u>100.0</u>

Source: Alaska Department of Labor, Employment Security Division.
Anchorage.

TABLE 35

OCCUPATIONAL SKILLS
KENAI YOUTH EMPLOYMENT SERVICE REGISTRANTS
FY 1978

<u>Occupational Category</u>	<u>Number</u>	<u>Percent of Total</u>
Professional /technical /managerial	0	0.0
Clerical and sales	10	6.2
Services	8	5.0
Farming, fishery, forestry	1	0.6
Processing	7	4.3
Machine trades	2	1.3
Bench work	1	0.6
Structural work	7	4.3
Miscellaneous	8	5.0
Unskilled	117	72.7
<u>TOTAL</u>	<u>161</u>	<u>100.0</u>

Source: Alaska Department of Labor, Employment Security Division.
Anchorage.

Income Levels

Various income measures consistently indicate that employees in the Kenai Labor Area enjoy comparatively high incomes. ~~As early as~~ 1969, according to the U.S. Census, the mean household income in the City of Kenai was \$15,927, well above the mark of \$14,150 for the Kenai-Cook Inlet Census Division and \$13,856 for the State as a whole (see Table 36). A more recent **sample** survey of household incomes conducted by the Anchorage Urban Observatory found that City of Kenai families had a mean income of \$31,771 in 1975. This was highest of the five **major** cities (Kenai, **Soldotna**, **Seldovia**, Seward and Homer) in the Kenai Peninsula Borough (see Table 37) and was well above the Boroughwide (excluding **Homer**) mean of **\$28,946**.

Also tending to support the conclusion that **family** incomes are above average in the **Kenai-North Kenai** area is the finding that the Kenai Labor Area employment mix includes a high proportion of workers in the better paid industrial sectors of mining and construction.

Public assistance programs appear to make a minor, if critical, contribution to the economic wellbeing of some **Kenai** area residents. In the month of March 1979, the various public assistance programs administered by the **Alaska** Department of Health and **Social** Services paid a total of \$33,024 to **129** aid recipients in **Kenai**, with the bulk of the cases and funds being in the Aid to Families with Dependent Children category (see **Table 38**). In addition, the Bureau of Indian Affairs'

TABLE 36

HOUSEHOLD INCOME DISTRIBUTION
KENAI, ALASKA
1969

<u>Household Income</u>	<u>Percent of Total</u>
Under \$3,000	3.6
\$3,000-\$4,999	2.4
\$5,000-\$6,999	4.2
\$7,000-\$9,999	13.4
\$10,000-\$14,999	23.6
\$15,000-\$24,999	40.3
\$25,000 or more	12.6
<u>TOTAL</u>	<u>100.0</u>
Median Household Income	\$15,716
Mean Household Income	\$15,927

Source: U.S. Department of Commerce, Bureau of the Census. 1971. General Social and Economic Characteristics, Alaska. Washington, D.C. Final Report PC(1)-C3.

TABLE 37

HOUSEHOLD INCOME DISTRIBUTION
KENAI, ALASKA
1975

<u>Household Income</u>	<u>Percent of Total</u>
Under \$2,500	--
\$2,500-\$4,999	0.7
\$5,000-\$7,499	2.8
\$7,500-\$9,999	0.7
\$10,000-\$14,999	10.5
\$15,000-\$19,999	11.1
\$20,000-\$24,999	14.5
\$25,000-\$29,999	11.1
\$30,000-\$34,999	11.1
\$35,000-\$39,999	11.1
\$40,000 or more	26.4
<u>TOTAL</u>	<u>100.0</u>
Median Household Income	\$29,931
Mean Household Income	\$31,771
N =	(144)

Source: Bureau of Management and Urban Affairs, and Anchorage Urban Observatory, University of Alaska. 1977. Profile of Five Kenai Peninsula Towns. Anchorage.

TABLE 38
 PUBLIC ASSISTANCE PROGRAM PAYMENTS
 KENAI, ALASKA
 MARCH 1979 a/

	<u>Old Age Assistance</u>	<u>Aid to the Blind</u>	<u>Aid to the Disabled</u>	<u>Aid to Families with Dependent Children</u>	<u>Total</u>
Total Payment	\$2,284	\$ 168	\$3,921	\$26,656	\$33,024
Number of Cases	17	1	29	82	129
Average payment	\$ 134	\$ 168	\$ 135	\$ 325	\$ 256

66

a/ March is considered to be a representative month for public assistance payments to individual cases.

Source: Alaska Department of Health and Social Services, Office of Information Systems. Juneau.

general assistance program, which is administered by the Cook Inlet Native Association in this area, distributed a total of \$21,118 in assistance payments in 1978 (see Table 39). Considering the high unemployment rates which prevail **in** the Kenai **region, the** amount of income provided through public assistance programs appears modest for a community of **Kenai's** size.

Land Use

OVERALL LAND USE PATTERNS

The City of **Kenai's** overall land use pattern derives from its past, from **its** economic dependence on a waterfront location, from the construction of major highways and from public ownership of large parcels of land.

The original townsite on the north bank of the **Kenai** River mouth evolved from a fort and fur trading post established there by the Russians in 1791. Most development concentrated in this area **until** the early part of the twentieth century when fish canneries were established on the waterfront off Beaver Loop Road and across the river off **Kalifonsky** Beach Road.

Following **World War II**, the Veterans Homestead Act brought numerous homesteaders to the area and more scattered development began. As a group, the most homesteads were large parcels surveyed in a grid pattern and scattered along existing township lines. Although many of these homesteads have since been subdivided, the extent of actual development-

TABLE 39

GENERAL ASSISTANCE PAYMENTS
 KENAI, ALASKA
FY 1973 - FY 1978

	<u>FY 1973</u>	<u>FY 1974</u>	<u>FY 1975</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u>
Total Payment	\$3,999	\$23,552	\$ 3,519	\$ --	\$14,790	\$21,118
Number of Cases	10	9	9	--	16	28
Average Payment						
Annual	\$ 400	\$2,617	\$ 391	\$ --	\$ 924	\$ 754
Monthly	\$ 33	\$ 218	\$ 33	\$ --	\$ 77	\$ 63

Source: Cook Inlet Native Association, Social Services Department.

remains light. Construction of the Wildwood Army Station and the North Kenai Road in 1953 encouraged linear development north of Kenai's corporate limits. Development along the Kenai Spur Road followed the construction of the Sterling Highway connection to Anchorage **later in the 1950's.**

The presence of large parcels of public land throughout the City of Kenai has resulted in much private development occurring in small privately owned pockets between large public tracts. Although the recent leasing of public land near the airport has encouraged commercial development of that facility, most private development **still occurs on pockets of private land.**

Most of Kenai's commercial uses are concentrated in the City center near the intersection of Kenai Spur Road and Willow Drive. However, substantial commercial floor space exists north of the downtown area **along the Spur Highway** while small convenience establishments are scattered throughout the community's residential areas.

Residential development in the City of Kenai tends to border the major roadways. Most homes are within 0.8 kilometers (0.5 miles) of the Spur Highway, Beaver Loop Road or the **Kalifonsky Beach Road**, with the latter area becoming attractive for residential development after the construction of a bridge across the Kenai River in the mid-1970's. Prior to that time, access to the **Kalifonsky Beach** area was via a bridge in **Soldotna.** **While** concentrations of residential development are located at the northern and eastern perimeters of the City along the North Kenai and

Spur Roads, most residential development is in close proximity to the highway near the commercial district.

A tabulation of occupied lands and tidelands within Kenai's 7,395.3 hectare (18,273.9 acre) corporate limits in 1979 indicated that only 20.6 percent was in use at that time (see Table 40). Industrial land use, most of which was taken up by the airport, occupied the largest area (581.4 hectares or 1,436.7 acres), followed by residences (459.6 hectares or 1,135.6 acres) and streets and roads (260.1 hectares or 642.7 acres).

The absence of a developed road system and the presence of the former **Wildwood** military reserve have constrained development in North Kenai to a narrow strip bordering the North Kenai Road. Industrial development is heavily concentrated at the Nikiski petrochemical complex. Residential and commercial development is scattered the entire length of the North Kenai Road from the Kenai City limits to Captain Cook State Park. Although relatively little development has occurred thus far at the Kenai Native Association facility at **Wildwood**, the 1,740.2 hectare (4,300 acre) site has a potential for expanded use, and the Native Association is actively encouraging industry and business to locate there.

A tabulation of land use in North Kenai by Human Resources Planning Institute, Inc. in 1974 indicated that a large share of the developed land in the area is in industrial use. At that time, there were :

TABLE 40
EXISTING LAND USE a_/
CITY OF KENAI
1978

<u>Use</u>	<u>Acres b/</u>	<u>Percent of Developed Area</u>	<u>Percent of Total</u>
Residential	1,135.6	30.2	6.2
Single Family c/	985.5	26.2	5.4
Trailer	102.4	2.7	0.5
Multi family	47.7	1.3	0.3
Commercial	116.8	3.1	0.6
Industrial	1,436.7	38.2	7.9
Institutional	118.5	5.0	1.0
Open Space	193.8	5.1	1.1
Streets and Roads	642.7	17.1	3.5
Utilities	49.0	1.3	-0.3
<u>Total Developed Area</u>	<u>3,763.1</u>	<u>100.0</u>	20.6
Undeveloped Land	14,510.8		79.4
<u>Total Land Area</u>	<u>18,273.9</u>		<u>100.0</u>

a/ To expedite the tabulation for each parcel, all secondary uses and associated vacant lands are considered part of the principal use. Thus, to say 80 percent of the City of Kenai is vacant is a conservative estimate.

b/ Multiply by .4046945 to obtain hectares.

c/ Single family includes trailers.

Source: R.W. Thorpe and Associates and Mundy/McCrackin and Associates. 1979. City of Kenai Land Use Analysis, Summary Report. Review Draft. Seattle.

approximately 412.4 hectares (1,019 acres) of developed land in North Kenai, of which 267.7 hectares (660 acres) or about 65 percent, were devoted to industry (see Table 41). Most of this was concentrated at Nikiski, although some industrial development was scattered along the North Kenai Road. Aside from industrial land use, most developed land in North Kenai was occupied by residences (112.1 hectares or 277.1 acres) and businesses (28.4 hectares or 70.1 acres).

The responsibility for planning in the City of Kenai, the North Kenai area and all other areas in the Borough rests with the Kenai Peninsula Borough Planning Department headquartered in Soldotna. The City of Kenai's first comprehensive development plan was prepared by the Alaska State Housing Authority in 1962 and an updated comprehensive plan was prepared by the same agency in 1965. More recently, the Borough Planning Department staff prepared a series of baseline studies for incorporated cities within the Borough boundaries, including one of Kenai in 1977. The 1965 comprehensive plan for Kenai was formally adopted by the Borough in 1974. However, because of the major growth which has taken place in the City in the intervening years and the prospect of substantial additional impacts from offshore oil development, the Borough is currently preparing a completely new comprehensive plan. This document will include plans for land use, community facilities and transportation facilities and recommend implementation procedures. Two additional planning efforts now underway by the Borough are of relevance to Kenai and the surrounding area. These include the Kenai Peninsula Port and Harbor Demand and Feasibility Study and the Coastal Management Program,

TABLE 41

**EXISTING LAND USE
NORTH KENAI AREA
1974**

<u>Land Use</u>	<u>Land Area (acres) a/</u>	<u>Percent of Total</u>
Residential	277.1	27.2
Commercial	70.1	6.9
Industrial	659.9	64.7
Public and Semipublic Buildings	12.2	1.2
<u>TOTAL</u>	<u>1,019.3</u>	<u>100.0</u>

a/ Multiply by .4045945 to obtain hectares.

Source: Mathematical Sciences Northwest, Inc. and Human Resources Planning Institute, Inc. 1976. A Social and Economic Impact Study of Off-Shore Petroleum and Natural Gas Development in Alaska. Prepared for the Bureau of Land Management. Contract No. 08550-CTS-46.

both of which are described in further detail in the section of this report dealing with the City of Homer.

DEVELOPMENT CONSTRAINTS

Geologic hazards and land ownership patterns are the major constraints to development in the general Kenai area. Poor soil conditions are a major limiting factor. In general, land with good drainage characteristics extends four miles to the northeast of the original townsite in a belt approximately 1.6 kilometers (1 mile) wide. Northwest of the original townsite, land areas with good natural drainage are more extensive and extend beyond Kenai's corporate limits. Other less extensive areas of land which can be developed without artificial drainage are located in a crescent bordering Beaver Loop Road in the southeastern part of the City. Much of the remaining area is poorly drained **swampland** which requires extensive excavation, backfill and the provision of public sewer services before it can be developed. These lands are located primarily in the Beaver Loop area, north and west of Beaver Creek and in low lying areas along the Kenai River.

Much of the undeveloped riverfront land in Kenai is subject to flooding. **Floods** result from spring melt, ice jams, glacial lake release and extremely high tides. **Floods** from snowmelt and ice jams occur in the spring. **Tidal** flooding from the mouth of the river to mile 11.5 at Eagle Rock, occurs annually and may reach an extreme range of 9.8 meters (32 feet). A detailed study of the flooding potential of the

Kenai River was prepared by the Army Corps of Engineers in 1967 and reported in Flood Plain Information, Kenai River. This study defines the 20 and 50 year floods and those areas susceptible to flooding from ice jams at Big Eddy. In general., lands most likely to flood are the low lying areas along the river where soil conditions are poor. A more recent study of the Kenai River prepared by the Corps of Engineers in 1978 recommends that development in areas identified as wetlands or floodplains should be precluded or severely limited.

The Kenai Lowlands are included in seismic risk zone--3, -an area susceptible to earthquakes of Richter magnitude 6.0 to 8.8 and where major structural damage could occur. Although property damage in Kenai as a result of the 1964 earthquake was minimal when compared to other Southcentral Alaska coastal communities, the U.S. Geological Survey reported extensive ground fissuring in the area and a lowering of the ground surface elevation by approximately 0.6 meters (2 feet). Similar effects could be expected to reoccur in the event of another earthquake of similar magnitude.

Although private land in Kenai appears to be adequate to accommodate sizable residential growth and development, much of the community's prime commercial and industrial land is in public ownership. The City of Kenai, in particular, owns many large parcels of land near the central business district and at the airport which are suitable for development. For a more detailed discussion, see the following Land Status section.

In North Kenai, the undeveloped road system, the Kenai National Moose Range, poorly drained soils and a number of lakes restrict development to a narrow strip roughly paralleling the Cook Inlet shoreline from the Kenai City limits to Captain Cook State Park. Within this area and the Wildwood facility, there appears to be ample private land for future development. Much of the prime waterfront land was selected for State ownership; but large portions of State selected lands were subsequently selected by Native groups under the terms of the Alaska Native Claims Settlement Act or by the Kenai Peninsula Borough under the Municipal Entitlement Act. Some of these tracts could eventually become available for development.

LAND STATUS

Within Kenai's corporate limits, privately owned land predominates in the outlying areas near major highways and roads, in areas north and west of the business center and in the old townsite. However, much of the prime commercial and industrial land near the City center and on the waterfront is in government ownership. The City of Kenai owns a large amount of strategically located land. This includes the Kenai Airport and adjacent business and industrial land, some of which is leased to private businesses, a number of small lots in the townsite area; land around the junction of Beaver Loop and Kenai Spur Roads, low-lying lands on both sides of the river mouth and several large tracts in the Beaver Loop area.

The federal government owns a large tract of land adjacent to the airport, some small lots in the townsite area, a large waterfront tract along the North **Kenai** Road, and tracts in the Beaver Loop area. State land includes several large tracts in the Beaver Loop area, ~~low-lying land along the~~ river mouth, a large parcel in the north of the City abutting Wildwood, and some land along the North **Kenai** Road. Borough land within the **City** is limited to a few miscellaneous parcels, school sites and a tract along the **Kenai** River near Eagle Rock.

In North Kenai, much of the road accessible and waterfront **property is** in private hands as a result of federal homesteading programs and State land sales. Remaining lands west of the **Kenai** National Moose Range and north of Wildwood are either patented or tentatively approved State land. Much of the latter has been selected by Cook Inlet Region, Inc.

Under the provisions of the Alaska Native Claims Settlement Act, this Native regional corporation is entitled to select approximately 600,000 hectares (1.5 million acres) of land within its 98,420 square kilometer (38,000 square mile) region. Since most of the land in the region with economic value was not available for selection, the corporation was able to obtain its entitlement only by selecting undesirable land. To remedy this situation, a complicated land trade was negotiated by the regional corporation, the State of Alaska and the Department of the Interior under which some previously restricted State land was made eligible for Native selection. On the **Kenai** Peninsula, this included 46,540 hectares (115,000 acres) of State patented and tentatively approved land between -.

Nikiski and the **Homer Spit**. The regional corporation did select substantial amounts of State land in the North **Kenai** area, but none of this has yet been conveyed.

The Native settlement at **Kenai** was designated as an "urban village" under the Alaska Native Claims Settlement Act and thereby became entitled under Section 4(h)(3) of the Claims Act to select 9,324.2 hectares (23,040 acres) "located in reasonable proximity to the municipality." As part of its entitlement, the **Kenai** Village Association selected and acquired in 1974 the 1,740.2 hectare (4,300 acre) former Air Force (and originally an Army) facility at **Wildwood** located just north of Kenai's corporate limits and east of the North **Kenai** Road. The remainder of its entitlement has been selected from State land in North **Kenai** and **Kenai**. In addition, the **Salamatof** Village Association, whose legal status must still be determined by the courts, has selected land in North **Kenai**.

Under the Municipal Entitlement Act, the **Kenai** Peninsula Borough is entitled to select 63,043 hectares (155,780 acres) of State land boroughwide. The Borough has already received title to approximately 19,425 hectares (48,000 acres) of this, some of which is in the North **Kenai** area. Additional selections are currently being studied by the State to check for conflicts with overriding State interests.

HOUSING

According to **Mundy/McCrackin** and Associates, most housing in the City of **Kenai** is in single family units. Of a total of **1,780 housing** units counted in the City in **1978**, 52 percent (925 units) were in single family units, with slightly less than one-third (587 units) in multifamily units and 15 percent (268 units) in mobile homes (see Table 42). **Mundy/McCrackin** also observed that **Kenai** had an extremely high vacancy rate of 22.6 percent in 1978. A March 1978 survey by **Frykholm** Appraisal Services found an even higher 46.1 percent vacancy rate, but this survey considered rental units only. High vacancy rates are unusual in Alaska communities which more often are faced with problems associated with a shortage of adequate housing. However, high housing vacancy rates were also being experienced by Fairbanks, Anchorage and **Valdez** during 1978 and **1979**, in large part because of overbuilding during the pipeline construction years. Although completion of pipeline construction undoubtedly influenced vacancy rates in **Kenai** to some extent, the completion of construction of the Union Oil petrochemical plant addition in the nearby Nikiski area and the subsequent **outmigration** of a large group of construction workers is believed to be a primary cause.

According to the Urban Observatory, in 1976 **Kenai** had a lower proportion of single family units and higher proportion of multifamily units than most other communities in the Borough. Although the proportion of mobile homes in **Kenai** is lower than in either Homer or **Soldotna**, it is substantially higher than in the **older** communities of **Seldovia** and

Seward. Slightly over 60 percent of Kenai's housing units were found by the Urban Observatory to be owner occupied in 1976, with the remainder being either occupied by renters (37.7 percent) or by **people** living in rent-free" accommodations (see **Table 43**). The proportion-of-owner occupancy in Kenai is lower than the other towns (except Seward) surveyed by the Urban Observatory because Kenai and Seward have a higher proportion of multi family housing.

According to the 1970 Census, the City of Kenai had an average of 3.6 persons per household, slightly higher than the Statewide average of 3.42 persons per household at that time. Anchorage Urban Observatory 1976 data indicate that household size in this community declined after **1970 as it** found the mean number of persons per household here to be 3.258. The number of persons per household in 1978 was an even lower **3.15**, using U.S. special census population data and dividing that **by** the number of occupied housing units counted in the City in 1978 by **Mundy/McCrackin**. This decline is consistent with a **nationw** de trend toward smaller family size.

Housing stock in Kenai is in generally good **condtion**. In 1976, the Urban Observatory found 76.4 percent of the City's housing units to be in good external condition, while 23 percent were judged to be in need of external repairs. Less than one percent were deemed to be in poor condition, Overall, the housing units in Kenai are of adequate **size**. In 1970, the U.S. Census found the average number of rooms per unit to be 4.4, slightly higher than the **1970** State urban housing median of 4.3"

TABLE 42
HOUSING COMPOSITION
KENAI, ALASKA
1979

<u>Type of Unit</u>	<u>Number</u>	<u>Percent of Total</u>
Single Family	925	52.0
Multifamily	587	33.0
Mobile Home	268	15.0
<u>TOTAL</u>	<u>1,780</u>	<u>100.0</u>

Source: **R.W. Thorpe and Associates and Mundy/McCrackin and Associates.**
1979. City of Kenai Land Use Analysis, Summary Report. Review
Draft. Seattle.

TABLE 43
HOME OWNERSHIP CHARACTERISTICS
KENAI, ALASKA
1970 AND 1976

<u>Type of Occupancy</u>	<u>1970</u>		<u>1976</u>		<u>Percent Distribution Change</u>
	Number	Percent	Number	Percent	
Owner Occupied	493	50.7	798	60.9	61.9
Renter Occupied	479	49.3	494	37.7	3.1
Other <u>a/</u>	--	--	17	1.3	--
<u>TOTAL</u>	972	<u>100.0</u>	<u>1,309</u>	<u>100.0</u>	<u>34.7</u>

a/ Includes company housing.

Source: Bureau of Management and Urban Affairs and Anchorage Urban
Observatory. 1977. A Profile of Five Kenai Peninsula Towns.
Soldotna.

rooms per **unit**. According to the Urban Observatory, **the** median number of rooms per unit was 4.3 in 1976.

Housing costs in Kenai are quite high. According to **the** Urban Observatory, the typical City resident paid an average of \$311.00 per month in rent or mortgage payments in 1976. This contrasted with an average of \$145.00 in Seward and \$285.00 in **Soldotna**. Kenai's high housing costs reflect the preponderance of new housing units in the community and an apparent scarcity of available housing in 1976.

Published data on housing characteristics in the North **Kenai** area are extremely limited. The 1970 Census developed housing characteristics for the Kenai-Cook Inlet Census Division as "a **whole** but these **are** not necessarily 'representative of the North Kenai area.'" **A review of 1974** aerial photographs of the North Kenai area by Human Resources Planning Institute, Inc. determined that a large share of the housing there consisted of mobile homes in trailer courts. HRPI **also** observed that a large number of once occupied trailer court spaces were empty. Since both **Kenai** and **Soldotna** were undergoing housing shortages and substantial housing construction at this time, it would appear that much of the housing in North **Kenai** was temporary and accommodated a transient population which left the area when petrochemical-related **construction** was completed. At the same time, it appears that much of the permanent **labor** force at the petrochemical complex **lives** in Kenai and **Soldotna** where public facilities and services are more readily available.

Community Facilities and Services

PUBLIC SAFETY

Police

The **Kenai** Police Department has provided police protection inside **Kenai's** corporate limits since 1969 when the community was incorporated as a first class city. The police station and jail are housed in a building shared with the Fire Department and are located **at the** corner of Willow Drive and Beaver Loop Road. The police station includes three administrative offices, a squad room, a physical evidence storage area, a visitors room and a kitchen. The jail, which is run by the City under contract to the Alaska Division of Corrections, has four cells which can accommodate 14 male adults. Female adults can be held only if advance notice is given. Also contained in the jail are a small library and a small recreation room for watching TV, playing cards and reading. Although the building is new and in excellent physical condition, Police Department officials estimate that additional station space **will** be required in 5 to 10 years and additional jail space will be needed in the next 4 to 5 years.

The Police Department is staffed by 12 police officers (a chief, lieutenant, three sergeants and seven patrolmen), six **jail** personnel and six clerical and communications personnel who also handle dispatching for the Fire Department. The ratio of police officers to population is **roughly 1 to** -

365. City police powers extend to **Kenai's** corporate limits, with areas beyond handled by the Alaska State troopers stationed in **Soldotna**.

Police equipment includes seven late model **radio-equipped patrol** cars, traffic surveillance equipment and a central communications system which connects the Police Department with the Central Peninsula General Hospital, the Fire Department and the State Department of Public Safety communications system. The Department will acquire two additional patrol vehicles and replace two older vehicles in the near future.

Kenai Police Department activity has increased **substantially** over the past five years. From 1974 to 1978, the number of **service** calls answered by the Department went from 2,000 to **3,422**, a **growth** of **approximately 70** percent (see Table 44). Although the greatest rate of growth **occurred** in 1976 during the Collier plant expansion project, service calls have continued to increase recently despite a decline of economic activity in the area. Police officials expect service **calls** to continue to grow over the next several years at a rate of approximately 10 percent per year.

Of more significance than the increase in service **calls** is the recent dramatic rise in the incidence of serious crime in **Kenai**, a phenomenon which has lately occurred in other **Southcentral** Alaska communities which have undergone rapid population growth or which have seasonal population fluctuations. In Kenai, Part I offenses increased by 181.5 percent from 1974 to 1978 (see Table 45). While crimes against persons (assault)

TABLE 44

CRIMINAL COMPLAINTS
KENAI POLICE DEPARTMENT
 1974 - 1978

<u>Year</u>	<u>Number of Service Calls</u>	<u>Percent Change</u>
1974	2,000	---
1975	2,105	5.2
1976	2,606	23.8
1977	3,079	18.2
1978	3,422	11.1

Source: City of Kenai Police Department.

TABLE 45

PART I CRIMINAL OFFENSES
 CITY OF **KENAI**
 1974 - 1978

<u>Criminal Offense</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>percent Change</u>
Homicide	--	--	--	--	--	--
Rape	--	--	--	--	2	--
Robbery	1	--	3	2	6	500.0
Assault	22	35	38	30	21	(4.5)
Burglary	38	27	40	48	79	107.9
Larceny	111	132	117	189	190	71.2
Auto Theft	27	18	45	38	37	37.0
<u>TOTAL</u>	<u>199</u>	<u>212</u>	<u>243</u>	<u>307</u>	<u>335</u>	<u>181.5</u>

Source: City of Kenai Police Department.

have decreased since reaching a high in 1976, crimes against property (burglary, larceny and auto theft) have grown substantially. According to police officials, the decrease in crimes against persons and the increase in crimes against property relate **directly to changes** in the area's economy. During periods of heavy construction and high employment, property crimes appear to stabilize. However, the population growth experienced during these periods appears to cause an increase in the incidence of crimes against persons. Conversely, during periods of high unemployment and economic decline, property crimes increase. The Police Department anticipates that property **crimes will continue to** increase during the next several years.

Although Part I crimes represent only about **10** percent of the Department's service requests, they represent a very disproportionate investment of the Department's man hours because they entail lengthy investigation and court proceedings and often involve sophisticated investigative techniques. Substantial increases in serious crime **will** mean increases in staff and support **equ**ipment and probably also the police station and jail.

The Alaska State troopers are responsible for **police** protection outside the corporate limits of **Kenai** and **Soldotna**. Detachment **D** which is headquartered in **Soldotna** covers an area which extends from Seward and Moose Pass to Seward and includes the village of Tyonek as **well**. In addition to **criminal** investigations, the State troopers are charged with responsibility for search and rescue, crash site investigations, administration of the driver **licensing** and testing program, and **assisting**

State Fish and Wildlife Protection personnel as needed. Trooper responsibility for driver licensing extends to the cities of **Kenai** and **Soldotna**.

In 1979, Detachment D employed 26 people, nine of whom were stationed in **Soldotna**. These included 7 troopers, an administrative assistant and a dispatcher. Equipment available for use in the **Kenai-North Kenai-Soldotna** area includes seven radio-equipped patrol cars. When detention of prisoners is required, State troopers use the **Kenai** jail. State trooper personnel relate that crime problems "in **their jurisdiction are** similar to those experienced in the incorporated cities of **Kenai** and **Soldotna**.

Fire Protection

The **Kenai** Fire Department is housed with the Police Department on Willow Street close to the municipal airport and the City's commercial center. The City's ambulance is also housed at the fire station. The station contains five bays, with the capacity of the station depending upon the type of rolling stock being stored. The Department's seven vehicles currently use all available space. Fire protection is provided throughout the City. In addition, both equipment and personnel from the North Kenai and **Soldotna** Fire Departments are available to **Kenai** under mutual aid agreements.

The **Kenai** Fire Department is staffed by 12 salaried firemen augmented as needed by up to 15 volunteers. Firefighting equipment consists of seven vehicles: a 1967 American LaFrance unit capable of pumping **63.1** liters per second (1,000 gallons per minute); a 1970 Mack **pumper with** a **94.6** liters per second (1,500 gallons per minute) capacity; a third pumper with a **78.8** liters per second (1,250 gallons per minute) capacity; a crash truck equipped with a 1,135.5 liter (300 gallon) water tank and 75.7 liters (20 gallons) of dry chemical; and a pickup truck with a 5 kilowatt generator used for rescue and **savage**. A recently acquired 19.7 kiloliter (5,200 **gallon**) tank truck is the main-water-supply for areas outside the hydrant system and also provides an emergency water supply in the event of **wellhouse** failures in the City water system.

Kenai's Insurance Services Office (**ISO**) rating varies by area, depending on the availability of fire hydrants and distance from the fire station. Areas on the hydrant system and within 8 kilometers (5 miles) of the station have an ISO rating of **6**. The City anticipates that this will be lowered to 5 when the new **11,355** kiloliter (3 million gallon) storage tank at the airport becomes operational in the summer of **1979**. Areas not served by the hydrant system but within a five mile radius of the town center have an **ISO** rating of 8 and all other areas have a rating of 9.

Kenai's fire incidence rate is very **low** and there have been no major fires or loss of life from fire here in the past five years (see Table 46). The community's **major** fire protection problem is the excessively :

TABLE 46
 FIRE LOSS
 KENAI, ALASKA
 1973 - 1978

<u>Year</u>	<u>Buildings</u>	<u>Trailers</u>	<u>Autos</u>	<u>Total</u>
1973	\$95,180	\$2,150	\$1,000	\$98,330
1974	15,700	200	1,350	17,250
1975	45,500	4,000	9,540	59,040
1976	208,600	15,000	7,800	231,400
1977	7,800	80,000	4,000	91,800
1978	37,600 "	63,000	3,390	103,990-- -----

Source: City of Kenai Fire Department. Annual Report. 1978.

long run required to fight fires in many outlying sections of the City. Areas which are particularly vulnerable in the event of a major fire are Beaver Loop, Thompson Park, Highland Trailer Park, VIP Estates, the canneries across the river and Wildwood. The construction of a substation at mile 5 on the Spur Highway near the intersection of Beaver Loop Road during the next two years will vastly improve response time to the eastern reaches of the City. A second substation has been proposed for the Wildwood area, but this will probably not be built until additional industry is attracted to the area.

The lack of a reliable water supply is also a fire protection problem. The Department's pumping capacity of 252.3 liters per second (4,000 gallons per minute) is well over the 157.7 liters per second (2,500 gallons per minute) recommended by the ISO for cities of Kenai's size; however, even with the addition of the 11,355 kiloliter (3 million gallon) storage tank at the airport, the City water system cannot support the pumping of 252.3 liters per second (4,000 gallons per minute) on a sustained basis without additional storage capacity.

Department officials also see a need for additional salaried staff. At the present time, in the event of a major fire requiring all three engines, it is necessary to call in off-duty personnel to cover the station. If these are unavailable, the station is unattended and there is no one to drive the ambulance, answer airport alerts or respond to fire calls.

In addition to fire protection, the **Kenai** Fire Department also provides emergency medical services within the City. Emergency medical service includes the provision of emergency medical treatment at the scene and transport to the hospital by ambulance if that is **required.** Equipment consists of a 1978 fully-equipped Dodge ambulance. All fire **department** personnel are trained so that an ambulance crew is available on a **24-** hour basis. However, as mentioned above, in the event of a major fire requiring all on-duty personnel to man engines, it is possible there might be no one available to drive the ambulance.

Since voter approval of the establishment of a service area in 1969, fire protection in the North Kenai area has been provided by the North **Kenai** Fire Department. Department headquarters are located **at mile** 17.9- of the Spur Road and a substation is located further north-at mile 26.6 near the **Nikiski** petrochemical complex and close to the geographic center of the service area. Fire protection and emergency medical service are provided to the road-connected area from the **Kenai** City boundary on the south to Captain Cook State Park on the north. Station No. 1 can accommodate five units and Station No. 2 currently houses two vehicles, with space for an additional two vehicles to be added in the **fall** of 1979.

The North **Kenai** Fire Department is staffed by 18 salaried and 28 volunteer firemen. Thirteen of the salaried firemen are either EMT or paramedic trained and all the staff has special training in fighting petroleum fires. Firefighting equipment consists of **12** vehicles. These include

two 63.1 liter per second (1,000 gallon per minute) pumpers, each with a 1,892.5 liter (500 gallon) tank capacity; two 47.3 liter per second (750 gallon per minute) pumpers equipped with 2,838.8 liter (750 gallon) tanks; two 9,462.5 liter (2,500. gallon) tankers; **one fully equipped** rescue unit; three 4-wheel drive utility vehicles used primarily for personnel transportation but also available as stand-by ambulances; and a fully equipped ambulance. In addition, within the next 12 months the **Department** will acquire two 757 liter (200 gallon) quick response vehicles designed specifically to fight brush and wildland fires and an ambulance for Station No. 2 to function as a standby: -Breathing units and a high pressure, foam injection system **will** considerably improve the Department's ability to respond to petrochemical fires at the Nikiski industrial complex. Mutual aid agreements with the Kenai and Soldotna Fire Departments further strengthen North **Kenai's** firefighting capability.

Because it lacks a public water and hydrant system, North **Kenai's** Insurance Services Office rating is extremely poor. Areas within an 8 kilometer (5 mile) radius of either fire station have an **ISO** rating of 8 and areas outside this range are rated **9**. The lack of a water and hydrant system outside the petrochemical complex at **Nikiski** is the community's most serious fire protection problem. At present, the North Kenai Fire Department obtains its water from hydrants at the Standard and Union Oil complexes. While these water sources are adequate, storage capacity is limited to the Department's 25.5 kiloliter (6,750 gallon) tanker capacity. An additional problem is the widely scattered rural character of the community which necessitates long equipment runs and sometimes results in poor response times.

Although the various petrochemical companies located at the **Nikiski** industrial complex are under the jurisdiction of the North Kenai Fire Department and depend upon it to some degree for fire protection, each major company also provides its own personnel, equipment, and built-in fire protection systems. According to the North Kenai Fire Marshal, all of these systems meet the guidelines established by the National Fire Protection Association for the types of fire most likely to occur with the industrial operations involved.

Although there have been no serious industrial or residential fires in the community since 1973, three serious fires, involving extensive property loss occurred at the **Nikiski** complex between 1970 and 1972.

Several commercial and residential fires of suspicious origin also occurred during that **period** which fire officials related to a downturn in the local economy which occurred in the late 1960's. While the North Kenai Fire Department is well trained and adequately equipped with highly sophisticated firefighting systems, the heavy concentration of high value petroleum-related industrial property in the **Nikiski** industrial area poses a constant threat of serious fire.

HEALTH AND SOCIAL SERVICES

Health and social services in the **Kenai** area are provided by a combination of public, semi-public and private organizations. Health facilities include the Borough-owned 30-bed Central Peninsula General Hospital in **Soldotna**, the **Kenai** Health Center operated by the State Department of

Health and Social Services and the Medical Center at **Wildwood** which is run by the Kenai Native Association. In addition, ten doctors and seven dentists have private offices in Kenai and **Soldotna**. The community's mental health program is run by the Central ~~Peninsula~~ **Mental Health** ----- Center, a nonprofit corporation funded by the State. Alcohol programs are provided by the Cook Inlet Council on Alcoholism in **Soldotna** and the Cook **Inlet** Native Association Council on Alcoholism at **Wildwood** which addresses alcoholism problems in the Native community.

Central Peninsula General Hospital

Central Peninsula General Hospital is located in **Soldotna** and serves the hospital needs of North Kenai, **Kenai**, **Kasilof**, Sterling and Cooper Landing, as well as the community of **Soldotna**. Owned by the Borough and operated by the Lutheran Homes and Hospital Society, the nonprofit facility began operations in **1971**.

The hospital has 30 beds, of which 26 are general hospital beds and 4 are reserved for maternity cases. In addition to patient beds, the hospital includes surgical facilities, a delivery room, an emergency room, an outpatient clinic, an X-ray department and a laboratory. Emergency transportation to and from the hospital is provided by ambulances based in various communities within the facility's service area.

The medical staff affiliated with Central Peninsula General Hospital includes ten doctors in private practice in the area with specialties in

surgery, ear-nose-throat, ophthalmology, pediatrics and family practice. In addition, visiting doctors offer orthopedic and ear-nose-throat clinics twice a month. The hospital's professional staff includes 20 full-time and 15 part-time registered nurses, 7 licensed practical nurses, 6 nurse aides, a physical therapist and assistant, 2 full-time and 2 part-time medical records personnel and the hospital administrator. An additional 18 to 23 persons are employed in culinary, janitorial, laundry, maintenance, supply and clerical functions.

According to South Central Health Planning and Development, Inc., a total of 3,287 inpatient days were logged at the hospital during fiscal year 1977, with the average length of patient stay being 2.8 days. This is well below the national average and is also lower than the average length of stay experienced by like-sized facilities around the State (see Table 47). The hospital occupancy rate of 30.7 percent in 1977 was well below the national average of 60 percent for hospitals in the 25 to 49 bed category. Although the number of patient days and hospital occupancy rates have increased somewhat since 1972, both indexes have declined since reaching a high in 1976 despite a continuing growth in the area's population.

While the number of inpatients at the hospital has decreased in recent years, the number of outpatients has increased substantially (see Table 48). From 1972 to 1976, outpatient services administered by the hospital jumped from 2,366 to 5,378, an increase of about 128 percent. Additional growth has taken place in the past two years. In 1977, the hospital

TABLE 47
 CENTRAL PENINSULA GENERAL HOSPITAL
 PATIENT LOAD
 FY 1972 - FY 1977

<u>Service</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>Percent Change</u>
Patient Days	3,108	3,137	3,286	3,581	3,590	3,287	5.6
Average Length of Stay	3.8	3.8	3.4	3.1	2.9	2.8	(26.3)
Percent Occupancy	28.3	29.0	30.0	32.6	33.0	30.7	8.4

Sources: South Central Health Planning and Development, Inc. Anchorage. 1979.

Central Peninsula General Hospital. Soldotna. 1979.

TABLE 48

CENTRAL PENINSULA HOSPITAL PATIENT SERVICES
FY 1972 - FY 1976

Service	Outpatient					Percent Change
	FY 72	FY 73	FY 74	FY 75	FY 76	
Emergency Room Visits	1,437	1,802	1,875	2,262	3,334	132.0
Laboratory & X-ray Procedures	929	803	1,466	2,046	2,043	120.0
Subtotal	2,366	2,605	3,341	4,308	5,387	128.0

Service	Inpatient					Percent Change
	FY 72	FY 73	FY 74	FY 75	FY 76	
Laboratory Procedures	8,654	10,560	12,085	14,291	16,803	94.0
X-ray Procedures	901	960	966	944	1,106	23.0
Subtotal	9,555	11,520	13,051	15,235	17,909	87.0
<u>TOTAL</u>	<u>11,921</u>	<u>14,125</u>	<u>16,392</u>	<u>19,543</u>	<u>23,296</u>	<u>95.0</u>

Source: Kenai Peninsula Borough. Baseline Study. The Choice is Kenai's. Soldotna. 1977.

administered 6,948 outpatient services and an additional 7,846 outpatient services in 1978, an increase of roughly 46 percent over the two year period.

Central Peninsula General Hospital has sufficient beds to accommodate a substantially larger population if the average length of patient stay remains low. However, for outpatient care, both space and equipment are inadequate to meet existing demands and cannot accommodate any additional growth. The Borough has proposed a 1,393.5 square meter (15,000 square foot) addition to the hospital's **outpatient facilities and the acquisition** of additional X-ray, physical therapy and emergency room equipment. The project is estimated to cost about **\$5 million** and must be approved by service area voters in the fall of 1979.

Hospital officials report no unusual health problems in the area, although the hospital probably has a higher than **normal load** of trauma- . . . patients because of the above average rate of high risk occupations in the area. Alcohol related accidents are reportedly also common.

Medical Clinics

In addition to the clinic at the Central Peninsula General Hospital, outpatient demands are also served by private and public clinics in **Soldotna, Kenai** and at **Wildwood**. In the spring of 1979 there were seven private dentists in the area, three of whom had offices in **Kenai** and four in **Soldotna**. One of the ten doctors associated with the hospital

operates a private clinic in Kenai, and the remaining nine doctors associated with the hospital staff have offices in Soldotna.

The State of Alaska Department of Health and Social Services operates the Kenai Health Center in Kenai. This facility serves the entire central Peninsula area, including Tyonek. Staffed by two public health nurses, a community health aide, a clerk/receptionist and a CETA employee who primarily handles patient records, the Health Center offers the full range of public health nursing services and also operates several clinics.

A well baby clinic provides routine examinations and immunizations, and an immunization clinic performs routine childhood and adult immunizations and inoculations for contagious diseases. The family planning clinic distributes educational material and provides health exams and birth control assistance. A fourth clinic offers chest X-rays and assistance with other respiratory problems. Clinics are offered one day a week in the fire station at North Kenai and in the Kenai Peninsula Borough building in Soldotna. In addition, a public health nurse visits Tyonek for several days each month.

The Kenai Native Association Medical Center at Wildwood serves the medical needs of the local Native community and is staffed by a community health representative and a registered nurse. Although the facility operates primarily as a referral service, the nurse does handle routine immunizations and inoculations and minor medical problems. One day a week the Center offers dental services.

Mental Health and Alcohol Programs

Assistance for mental health problems is available at the Central Peninsula Mental Health Center. Located in its own building at Wildwood, the mental health facility is a nonprofit corporation supported by the State Division of Mental Health, client fees and donations. The Center serves the Central Peninsula area, including North Kenai, Kenai, Tyonek, Sterling, Soldotna and as far south on the Sterling Highway as Clam Gulch.

Staffing includes a clinical psychologist, a psychiatric social worker and an office worker. All care is on an outpatient basis and includes ongoing therapy such as psychotherapy, marital counseling, family counseling and group therapy (see Table 49). Patients requiring hospitalization are referred to the Alaska Psychiatric Institute in Anchorage or other inpatient facilities outside the community. In 1978, the Center treated about 260 patients but the active caseload is about 160 patients, almost entirely white. Because of funding limitations, many potential patients are forced to seek treatment elsewhere, primarily in Anchorage. According to Health Center staff, the major mental health problems in the area are related to depression, anxiety, personal crisis and alcohol. This view is not supported by Table 49 which indicates that disturbances and behavior disorders of childhood and adolescence, other non-physical mental disorders are of social maladjustment account for the 90 percent of the mental health program caseload.

TABLE 49
 PROVISIONAL DIAGNOSIS
 KENAI COMMUNITY MENTAL HEALTH PROGRAM CASELOAD
 FY 1978

<u>Diagnosis</u>	<u>Number of Cases</u>	<u>Percent of Total</u>
Alcohol Disorder	2	0.8
Drug Abuse	0	0.0
Mental Retardation	0	0.0
Depressive & Affective Disorder	4	1.5
Schizophrenia	4	1.5
Organic Brain Syndromes	1	0.4
Other Psychoses	0	0.0
Disturbances & Behavior Disorders of Childhood & Adolescence	69	26.6
Other Non-Psychotic Mental Disorders	111	42.9
Social Maladjustment	60	23.2
No Mental Disease	7	2.7
Not Indicated	1	0.4
<u>TOTAL</u>	259	<u>100.0</u>

Source: Alaska Department of Health and Social Services, Division of
 of Mental Health and Development Disabilities. January 1979.
 Community Mental Health Client and Services Summary FY 78.
 Juneau, Alaska.

Two organizations provide alcohol programs in the greater Kenai area. The Cook Inlet Council on Alcoholism, located in Soldotna, is funded by the State Office of Alcoholism and offers alcohol and drug abuse education, information and intervention programs. The Cook Inlet Native Association Council on Alcoholism at Wildwood offers a similar program specifically directed at Natives in the area and also operates the local Alcoholics Anonymous program.

EDUCATION

Elementary and secondary education services in Kenai and North Kenai are provided by the Kenai Peninsula Borough School District headquartered in Soldotna. The School District is responsible for the hiring of teachers and maintenance of the school plant, while the Borough is responsible for the construction of new school facilities, as required.

Kenai area school children are served by four separate school complexes. These include Sears Elementary School (grades K through 3), Kenai Elementary (grades 4 through 6), Kenai Junior High (grades 7 through 9), and the Kenai Central High School (grades 10 through 12). Sears and Kenai Elementary Schools accommodate students from the City of Kenai and from the Kalifonsky area to the south which does not have an elementary school. Kenai Junior High serves students from the City of Kenai, from North Kenai (including Nikiski) and from Kalifonsky. At present, Kenai Central High School accommodates students from Kenai, North Kenai, (including Nikiski), Kalifonsky, Kasilof, Soldotna, Sterling, Cooper :

Landing and adjacent areas. After the new Soldotna high school complex is completed in the summer of 1980, students in grades 9 through 12 from Soldotna, Cooper Landing, Sterling and Kalifonsky will attend that facility. Upon the opening of the new Soldotna school, Kenai Junior High will be organized to accommodate grades 7 and 8 and Kenai Central High School will serve students in grades 9 through 12.

Sears Elementary School is situated on an 8.1 hectare (20 acre) site on Forrest Drive. The school was constructed in 1968 and remains in good condition. As well as 20 general classrooms, the school has a combination library/instructional materials center, a multipurpose room which doubles as a gym and cafeteria, a kitchen and administrative offices. Outdoor facilities are limited to a playground and paved parking area. The school's professional staff consists of a principal, 19 full-time teachers and 2 part-time music teachers plus 8 classified employees who perform special education, nursing, culinary and custodial functions.

Kenai Elementary School dates to 1949. A major addition in 1956 and remodeling in 1963 and 1974 have maintained the plant in good condition. The school is located on a 1.4 hectare (3.5 acre) site on Peninsula Drive just off the City's major thoroughfare. The facility contains 21 general classrooms and, like Sears Elementary, a library/instructional materials center, a multipurpose room, a kitchen, and administrative offices. A playground and parking area consume most of the remaining school site. The school is administered by a principal assisted by a school staff of 17 full-time teachers, 2 part-time music teachers, and 11 classified employees.

Kenai Junior and Kenai Central High Schools are located on separate but adjacent sites off the Kenai Spur Road on Lawton Drive. The junior high school was built in 1972 on a 8.1 hectare (20 acre) site, which in addition to the main school building, also accommodates an athletic field, a parking area, and 2 portable classrooms which will be relocated elsewhere in the School District during the summer of 1979. Besides 25 classrooms, the school includes a gym/multi purpose room equipped with showers, a library/instructional materials center, a kitchen and administrative offices. The administrative staff of a principal and vice principal is assisted by 28 full-time teachers and 14 classified employees engaged in custodial, clerical, nursing, counseling and special education pursuits.

The high school site covers 21.4 hectares (53 acres) and includes athletic fields, a track, tennis courts and an outdoor hockey rink. The initial school plant was constructed in 1964. Industrial shops were added in 1968, a vocational education building was constructed in 1970 and in 1975 another 3,608 square meters (38,840 square feet) were added to accommodate classrooms and a swimming pool. Special education classrooms were also remodeled at this time. The outdoor skating rink was constructed in 1978. Altogether, the school contains 37 classrooms (including vocational and industrial education shops), a gym/multi purpose room, swimming pool, showers and lockers, a library/instructional materials center, a kitchen and cafeteria and administrative offices. The school's administrative staff consists of a principal and vice principal. The school staff includes 52 full-time teachers and the classified staff of-

32 includes custodial, culinary, clerical, counseling, pool, library, delivery, nursing and special education personnel.

In addition to regular academic courses, the **Kenai Peninsula** Borough School District provides a wide variety of special programs for **Kenai** school students. Title I federal funds provide individualized instruction in mathematics, reading and language. Title IV Indian education funds support individualized instruction for Native students. **Also**, the Borough conducts special education classes for handicapped children from age 2 to 21, for gifted students and for those **with learning** disabilities. If required, bilingual instructors are provided for students whose primary language is not English. Although there is no community schools program in Kenai, the **Soldotna program** is open to **Kenai residents**.

Kenai school system enrollment rose from 1,742 students in 1972 the 1972/73 school year to 1,964 students in 1978/79, a 12.7 percent increase (see Table 50). Elementary school enrollment has grown at a faster rate than that in junior and senior high school (20.8 percent as opposed to 13.2 percent and 6.6 percent, respectively). However, elementary school (as well as junior high school) enrollment declined slightly in the 1978/79 school year. School District officials attribute this decline to an actual drop in the community's population since completion of the Collier plant expansion project and **Alyeska** pipeline construction.

In 1978, the **Kenai Peninsula** Borough projected that enrollments in **Kenai** schools would continue to increase through 1982/83 (see **Table 51**). The

--TABLE 50

ENROLLMENT TRENDS
KENAI SCHOOL SYSTEM
1968/69 - 1978/79

School Year	Enrollment a/						
	Grades K- 6 b/		Grades 7 - 9		Grades 10 - 12 c/		Total
	Number	% of Total	Number	% of Total	Number	% of Total	
1968/69	959	55.1	--	--	781	44.9	1,740
1969/70	1,191	58.5	--	--	846	41.5	2,037
1 970/71	1,124	57.1	--	--	843	42.9	1,967
1971/72	1,101	55.6	--	--	880	44.4	1,981
1972/73	543	31.2	445	25.5	754	43.4	1,742
1973/74	543	33.1	442	27.0	655	39.9	1,640
1 974/75	569	32.2	457	25.9	740	41.9	1,766
1975/76	631	36.8	450	26.3	633	36.9	1,714
1976/77	632	34.9	492	27.2	687	37.9	1,811
1977/78	685	35.0	516	26.3	757	38.7	1,958
1978/79	656	33.4	504	25.7	804	40.9	1,964

a/ Enrollment data are as of the first day-of school in October.

b/ Included grades 7 and 8 from 1968/69 - 1971/72.

c/ Included grade 9 from 1968/69 - 1971/72.

Source: **Gallagher, P.G.** and **F. McIlhargey**. March 23, 1978. Enrollment Projections and School Construction Report. Kenai Peninsula Borough. Soldotna.

TABLE 51

KENAI SCHOOL ENROLLMENT PROJECTIONS
1979/80 - 1982/83

School Year	Elementary	Jr. High	Sr. High	Total
1979/80	761	507	915	2,183
1980/81	811	526	904	2,241
1981 /82	841	558	930	2,329
1982/83	884	641	932	2,457

Source: **Gallagher, P.G.** and **F. McIlhargey**. March 23, 1978. Enrollment Projections and School Construction Report. Kenai Peninsula Borough. Soldotna.

recent population decline has caused the School-District to reassess these figures. Barring an influx of population related to some unforeseen economic development, it is now anticipated that elementary school enrollments will remain relatively constant in **the next** five years, while junior and senior high school enrollments will decline in 1980 with the opening of the new **Soldotna** high school. As elementary schools are currently operating far below capacity, no new facilities are expected to be needed in the next five years. Both junior and senior high schools are presently over capacity, but the new **Soldotna** school will remedy this problem and no new-facilities are anticipated. 1982/83.

Elementary school students in North **Kenai** and **Nikiski** use the **North Kenai Elementary School** on North Kenai Road, about 20.9 kilometers (13 miles) from downtown **Kenai**. The plant *was* originally constructed in 1963 and an additional 1,820.8 square meters (19,600 square feet) were added in 1968. Besides 19 classrooms, the facility contains a **combination** library/instructional materials center, a gym/multi purpose room, a kitchen and cafeteria, and administrative offices. The 4 hectare (10-acre) school site includes a playground with equipment, a baseball field and parking facilities. Additional outdoor athletic facilities, designed primarily to meet community rather than school needs are being added on the **school** site during the summer of 1979.

The school's professional staff consists of a principal, 18 full-time teachers and four part-time teachers. An additional 7 classified

employees provide culinary, clerical, custodial, nursing and counseling services. Special education services described previously are also available at North Kenai Elementary School.

Although enrollment at North **Kenai** in 1978/79 was essentially the same as in 1968/69, the number of students at the school has undergone sharp increases and declines during the 10-year period (see Table 52). After reaching a high of 435 students in 1969/70, enrollment declined each year through 1973/74 when it reached a low of 280 students. According to Borough School **District** officials, a **major cause of this** decline was the phase-out and eventual closure in 1972 of the Air Force communications facility at **Wildwood** which removed a large number of military personnel and dependents living in North **Kenai**. During this same period, there was also a slowdown in construction related to the petrochemical industry.

From 1973/74 to 1978/79, enrollment has increased each year, although in the 1978/79 school year this growth appeared to level out. Nevertheless, actual enrollments substantially exceeded projections made by the School District in March 1978 (see Table 53). The School District estimates that North **Kenai** enrollments **will** continue to undergo modest increases during the next five years.

Although the existing school **plant** is in good condition, present enrollment exceeds the school's 400 student capacity and, with anticipated growth, the school **will** be inadequate to meet student needs. Because the existing site is too **small** to accommodate a major expansion, the School **District**:

TABLE 52
 ENROLLMENT TRENDS
 NORTH KENAI ELEMENTARY SCHOOL
 1968/69 - 1978/79

<u>School Year</u>	<u>Enrollment a/</u>	<u>Percent Change</u>
1968/69	408	----
1969/70	435	6.6
1970/71	425	(2.3)
1971/72	357	(16.0)
1972/73	314	(12.0)
1973/74	280	(10.8)
1974/75	311	11.1
1975/76	327	5.1
1976/77	364	11.3
1977/78	407	11.8
1978/79	414	1.7

a/ Enrollment data are as of the first day of school in October.

Source: **Gallaher, P.G.** and **F. McIlhargey**. March 1978. Enrollment Projections and School Construction Report. Kenai Peninsula Borough.

TABLE 53
 ENROLLMENT PROJECTIONS
 NORTH KENAI ELEMENTARY SCHOOL
 1979/80 - 1982/83

<u>School Year</u>	<u>Enrollment</u>	<u>Percent Change</u>
1979/80	382	---
1980/81	385	0.8
1981/82	402	4.4
1982/83	406	1.0

Source: **Gallagher, P.G.** and **F. McIlhargey, March 1978.** Enrollment Projections and School Construction Report. Kenai Peninsula Borough.

has recommended the acquisition of a separate 4-hectare (10-acre) site further to the north in the **Nikiski** area. The **School** District has proposed that the Borough construct a new building to include a kindergarten and nine **classrooms**, a multipurpose **room**, a **library**, a kitchen and a clinic and office suite. As of June 1979, the Borough had not acted on this proposal.

RECREATION

The **Kenai** Peninsula receives by far the heaviest outdoor recreation use of any area in the State. The **Kenai** Lake and River complex, **Chugach** National Forest, **Kenai** National Moose Range, and a number of State maintained recreation facilities and privately owned facilities in the area offer both local residents and visitors the widest possible range of outdoor activities and are an invaluable **local** recreation resource. However, recreation facilities provided by the City of **Kenai** are limited.

The City of **Kenai** has a Parks and Recreation Department and has recently added a full-time director to develop a formal recreation program. At the present time, the only activity sponsored by the Department is the summer recreation program held **at** Sears Elementary School which is run by several part-time college and high school students. The City has no indoor recreation facilities, but it does maintain seven outdoor recreation areas. Of these, the most heavily used is the Municipal Park on Forrest Avenue near the center of town. This facility includes 15 to 20 unimproved camp sites, fire grills, picnic tables, rest rooms and a shelter, as-

well as three Little League fields separated from the rest of the park by a ravine. Birch Drive Park on Spruce Drive is a **small** neighborhood park designed to meet the needs of small children. The area is equipped with swings, a teeter-totter **and a picnic table, with additional play** equipment to be added in the summer of 1979. The City maintains two other athletic facilities near the town center. These are the largely unimproved Kenai Spur Park which contains two adult softball fields and two football fields on Federal Aviation Administration property which are used for the children's summer football program.

Three additional City-maintained facilities are located outside the downtown area. Cunningham Park on Beaver Loop Road near the river has several camp sites, picnic tables and restrooms with fire grills-- "playground equipment to be added here in the next several years. Beaver Creek Park is located on land leased from the State on the Spur Road about 8 kilometers (5 miles) from downtown. The facility has only **minimal** play equipment and is not well maintained. No future development is planned until the land is obtained from the State. The City has recently cleared trees from another small parcel of land on the Spur Road and playground equipment will eventually be added here. At the present time, however, the area is being **used** for softball practice. One additional facility is now in the planning stages. This is a 1,828.8 meter (6,000 foot) combination hiking and cross country ski trail on City **land** near the junior and senior high schools.

As in most Alaska communities, the Kenai public-schools are a focal point for community recreation activity during non-school hours. School multipurpose rooms and gymnasiums are used for men's and women's athletic programs and the high school **swimming** pool is available to the public for a nominal fee. In addition, the high school track, athletic field, tennis courts and hockey rink are heavily used by the community. Although there is no community schools program in **Kenai**, the **Soldotna** program is open to Kenai residents and the Kenai Peninsula Community College, also located in **Soldotna**, offers a number of outreach programs available to Kenai area persons.

Besides public recreational facilities, Kenai has a number of privately owned attractions which are used for recreation purposes. The **Kambe Theatre** shows movies seven nights a week and the **Wildwood Bowl** is open daily. In addition, many area churches and clubs offer recreational activities for their members.

Because the North **Kenai** area is unincorporated, public recreational facilities are provided by the Kenai Peninsula Borough here on a service area basis. At the present time, the only facility in the area designed specifically for community recreation needs is the indoor swimming pool located adjacent to the elementary school. The Borough employs seven persons at the pool, including a full-time manager, two part-time instructors and three part-time lifeguards. In the past, the Borough has maintained a cross-country ski trail in this same general area, but in June 1979 the Borough Assembly voted to abandon this facility.

Although not designed **to** meet the recreation needs of the community as a whole, North **Kenai** Elementary School facilities are **also** a local recreation resource. These include the school's multipurpose room which is used **for** community meetings and the outdoor playground and athletic facilities.

Most of the recreational activities enjoyed by Kenai area residents do not require the presence of formal facilities but depend instead on the land and waters which surround the area. The **Chugach** National Forest and the **Kenai** National Moose Range, both within easy driving distance from Kenai and North Kenai, offer a wide variety **of outdoor** recreation **experiences**. The 700,000 hectare (1.73 million acre) Moose Range was **established** in 1941 to protect the habitat of moose and other wildlife. Sport hunting and fishing is allowed in the Range in accordance **with** **Alaska** Department of Fish and Game regulations. **The U.S. Fish** and Wildlife Service maintains campgrounds, picnic sites, cabins and hiking and canoe trails within the Range. Several **local** commercial float plane operators maintain cabins on the more remote lakes for fly-in fishing and hunting trips.

Along the Sterling Highway in the **Chugach** National Forest, the U.S. Forest Service maintains recreational areas at Quartz Creek, Cooper Creek and Russian River. Typically these areas include campgrounds, picnic **tables** and hiking trails. The popular Russian Lakes and Resurrection Pass Hiking Trails are also located in this same general area. As in the Moose Range, sport hunting and fishing are allowed in the National Forest in accordance with State regulations.

The State of Alaska maintains a number of recreational facilities in the Kenai area. The 834 hectare (2,060 acre) Captain Cook State Park located on Cook Inlet north of the community currently has over 50 campsites with 200 more to be added in the future. The park also contains swimming beaches, boats and boat launching sites and picnic facilities. Other State campsites and picnic areas are located at Bernice Lake, **Kasilof**, Johnson and Tustumena Lakes and Clam Gulch, all an easy drive from Kenai and North Kenai. Finally, the State plans to develop additional recreation areas at the mouth of the **Kasilof** River and at Kalifonsky Beach south of Kenai in the future.

Despite the recreational opportunities available, some Kenai residents feel that these are not sufficient to meet community needs. In 1978, **Mundy/McCrackin** and Associates conducted a survey in Kenai to determine recreational preferences and perceived community needs. Most community members **felt** that camping, fishing, and **boating** were recreational opportunities which should be developed by the City. Over half of the survey respondents felt that additional playgrounds were needed, while about 35 percent felt a need for additional picnic spots and about **one-third** desired additional athletic fields and ice skating rinks. Despite the apparent lack of indoor public facilities, 64 percent of the survey respondents **felt** that the **school** recreational facilities now in existence were adequate for the community's needs. About half of the people participating in the survey felt that Kenai needed a community center for public use, while the remainder either felt that such a facility was not necessary or had no opinion on the subject.

UTILITIES

Water

Kenai presently obtains its water from two wells in the Beaver Creek area on the east side of town which together yield a total of 8,705.5 liters (2,300 gallons) per minute. The water distribution system runs from the wells to the City center and Wildwood. All water is aerated and clarified, and chlorine is added. Storage consists of a 113,550 liter (30,000 gallon) storage tank at each of the two well houses and a recently constructed tank at the airport with a 11,355 kiloliter (3 million gallon) capacity. This latter facility is primarily for **firefighting** purposes and replaces an open-pump storage reservoir near the airport which was never used because it was unsanitary. Water service is provided within the City limits and to Wildwood outside the City to the north. In March 1979, there were 1,021 residential and commercial water service customers which, according to City officials, represents about **half** the community's residences and commercial establishments. Industrial users have developed their own water systems.

According to the Department of Public Works, water consumption in Kenai varies from 2,316.4 kiloliters (612,000 gallons) per day in January to 2,816 kiloliters (744,000 gallons) per day in August when the influx of transients is heaviest. From 1974 to **1978**, peak water consumption increased approximately 57 percent from 1,824.4 kiloliters (482,000 gallons) per day in August 1974 to 2,816 kiloliters (744,000 gallons)

per day in August 1978. However, between 1977 and 1978, average daily consumption during the peak month of August decreased by about 2 percent. The water source and pumping capacity are adequate to accommodate substantial additional growth **when** both pumps are **operating but**, even with the recent addition of the 11,355 kiloliter (3 million gallon) tank at the airport, storage capacity is not sufficient for **firefighting** purposes and additional storage capacity needs to be constructed.

Kenai's water system dates from 1964 when service was first provided to the townsite and the East Addition. In 1967, service was extended to the airport, a step which encouraged the development of **commercial** activity in a linear pattern in this area. Since 1967, the system has been expanded **regularly** in phases, first to new residential and commercial development and then to residences which were formerly served by **wells**. Water was originally obtained from ten wells in three locations around the City, but these were abandoned with the development of the two Beaver Creek wells in 1973 and 1974. Besides continued expansion, no other changes to the system are planned in the near future.

With the exception of **Wildwood** which is on the City of **Kenai** water system, the North Kenai area is without community water service. Most residences obtain water from private wells, while the petrochemical and light industrial plants and residential development along Arness Dock Road have individual water systems. Local officials have expressed concern at recent fluctuations in groundwater levels in the North **Kenai-Kenai-Soldotna** area. Whether these fluctuations result from an overdraw

of groundwater by heavy industrial users or fluctuations in rainfall and groundwater replenishment cannot be determined at this time. Regardless, it is apparent that extended and severe fluctuations will necessitate the development of another **water** source. The **Kenai Peninsula** Borough has recently funded a study with CEIP funds to determine the feasibility of developing alternative water sources to meet anticipated industrial growth in the Central Peninsula area. Preliminary findings of the study conclude that with substantial growth in the area, some source other than **groundwater** will have to be developed. Aside from desalination, the **Kenai** River appears--the most likely source. **Construction** of a system to transport this water to the industrial area in North **Kenai** would be extremely expensive. A report containing specific recommendations for future water supply is scheduled to be issued in the fall of 1979.

Sewer

Like the water system, the City sewer system is confined primarily within **Kenai's** corporate boundaries although it does extend to Wildwood to the north of the City. The **Wildwood** system was constructed by the military in the mid-1950's and was connected to the **Kenai** system in 1973 when the former Air Force installation was taken over by the **Kenai** Native Association. As of March 1979, there were approximately 970 **commercial** and residential sewer customers, slightly fewer than the number of water customers. The sewer system serves a roughly 404.7 hectare (1,000 acre) area or about 30 percent of the City's developed land. Not served by the system are **industrial** users which have **their**

own independent systems, Beaver Loop Road, and the **Kenai** Spur Road beyond Candlelight Drive.

In 1979, the sewer system included about 33,233.2 **lineal meters** (109,013 lineal feet) of gravity sewers, 2,590.8 meters (8,500 feet) of gravity pressure sewers and five lift stations (see Figure 9). Although the system is adequate to meet community needs at the present time, the 1978 Wastewater Facilities Plan prepared by **CH2M-Hill** determined that portions of the system **will** require upgrading over the next 20 years to meet anticipated population growth. Three basic improvements are involved in the upgrading plan. These are a central **Kenai** interceptor which should be built by 1980 and a west **Kenai** interceptor and several lift stations which will be required by 1985.

The sewage treatment plant is located on the beach west of the **old** townsite. Sewage is biologically treated through an extended aeration activated sludge process. Treated wastewater is transported through a 20.3 centimeter (8 inch) outfall to the **Kenai** River estuary and then flushed by tidal action into Cook Inlet. Dewatered sludge is hauled by tank truck to an underground sludge pit near the City's gravel source.

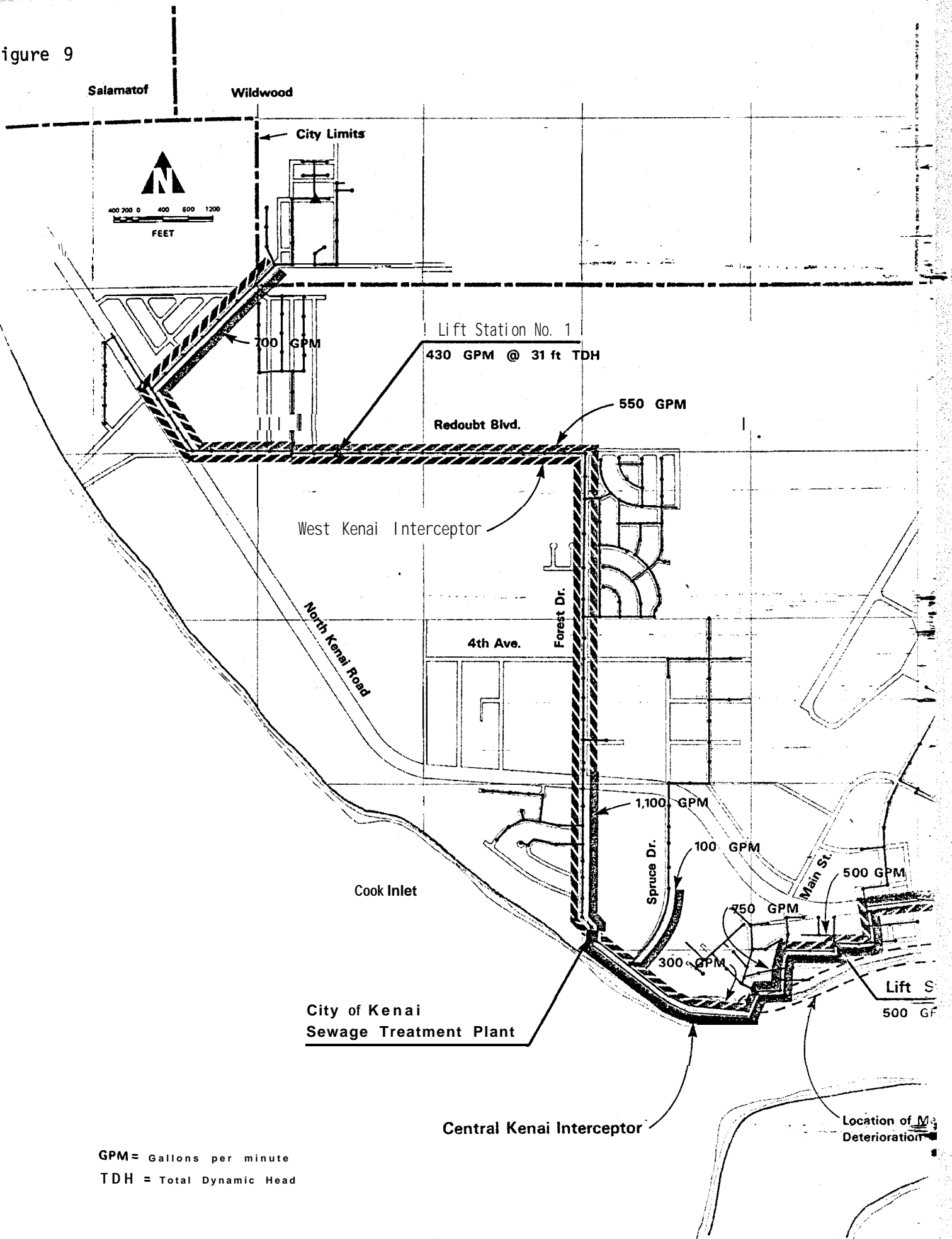
The treatment plant is designed to handle a peak flow of 3,785 kiloliters (1 million gallons) a day and an average flow of 1,892.5 kiloliters (0.5 million gallons) daily. The current flow through the plant averages 1,741.1 kiloliters (0.46 million gallons) per day, while the peak flow is 3,028 kiloliters (0.8 million gallons), both well within the plant's

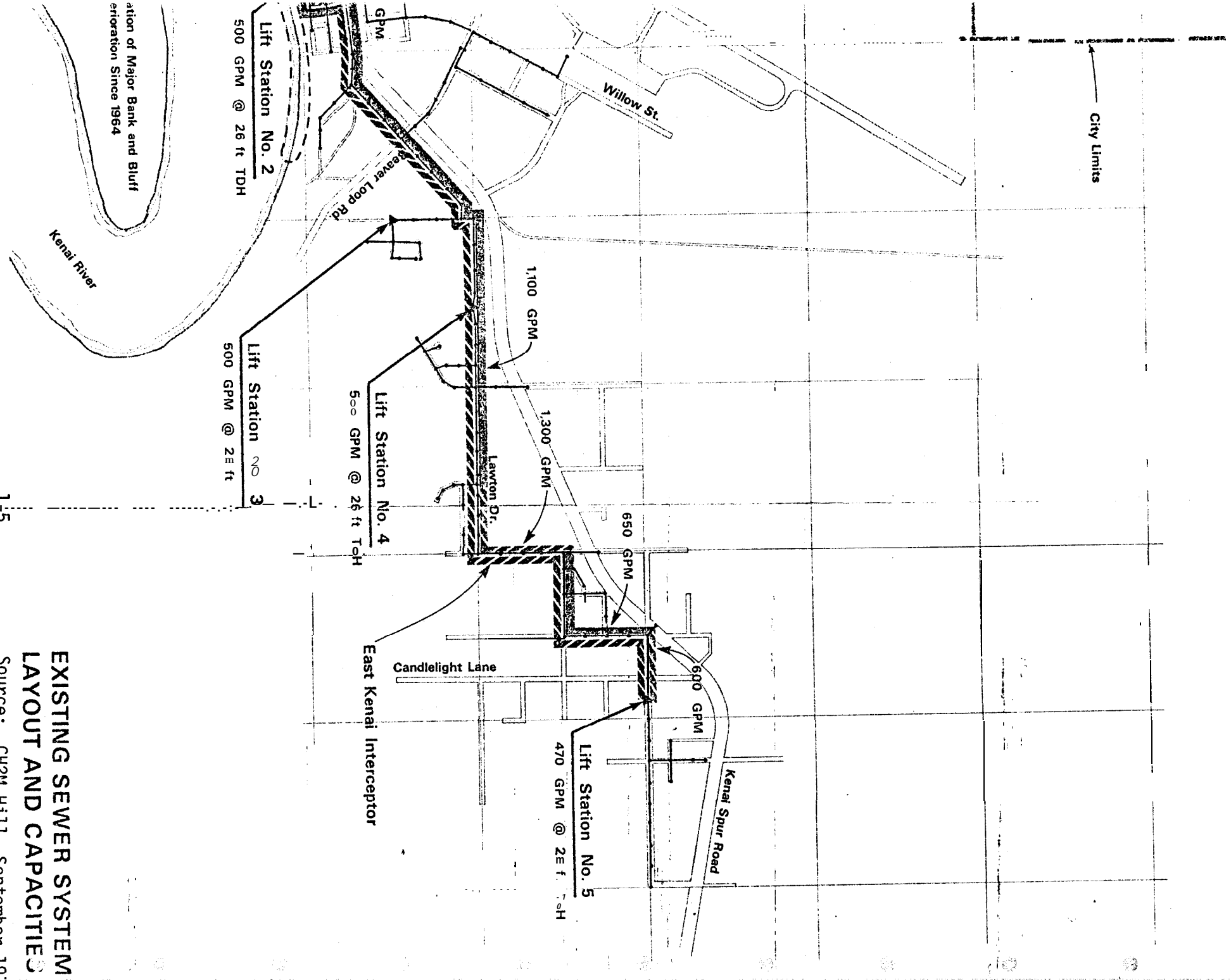
design capacity. In 1978, infiltration and inflow accounted for as much as 34 percent of the peak flow and about 17 percent of the average flow through the plant. Most of this infiltration enters the system through **faulty** manhole covers during storms and spring **breakup**.

Several problems are associated with the current operation of the sewage treatment plant. Although it has the design capacity to handle average peak **flows**, there are occasions, particularly during breakup, when overflows occur. These are caused primarily by inefficient operation of the plant and poorly designed equipment. Most of these problems are being remedied or will be addressed in the near future. Assuming a per capita daily wastewater output of 359.6 liters (95 gallons), **CH2M-Hill** determined that the **Kenai** treatment-plant **will** require expansion by 1980 when average daily flow is expected to be 2,271 kiloliters (0.6 million gallons) and peak flow to be 5,677.5 kiloliters (1.5 **million** gallons) per day. Furthermore, in order to meet Environmental Protection Agency standards, additional treatment processes will be required. The City is currently implementing recommendations for upgrading and expanding its treatment facility.

There is presently no public sewer system in North Kenai, nor are there any plans to construct one. Domestic wastes are disposed of with individual septic tanks. Non-contaminated industrial wastes are treated at the individual industrial plants in the **Nikiski** area and are then dumped into the Inlet. Contaminated wastes are transported by pump truck to the Sterling Special **Waste** Site, a landfill operated by Mar Enterprises on land leased from the **Kenai** Peninsula Borough.

Figure 9





The landfill is situated on a 16.2 hectare (40-acre) parcel, but only about 6.3 hectares (15.5 acres) of this is usable for waste disposal. The operator is permitted by the State Department of Environmental Conservation (DEC) to dispose of contaminated drill mud and cuttings, and bilge water containing not more than 4 percent oil and sludge from Collier Carbon's water treatment facility. On occasion, the operator obtains special permits from DEC to dispose of other slightly contaminated wastes. According to Mar Enterprises, the disposal site should have sufficient capacity for the next 20 years if operated properly. Because the waste material dumped there contains organic material (mud), it can be reused in the landfill operation once it has been dried. The operator uses the conventional techniques of landfilling, including trenching, dumping, compacting and backfilling.

Electric Power

Electricity in Kenai and North Kenai is provided by the Homer Electric Association, Inc. (HEA). A detailed description of the service area, the number of customers and power consumption trends can be found in the section of this report dealing with the City of Homer's electric power. Power for the Kenai area is purchased from Chugach Electric's gas turbine facilities at Beluga across the Inlet and at Bernice Lake in North Kenai and from its hydro electric facility at Cooper Landing. Adequate power is available for any foreseeable future demand, barring prohibitions on the use of natural gas for power generation.

According to HEA officially the transmission system in the **Kenai** area is in good condition, with all on-line equipment meeting or exceeding REA standards. However, certain circuits, primarily those to heavy power users such as the canneries, are inadequate and **are being upgraded from** single to triple phase. Several major industrial users in the **Nikiski** area (**Tesoro-Alaska** and Collier Carbon and Chemical) maintain their own power generating facilities and rely on HEA **only** for standby power.

Power costs in the **Kenai-North Kenai** area are quite reasonable when compared to similar sized communities around the **State** which depend upon diesel fuel for power generation. Atypical residential household will consume between 800 and 1,000 kilowatt hours of electric power per month, excluding heat. In the spring of **1979**, this cost **Kenai-North Kenai** area residents between **\$28.50** and \$36.50, well below the rates paid by residents of Kodiak and Cordova, for example. Electric rates in Kenai have not changed since 1971 when HEA took over the privately owned Kenai City Light System. However, according to HEA officials, substantially increased operating costs will probably necessitate an increase in HEA rates in the next year.

Solid Waste Disposal

Peninsula Sanitation, headquartered in **Soldotna**, provides commercial and residential garbage collection services in **the** central Peninsula area. Residential service is provided once weekly and costs \$6 and \$8.50 a month for one and two cans, respectively. **Commercial** customers are

served as required, with charges depending on the size of the dumpster. Weekly collection for a 1.5 cubic meter (2 yard) container costs \$26.50 per month, while the charge for the same frequency of service for a 4.6 cubic meter (6 yard) container is \$53 per month. Collection equipment includes two compactor trucks and two flatbeds. A roll-off unit for commercial service and a third compactor will be acquired during 1979.

Commercial and residential garbage is hauled to two 12.1 hectare (30-acre) dump sites maintained by the Kenai Peninsula Borough's Public Works Department. One landfill is located at the northern edge of Kenai inside its corporate City limits and the other is 9.7 kilometers (6 miles) south of Soldotna on the Sterling Highway. Both sites are nearly filled to capacity, and the Borough will have to locate new landfills in the next five years. Landfill operation includes trenching, dumping, compacting and backfilling.

Communications

Telephone service in Kenai is provided by Glacier State Telephone, a subsidiary of the Continental Telephone System. The service area includes Kenai, North Kenai, Soldotna and Ninilchik. Glacier State maintains its regional offices and a service and installation facility in Kenai. As of May 1979, the Kenai system included 1,961 main stations and 1,151 extensions, an increase of about 75 percent since 1976.

Although capacity is added as needed, the company is currently behind demand in adding new stations and there is often a delay in phone

installation. Telephone service to North **Kenai** is through a separate exchange. This system currently includes 800 main stations and 517 extensions.

One hundred and fifteen trunk lines provide long distance service to **Kenai** and North **Kenai**. Thirty of these are two way, 72 are outbound and 13 are **directionalized** inbound lines but can be switched if outbound demand requires. According to **Alascom** officials, capacity is sufficient for existing demand and can accommodate some growth.

Local Government Organization

The City of **Kenai** was incorporated as a **home rule** city in 1960 and has a council-manager form of government. The **City** is governed by an elected city council of six members and an elected mayor whose primary function is to preside over City Council meetings.

CITY POWERS

Under Alaska Statutes, the City of **Kenai** is organized as a home rule city and is thereby legally empowered to exercise all functions consistent with its charter and which are not otherwise prohibited by Law or mandated to or assumed by the **Kenai** Peninsula Borough.

Among the powers exercised by the City are police and fire protection, water and sewer utilities, street maintenance and lighting, airport,

parks and recreation, library and animal control. Capital assets managed by the City include the water and sewer utility improvements and the municipal airport terminal. The City employs 82 persons. The administration is professionally staffed with a **city manager**, attorney, finance director, police chief, fire chief, public works director and city engineer.

The Kenai Peninsula Borough is a second class local government unit which takes in a 66,304 square kilometer (25,600 square mile) area and which, in addition to **Kenai**, also includes the **cities** of Homer, **Seldovia**, Seward, **Soldotna** and Kachemak plus a number of unincorporated settlements one of which is the North **Kenai** area. The Borough has three mandatory areawide powers as per AS 29.30. These are assessment and collection of taxes, education, and planning, platting and zoning. In addition to these mandatory powers, the Kenai Peninsula Borough has assumed responsibility for solid waste disposal on an areawide basis. It has also formed a number of special service areas, including several which provide special services to the unincorporated area around Kenai. These are the North Kenai Fire Service Area, the North Kenai Recreational Service Area and the Central Hospital Service Area.

LOCAL GOVERNMENT FINANCES

Fiscal data from the City of **Kenai's** financial report for the **fiscal** year ending June 20, 1978 and other municipal financial data compiled and published by the State Assessor's Office were analyzed to evaluate the City's financial circumstances.

Property taxes are the leading source of general fund revenues for the City of Kenai. Property tax revenue yields depend directly on the value of the local property tax base. The City's equalized assessed valuation was reported at \$109,700,000 in 1978 (see Table 54). - This represents an increase of 175 percent over the assessed valuation of 1969, with most of the increase occurring in the most recent two years. During the same decade-long period, Kenai population increased by about one-quarter, so the property tax base has grown at a much faster rate than population, although a good share of the rise in assessed value can be dismissed as merely reflecting inflation rather than a real increase.

The ratio of assessed valuation to population is a good index of the revenue capacity of a locality. As of 1978, the City of Kenai's valuation was reported as \$20,451 per capita. This ratio is far below the Statewide average of \$50,398 per capita. However, if the extraordinary effect of the trans-Alaska pipeline and related property on a few local jurisdictions is taken into consideration, then Kenai's per capita valuation begins to approach the norm.

As of June 1978, the City of Kenai had outstanding general obligation bonds in the amount of \$4,425,000 and total general obligation debt service requirements of \$6,527,817 through 1998 (see Tables 55 and 56). In per capita terms, this equalled a direct general obligation debt to the City of \$825 per person, a figure well below the Statewide municipal average of \$1,421. Not included in this figure, however, is the City of Kenai's share of the Kenai Peninsula Borough's bonded debt. Prorating

TABLE 54

CITY OF KENAI
 COMPARISON OF FULL VALUE DETERMINATION
 1969 - 1978
 (in \$000's to nearest \$1,000)

<u>Year</u>	<u>Full Value Determination</u>
1969	\$39,849
1970	\$48,179
1971	\$46,987
1972	\$48,485
1973	\$49,444 - " - -
1974	\$49,425
1975	\$54,687
1976	\$62,934
1977	\$85,178
1978	\$109,700

Source: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

TABLE 55

INDICATORS OF FINANCIAL CONDITION
CITY OF KENAI, ALASKA
FY 1978

Population	5,364 <u>a/</u>	
Full Value Determination		\$109,699,805.00
Full Value Per Capita		\$ 20,451.00
General Obligation Debt		\$ 4,425,000.00
Total Debt <u>b/</u>		\$ 7,822,223.00
Per Capita Debt		
General Obligation		\$ 825.00
Total		\$ 1,458.00
Debt as Percent of Full Value		
General Obligation		4.03%
Total		7.13%
<hr/>		
<u>Guidelines for Per Capita Debt</u>		
Direct	\$ 618.48	"
Overall	\$ 733.73	
Percent of Full Value <u>c/</u>		5.50%

a/ Kenai's July 1977 population as accepted by the Department of Community and Regional Affairs for State Revenue Sharing purposes.

b/ Total debt equals Kenai's G.O. bonded debt plus a pro-rated share (\$3,397,223) of the Kenai Peninsula Borough's G.O. bonded debt based on the City of Kenai's accounting for 7 percent of the Borough's 1977 full value determination.

c/ Median value for selected places of under 10,000 population used by Moody's Investors Services, Inc.

Sources: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

TABLE 56

CITY OF KENAI
 GENERAL BONDED DEBT
 SCHEDULE OF FUTURE DEBT SERVICE REQUIREMENTS
 JUNE 30, 1978

<u>Fiscal Year</u>	<u>Principal</u>	<u>Interest</u>	<u>Total Requirement</u>
1979	\$ 280,000	\$ 239,070	\$ 519,070
1980	290,000	223,520	513,520
1981	295,000	207,382	502,382
1982	265,000	190,520	455,520
1983	215,000	177,875	392,875
1984	230,000	166,393	396,393
1985	235,000	154,070	389,070
1986	255,000	141,230	396,230
1987	265,000	127,350	392,350
1988	280,000	112,605	-- - 392,605 - - - - -
1989	300,000	96,838	396,838
1990	310,000	79,885	389,885
1991	310,000	61,975	371,975
1992	310,000	44,362	354,362
1993	195,000	26,212	221,212
1994	70,000	18,815	88,815 -- - - -
1995	75,000	14,973	- 89,973
1996	80,000	10,865	90,865
1997	80,000	6,625	86,625
1998	85,000	2,252	87,252
	<u>\$4,425,000</u>	<u>\$2,102,817</u>	<u>\$6,527,817</u> ----

Source: Arthur Young & Co., September 22, 1978. City of Kenai, Financial Statements, Year Ended June 20, 1978 with Report of Certified Public Accountants.

to the City of **Kenai** a share-of the Borough's debt proportionate to the City's share of the Boroughwide property tax base adds an additional \$3,397,223 to the debt burden effectively resting upon the City's property tax base.

Compared to nationwide debt ratio indexes for cities of its size, **Kenai** is within satisfactory limits. By the key index of the ratio of bonded debt to assessed valuation, **Kenai**, at 4.03 percent, is in a superior position to the guidelines figure of 5.5 percent developed by Moody's Investors Service, Inc. -for cities of under **10,000 population**. However, if **Kenai's** share of the Borough's debt is included, the City has a less favorable 7.13 percent ratio of bonded debt to local assessed valuation. Nevertheless, the City's debt service capacity has improved substantially" since 1976 when its local debt to valuation ratio was a very high **12.01** percent.

The City has also issued revenue bonds to finance its airport terminal building (outstanding balance of \$467,500) and the Kenai City Light Utility (outstanding balance of \$1,173,679), whose assets and debts were conveyed to the Homer Electric Association in August 1971.

The City's general fund expenditures in fiscal year 1978 amounted to \$2,167,650 or better than \$400 per resident. The major category of expense was public safety which commanded 39.8 percent of the budget, followed by general government (29.4 percent), public works (26.4 percent) and parks and recreation (4.4 percent). In **Kenai's** organizational

● structure, public safety includes both City police and fire protection services (see Table 57).

● For general fund revenues, ~~the City~~ relies very heavily upon locally raised funds. The City property tax was the leading revenue contributor and provided 42.2 percent of general fund revenues. The City sales tax yielded 26.5 percent of revenues while fees, licenses and other miscellaneous sources provided 7.7 percent. Kenai obtained **only 23.6** percent or less than a quarter of its operating revenues from intergovernmental transfers.

● Property tax rates in the **City** of Kenai rose sharply between 1972 and 1975, from **7 mills** to 16.75 mills, but have since declined slightly. The 1978 mill rate of 13.4 was about average for Kenai over this recent period and was in the middle of the range for cities in the **Kenai Peninsula Borough**. In addition to the City mill levy, the **Kenai Peninsula Borough** also assesses a 4.7 mill tax in the City for **school** support (4.035 mills), Borough administration (0.465 mills) and hospitals (0.2 mills). It should be noted that Boroughwide administration of the local public education system relieves the City of direct responsibility for one of the major fiscal and service burdens of local government. The City sales tax levy was 3 percent in 1978, with an added 2 percent collected by the Borough and allocated to school support (see Table 58).

● In the broad picture of local government finance in the **Kenai Peninsula Borough**, the City of Kenai is adversely affected by the peculiar **geography**

TABLE 57

GENERAL FUND
STATEMENT OF REVENUES AND EXPENDITURES
CITY OF KENAI
YEAR ENDED JUNE 30, 1978

<u>Revenues</u>	<u>Estimated</u>	<u>Actual</u>	<u>Actual</u> over (under) <u>Estimated</u>
Real and Personal			
Property Taxes	\$1,228,812	\$1,320,336	\$ 91,524
Sales Tax	610,000	828,054	218,054
Licenses and Permits	16,300	31,539	15,239
Intergovernmental Revenue	702,345	735,972	33,627
Charges for Services	43,000	31,199	(11,801)
Fines and Forfeits	12,500	17,607	5,107
Rents and Leases	5,488	22,589	1-7,701
Miscellaneous Revenue	42,586	44,720	2,134
Transfers from Other Funds	94,143	94,143	0
<u>TOTAL REVENUES</u>	<u>\$2,755,174</u>	<u>\$3,126,159</u>	<u>\$ 370,985</u>
<u>Expenditures</u>	<u>Appropriations</u>	<u>Expenditures</u>	<u>Bal ante</u>
General Government	\$ 686,091	\$ 637,429	\$ 48,662
Public Safety	967,679	863,399	104,280
Public Works	692,128	570,773	121,355
Parks & Recreation	103,300	96,052	7,248
Other	305,976	0	305,976
<u>TOTAL EXPENDITURES</u>	<u>\$2,755,174</u>	<u>\$2,167,653</u>	<u>\$ 587,521</u>

Source: City of Kenai. 1978. City of Kenai Financial Report for the Fiscal Year Ended June 30, 1978. Kenai, Alaska.

TABLE 58

CITY OF KENAI
PROPERTY AND SALES TAX RATES
FY 1972 - FY 1978

	Property Tax (mills)						
	1972	1973	1974	1975	1976	1977	1978
City of Kenai	7.00	10.50	12.00	16.75	16.00	15.00	13.400
Borough - Administration							0.465
Borough - Schools	5.00	5.00	5.00	5.00	5.00	5.00	4.035
Borough - Hospital (South)			0.20	0.20	0.20	0.20	<u>0.200</u>
<u>TOTAL</u>	<u>12.00</u>	<u>15.50</u>	<u>17.20</u>	<u>21.95</u>	<u>21.00</u>	<u>20.20</u>	<u>18.100</u>

	Sales Tax (percent)						
	1972	1973	1974	1975	1976	1977	1978
City of Kenai	1.00	1.00	1.00	3.00	3.00	4.00	3.00
Borough - Schools	3.00	3.00	3.00	3.00	2.00	2.00	2.00
<u>TOTAL</u>	<u>4.00</u>	<u>4.00</u>	<u>4.00</u>	<u>6.00</u>	<u>5.00</u>	<u>6.00</u>	<u>5.00</u>

Source: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

of residents and high value properties in the **Kenai-North Kenai** area. **Kenai** is the largest city in the Borough, in part because of its function as a bedroom community for employees of the industrial plants in the **Nikiski** area. However, its real property tax base consists mostly of relatively low-valued residential, commercial and light industrial properties. Kenai is home to roughly 20 percent of the Borough's residents but only about 7 percent of its property tax base. On the other hand, the less populous but heavily industrialized **Nikiski-North Kenai** area immediately adjacent to **Kenai** encompasses about 75 percent of the Borough tax base, a difference of tenfold over **the City of Kenai**. In effect, the City of **Kenai** supports city services for residents who commute to the **Nikiski** industrial plants, but it does not have tax access to the property tax base of the firms which benefit from **Kenai's** role as a residential community. In years past, **the City of Kenai** has pursued changes in State statutes which would entitle it to a share of property tax income from the nearby highly capitalized industrial plants, but its efforts have not yet met with success.

Despite the City's above-noted imbalance of service burdens and revenue potential, the City of **Kenai's** general financial condition seems to have improved in the past few years. Mill rates, per capita debt and the ratio of debt to assessed valuation have all declined while assessed valuation has climbed.

CITY OF SOLDOTNA

Population and Economy

POPULATION

Past Trends

A number of Alaska Native settlements are reported to have existed at various times in the past **along** on the **Kenai River** in the vicinity of **Soldotna** but all of these had been abandoned well before the arrival of the first white settlers in the area in the 1940's. Immediately following World War II, the Veterans Homestead Act encouraged settlement **in the Soldotna** area but, as access was limited to boat or **plane**, population remained small through the early 1950's.

a

Since the mid-1950's, the west side of the **Kenai** Peninsula has experienced a series of economic stimuli which have prompted rapid population growth in **Soldotna**. The completion of the Sterling and **Kenai** Spur Highways in the mid-1950's provided access from Anchorage and Seward to the entire west side of the Peninsula and encouraged new settlement here plus increased recreational use of the area. **Soldotna's** situation at the junction of two of the Peninsula's major highways encouraged the establishment of a variety of trade and service activities to meet the needs of both the local population and transient highway traffic.

Another stimulus to growth in Soldotna was the discovery, beginning in 1957, of commercial oil and gas resources on the western lowlands of the **Kenai Peninsula** and offshore in Cook Inlet. The subsequent exploitation of these resources and **development** of the **petrochemical complex** in the North Kenai area brought substantial numbers of new residents to this area, with a share of these new residents choosing to settle in **Soldotna**.

The key event in **Soldotna's** growth, however, was the **formation** of the Kenai Peninsula Borough in January 1964 and the **decision** to base the Borough headquarters **in Soldotna**. Today, the Borough administration and school district offices and the Borough-owned Central Peninsula General Hospital are located, in the community, as is the State-operated **Kenai Peninsula Community College**. **Together, these government activities** have provided **Soldotna** with a **stable** and growing **employment** base. The community has **also** gained in population because of its increasing importance as a bedroom community for persons employed outside town in Kenai, North Kenai and adjacent areas.

As a result of these and other events, the City of **Soldotna's** population has grown from a mere 332 in 1960 to **1,202** in 1970 and 2,368 in 1978. This represents an increase of about 613 percent in just 18 years (see **Table 59**).

TABLE 59

POPULATION TRENDS
SOLDOTNA, ALASKA
1950 - 1978

<u>Year</u>	<u>Population</u>	<u>Percent Change</u>
1950	---	---
1960	332	---
1970 <u>a/</u>	1,202	262.0
1978 <u>b/</u>	2,368	97.0

- 9 ,
- a/ Soldotna incorporated as a city under Alaska law in July, 1967.
b/ 1978 special census conducted for the Kenai Peninsula Borough by the U. S. Census Bureau.

Sources: U. S. Department of Commerce, Bureau of the Census. 1960. U. S. Census of Population: 1960, **Number of Inhabitants**, "Alaska" Final Report **PC(1)-3A**. Washington, D. C., U. S. Government Printing Office.

U. S. Department of Commerce, Bureau of the Census. 1971. U. S. Census of Population: 1970, **Number of Inhabitants**, **Final Report PC(1)-A3**, Alaska. Washington, D. C., U. S. Government Printing Office.

Kenai Peninsula Borough, Growth Monitoring Program Advisory **Committee**. March 1979. Kenai Peninsula Borough: Special Census of the Population. **Soldotna**, March 1979. (Special Report Number 1).

Population Composition

The composition of **Soldotna's** population reflects several typical Alaska characteristics (see Figures 10 and 11). Like the State, males in **Soldotna** outnumber females and the community has a high proportion of very young people and a relatively low proportion of persons of retirement age.

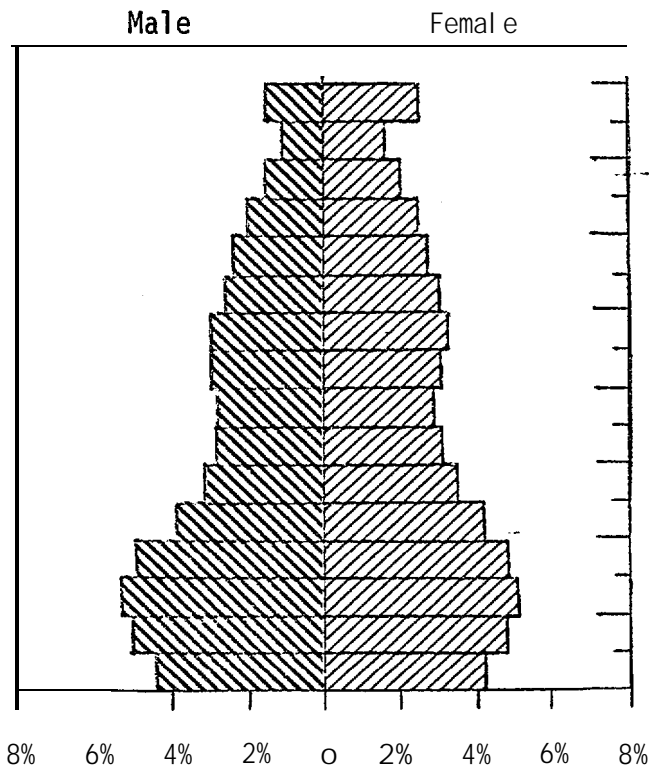
In 1970, the ratio of males to females in **Soldotna** was 51.4 percent to 48.6 percent. This ratio departs from the 1970 national norm where females outnumbered males by a 51 percent to 49 percent margin but it was typical of the State's population as a whole. As of 1978, **Soldotna's** male to female ratio had changed little, to 51.7 percent males and 48.2 percent females.

True to the ethnic origins of its contemporary settlers, almost all of **Soldotna's** population is white. According to the 1970 Census, 98.7 percent of **Soldotna's** residents were white and the remaining 1.3 percent were Alaska Native. In 1978, the ethnic composition of **Soldotna** was almost the same (see Tables 60 and 61).

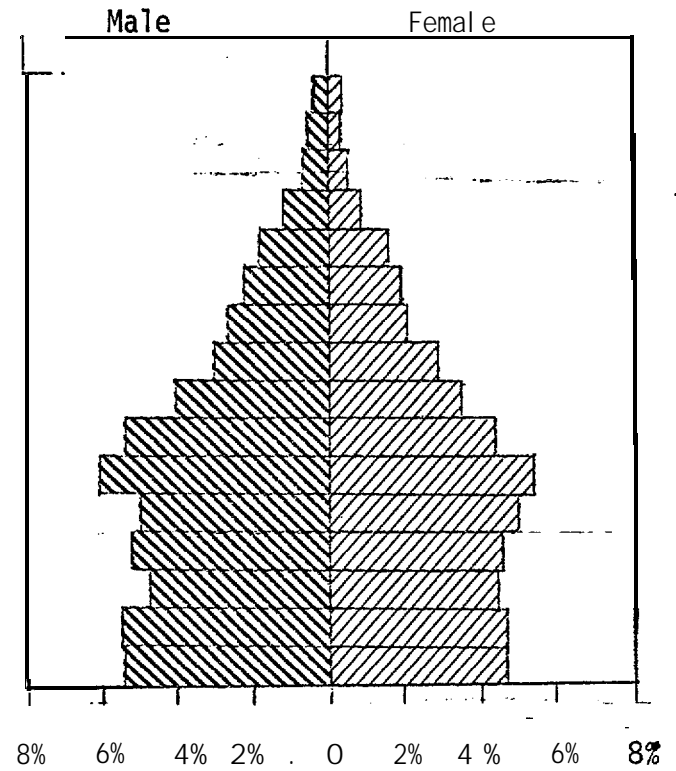
Changes in the age distribution of **Soldotna's** residents between 1970 and 1978 suggest that in-migration of whites in the 20 to 34 age group, rather than natural increase, was primarily responsible for the community's growth. In 1970, this age group accounted for about 23 percent of the City's total population. The population pyramid for that time (see

FIGURE 10
COMPOSITION OF POPULATION
CITY OF SOLDOTNA

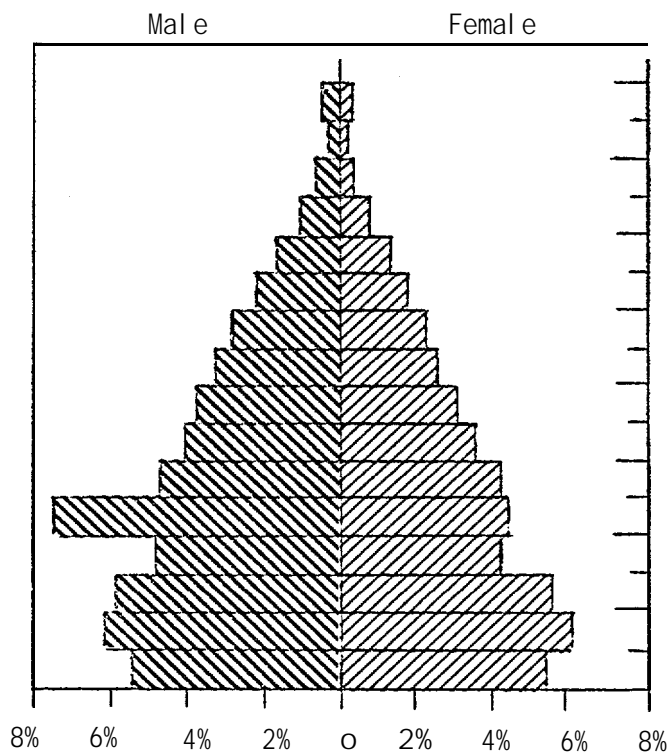
United States 1970



Kenai - Cook Inlet Census Division 1978



Alaska 1970



City of Soldotna 1978 - -

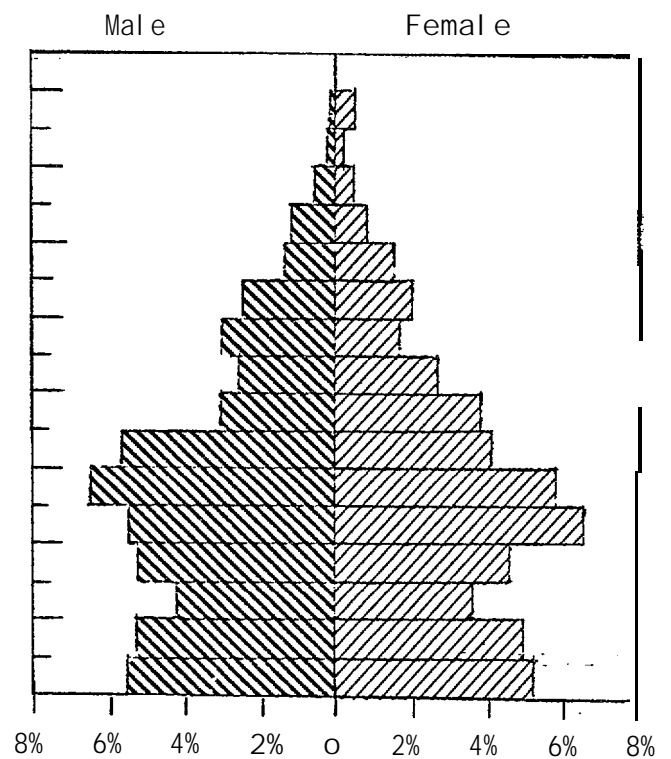
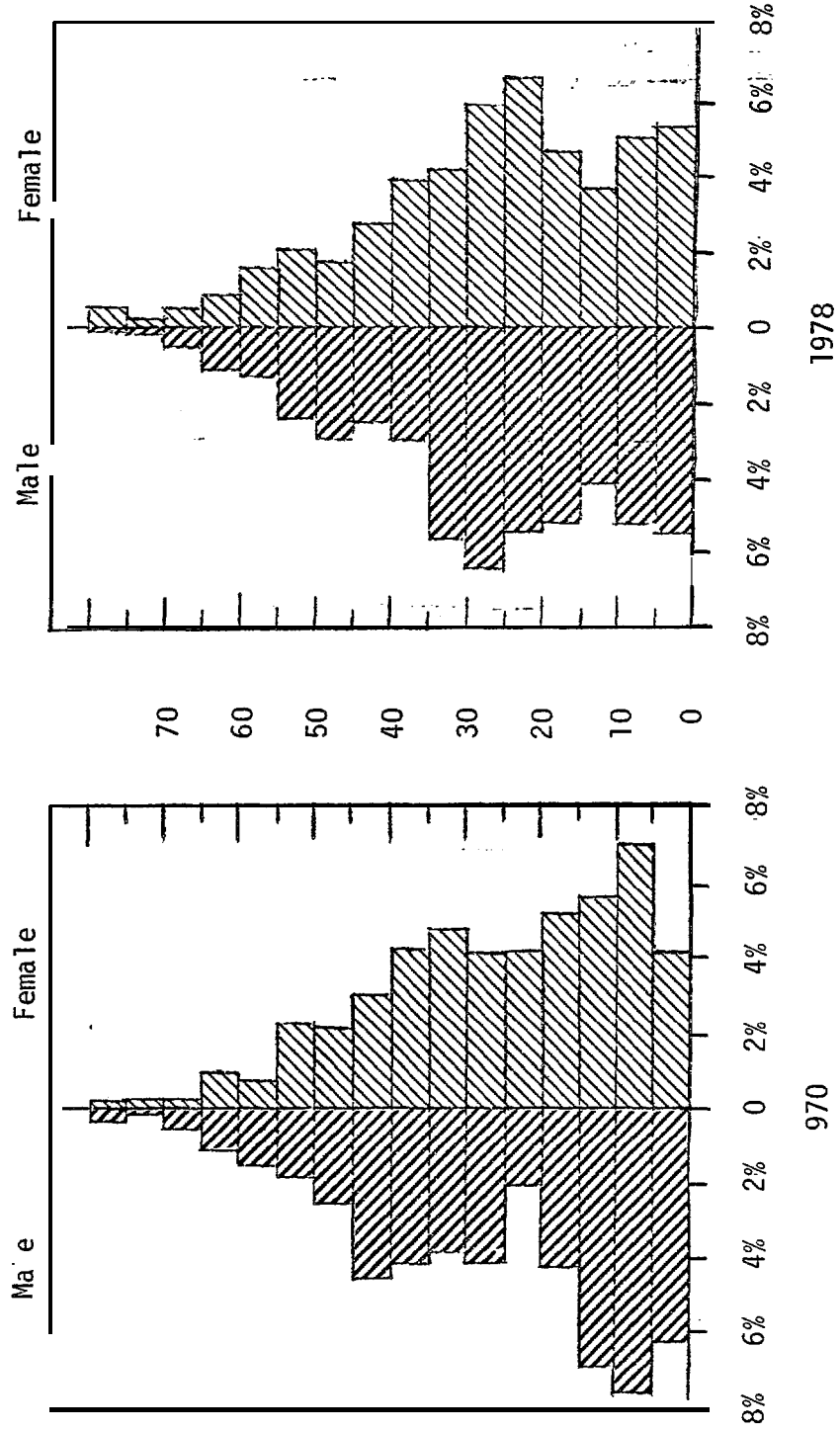


FIGURE 11
 COMPOSITION OF POPULATION
 CITY OF SOLDOTNA



Source: U.S. Census Bureau, 1970 & 1978

TABLE 60
COMPOSITION OF POPULATION BY RACE AND SEX
SOLDOTNA, ALASKA
1970

<u>Race</u>	<u>Sex</u>		<u>Total</u>	<u>Percent of Total</u>
	<u>Male</u>	<u>Female</u>		
White	614	572	1,186	98.7
Negro	0	0	0	0.0
Indian	2	3	5	0.4
Alut	0	1	1	0.1
Eskimo	2	8	10	0.8
Other	0	0	0	0.0
<u>TOTAL</u>	618	584	<u>1,202</u>	<u>100.0</u>

Source: University of Alaska, Institute of Social, Economic and Government Research. September 1973. Age and Race by Sex Characteristics of Alaska's Village Population. College. (Alaska Review of Business and Economic Conditions. vol. x, NO. 2.)

TABLE 61
 COMPOSITION OF POPULATION BY RACE AND SEX
 SOLDOTNA, ALASKA
 1978

<u>Race</u>	<u>Sex</u>		<u>Total</u>	<u>Percent of Total</u>
	<u>Male</u>	<u>Female</u>		
White	1,205	1,128	2,333	98.5
Other Races	18	17	35	1.5
<u>TOTAL</u>	<u>1,223</u>	<u>1,145</u>	<u>2,368</u>	<u>100.0</u>

Source: **Kenai** Peninsula, Growth Monitoring Program Advisory Committee. March **1979**. **Kenai** Peninsula Borough: Special Census of the Population. **Soldotna**. (Special Report No. 1).

Figure 11), particularly the relatively small percentage of males in the 20 to 24 age group, indicated that many young people were moving away from Soldotna when they were old enough to enter either college or the labor market. The total number of residents between 20 and 34 years of age rose from 273 in 1970 to 803 in 1978, an increase of 194 percent, much of which can be attributed to in-migration.

On the other hand, as in other areas of the State and the nation, the proportion of younger persons in Soldotna's population declined between 1970 and 1978, primarily because of a falling off in birth rates.

Persons under 20 years of age made up 47 percent of Soldotna's population in 1970 (compared with 43 percent for the State and almost 38 percent for the nation as a whole), whereas this group accounted for a much lower 38 percent of the community's population in 1978.

Growth Prospects

Soldotna's population growth over the past two decades has been tied indirectly to economic development outside the immediate community, most particularly to oil and gas development in the Kenai Lowlands and offshore in Cook Inlet. Soldotna has benefited through secondary economic growth stimulated by this development of oil and gas resources in its vicinity. It has thrived as the governmental center for the Borough and as a commercial center serving the central Peninsula area. Similarly, its future growth appears tied mainly to these same economic functions.

As the regional outlook for continued petroleum resource development is favorable, future growth prospects for **Soldotna** appear positive. On the horizon is continued exploration for oil and gas on federal and State offshore tracts in Cook Inlet. The discovery of additional commercial reserves of oil and gas will most likely mean the continued use and possible expansion of existing facilities in the Nikiski industrial area in North **Kenai** for treatment, transport and processing of oil and gas. Construction and operation of the proposed Pacific-Alaska LNG plant in the Nikiski industrial area will, if the project proceeds, promote another round of boom growth in the region. The scheduled expansion of the **Tesoro-Alaska** refinery proposed for 1980 or 1981 would lend a lesser boost to the area's economy. If historic growth patterns hold true, **Soldotna** will continue to expand as a government and service and trade center for the central Peninsula region's population and as a bedroom community for the industrial complex in North **Kenai**.

Within the government sector, strongest growth can be expected within local government, expanding upon **Soldotna's** role as the seat of the Kenai Peninsula Borough. According to a 1979 employment count by Alaska Consultants, Inc., there were about 255 Kenai Peninsula Borough employees in **Soldotna**, accounting for about 70 percent of the total government employment of 361. Thus, as the central Borough government expands to administer and deliver local public services to a steadily growing regional population, this component of the City's economic base will appreciate.

The **Soldotna** area is generally not well endowed with the natural resources or other economic assets which could support strong growth in tourism, agriculture, mining or non-petrochemical manufacturing industries.

While **Soldotna's** economy does include some trade and service employment related to tourism, its position in this industry has not altered much in recent years and does not appear susceptible to major changes in the foreseeable future.

In summary, it appears that **Soldotna's** economic and population dynamics will remain closely related to population growth in its service area and to the fortunes of the oil and gas industry. Over the coming decades, the area's growth will depend heavily on the success of the search now underway for additional offshore oil and gas reserves and the outcome of future federal and State oil and gas lease programs.

ECONOMY

Composition of Employment

The following analysis of employment composition in the **Soldotna** area relies on several sources. The Alaska Department of Labor compiles the most definitive local employment data. Its survey of insured employment collects monthly employment data by industry for the **Soldotna** Labor Area which coincides with **Soldotna's** corporate limits. However, in the case of **Soldotna**, these data have some limitations. Disclosure regulations prohibit the publication of government sector employment, a significant

omission for Soldotna, the seat of the **Kenai** Peninsula Borough government. To supplement State data in this area, Alaska Consultants, Inc. tabulated government employment in **Soldotna** during the summer of 1979. Data developed through this count are more current than available State employment data, but should be comparable as government employment has been quite stable over the past several years.

The Alaska Consultants, Inc. 1979 employment count **totalled** 361 government sector employees in **Soldotna**. This included 293 Borough, School District and City of **Soldotna** employees; 58 State employees, most of whom were associated with the **Kenai** Peninsula Community College; and 10 federal government employees. It is assumed that government employment was a slightly lower 350 in **1977**. The government sector is the largest single employer in **Soldotna** and represents about one-quarter of all of the City's employment. In this respect **Soldotna** is closer to Statewide norms than either the **Kenai-Cook** Inlet Census Division or the **Kenai** Labor Area where construction was the dominant sector in 1977.

State Department of Labor data indicate that, next to government employment, **Soldotna** is most heavily dependent upon the trade and service sectors. In 1977, the latest year for which complete data are available, trade (25.6 percent) and services (22.3 percent) accounted for 459 jobs or nearly half (47.9 percent) of insured employment. This is a much heavier concentration of employment in these two sectors than occurred in the State as a whole (33.9 percent) or the **Kenai-Cook** Inlet Census Division (25.6 percent) in 1977.

After government, trade and services, most remaining employment in Soldotna is in transportation, communications and public utilities (20 percent) and construction (16.5 percent).

Unemployment and Seasonality of Employment

There are no sources of unemployment data specifically for the Soldotna Labor area. Furthermore, because the composition of Soldotna's employment is unlike that of the larger Kenai-Cook Inlet Census Division, it cannot be inferred that unemployment rates in Soldotna resemble those of the region as a whole. Indeed, because of the high proportion of government employment in Soldotna, it is probable that unemployment rates here are lower than in the region as a whole.

State employment data distort the degree of employment seasonality in Soldotna since Borough School District employees are all assigned to the Soldotna Labor Area rather than to their actual place of employment. As a result, these data indicate a substantial drop in employment during the summer months when school is not in session and a sharp rise in early fall when classes resume. When school employees are excluded, Soldotna's employment seasonality more resembles the typical Alaska pattern of summer employment highs but is less pronounced than for the region as a whole where the seasonal construction and fish processing industries play important roles. Seasonal fluctuations in Soldotna's employment appear instead to stem from increases in trade and service sector employment coincident with tourist and recreational use of the

area and, to a somewhat lesser extent, from increased summer construction activity.

Recent Trends and Changes

The trend in employment in **Soldotna** during the past decade has been one of rapid growth. Employment rose from 374 in 1970 to 958 by 1977, an increase of 156 percent (see Table 62).

Due to non-disclosure regulations and changes in the reporting requirements for local government employment, published Department of Labor data do not fully reflect growth trends in the public sector. However, Department of Labor data, considered together with the 1978 Alaska Consultants, **Inc.** employment count, do support the conclusion that the government sector has grown to become the most important employer in **Soldotna**.

After government, the strongest growth occurred in the contract construction industry where employment expanded fivefold during the seven year period. Most of this growth took place from 1975 to 1977, concomitant with the Collier Carbon and Chemical Corporation's plant expansion and involved primarily residential development.

After construction, the most dynamic element of **Soldotna's** economy was the service sector where employment more than tripled from 1970 to 1977. While some of this increase undoubtedly resulted from tourism, it also reflects the growing importance of **Soldotna** as a regional service center.

TABLE 62
 NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT DISTRIBUTION
 SOUTHERN LABORAREA
 1970-1977

	1971		1972		1973		1974		1975		1976		1977		1970 - 1977	
	Number	% Change	Number	% Change	Number	% Change	Number	% Change	Number	% Change	Number	% Change	Number	% Change	Number	% Change
Agriculture, Forestry & Fisheries	0	*/	0	*/	0	*/	0	*/	0	*/	0	*/	0	*/	0	*/
Mining	31	8.3	29	7.4 - 9.7	24	5.9 - 17.2	24	5.1 0-0	57	7.3 58.3	51	6.1 -10.5	51	5.3 0.0	64.5	16.5 51.9
Contract Construction	23	6.1	53	13.5 130.4	49	12.0 7.5	38	8.1 -22.4	85	10.9 102.4	104	12.5 22.4	158	16.5 51.9	587.0	16.5 51.9
Manufacturing	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
Transportation, Communications and Public Utilities	*/	*/	62	15.2	73	15.6 17.7	125	2.2 71.2	182	23.4 45.6	195	23.5 7.1	192	20.0 - 1.5	81.5	20.0 - 1.5
Trade	135	36.1	124	31.6 - 8.1	117	28.6 - 5.6	146	25.7 12.8	195	25.1 33.6	187	22.5 - 4.1	245	25.6 31.0	81.5	25.6 31.0
Finance, Insurance and Real Estate	*/	*/	*/	*/	*/	*/	*/	*/	25	3.2	30	3.6 20.0	42	4.4 40.0	245.0	4.4 40.0
Service	48	12.8	75	19.1 56.2	100	24.4 33.3	115	24.6 15.0	147	18.9 9.7	202	24.3 37.4	214	22.3 5.9	245.0	22.3 5.9
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Government State & Local	17	4.5	23	5.9 35.3	30	7.3 30.4	467	100.0 14.2	567	100.0 21.4	778	100.0 37.2	958	100.0 15.4	1567.1	100.0 15.4
TOTAL	374	100.0	392	100.0 4.8	409	100.0 4.3	467	100.0 14.2	567	100.0 21.4	778	100.0 37.2	958	100.0 15.4	1567.1	100.0 15.4

*/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. Unpublished data.

Because of disclosure regulations, data on employment in the transportation, communications and public utilities sector are not available for the early years of the decade. However, employment in this sector rose from 62 in 1972 to 192 in 1977, an increase of 210 percent.

According to State Department of Labor data, Soldotna Labor Area employment during the first three quarters of 1978 was nearly double the average annual employment during 1977 (see Table 63). However, this apparent increase was largely due to the new practice adopted in 1978 of including local public employees in insured employment. This, together with the fact that all Kenai Peninsula Borough and School District employees are reported from the Soldotna Labor Area regardless of their actual place of employment, grossly distorts the annual comparison. Discounting Borough employees, Soldotna Labor Area employment appears to have undergone modest growth during the first three quarters of 1978, despite the decline in employment in the region as a whole during this period. Although employment in the construction and transportation, communications and public utilities sectors declined, gains in all other sectors of the economy, most notably in trade and services, more than made up for the loss.

Income Levels

Soldotna households enjoy higher incomes than those in most other Kenai Peninsula Borough communities. A survey conducted by the Anchorage Urban Observatory found that City of Soldotna households had a mean

TABLE 63

NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
SOLDOTNA LABOR AREA
FIRST THREE QUARTERS, 1978

Average Three Quarters	January	February	March	April	May	June	July	August	September	1978
Mining	65	67	67	59	53	47	52	48	64	58
Contract Construction	99	97	109	151	169	183	173	180	177	149
Manufacturing	*/	*/	*/	12	15	20	*/	*/	*/	*/
Transportation, Communications and Public Utilities	*/	*/	*/	150	192	166	188	185	185	*/
Trade	235	242	241	294	314	332	349	350	330	299
Finance, Insurance and Real Estate	*/	*/	*/	52	53	54	67	61	64	*/
Service	216	231	238	237	253	261	268	256	275	248
Miscellaneous	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
Government	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
Federal	(9)	(9)	(11)	(11)	(14)	(14)	(*)	(*)	(*)	(*)
State and Local	(/)	(/)	(/)	(/)	(/)	(/)	(/)	(/)	(/)	(/)
101M1	1,720	1,768	1,780	1,815	1,906	1,679	1,397	1,459	2,044	1,730

*/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. Unpublished data.

income of \$29,659 in 1975 (see Table 64), second only to Kenai of the five major cities (Soldotna, Kenai, Seldovia, Homer and Seward) in the Borough. For the larger Soldotna area (including Sports Lake and Big Eddy Road), mean household incomes were a somewhat higher \$30,870, but were still slightly lower than those in Kenai.

Also lending credence to the premise that Soldotna households enjoy high incomes are data published by the Alaska Department of Labor which indicate that the average wage in the Kenai-Cook Inlet region in 1977 was \$23,386, nearly 10 percent higher than the Statewide average. By inference, one can thus assume that Soldotna wage earners also have above average earnings.

Public assistance programs make only a minor contribution to the income of Soldotna area households. In March 1979, the various public assistance programs administered by the Alaska Department of Health and Social Services paid a total of \$15,048 to 65 aid recipients in Soldotna, with the bulk of the cases and funds in the Aid to Families with Dependent Children category (see Table 65). In addition, the Bureau of Indian Affairs' general assistance program, administered by the Cook Inlet Native Association, distributed a total of \$2,869 to Soldotna Native residents in 1978 (see Table 66).

TABLE 64

HOUSEHOLD INCOME DISTRIBUTION
SOLDOTNA, ALASKA
1975

<u>Household Income</u>	<u>Percent of Total</u>
Under \$2,500	1.0
\$2,500-\$4,999	2.0
\$5,000-\$7,499	2.0
\$7,500-\$9,999	3.0
\$10,000-\$14,999	8.1
\$15,000-\$19,999	8.1
\$20,000-\$24,999	18.2
\$25,000-\$29,999	15.2
\$30,000-\$34,999	8.1
\$35,000-\$39,999 "	8.1
\$40,000 or more	26.2
<u>TOTAL</u>	<u>100.0</u>
Median Household Income	\$26,875
Mean Household Income	\$29,659
N =	(99)

Source: Bureau of Management and Urban Affairs, and Anchorage Urban Observatory, University of Alaska. 1977. Profile of Five Kenai Peninsula Towns. Anchorage.

TABLE 65
PUBLIC ASSISTANCE PROGRAM PAYMENTS
SOLDOTNA, ALASKA
MARCH 1979 a/

	<u>Old Age Assistance</u>	<u>Aid to the Disabled</u>	<u>Aid to Families with Dependent Children</u>	<u>Total</u>
Total Payment	\$2,246	\$1,957	\$10,845	\$15,048
Number of Cases	17	13	35	65
Average Payment	\$ 132	\$ 151	-\$ 310	\$ 232

a/ March is considered to be a representative month for public assistance payments to individual cases.

Source: Alaska Department of Health and Social Services, Office of Information Systems. Juneau.

TABLE 66
GENERAL ASSISTANCE PAYMENTS a/
SOLDOTNA, ALASKA
FY 1973 - FY 1978

	<u>FY 1973</u>	<u>FY 1974</u>	<u>FY 1975</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u>
Total Payment	\$ --	\$ 1 2 5	\$ - -	\$. -	\$1,045	\$2,869
Number of Cases	--	1	--	--	2	3
Average Payment						
Annual	\$ --	\$ 1 2 5	\$ - -	\$ - -	\$ 522	\$ 956
Monthly	\$ --	\$ 1 0	- -	\$ - -	\$ 44	\$ 80

a/ Payments made to individual cases by the Bureau of Indian Affairs.

Source: Cook Inlet Native Association, Social Services Department.

Occupational Skills

From the limited data available, it appears that the Soldotna labor force includes a high proportion of persons with skills in the building trades, managerial and clerical and sales occupations. According to the Urban Observatory, these occupational groups accounted for almost 55 percent of all employed adults surveyed here in 1976 (see Table 67).

Some additional information on occupational skills of Soldotna area residents is provided by Kenai Job Service statistics. Since this information pertains to unemployed rather than employed persons and only to those persons registering with the Job Service program, it is not necessarily representative of the skills of the whole workforce nor even of all unemployed persons in the area. Furthermore, it is not possible to determine in which community in the area registrants actually reside. These qualifications notwithstanding, the skills most often listed by Kenai Job Service registrants in 1978 were in clerical and sales (25.6 percent), services (16.9 percent), and structural work (16.7 percent) occupations.

Land Use

OVERALL LAND USE PATTERNS

Soldotna's overall land use pattern reflects its highway orientation (see Figure 12). Following construction of the Sterling and Kenai Spur

TABLE 67
 OCCUPATION OF ALL EMPLOYED ADULTS a/
 PERCENT DISTRIBUTION
 CITY OF SOLDOTNA
 1976

	<u>Percent-</u>
Professional, Technical	9.9
Managers, Officials, Proprietors	17.6
Clerical and Sales	14.8
Crafts, Foremen	22.5
Operative Workers	9.9
Service Workers	11.3
Laborers, Fishermen	12.0
Farmers, Farm Managers	2.0
<u>TOTAL</u>	<u>100.0</u>

a/ Based on a sample of 142 persons surveyed.

Source: Bureau of Management and Urban Affairs, and Anchorage Urban Observatory, University of Alaska. 1977. Profile of Five Kenai Peninsula Towns. Anchorage.

FIGURE 12

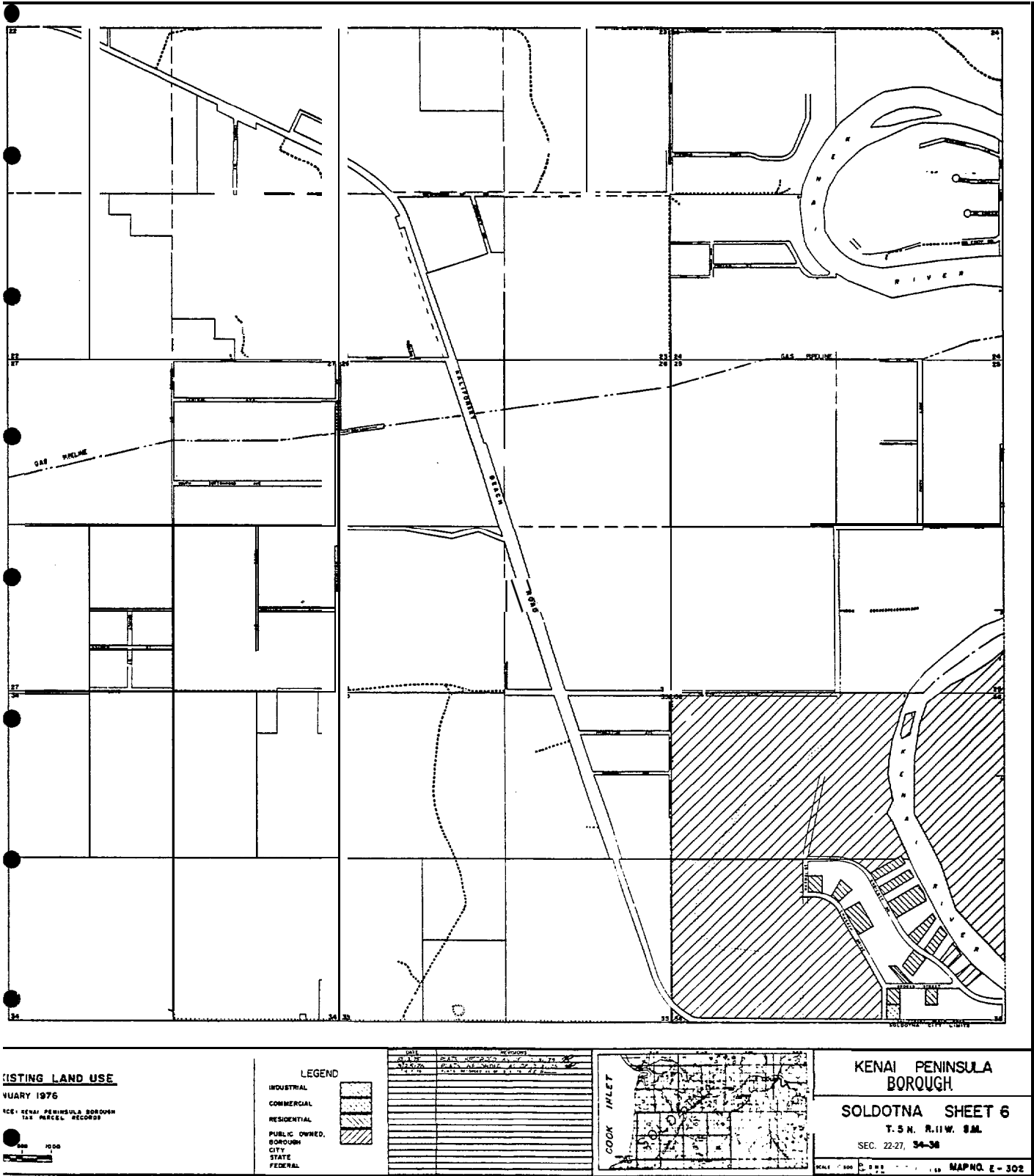


FIGURE 12 continued

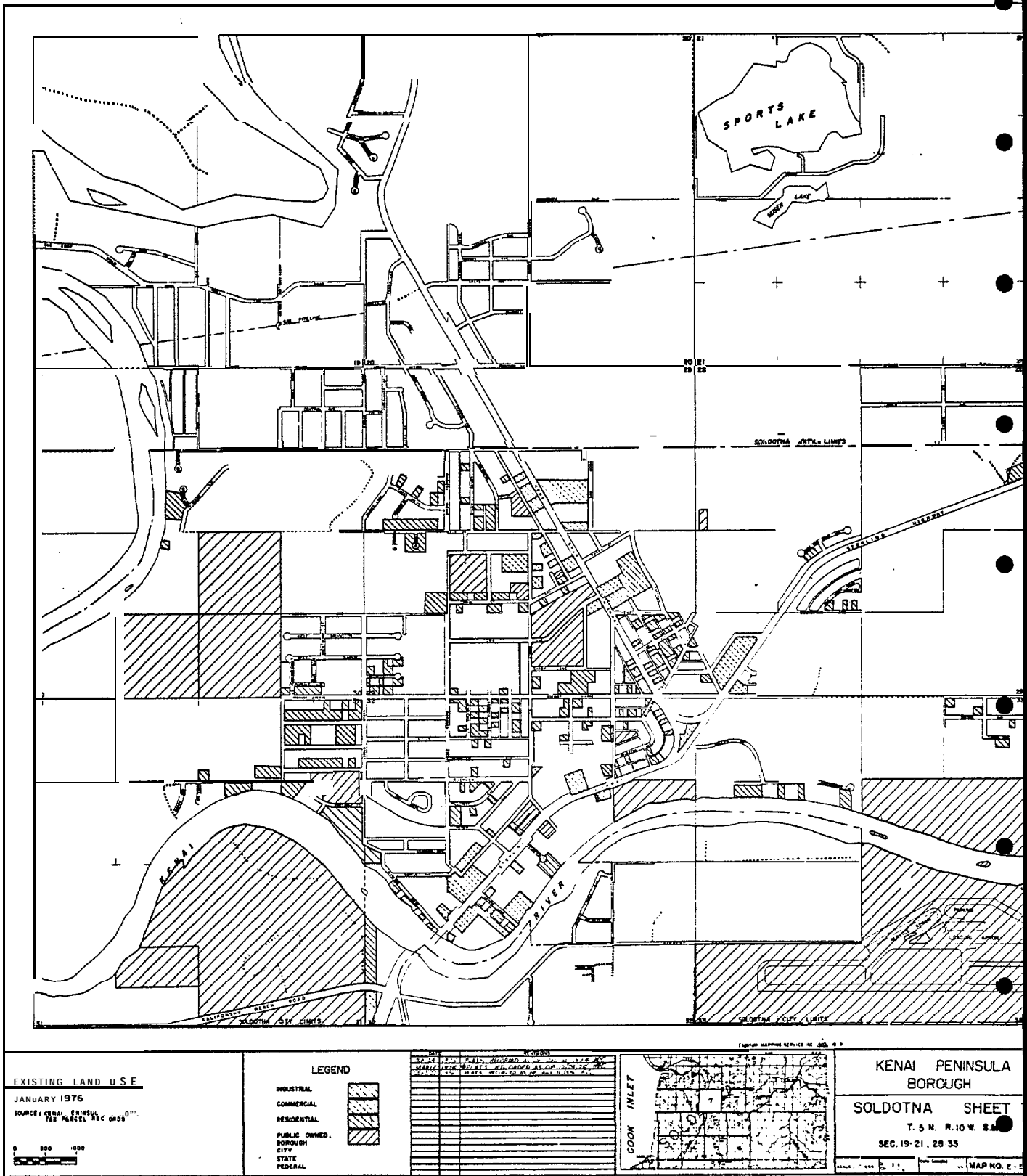
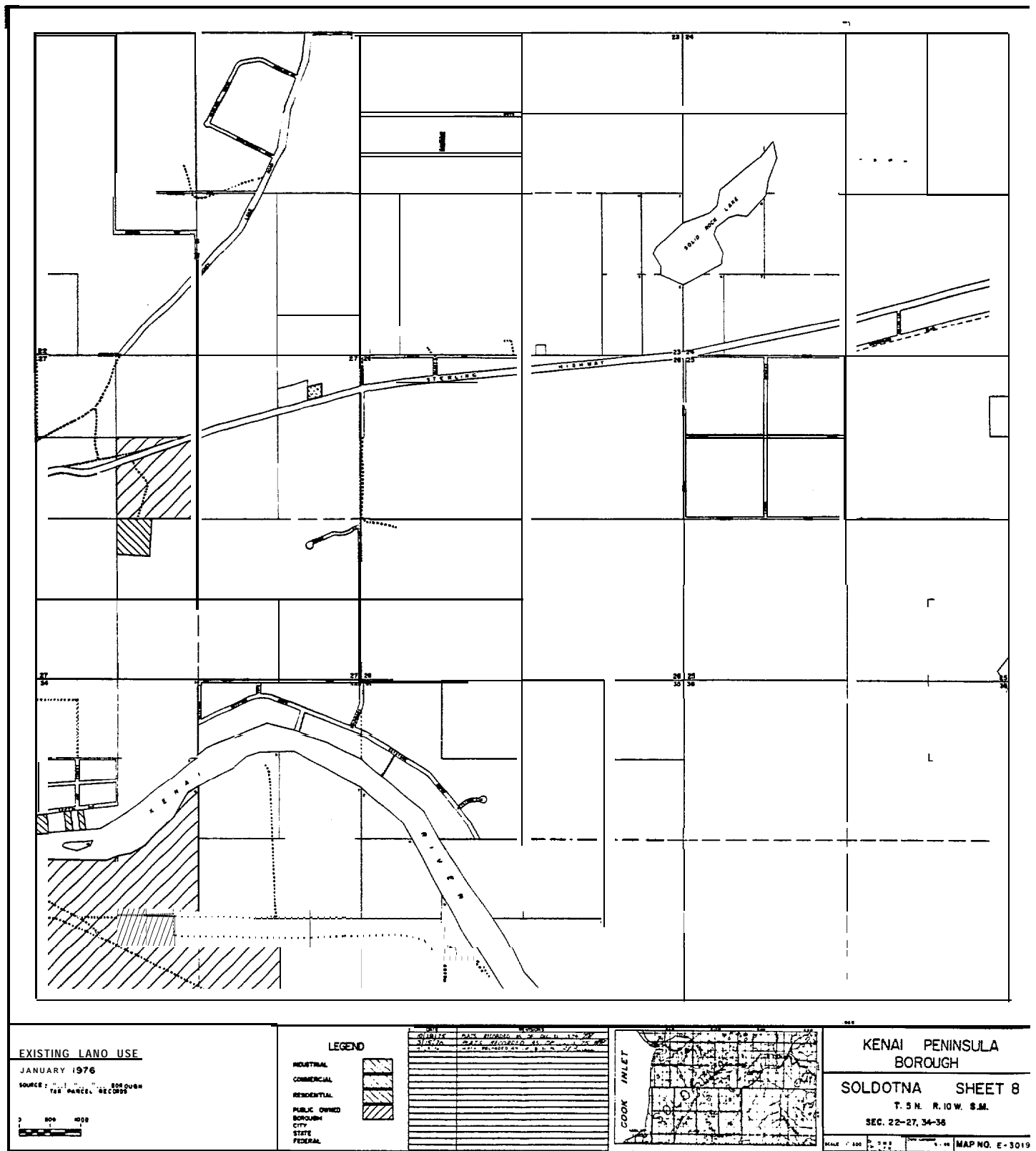


FIGURE 12 continued



Highways during the 1950's, commercial establishments began to concentrate at the junction of the two routes and subsequently spread in a linear pattern along the major roadways. Early residential development, primarily homesteads, was widely dispersed along these same routes. Today, although still scattered, residential development is concentrated most heavily in the area bounded by the Kenai Spur and Sterling Highways and the Kenai River, with new subdivision development spreading northward inside and outside the City limits, to the east of the Spur Highway and south across the Kenai River. Soldotna's existing industrial development is limited to a few warehouses and small manufacturing enterprises along the Spur Highway; however, the City is considering development of an industrial park at the municipal airport.

A tabulation of occupied lands and tidelands within Soldotna's 1,899.6 hectare (4,694 acre) corporate limits in 1974 indicated that only 156.0 hectares or 385.4 acres (8.2 percent of the total land area) was in use at that time (see Table 68). After residential land which accounted for the largest area in use (87.7 hectares or 216.7 acres), most was taken up by public and semi-public buildings (36.2 hectares or 89.5 acres). Commercial and industrial uses each accounted for about 16 hectares (about 40 acres) or 10 percent of the total. A more recent land use survey conducted for the City by Ted Forsi and Associates in 1978 found 649.9 hectares (1,606 acres) in use within Soldotna's corporate limits, a large portion of this (531.8 hectares or 1,314 acres) devoted to public uses. With only one-third of the City's land occupied at the present time, there is ample room for future development.

TABLE 68

**EXISTING LAND USE
SOLDOTNA
1974**

<u>Land Use</u>	<u>Land Area a/</u>	<u>Percent of Total</u>
Residential	216.7	56.2
Commercial	40.0	10.4
Industrial	39.2	10.2
Public and Semi-public Buildings	89.5	23.2
<u>TOTAL</u>	<u>385.4</u>	<u>100.0</u>

a/ Multiply by .4045945 to obtain hectares.

Source: Mathematical Sciences Northwest, Inc. and Human Resources Planning Institute, Inc. 1976. A Social and Economic Impact Study of Off-shore Petroleum and Natural Gas Development in Alaska. Prepared for the Bureau of Land Management. Contract No. 08550-CTS-46.

The responsibility for planning in the City of **Soldotna** rests with the **Kenai** Peninsula Borough Planning Department headquartered in **Soldotna**. However, the City's first comprehensive development plan was prepared in 1978 with municipal funds. This document was adopted by the **Soldotna** Advisory Planning Commission in March 1979 and became law when it was formally adopted by the Kenai Peninsula Borough Assembly in June 1979. **Soldotna** is also included in the **Kenai** Peninsula Borough's coastal management planning effort now underway although it is possible that the Borough's coastal zone may be redefined to exclude portions of the community. Another planning study being conducted by the Borough of relevance to **Soldotna** is the Central Peninsula **Water** Resources study discussed in detail in the section of this report describing **Soldotna's** water system.

DEVELOPMENT CONSTRAINTS

Most land in **Soldotna** is suitable for development; however, poor soil conditions, potential flooding of the **Kenai** River and possible earthquake hazards pose building constraints in certain areas of town. According to a soil survey of the **Kenai-Kasilof** area conducted by the U.S. Soil Conservation Service, most soils in **Soldotna** are well drained and are suitable for development with normal construction techniques. However, areas with slopes in excess of 12 percent, with slowly permeable soils near the surface and with high water tables require special construction techniques. Such soils are found near **Stikok** Creek and on the south bank of the Kenai River in the Centennial Park area, northeast of the

Kenai Spur Road and in a strip along the Sterling Highway extending to the City limits and beyond. Soils in the southwest portion of town on the banks of Sitkok Creek, in isolated pockets along the Kenai River and in the northeast section of the City near Soldotna Creek are waterlogged at all times and are generally unsuited for development.

Some riverfront lands in Soldotna are subject to flooding from spring melt, ice jams, glacial lake release and heavy rainfall. Floods from snow melt and ice jams occur in the spring, while flooding from glacial lake release and heavy rainfall generally occurs in the late summer. A detailed study of the flooding potential of the Kenai River was prepared by the Army Corps of Engineers in 1967 and reported in Flood Plain Information, Kenai River. This study describes the 20 and 50 year floods and "chose" areas susceptible to flooding from ice jams at Big Eddy. In general, lands most likely to flood are low lying areas along the river where soil conditions are poor. A report on the Kenai River prepared by the Corps of Engineers in 1978 recommends that development in those areas identified as wetlands or floodplains should be precluded or severely limited.

Soldotna is located in the Kenai Lowlands, an area determined by the U.S. Geological Survey to be in seismic risk zone 3 and susceptible to major structural damage from earthquakes of up to 6.0 to 8.8 on the Richter scale. Although property damage in Soldotna as a result of the 1964 earthquake was minimal, the U.S. Geological Survey reported extensive ground fissuring in the area. Similar effects could recur in the event of another earthquake of similar magnitude.

LAND STATUS

Within **Soldotna's** corporate limits, most land is privately owned; however, parcels of public land occur throughout the community, generally associated with public facilities. Most State land is adjacent to the river in the west of the City. Kenai Peninsula Community College occupies a **large parcel** of State land on the far side of the river, while the City is currently negotiating with the State to acquire State land on the near side of the river for recreation purposes. Kenai **Peninsula** Borough property accommodates the Borough building, **Soldotna's** public schools and Central Peninsula General Hospital. Large parcels of City land **lie** south of the Community College adjacent to the **Slikok** Creek subdivision, Centennial Park off **Kalifonsky** Beach Road on the **south** side of the river, the Swiftwater camper park east of town on the river bank, and a large tract of land at the municipal airport where the City plans to develop an industrial park.

Outside Soldotna to the south is the **Kenai** National Moose Range managed by the U.S. Department of Interior's Fish and Wildlife Service. To the north, east and west of **Soldotna**, most land is privately owned as a result of federal homesteading programs and State land sales. Other property in this area is either patented or tentatively approved State land, with much of the latter selected by Cook Inlet Region, Inc.

Under the provisions of the Alaska Native Claims Settlement Act, Cook Inlet Region, Inc. is entitled to select approximately 600,000 hectares

(1.5 million acres) of land within its 98,420 square kilometer (38,000 square mile) region. However, most of the land in the region with economic value was not available for selection and to remedy this situation a complicated land trade was negotiated by the regional corporation, the State of Alaska and the U.S. Department of the Interior which made some previously restricted State land eligible for Native selection. On the Kenai Peninsula, this included 46,540 hectares (115,000 acres) of State patented and tentatively approved land between Nikiski and the Homer Spit. The regional corporation did select some State land in the **Soldotna** area, but it has not yet been conveyed.

Under the Municipal Entitlement Act, the Kenai Peninsula Borough is entitled to select 63,043 hectares (115,780 acres) of State land Boroughwide. The Borough has already received title to approximately 19,425 hectares (48,000 acres) of this, some in the **Soldotna** area. Additional selections are being studied by the State to determine conflicts with overriding State interests.

HOUSING

According to the Urban Observatory, most housing in **Soldotna** is in single family units (see Table 69). Of a total of 601 units counted in Soldotna in 1976, 55.6 percent (334 units) were in single family units, with about 15.7 percent (94 units) in multi family units and about 28 percent (167 units) in mobile homes or trailers. In 1976, the Urban Observatory noted a very low housing vacancy rate in **Soldotna** (2.4

percent); however, the vacancy rate has risen sharply since that time. Surveys conducted by Frykholm Appraisal Services in March 1978 and March 1979 determined the rental unit vacancy rate in Soldotna to be 16 percent (1978) and 30.8 percent (1979). While this is unusual for small Alaskan communities where adequate housing is generally in short supply, similarly high housing vacancy rates were being experienced by Kenai, Fairbanks, Anchorage and Valdez during 1978 and 1979, probably because of overbuilding during the pipeline construction years. The completion of construction of the Collier Carbon petrochemical plant addition in the nearby Nikiski industrial area and the subsequent outmigration of a large group of construction workers is also believed to be a major factor in high vacancy rates in the Kenai-North Kenai-Soldotna area.

According to the Urban Observatory, Soldotna had a lower proportion of single family and multifamily units and a higher proportion of mobile homes than most other communities in the Borough in 1976. Nearly three quarters (72.2 percent) of Soldotna's housing units were found by the Urban Observatory to be owner-occupied in 1976, with the remainder being either occupied by renters (25.0 percent) or people living in rent-free accommodations (see Table 70). The proportion of owner occupancy in Soldotna is higher than all other towns in the Borough observed by the Urban Observatory, primarily because of the low proportion of multifamily housing units.

According to the 1970 Census, Soldotna had an average of 3.4 persons per household, about the same as the 1970 Statewide average of 3.42 persons

TABLE 69
HOUSING COMPOSITION
SOLDOTNA, ALASKA
1976

<u>Type of Unit</u>	<u>Number</u>	<u>Percent of Total</u>
Single Family	334	55.6
Multi family		15.7
Mobile Home	1;	27.8
Other	6	0.9
<u>TOTAL</u>	601	<u>100.0</u>

Source: Bureau of Management and Urban Affairs and Anchorage Urban Observatory. 1977. A Profile of Five Kenai Peninsula Towns. Anchorage.

TABLE 70
HOME OWNERSHIP CHARACTERISTICS
SOLDOTNA, ALASKA
1976

<u>Type of Occupancy</u>	<u>Number</u>	<u>Percent of Total</u>
Owner Occupied	434	72.2
Renter Occupied	150	25.0
Other <u>a/</u>	17	2.8
<u>TOTAL</u>	601	<u>100.0</u>

a/ Includes company housing and group quarters.

Source: Bureau of Management and Urban Affairs and Anchorage Urban Observatory. 1977. A Profile of Five Kenai Peninsula Towns. Anchorage.

per household. Anchorage Urban Observatory 1976 data indicate that household size in Soldotna declined slightly to 3.3, a decline which is consistent with nationwide trends to smaller family sizes.

Soldotna's housing stock is in generally good condition. In 1976, the Urban Observatory found 72.2 percent of the community's housing units to be in good external condition, with 17.6 percent judged to need external repairs and slightly over 10 percent determined to be in poor condition. In general, the housing units in Soldotna are of adequate size. In 1970, the U.S. Census found the average number of rooms per unit here to be 4.2, slightly lower than the State urban housing median of 4.3 rooms per unit. In 1976, according to the Urban Observatory, the median number of rooms per unit in Soldotna had risen to 4.8.

As reported by the Urban Observatory, the typical Soldotna resident paid an average of \$285 per month in rent or mortgage payments in 1976.

While this was lower than the average of \$311 per month paid by Kenai residents, it was substantially higher than was the case in Seward and Seldovia primarily because Soldotna's housing stock is relatively new.

Community Facilities and Services

This section on community facilities and services for Soldotna does not include discussions of health and social services, electric power and solid waste disposal. These services are provided on an area basis and have already been described for Kenai. The reader should therefore refer to appropriate sections in the Kenai chapter of this report.

PUBLIC SAFETY

Police

The **Soldotna** Police Department provides police protection inside **Soldotna's** corporate limits and outside the City to Mile 90 on the Sterling Highway, to Mile 20 on the **Kalifornsky** Beach Road and to Mile 2 on the **Kenai** Spur Road. Unincorporated areas outside this perimeter are served by Alaska State Trooper Detachment E based in **Soldotna**. Until 1978, both the **Soldotna** police and the State troopers were housed in the City police station on the Sterling Highway across from the Post Office. Because of limited space, however, the City police have moved temporarily to an adjacent City-owned building and will move back to the police station in 1980 when the new State trooper facility is completed.

The police station contains two temporary holding cells, a reception and records room, a small kitchen, a squad room, four offices and an evidence closet. There is no jail in **Soldotna** and prisoners requiring detention are instead incarcerated in **Kenai**. According to the police chief, space at the station is more than adequate for current needs and, if needed, a second story can be added.

The Police Department is staffed by a chief, seven commissioned officers, a stenographer and an animal control officer. The ratio of police officers to population is roughly 1 to 300. Police equipment includes four radio-equipped squad cars and a communications system which links

the Department with the hospital, the Fire Department and the State Department of **Public** Safety communications system.

Statistics reported by the **Soldotna** Police Department to the State Criminal Justice Planning Agency show that while serious crime is rare, a substantial increase in local police activity has recently taken place. From 1977 to 1978, the only two years for which data are available, the number of offenses reported to the Department increased from 97 to 182, a rise of about 88 percent. The number of criminal arrests made by the Department also rose from 32 in 1977 to 65 in 1978, an increase of approximately 103 percent (see Table 71). **Although misdemeanors**, particularly driving while under the influence, account for most criminal arrests, the recent increase in felonies or more serious crime is a major concern of **local** police officials.

Fire Protection

The **Soldotna** Volunteer Fire Department is housed in a 371.6 square meter (4,000 square foot) building at Mile 95 of the Sterling Highway in the City's commercial district. The station contains five bays, all of which are currently in use. Fire protection is provided throughout the City and, under contract to the State, the Department **also** provides men and equipment for fighting **wildland** fires on State land within a 6.4 kilometer (4 mile) radius of the City. **Fireson** federal land close to town are the responsibility of the federal government; however, the Bureau of **Land** Management does provide local assistance if fires

TABLE 71
 CRIMINAL ARRESTS
 SOLDOTNA POLICE DEPARTMENT
 1977 - 1978

<u>Type of Crime</u>	<u>Number of Arrests</u>		<u>Percent Change</u>
	1977	1978	
Felony <u>a/</u>	4	10	150.0
Misdemeanor <u>b/</u>	28	55	96.4
<u>TOTAL</u>	32	65	<u>103.1</u>

a/ Felony offenses include criminal homicide, rape, robbery, aggravated assault, burglary, larceny and motor vehicle theft.

b/ Misdemeanor offenses include other assaults, arson, forgery, and counterfeiting, fraud, embezzlement, stolen property, vandalism, violations of narcotic drug laws, gambling, violations of liquor laws, including drunken driving and disorderly conduct and so forth.

Source: State of Alaska Criminal Justice Planning Agency. 1977 and 1978. Crime in Alaska. Juneau.

originating on federal land spread to the City. Before January 1979, firefighting services were also provided by the City to nearby areas outside town but this has been discontinued because of inadequate funding and the refusal of people outside town to pay for the service.

The **Soldotna** Fire Department is staffed by four salaried firemen and about 15 volunteers. Firefighting equipment consists of four vehicles: two pumpers with a combined capacity of 145.1 liters per second (2,300 gallons per minute) and two tankers which together hold 15,897 liters (4,200 gallons) and are used primarily for firefighting in areas outside the hydrant system. The City ambulance and the Department's two staff cars are also housed at the station.

Soldotna's Insurance Services Office (ISO) rating of 6 depends on the presence of fire hydrants. Residential areas outside the hydrant system have an ISO rating of 7, while **commercial** ratings outside the system are determined on the individual merits of the property.

Soldotna's fire incidence is very low. There have been no major fires or loss of life in the past five years, and fire calls have decreased despite an increasing population. According to local fire officials, this is largely because most buildings in town are new, have been built according to code and are heated with natural gas rather than wood stoves or oil. Most fires which do occur are residential, primarily in mobile homes.

Despite a low incidence of serious fires, **Soldotna** has several fire protection problems. One is the excessively long run required to fight fires in outlying sections of the City, particularly considering that many such areas have no fire hydrants. The municipal airport is particularly vulnerable. The City plans to upgrade the airport and develop the industrial potential of this area and is studying the possibility of extending water service here. Local fire officials feel that if extensive development occurs in this area, a substation will be required.

Water supply is another problem. The Department's pumping capacity of 145.1 liters per second (2,300 gallons per minute) is adequate for a city of **Soldotna's** size; however, the present storage capacity of 1,892.5 kiloliters (500,000 gallons) cannot sustain this level over an extended period. The City has a Coastal Energy Impact Program (CEIP) grant to design a second 1,892.5 kiloliter (500,000 gallon) reservoir and expects to construct such a facility in the next five years. According to local fire officials, the distribution of hydrants is also inadequate, particularly in the commercial areas of town. Bonding to expand and upgrade the hydrant system, was rejected by **Soldotna** voters in the spring of 1979.

In addition to fire protection, the **Soldotna** Fire Department also provides emergency medical services within the City and has a 1976 Ford Superior Modular ambulance for this purpose. Thirteen of the Department's volunteers are trained emergency medical technicians.

EDUCATION

Elementary and secondary school services in **Soldotna** are provided by the Kenai Peninsula Borough School District. The School District is responsible for hiring teachers and maintaining the school plant, while the Borough is responsible for the construction of new school facilities.

In the fall of 1979, **Soldotna** school children in grades Kindergarten through 9 are attending three separate schools -- **Soldotna** Elementary School, the new Redoubt Elementary School (grades K through 6) and **Soldotna** Junior High School (grades 7 through 9). Until the fall of 1980 when the new high school is completed, students in grades 10 through 12 will attend Kenai Central High School. Beginning in 1980, the new high school will house grades 9 through 12 from **Soldotna**, Sterling, **Kaslof** and Funny River, and the junior high school which also serves **Kaslof** will be reorganized to accommodate grades 7 and 8 only.

Soldotna Elementary School is situated on a 2.7 hectare (6.7 acre) site on Park Avenue near the Borough building. The school was constructed in 1960 with major additions in 1968 and 1975. Besides 26 classrooms, the school contains a combination instructional materials center/library, a gymnasium which doubles as a cafeteria, a kitchen and administrative offices. Two portable classrooms were also used during the 1978/79 school year, but with the opening of the new elementary school these will no longer be required locally. The school playground is equipped with a variety of recreation equipment and a paved area for games. The

professional staff associated with **Soldotna** Elementary School includes a principal, a vice principal, 29 full-time and two part-time teachers. In addition, 11 full-time and 3 part-time classified employees perform tutorial, custodial, clerical, culinary and nursing-counseling functions.

Redoubt Elementary School shares a 32.4 hectare (80 acre) site on Redoubt Avenue with **Soldotna** Junior High and the new high school. This new elementary school will accommodate roughly 450 students from the northern part of the City, while those students living in the southern end of town will attend the older facility. Besides **22** classrooms, the new school contains an instructional materials center/library, a gym/multi-purpose room, a kitchen and administrative offices. The school **will be** staffed by a principal and assistant principal, 18 teachers and about 10 classified employees. **School** grounds contain a game area and a full complement of playground equipment.

Soldotna Junior High School was constructed in 1970 and has been maintained in excellent condition. The school plant contains 19 classrooms, including rooms equipped for home economics and shop, a library, a combination gym/multi-purpose room, a kitchen and administrative offices. School staff consists of a principal and dean of students, 25 teachers and 12 full-time and 2 part-time classified employees. Although outdoor facilities are presently limited, when the high school is completed in 1980, the two schools will share an athletic complex which will include a football field, an all-weather track, tennis courts, a **hockey rink** and a softball field.

The new high school, located behind the junior high school, **will** contain 45 classrooms, including wood, **metal**, heating and refrigeration and electronics shops, a business education room, a home economics laboratory, an art area and a combination music and choral room. Additional facilities will be a gym, a library, a multi-use room, a kitchen, a swimming pool and an 800-seat auditorium. Precise staffing levels for the new facility have not been determined; however, given the current student/teacher **ratio** of about 15.5 to 1 at **Kenai** Central High School, it **is** estimated that **Soldotna** High School, with an anticipated 1980 enrollment of 532 students will have a teaching staff of about 34.

As well as the regular academic program, the Kenai Peninsula Borough School District offers a wide variety of special education programs in **Soldotna** and **other** Borough communities. **(These are described in detail** in the section of this report dealing with education in **Kenai**). In addition, the School District's **community** schools program held at **Soldotna** schools during non-school hours offers a number of recreational courses.

Soldotna school enrollments have grown substantially over the past ten years, with the initial enrollment in grades Kindergarten through 9 in 1978/79 of 1,148 students being 70 percent above the 677 counted in 1969/70 (see Table 72). This is unlike many other school systems around the State which have recently experienced declining enrollments.

As a result of this growth, **Soldotna** schools have operated far beyond capacity in recent years. In 1978/79, **Soldotna** Elementary School which

has a capacity of 500 students, had an enrollment of 694 students. Similarly, **Soldotna** Junior High School, with an enrollment of 454 in the 1978/79 school year, was 54 students over its 400 student design capacity. However, the opening of Redoubt Elementary School in the fall of 1979 will double elementary school capacity and will enable the transfer of grade 6 from the overcrowded junior high school, thus alleviating some of the capacity problems in that facility. With the opening of an 800 student capacity high school in the fall of 1980 and the transfer of grade 9 to that building, the junior high school **should** then have adequate space to accommodate forecasted growth through 1983.

Borough enrollment projections for **Soldotna** schools through 1982/83 anticipate further increases in both elementary and junior high school enrollment (see Table 73). While the high school and junior high school (except for indoor physical education facilities) are considered adequate through this period, elementary school capacity will again be reached in 1982/83 if enrollment projections are realized. The School District has recommended the addition of ten classrooms to the new Redoubt Elementary School and the proposal is under consideration by the Borough. The School District has also recommended the addition of a multi-purpose physical education and athletic facility to the junior high school.

TABLE 72
ENROLLMENT TRENDS
SOLDOTNA SCHOOL SYSTEM
1968/69 - 1978/79

<u>School Year</u>	Initial Enrollment a/				<u>Totals</u>
	<u>Grades K - 5 b/</u>		<u>Grades 6 - 9 c/</u>		
	Number	% of Total	Number	% of Total	
1968/69	600	100.0	0	00.0	600
1969/70	380	56.1	297	43.9	677
1970/71	393	55.6	314	44.6	707
1971/72	346	52.7	311	47.3	657
1972/73	398	55.1	324	44.9	722
1973/74	376	53.6	326	46.4	702
1974/75	382	52.3	348	47.7	730
1975/76	435	54.1	369	45.9	804
1976/77	572	64.5	315	35.5	887
? 1977/78	671	67.9	317	32.1	988
1978/79	694	60.4	454	39.5	1,148

- a/ Enrollment data are as of the first day of school in October.
b/ Included grades 6 through 8 in 1968/69, excluded grade 5 from 1969/70 to 1971/72, and included grade 6 in 1976/77 and 1977/78.
c/ Included grade 5 and excluded grade 9 from 1969/70 through 1971/72, and excluded grade 6 in 1976/77 and 1977/78.

Source: **Gallaher, P.G.** and **F. McIlhargey**. March 23, 1978. Enrollment Projections and School Construction Report. **Kenai Peninsula Borough. Soldotna.**

TABLE 73
SOLDOTNA SCHOOL ENROLLMENT PROJECTIONS
1979/80 - 1982/83

<u>Year</u>	<u>Elementary</u>	<u>Juni or Hi gh School</u>	<u>Total</u>
1979/80	813	320	1,133
1980/81	895	365	1,260
1981/82	956	413	1,369
1982/83	1,036	461	1,497

Source: **Gallaher, P.G.** and **F. McIlhargey**. March 23, 1978. Enrollment Projections and School Construction Report. **Kenai Peninsula Borough. Soldotna.**

RECREATION

City-operated recreation facilities are limited and primarily serve the needs of visitors rather than local residents. The largest facility is Centennial Park located off Kalifonsky Beach Road on the south bank of the Kenai River. In addition to 33 improved camping spaces, the park includes a boat ramp and picnic tables, two softball fields and two Little League fields. The City fairground, site of the popular Fourth of July rodeo, 4-H programs and horse shows, is also located there.

Swiftwater camper park, located east of town on the Kenai River, has 15 improved spaces, a boat ramp and picnic tables. Soldotna's only neighborhood park is the Jack Farnsworth Memorial Park on Birch Lane.

This facility contains a variety of play equipment and is used primarily by small children.

The City has neither a paid recreation director nor an organized recreation program, although the Mayor recently named a committee to advise the City on park and recreation matters and to coordinate the activities of a wide variety of private organizations which use City facilities.

These include men's and women's softball groups, the Pop Warner Football Association, hockey and dog mushers organizations, the Little League, and a number of service organizations.

As in most Alaska communities, public schools in Soldotna are a focal point for community recreation activity during non-school hours. The elementary and junior high school multi-purpose rooms are heavily used

for community sports programs and public meetings, and the community schools program held at the schools offers a wide variety of leisure time activities. With the opening of Redoubt Elementary School in the **fall** of 1979 and the new high school in 1980, **Soldotna's** recreation facilities will be substantially augmented. The elementary school provides an additional gym and the high school will contain a swimming pool, an 800-seat auditorium and another gymnasium. Outdoor athletic facilities at the high school will include an all-weather track, football and softball fields, tennis courts and a hockey rink.

Aside from public recreation facilities, **Soldotna** has privately owned attractions used for recreation purposes. These include a golf course, a bowling alley and clubs catering to adult recreation needs. Churches also offer recreational activities for their members.

Although formal recreation facilities and activities in **Soldotna** are limited, the lands and waters surrounding the area provide a wealth of summer and winter recreation opportunities enjoyed by local residents and visitors alike. These are addressed in detail in the discussion of **Kenai's** recreation resources elsewhere in this report.

Soldotna residents have expressed a desire for additional outdoor recreation facilities. A recently completed comprehensive development plan prepared for the City by Ted **Forsi** and Associates and adopted by the Borough in June 1979 recommends the acquisition of substantial additional park and recreation facilities for **community** use. of top

priority are community boat ramps, neighborhood parks and "tot lots," a green belt along **Soldotna** Creek and a footpath system along primary roads and between major activity centers.

UTILITIES

Water

Soldotna derives its water from two wells located at the Borough building and at Mile 1 on the **Kenai** Spur Road which together yield 1.7 kiloliters (450 gallons) per minute. A third well under construction near the new high school will have a 3.8 kiloliter (1,000 gallon) per minute pumping capacity. Water is chlorinated during the pumping process. A reservoir and tanks at the wells supply 1,995 kiloliters (527,000 gallons) of storage and an additional 56.8 kiloliters (15,000 gallons) will be associated with the new well.

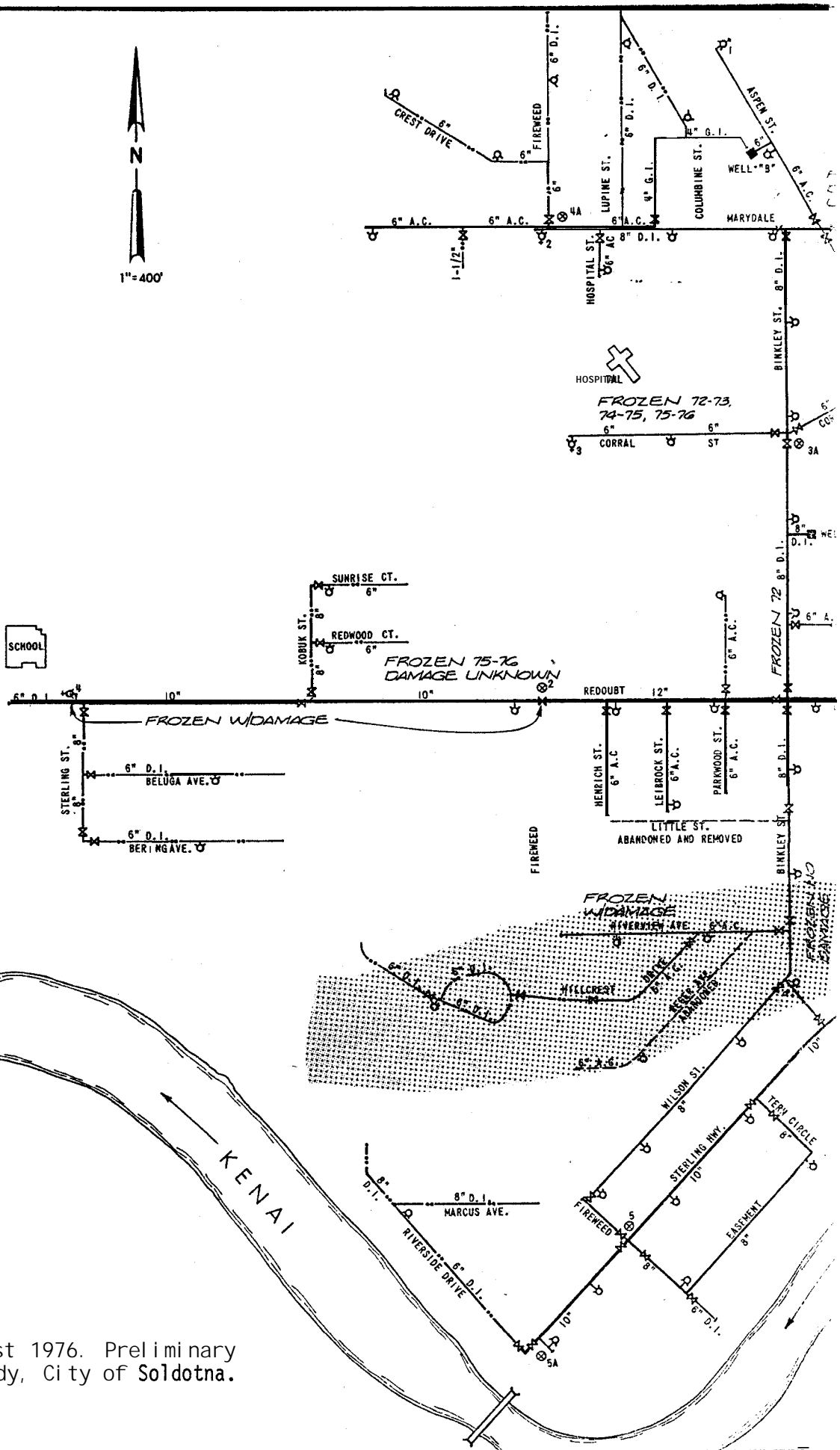
Water service is provided within the City limits, although outlying areas to the north and east and the municipal airport on the south side of the river are not on the system (see Figure 13). In July 1979, there were 584 commercial and residential water customers.

Construction of the municipal water system began in 1972. Since then, the system has been steadily expanded, with major additions in both 1976 and 1977. Service is planned to be extended to four more areas in the next two years. Two local improvement districts, **Kobuk** and **Sterling**,

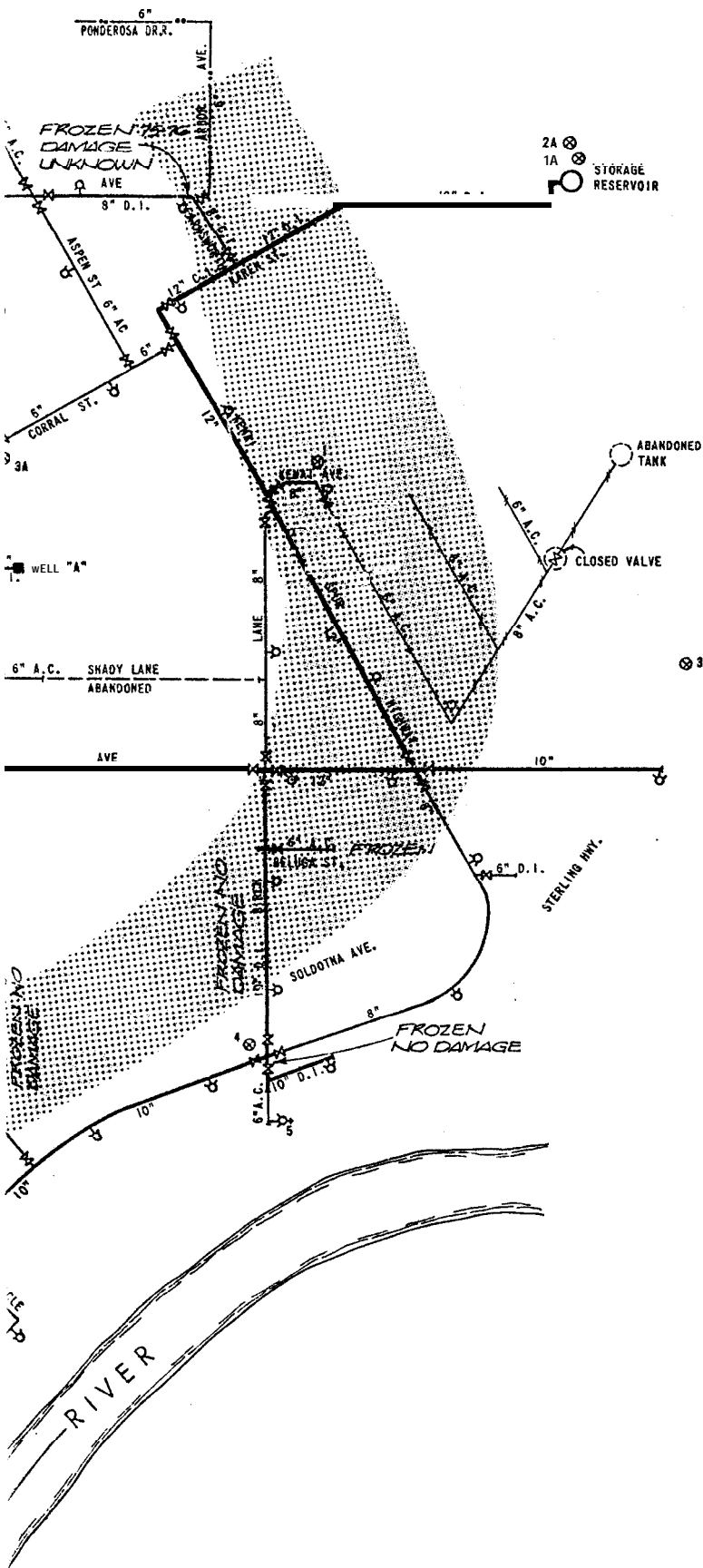
will be serviced before the end of 1979, and **Kobuk** East should be added by the spring of 1980. Water service is also scheduled to be extended to Banner Lane and Mooring Estates during 1980. Altogether, these four local improvement districts cover approximately 40.5 hectares (100 . . . - acres) and will add about 250 hook-ups to the system. Further in the future, the system may be extended to new residential development in the northern and eastern sections of town, and south across the river to the airport.

During its first years of operation, the **Soldotna** water system experienced a number of problems. During the winter, frozen mains and hydrants were common and damage from broken pipes was extensive. To prevent this, users often left taps running constantly during particularly cold weather, thus taxing the water supply and overloading the wastewater treatment plant. Expansion of the system and increased water circulation appear to have reduced damage to water mains; however, freezing problems continue where lines are connected to houses at depths of less than 10 feet.

In 1976, a Preliminary Water System Study prepared for the City by **CH2M-Hill** reported that **Soldotna** had no accurate means of recording pumping capacity nor, in the absence of meters, was it able to determine water consumption rates. The study also determined that one of the two wells was unreliable as a long-term water source because of broken suction and sand deposits. Although the sand and suction problems have since been resolved, the City is developing a third well as recommended.



Source: CH2M Hill. August 1976. Preliminary Water System Study, City of Soldotna.



LEGEND

A.C.	ASBESTOS CEMENT PIPE
D.I.	DUCTILE IRON PIPE
C.I.	GRAY CAST IRON PIPE
	12" WATER MAIN
	10" WATER MAIN
	8" WATER MAIN
	6" WATER MAIN
	WATER MAIN PRIOR TO 1972
	WATER MAIN INSTALLED BY LOCAL IMPROVEMENT DISTRICT (L. I. O.)
	ABANDONED WATER MAIN
	WELL
	FIRE HYDRANT WITH GATE VALVE
	FIRE HYDRANT WITH 1/2" HOSE TO WASTE IN COLO WEATHER (1976) TO 5 VALVE
	APPROX. ARSA OF HIGH SILT CONTENT IN GRAVELS
	STORAGE RESERVOIR
	ABANDONED TANK
	TEST BORING (SEE APPENDIX 1-5 AND 1A-5A)
G.I.	GALVANIZED IRON

NOTES:

1. ALL MAINS OVER 8" ARE DUCTILE IRON
2. INFORMATION FROM CITY RECORDS

THIS PRINT IS REDUCED TO ONE-HALF OF THE ORIGINAL SCALE IF THE SCALE READS V-11-00 USE 1/2" = 1'-0" OR 1/4" = 1'-0"

1976 WATER SYSTEM
CITY OF SOLDOTNA, ALASKA

Since water is not metered and records of **wellhouse** production have not been maintained consistently until recently, City water officials have no accurate measure of water consumption. In the past, supply has been adequate to meet demand and the addition of the new well should ensure sufficient supply in the near-term but the adequacy of long-term supply is the subject of some concern with local officials as groundwater levels in the North **Kenai-Kenai-Soldotna** area have undergone fluctuations in recent years. Whether these fluctuations result from an overdraw of groundwater by heavy industrial users in North **Kenai** or from variations in rainfall has not yet been determined. However, it is apparent that extended and severe fluctuations would necessitate the development of alternative water sources. The Kenai Peninsula Borough has recently funded a study with **CEIP funds** to determine the feasibility of developing alternative water sources to meet anticipated industrial growth in the Central Peninsula area. The **Kenai** River appears the most likely source although construction of an **areawide** system would be extremely expensive. A report containing specific **recommendations** as to future action **will** be issued in late 1979.

Although water supply is deemed adequate for the short-term, water storage capacity is limited and needs to be expanded to meet firefighting demands. The City is in the process of designing an additional 1,892.5 kiloliter (500,000 gallon) storage facility with CEIP funds.

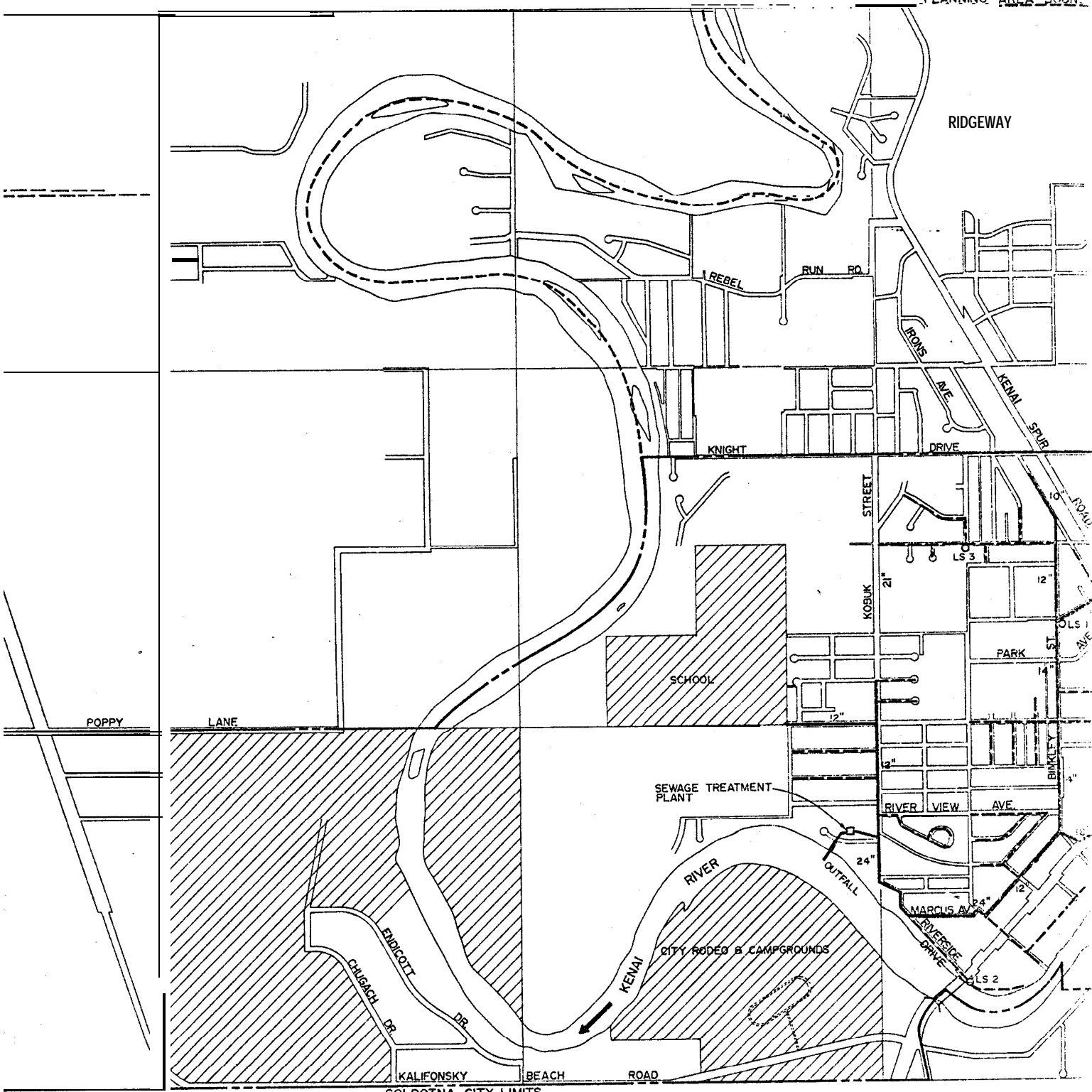
Sewer

The City sewer system was constructed in 1972 in conjunction with the water system and serves essentially the same area (see Figure 14). In July 1979, there were 720 sewer customers, slightly fewer than the number served by City water. Since its initial construction, the sewer system has been expanded annually along with the water system.





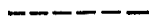
Approximately an **additional** 250 hook-ups are scheduled to be provided to the Kobuk and Sterling local improvement districts and the Banner Lane and Mooring Estates **neighborhoods** in the next two years. Although not currently scheduled, interceptor and trunk sewer extensions north along Kobuk Street, east along Redoubt Avenue, and south and east to **the Soldotna** Airport are also likely to be needed to service existing and **probable** future development.

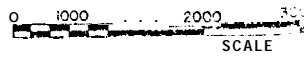
The **Soldotna** sewage collection system consists of 20.3 to 61.0 centimeter (8 to 24 inch) gravity sewers and three lift stations. The existing system is adequately sized to accommodate present and future flows except for the 25.4 centimeter (**10** inch) line leading to the treatment plant. However, because the gradient of the system is too flat for flow volumes, an undesirable amount of sludge builds up in the lines and periodically obstructs the flow. Current practice is to purge the lines when they become clogged which causes a maintenance burden. The City's engineering consultants (**CH2M**) have indicated that the flow problem could be minimized by hooking sewer connections to existing flat lines to keep **flow** velocities sufficiently high to prevent sludge accumulation. Alternatively, additional lift stations could be added to the system.

PLANNING AREA BOUNDARY

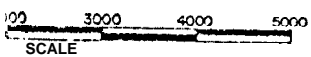
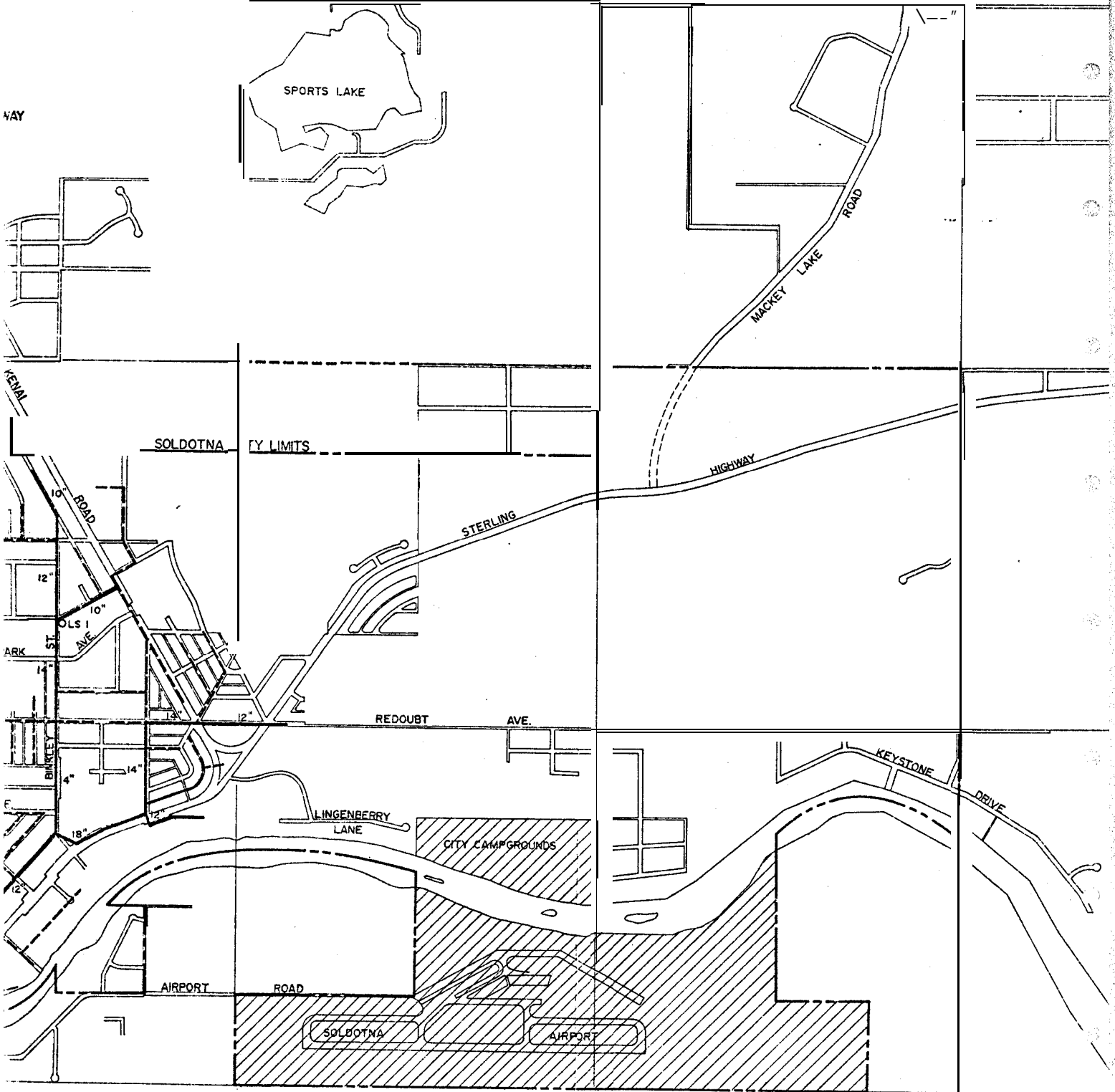


Source: CH2M Hill. December 1977. Wastewater Facilities Plan, City of Soldotna, Alaska.

-  PUBLIC LANDS
-  EXISTING 8" COLLECTORS
-  EXISTING INTERCEPTORS W/SIZE SHOWN
-  PLANNING AREA BOUNDARY
-  SOLDOTNA CITY LIMITS



AREA BOUNDARY



EXISTING SEWAGE COLLECTION SYSTEM

The sewage treatment plant is located east of **Kobuk** Street, close to the Kenai River. Sewage is treated by the activated sludge process and treated wastewater is carried by an outfall to the river. The plant is designed to process an average load of 984.1 kiloliters (0.26 million gallons) per day and a peak flow of 1,514 kiloliters (0.4 million gallons) per day. In 1977, **CH2M-Hill** determined the average daily flow through the plant to be approximately 1,059 kiloliters (0.28 million gallons) and the peak flow to be about 1,627.6 kiloliters (0.43 million gallons) a day, well above design **standards**. Both average and peak flows are highest during the winter months when taps are left running to prevent lines from freezing. Because of excessively high flows and equipment inefficiencies, the plant cannot produce an **effluent** which will meet federal standards.

In the 1977 **Soldotna** Wastewater Facilities Plan, **CH2M-Hill** recommended modifying the existing plant to expand the capacity of the activated sludge treatment process. Subsequently, it was determined that implementation of this concept would be extremely costly, and an amendment to the Plan was issued in March 1979 recommending instead a rotating biological **contactor (RBC)** treatment process. The amendment was adopted by the City and construction will begin in 1980, with completion scheduled for 1981.

Communications

Telephone service in **Soldotna** is provided by Glacier State Telephone, a subsidiary of the Continental Telephone System. The service area includes **Soldotna, Ninilchik, Kenai** and North **Kenai**. Regional offices and an installation and service facility are located in **Kenai**. As of May 1979, the **Soldotna** system included 2,400 main stations and 1,332 extensions. According to Glacier State officials, capacity is added as needed; however, the company is currently behind demand in adding new stations and there is often a **delay** in phone installation. Long distance services are provided by 38 outbound and 28 inbound trunk lines.

Local Government Organization

Soldotna incorporated as a fourth class city in 1960 and became a first class city in 1967. Today it has a council/manager form of government and is governed by an elected council of six members and an elected mayor whose primary function is to preside over City council meetings.

CITY POWERS

The City of **Soldotna** exercises a broad range of local government powers consistent with its statutory authority under Title 29 of the Alaska Statutes. Major public functions provided by the City include police and fire protection, water and sewer utilities, street maintenance and lighting, parks and recreation, library, animal **control** and the municipal airport.

In the summer of 1979, the City had 38 full-time employees. Among the professional staff were a city manager, a police chief, a fire chief, a finance supervisor, an engineer and a public works director. Capital assets managed by the City include the water and sewer utility improvements and the municipal airport terminal.

The Kenai Peninsula Borough is a second class local government unit encompassing a 66,304 square kilometer (25,600 square mile) area and which, in addition to **Soldotna**, also includes the cities of **Kenai**, Homer, **Seldovia**, Seward and Kachemak, plus a number of unincorporated settlements. The Borough has three mandatory areawide powers as per AS 29.33. These are assessment and collection of taxes, education, and planning, platting and zoning. In addition to these mandatory powers, the Kenai Peninsula Borough has assumed responsibility for solid waste disposal on an areawide basis. It has also formed a number of special service areas, one of which, the Central Hospital Service Area, serves the entire Central Peninsula area.

LOCAL GOVERNMENT FINANCES

In order to evaluate the fiscal condition of the City of **Soldotna**, the most recent City financial statement for the fiscal year ending June 30, 1978, was reviewed, along with data on assessed valuations, municipal debt and real property and sales tax rates published by the State Assessor's Office.

A review of the full **value** of property, as determined by the State Assessor (Alaska Taxable), within **Soldotna's** corporate limits from 1969 through **1978 was** undertaken (see Table 74). According to the State Assessor's records, the full value of property in **Soldotna increased by** . about 414 percent during this period, with most of the increase occurring since 1976. This was a more rapid rate of growth than was experienced in other incorporated communities in the Borough with the exception of Homer. However, the **full** value of property in the Borough as a whole increased at a faster rate than in **Soldotna** during the same period, with the largest share of growth in valuation taking **place** outside the Borough's incorporated communities, primarily due to oil and gas-related **construction** activity in the North **Kenai** area.

Under Alaska law, first **class** and home **rule** municipalities may levy property taxes of up to 30 mills although this mill rate may be exceeded if it is applied **to** debt service. In **addition**, both first and second class municipalities may **levy** sales taxes of up to 3 percent, while there is no limitation placed on sales tax levies by home rule municipalities. Cities of any class within organized boroughs may also have higher sales tax rates if overlapping units of government both levy **sales** taxes.

A review of **local** and areawide property **millage** and sales tax rates applicable to **Soldotna** since the 1972-73 fiscal year (see Table 75), and a comparison of these rates with those of other Alaska municipalities indicates that **Soldotna** residents pay relatively high property taxes.

TABLE 74
 CITY OF SOLDOTNA
 COMPARISON OF FULL VALUE DETERMINATION
 1969 - 1978
 (in \$000's to nearest \$1,000)

<u>Year</u>	<u>Full Value Determination</u>
1969	\$13,330
1970	\$14,217
1971	\$14,761
1972	\$16,495
1973	\$18,085
1974	\$19,658
1975	\$22,841
1976	\$30,948
1977	\$43,356
1978	\$68,502

Source: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

TABLE 75
CITY OF SOLDOTNA
PROPERTY AND SALES TAX RATES
1972 - 1978

	Property Tax (mills)						
	1972	1973	1974	1975	1976	1977	1978
City of Soldotna	10.00	14.00	15.00	12.00	10.00	11.00	11.400
Borough - Administration							0.465
Borough - Schools	5.00	5.00	5.00	5.00	5.00	5.00	4.035
Borough - Hospital (Central)	<u> </u>	<u> </u>	<u>0.20</u>	<u>0.20</u>	<u>0.20</u>	<u>0.20</u>	<u>0.200</u>
<u>TOTAL</u>	<u>15.00</u>	<u>19.00</u>	<u>20.20</u>	<u>17.20</u>	<u>15.20</u>	<u>16.20</u>	<u>16.100</u>

	Sales Tax (percent)						
	1972	1973	1974	1975	1976	1977	1978
City of Soldotna		1.00		1.00	2.00	3.00	2.00
Borough - Schools	<u>3.00</u>	3.00	<u>3.00</u>	<u>3.00</u>	<u>2.00</u>	<u>2.00</u>	<u>2.00</u>
<u>TOTAL</u>	<u>3.00</u>	4.00	<u>3.00</u>	<u>4.00</u>	<u>4.00</u>	<u>5.00</u>	4.00

Source: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

In 1978, property tax rates were set at 16.1 mills (11.4 by the City and 5 by the Kenai Peninsula Borough), comparable with rates set for Anchorage (old city area) and Juneau in the same year. However, Soldotna's current mill levy is much lower than in FY 1974 when local residents paid 20.2 mills in property taxes as well as a 3 percent sales tax.

Soldotna currently levies a 2 percent sales tax while the Kenai Peninsula Borough also levies a 2 percent areawide sales tax so that Soldotna residents pay a 4 percent tax on all sales within the City limits. Even so, this is lower than in Kenai or Homer where a 3 percent local sales tax is levied as well as the Boroughwide 2 percent levy.

An analysis of Soldotna's general fund revenues and expenditures for the fiscal year ended June 30, 1978 was undertaken (see Table 76). A very high proportion of Soldotna's general fund revenues is derived from local sources. Total general fund revenues for FY 1978 amounted to \$1,605,664. Of this, almost 60 percent was derived from property and local sales taxes. State revenue sharing funds were also significant, accounting for about 8 percent of Soldotna's general fund revenues in FY 1978.

The City's general fund expenditures in FY 1978 amounted to \$1,365,716, or about \$575 per capita. The major category of expense was the Police Department which accounted for 20.6 percent of general fund expenditures followed by administration (14.1 percent), streets and roads (10.8 percent), the City shop (9.5 percent) and the Fire Department (9.2 percent) (see Table 76).

A review of **Soldotna's** overall financial condition indicates that the City's financial position is basically sound but, in order to maintain this position, **Soldotna** residents have had to pay relatively high property and sales taxes. In the **Kenai-Soldotna** area, this is due in large part to the location of the **Nikiski** industrial area in North **Kenai**, outside the corporate limits of these communities although many workers live in either **Kenai** or **Soldotna** and use municipal facilities and services.

According to the State Assessor's records, **Soldotna's** per capita valuation was **\$28,965** per capita in **FY 1978** (see Table 77). This was well below the Statewide per capita valuation of **\$50,398** for that year. However, the Statewide average was seriously distorted by the inclusion of the **trans-Alaska** pipeline and related taxable real property and **Soldotna's** per capita valuation exceeded that of most Alaska communities of a similar size.

As reported by the State Assessor, the City of **Soldotna** had an outstanding general obligation bonded indebtedness of **\$1,579,000** as of June 1978 (see Table 77). Nearly all of this debt is serviced through various special assessment funds established for specific public improvements rather than through general property tax revenues or general fund expenditures. The direct per capita debt averaged **\$668**, which was well below the Statewide municipal average (**\$1,421**) but slightly above the average used by Moody's Investors Services. Not included in **Soldotna's** direct debt, however, is its share of the **Kenai Peninsula Borough's**

TABLE 76
GENERAL FUND
STATEMENT OF REVENUES AND EXPENDITURES
CITY OF SOLDOTNA
YEAR ENDED JUNE 30, 1978

<u>Expenditures</u>	<u>Appropriations</u>	<u>Actual</u>	<u>Actual Over (Under)</u>
Council Administration	\$ 74,250	\$ 80,581	\$ 6,331
Public Works Administration	204,605	192,625	(11,980)
Police Department	41,347	44,791	3,444
Fire Department	303,121	281,199	(21,922)
Streets and roads	130,829	125,976	(4,853)
Animal control	160,961	147,776	(13,185)
Shop	24,727	25,168	441
Parks	134,158	129,888	(4,270)
Library	19,481	25,869	6,388
Airport	38,104	34,911	(3,193)
Insurance and bonding	55,817	77,124	21,307
Bonded debt retirement	41,694	41,432	(262)
Interest on debt	19,000	19,000	
Repairs and maintenance	4,072	6,416	2,344
Other employee benefits	17,000	18,170	1,170
Municipal property rental expense	8,500	7,025	7,025
City assessment		9,156	656
Lease payment capital outlay		10,758	10,758
Undistributed capital outlay	21,551	14,978	(6,573)
Bad debt expense	63,290	61,990	(1,300)
Boat harbor		8,822	8,822
Contingency	81,811	2,061	2,061
	<u>1,444,318</u>	<u>1,365,716</u>	<u>(78,602)</u>
Less: Departmental contribution to equipment sinking fund	<u>7,625</u>	<u>(7,625)</u>	
	1,436,693	1,358,091	(78,602)
Transfers to other funds and reserves:			
Equipment Reserves	27,625	31,273	3,648
Grant Audit Reserve	31,000	31,000	
Special Revenue Funds	3,896	3,896	
Capital Project Fund	53,138	18,062	(35,076)
Special Assessment Fund	8,000	8,000	
TOTAL EXPENDITURES	<u><u>\$1,560,352</u></u>	<u><u>\$1,450,322</u></u>	<u><u>\$(110,030)</u></u>

TABLE 76
continued

GENERAL FUND
STATEMENT OF REVENUES AND EXPENDITURES
CITY OF SOLDOTNA
YEAR ENDED JUNE 30, 1978

<u>Revenues</u>	<u>Estimated Revenue</u>	<u>Actual</u>	<u>Actual Over (Under)</u>
Property tax	\$ 424,000	\$ 459,801	\$35,801
Sales taxes	416,000	488,415	72,415
Franchises	6,000	6,409	409
Licenses and building permits	9,000	37,451	28,451
Airport income	16,000	18,867	2,867
Shared revenue - State	126,700	131,472	4,772
Anti-recessionary	68,616	63,129	(5,487)
Transfer from Federal Revenue Sharing Fund	53,250	53,250	
Business licenses	71,000	89,580	18,580
Liquor licenses	5,000	4,875	(125)
Telephone and electric cooperative	7,500	10,799	3,299
Amusement devices	400	714	314
Fines	12,000	9,858	(2,142)
Park fees	8,000	5,881	(2,119)
Charges for services	26,000	12,407	(13,593)
Rental of municipal property	10,000	18,053	8,053
Shop revenue and equipment rental	88,400	73,148	(15,252)
Motor vehicle license commission	18,000	23,058	5,058
Dispatch revenue		20,700	20,700
Interest earned	15,000	19,197	4,197
Sale of municipal property		5,735	5,735
Airport gas tax	3,500	3,248	(252)
Bureau of Outdoor Recreation	12,330		(12,330)
Animal control	350	1,182	832
CETA	23,099	17,636	(5,463)
Transfer from capital projects		25,495	25,495
Miscellaneous revenue	631	5,304	4,673
TOTAL REVENUES	<u>\$1,420,776</u>	<u>\$1,605,664</u>	<u>\$184,888</u>

Source: Price Waterhouse & Co., August 15, 1978. City of Soldotna, Financial Statements and Supplementary Information, June 30, 1978. Anchorage.

TABLE 77
INDICATORS OF FINANCIAL CONDITION
CITY OF SOLDOTNA, ALASKA
FY 1978

Population <u>a/</u>		2,365
Full Value Determination	\$68,502,128.00	
Full Value Per Capita	\$ 28,965.00	
General Obligation Debt	\$ 1,579,000.00	
Total Debt <u>b/</u>	\$ 3,714,398.00	
Per Capita Debt		
General Obligation	\$ 668.00	
Total	\$ 1,571.00	
Debt as Percent of Full Value		
General Obligation		2.31%
Total		5.42%

Guidelines for Per Capita Debt

Direct	\$ 618.48	
Overall	\$ 733.93	
Percent of Full Value <u>c/</u>		5.50%

- a/ Soldotna's July 1977 population as accepted by the Department of Community and Regional Affairs for State Revenue Sharing purposes.
- b/ Total debt equals Soldotna's G.O. bonded debt plus a pro-rated share (\$2,135,398) of the Kenai Peninsula Borough's G.O. bonded debt based on the City of Soldotna's accounting for 4.4 percent of the Borough's 1978 full value determination.
- c/ Median value for selected places of under 10,000 population used by Moody's Investors Services, Inc.

Sources: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

general bonded indebtedness. Using a pro-rated share of the Kenai Peninsula Borough's general bonded debt based on the City of Soldotna's accounting for 4.4 percent of the Borough's 1978 full value determination, a \$2,135,398 indirect debt has been added to the City's general bonded debt to arrive at a total debt of \$3,714,398. This total debt figure translates into a much larger per capita debt of \$1,571 which is above the 1978 Statewide municipal average and significantly exceeds the guidelines used by Moody's Investors Services. It also exceeds that of all other Kenai Peninsula Borough communities except Homer. Nevertheless, Soldotna's overall debt in terms of percentage of full value (5.4 percent) is within Moody's Investors Services' recommended guidelines (5.5 percent).

CITY OF HOMER

Population and Economy

POPULATION

Past Trends

Lower Cook Inlet and Kachemak Bay have long been inhabited by **Tanaina** Indians. However, though there is record of many traditional settlements in the region, some still occupied and many now abandoned, Homer Spit and its adjacent upland area apparently were not inhabited before white settlement. The first non-Native settlers in the area were Russian trappers and coal miners who sporadically used the **Kachemak** Bay area after 1786. Homer itself was first settled toward the end of the nineteenth century to serve as a coaling station, supplying locally mined coal to ships. The post office was founded in 1896. Through the middle of the twentieth century, Homer survived as an isolated minor community, depending at various times on fur farming, agriculture and fishing for its livelihood, with fishing eventually becoming the dominant economic activity.

The 1951 completion of the Sterling Highway linking Homer by road to Anchorage and Seward was a milestone event for it immediately made the Homer area more accessible for homesteading and as the recreational and tourist destination it has increasingly come to be, particularly for the

rapidly growing Anchorage area's population. The population of the Homer area rose from 725 people in 1950 to 1,247 in 1960. In 1964, part of the settled area incorporated as the City of Homer with an estimated 800 residents. Subsequently, with commercial fishing and fish processing along with tourism and recreation and related trade and services as the economic mainstays of the town, its population grew to 1,083 in 1970 and nearly doubled to 2,054 in 1978 (see Table 78). Thus, since 1970, Homer has demonstrated a healthy rate of growth (a 90 percent increase in eight years), second within the Kenai Peninsula Borough only to the City of Soldotna.

Population Composition

Analysis of a community's population usually yields insight into its history and economic and social dynamics. In Homer's case, an analysis of the changes in population composition which have accompanied the town's rapid growth since 1970 are suggestive of the character of recent trends (see Tables 79 and 80 and Figures 15 and 16).

In 1970, the ratio of males to females was 53.6 percent to 46.4 percent respectively. While this ratio departs from the national norm which stands at a slight advantage of females over males, it is typical of Alaska communities and about the same as the 1970 Statewide figure. As of 1978, the ratio had changed little, to 53.2 percent males and 46.8 percent females.

TABLE 78
POPULATION TRENDS
HOMER, ALASKA
1950 - 1978

<u>Year</u>	<u>Population</u>	<u>Annual Percentage Increase -- -</u>
1950	307	
1960	1,247	
1964 <u>a/</u>	800	
1968 <u>b/</u>	975	5.1
1970	1,083	5.4
1972 <u>c/</u>	1,243	5.7
1975 <u>d/</u>	1,538	7.8
1978 <u>e/</u>	2,054	10.1

a/ Homer incorporated as a city with its present corporate limits on March 31, 1964. 1964 population figures estimated by City personnel. 1950 and 1960 Census figures are for the former Homer Public Utility District which covered a larger area.

b/ Homer's 1968 population estimated by the Alaska State Housing Authority.

c/ Census conducted by the City of Homer in October 1972.

d/ Special U.S. Census, August 1975.

e/ Special U.S. Census conducted for the Kenai Peninsula Borough, July, 1978.

Sources: U.S. Department of Commerce, Bureau of the Census. 1960. U.S. Census of Population: 1960, Number of Inhabitants, Alaska. Final Report PC(1)-3A. Washington, D.C., U.S. Government Printing Office.

U.S. Department of Commerce, Bureau of the Census. 1971. U.S. Census of Population: 1970, Number of Inhabitants, Final Report PC(1)-A3, Alaska. Washington, D.C., U.S. Government Printing Office.

Alaska State Housing Authority. Spring 1969. City of Homer Comprehensive Development Plan. Anchorage, Alaska.

CH2M-Hill. May 1977. Comprehensive Water Plan: Homer, Alaska. Anchorage, Alaska.

Kenai Peninsula Borough, Growth Monitoring Program Advisory Committee. March 1979. Kenai Peninsula Borough: Special Census of the Population. Soldotna, March 1979. (Special Report Number 1).

TABLE 79
COMPOSITION OF POPULATION BY RACE AND SEX
HOMER, ALASKA
1978

<u>Race</u>	<u>Sex</u>			<u>Percent of Total</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>	
White	550	471	1,021	94.3
Negro	1	1	2	0.2
Indian	4	5	9	0.8
Alut	4	5	9	0.8
Eskimo	5	10	15	1.4
Other	16	11	27	2.5
<u>TOTAL</u>	580	503	<u>1,083</u>	<u>100.0</u>

Source: University of Alaska, Institute of Social, Economic and Government Research. September 1973. Age and Race by Sex Characteristics of Alaska's Village Population. College. (Alaska Review of Business and Economic Conditions. Vol. X, No. 2.)

TABLE 80
COMPOSITION OF POPULATION BY RACE AND SEX
HOMER, ALASKA
1978

<u>Race</u>	<u>Sex</u>			<u>Percent of Total</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>	
White	1,069	928	1,997	97.2
Black and Other	24	33	57	2.8
<u>TOTAL</u>	<u>1,093</u>	961	<u>2,054</u>	<u>100.0</u>

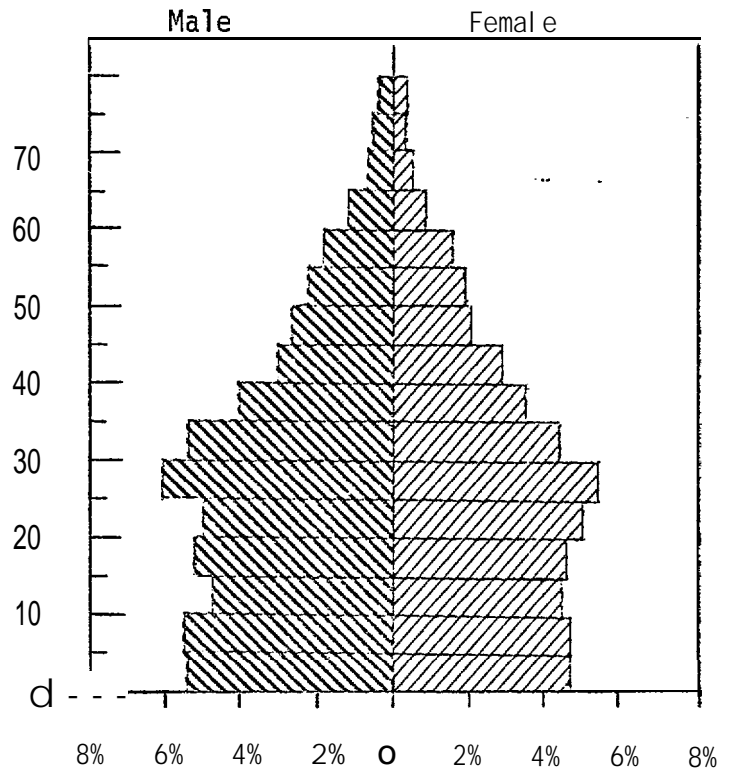
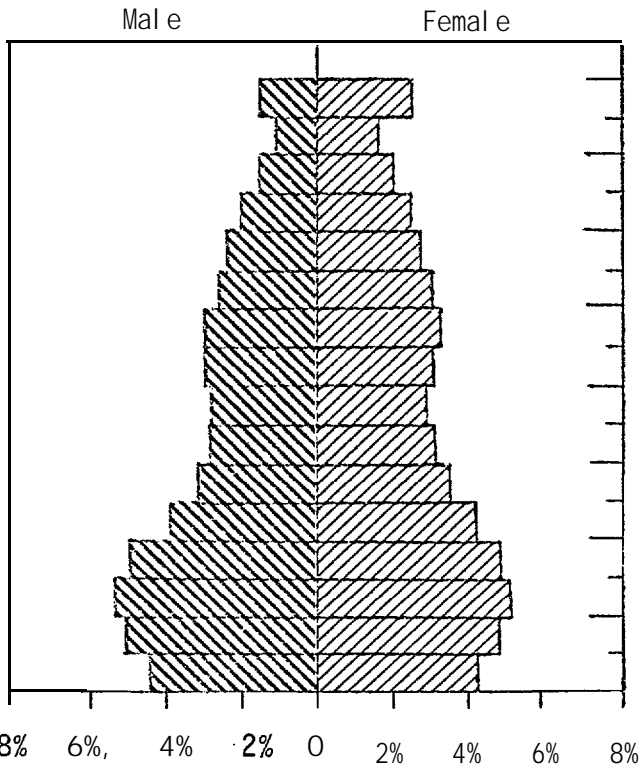
Source: Kenai Peninsula, Growth Monitoring Program Advisory Committee. March 1979. Kenai Peninsula Borough: Special Census of the Population. Soldotna, March 1979. (Special Report No. 1).

Figure 15

COMPOSITION OF POPULATION
CITY OF HOMER

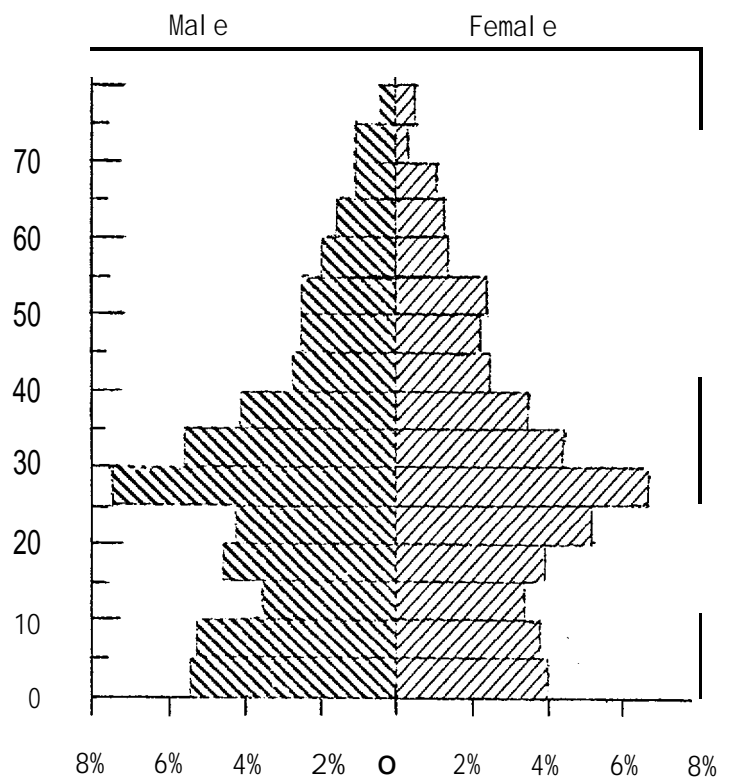
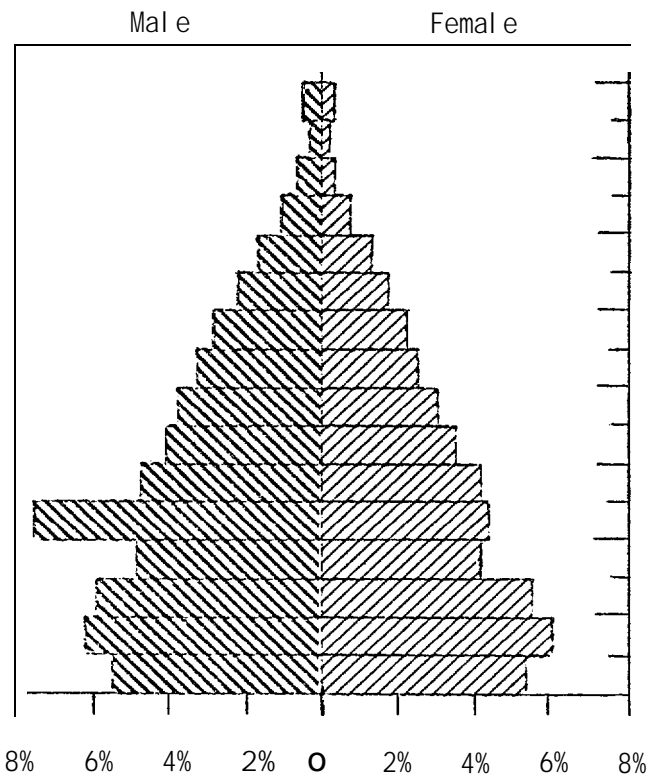
United States 1970

Kenai - Cook Inlet Census Division 1978



Alaska 1970

City of Homer 1978

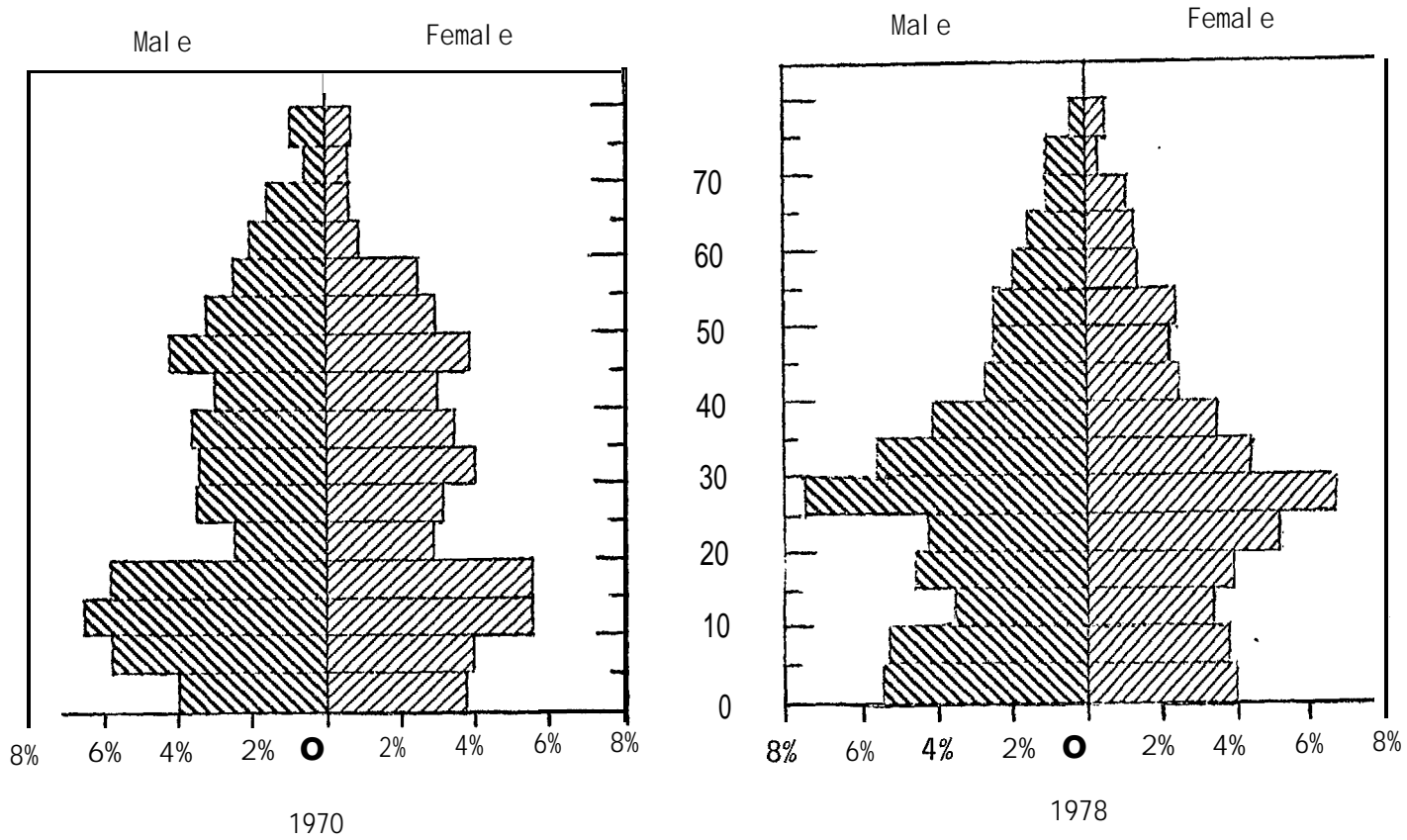


True to its origins, Homer's population is overwhelmingly white in ethnic composition. According to the 1970 Census, 94.3 percent of Homer's residents were white and the remaining 5.7 percent were distributed among other ethnic groups, primarily Alaska Natives. By 1978, the percentage of non-white residents had dwindled even further down to 2.8 percent, while the percentage of whites climbed to 97.2 percent. This shift in ethnic composition suggests that immigration, primarily of whites, rather than natural increase of the resident population was the source of Homer's rapid population growth from 1970 to 1978.

This hypothesis is confirmed by changes in the age distribution of Homer's residents between 1970 and 1978. Over that span of time, there was little movement in the total population's median age: the median age was 28.1 in 1970 and 27.5 in 1978. Other features of the age structure indicate a pattern of selective immigration to Homer, heavily weighted toward white men and women in the 20-34 age group. In 1970, this age group accounted for about 19.3 percent of the City's total population. The age pyramid for that time, most particularly the relatively small percentage of residents aged 20-24 years, indicated that many young people were moving away from Homer when they completed high school and entered the labor market. However, by 1978, the percentage of residents in the 20-34 age group had risen to 33.6 percent. The total number of residents between 20 and 34 years of age grew from 209 in 1970 to 690 in 1978, an increase of 230 percent. Natural increase can, at most, account for only a small part of this increase. The bulk of this growth can only be attributed to heavy immigration of new residents in that age

COMPOSITION OF POPULATION
CITY OF HOMER

Figure 16



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Source: U. S. Census Bureau, 1970, 1978

group. Furthermore, the data show about the same increase for male and female populations alike, so the immigration is evenly balanced in sex composition. Finally, the evidence suggests that this new group includes a predominance of unmarried individuals or childless couples and small families, since there was no significant rise in the percentage of children, as might ordinarily be expected in association with a large influx of men and women in their childbearing years.

To summarize, immigration has clearly been the main source of Homer's growth in recent years, and the composition of this migration has been weighted heavily in favor of white males and females between 20 and 34 years of age.

In other respects, Homer's 1970 population included a smaller percentage (7.7 percent) of residents under five years than the State (11 percent) or national averages (8.4 percent). On the other hand, Homer had a larger percentage (5.1 percent) of residents 65 years of age or older than the State average (2.2 percent) though still well below the national average (9.8 percent). No major change in these relationships was observed between 1970 and 1978.

Growth Prospects

The peculiar composition of Homer's growth in recent years makes it difficult to relate the town's growth to historic economic trends and, thus, to foretell the community's prospects for future growth. Usually,

population growth through migration corresponds with the attraction of basic employment opportunities. The demographic and economic data for Homer suggest that other considerations, such as the opportunity for a semi-rural lifestyle in the attractive natural setting for which Homer is renowned, may also be factors in Homer's recent growth. Thus, Homer's future growth prospects may depend upon the persistence of this appeal as well as upon growth in the local basic economy.

The prospects for growth in Homer's basic economy lie primarily in the two sectors of fishing and fish processing and tourism and recreation. At present, commercial fishing and fish and shellfish processing constitute Homer's **single** most important economic activity. Expansion of the Homer-based fishing fleet into **bottomfishing** and the development of additional processing plant capacity to **handle bottomfish** delivered to Homer could add measurably to the community's employment base. As Anchorage's and the western **Kenai** Peninsula's population has grown, the popularity of the Homer area as a base for outdoor recreation and as a tourist destination has supported substantial expansion in the trade and services components of the local economy. Homer's role as a fishing port has likewise contributed to the development of strong trade and services sectors. As the **Southcentral** Alaska region's population grows and additional public and private recreational and visitor facilities are developed, it is likely that the volume of tourism and recreation related commerce will also expand.

Over the long run, Homer's ability to sustain the growth rate of recent years will depend upon its success in attracting new residents from other areas, rather than upon natural increase. Homer's good harbor and convenient location in relation to some of the offshore tracts sold in October 1977 in the Lower Cook Inlet OCS lease **sale** may also generate some **OCS-related** employment in offshore support activities at Homer during the exploration phase and, if commercial discoveries are made in Homer's vicinity, through the development and production phases as well.

ECONOMY

Composition of Employment

The following analysis of the composition of employment in the Homer area relies upon a variety of data sources. The Alaska Department of Labor compiles the most definitive **local** employment data. Its survey of insured employment collects monthly employment data by industry for the Homer Labor Area, defined to include the cities of Homer and Kachemak and the unincorporated areas of Anchor Point, Diamond Ridge and Fritz Creek. However, insured employment does not include self-employed fishermen, a significant omission in Homer's case. Therefore, in order to obtain a full and up-to-date picture of Homer's employment, Alaska Consultants, Inc. conducted an April 1979 employment count in Homer and its immediate vicinity, approximately the Homer Labor Area. These findings, together with Department of Labor data and other information on the commercial fisheries, were used to construct an overview of Homer's employment (see Tables 81, 82 and 83).

TABLE 8 I
 NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT DISTRIBUTION
 HOMER LABOR AREA #/
 1970-1977

	1970		1971		1972		1973		1974		1975		1976		1977		1970 - 1977									
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	% Change	% Change								
Agriculture, Forestry & Fisheries	0	0	0	0	25	4.9	250.0	49	7.9	96.0	48	7.0	2.0	44	5.4	0	0									
Mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Contract Construction	0	0	63	14.2	0	0	0	0	42	6.4	46	6.2	9.5	0	0	0	0	0	0							
Manufacturing	0	0	0	0	0	0	0	0	0	0	166	22.3	157	19.2	5.4	0	0	0	9.9							
Transportation, Communications and Public Utilities	93	22.3	93	20.9	102	20.1	9.1	108	17.5	5.9	148	19.9	0.0	151	18.5	2.0	162	22.0	7.3							
Trade	40	9.6	55	12.4	58	11.4	5.5	76	12.3	31.0	110	16.8	44.7	144	19.4	30.9	140	17.1	-2.8							
Finance, Insurance and Real Estate	17	4.1	16	3.6	16	3.2	0.0	14	2.3	-12.5	16	2.4	14.3	22	3.0	37.5	29	3.5	31.8	35	4.8	20.7	105.8			
Service	44	10.6	53	11.9	60	11.8	13.2	54	8.7	-10.0	50	7.6	-7.4	59	7.9	18.0	66	8.1	11.9	106	14.4	60.6	140.9			
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Government Federal	45	10.8	50	11.2	50	9.9	0.0	73	11.8	46.0	77	11.1	5.5	88	11.8	4.0	88	11.8	14.3	98	12.0	11.4	14.1	6.1	131.1	
State & Local	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Includes Anchor Point, Diamond Ridge, Fritz Creek and Kachemak.	417	100.0	445	100.0	507	100.0	13.9	618	100.0	21.9	656	100.0	6.1	743	100.0	13.3	818	100.0	10.1	725	100.0	-10.1	76.3			

Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. Unpublished data.

TABLE 82

NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
HOMER LABOR AREA
FIRST THREE QUARTERS, 1978

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>Average Three Quarters</u>
Mining	<u>*/</u>	<u>*/</u>	<u>*/</u>	15	13	15	19	18	17	<u>*/</u>
Contract Construction	76	63	61	68	94	118	111	104	106	89
Manufacturing	<u>*/</u>	<u>*/</u>	<u>*/</u>	69	108	158	87	117	141	<u>*/</u>
Transportation, Communications and Public Utilities	160	159	161	164	188	202	212	224	219	188
Trade	165	162	164	160	193	224	232	240	215	195
Finance, Insurance and Real Estate	45	42	41	46	46	43	49	50	51	46
Service	85	87	92	145	150	210	156	150	147	136
Miscellaneous	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>	<u>*/</u>
Government	287	299	408	305	325	359	366	366	363	342
Federal	(29)	(29)	(29)	(29)	(29)	(30)	(36)	(35)	(35)	(31)
State and Local	(258)	(270)	(379)	(276)	(296)	(329)	(330)	(331)	(328)	(311)
<u>TOTAL</u>	890	886	910	974	<u>1,117</u>	<u>1,329</u>	<u>1,237</u>	<u>1,274</u>	<u>1,261</u>	<u>1,098</u>

*/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor, Employment Security Division. Unpublished data.

TABLE 83
 AVERAGE ANNUAL FULL-TIME EMPLOYMENT a/
 HOMER LABOR AREA b/
 1979

<u>Industry Classi fication</u>	<u>Number</u>	<u>%</u>	<u>% Basic</u>	<u>Basic Number</u>	<u>Secondary Number</u>
Agri cul ture, Forestry and Fi shi ng	400 <u>c/</u>	24.7	98	392	8
Mi ni ng	o <u>d/</u>	0.0	--	0	0
Contract Constructi on	49	3.0	12	6	43
Manufacturi ng	151	9.3	95	143	8
Transportati on, Communi cati on & Publi c Utili ties	139	8.6	46	64	75
Trade	311	19.2	37	115	196
Fi nance, Insurance & Real Estate	77	4.7	31	24	53
Servi ce	198	12.2	24	53	145
Government	296	18.3	42	125	171
Federal	(78)	(4.8)	(80)	(62)	(16)
State	(71)	(4.4)	(48)	(34)	(37)
Local	(147)	(9.1)	(2,0)	(29)	(118)
<u>TOTAL</u>	<u>1,621</u>	<u>100.0</u>	<u>57</u>	922	699

a/ Includes self-employed and military personnel.

b/ The Homer Labor Area is defined as the Homer Precinct, Anchor Point, Fritz Creek, Diamond Ridge and Kachemak.

c/ Number of fishermen employed on an average annual year-round basis estimated by using yearly registration data, length of fishing season and normal "crew" sizes for various types of fishing vessels.

d/ Minor employment in sand and gravel considered with contract construction and transportation.

Source: Alaska Consultants, Inc.

The 1978 Special Census counted 2,054 residents in the City of Homer. Another 3,027 persons lived at Anchor Point, Diamond Ridge, Fritz Creek and Kachemak, which comprise the rest of the Homer Labor Area. Thus, nearly 60 percent of the residents of the Homer Labor Area appear to live in the surrounding area outside the City of Homer proper. Still, Homer **itself** is the focus of most employment in this area and, therefore, it is assumed that Labor Area data area fairly representative of Homer's own employment structure.

The Alaska Consultants, Inc. field survey found that the fishing industry was the largest single employer here in **1979**. Commercial fishing accounted for about 400 direct jobs or about one-quarter of the total of 1,621 jobs tallied. Since the Homer-based fishery is essentially an export industry sending its products outside the region, nearly all fishermen can be considered basic workers, making the fishing industry the source of nearly half of **all** basic employment.

This survey's count of the number of fishermen in the Homer area was checked against permit application data compiled by the Commercial Fisheries Entry Commission. In 1975, Commission records show that 196 permit applicants had a Homer mailing address and another 95 had an Anchor Point address. If allowance is made for a likely excess in the actual number of fishermen over the number of gear permits issued, this measure of fishing employment is broadly consistent with the results of the **1979 field** survey.

Department of Labor employment data indicate that, omitting direct employment in the fishing industry, the Homer area is heavily dependent upon the trade and service sectors for employment. In 1977, the most recent year for which complete data are available, trade (21.9 percent) and services (14.4 percent) together accounted for 267 jobs or better than one-third of insured employment. In part, this reflects the strong contribution of the tourism and recreation industry to Homer's economy. For example, the Alaska Consultants, Inc. survey found that between a quarter and a third of trade and service jobs were basic in nature, catering to tourists and other visitors rather than to strictly local markets.

The industrial sector of transportation, communications and public utilities was reportedly the largest single category of insured employment, with 162 workers or 22.0 percent of the total. The public sector employed about 14.1 percent of the workforce, while the construction industry, a major employer in the Kenai area of the Borough, engaged a relatively small share (9.9 percent) of Homer's workforce. Because of disclosure restrictions, an exact tabulation of manufacturing employment is not available, but it is estimated at about 10 percent of total employment, most of it in the fish and shellfish processing industry. These manufacturing jobs and other secondary employment engendered by the fishing industry should be considered in weighing the full economic importance of the fisheries industry to Homer.

Unemployment and Seasonality of Employment

Lacking specific data about local unemployment rates, it may be assumed that unemployment trends in the Homer area are generally similar to trends in the larger **Kenai-Cook** Inlet Census Division. On this assumption, unemployment rates in the Homer area may be expected to exceed the State average and be far above the national unemployment rate.

A review of monthly employment data for the Homer area for 1977 shows a definite pattern of seasonal highs and lows (see Figure 4). **Seasonality** is more pronounced than in Statewide employment, but is roughly comparable to other major labor areas in the **Kenai-Cook** Inlet Labor Area. Gross employment fluctuations can be traced largely to the inherently seasonal character of Homer's basic industries: fishing and tourism and recreation. The economic influence of tourism and recreation is evident in trade and, especially, service employment which tends to be much higher in the **summer** months of June, July and August than in the rest of the year. For example, in **1977**, the service sector employed 154 persons in the high summer month but only 54 in the **low** winter month. The trade sector showed a similar-trending but less emphatic spread, from a high of 176 jobs to a low of 136 jobs. It is not known to what degree this seasonal variation in gross employment is matched by a corresponding variation in unemployment. **It** is plausible that part of the seasonal gain and loss in jobs may be offset by short-term population gains and losses among transient residents.

While most fishermen are not included in State insured employment statistics, the built-in **seasonality** of the fisheries industry assures some periods of inactivity for fishermen and for fish and shellfish processing plant workers. Still, compared to the **Kenai** area, whose fishermen are mainly dependent upon the highly seasonal Cook Inlet salmon fishery, Homer-based fishermen are engaged in a more diversified harvest of halibut, crab species and shrimp as well as salmon. This diversification tends to moderate seasonal swings in fishing effort.

Recent Trends and Changes

The trend for Homer's economy in the current decade has been expansionist. Employment has grown from 417 in 1970 to 735 as of 1977, an increase of 76 percent. The most dynamic elements of the economy have been those sectors oriented to the visitor industries. Thus, between 1970 and 1977, employment in trade tripled and service employment increased by 140 percent, in each case a rate of growth well above the overall rate for Homer's economy.

However, local impressions and interviews indicate that the summer of **1979** is expected to bring a temporary reversal in this growth trend. The vitality of Homer's visitor industry is closely tied to the growth and prosperity of the Anchorage area it largely serves and the current post-pipeline economic deceleration in the Anchorage area will **likely** be reflected in this sector of Homer's economy.

On the other hand, the fishing and fish processing industry appears to have consolidated and stabilized its role in Homer's economy. This has come about through improvements in the management regime for fisheries, added investment in the fish processing industry and the Homer-based .. fishing fleet, and better fleet services. It appears likely that continuing efforts to improve port facilities and to develop and explore the groundfish resources of the region will further enhance the economic development of Homer's fisheries industry.

Occupational Skills

The Anchorage Urban Observatory conducted a sample survey of the occupations of the City of Homer resident workforce as of 1976. The survey results found that service workers comprised the largest (24.0 percent) occupational group of employed **adults** followed closely by professional, technical and kindred workers (21.0 percent) and fishermen and laborers (20.0 percent). Among other occupational groups, the category of managers, officials and proprietors was most frequently named (12.0 percent), followed by crafts, foremen and kindred workers (9.0 percent) clerical and sales workers (7.5 percent) and operatives (6.5 percent) (see Table 84).

The heavy representation of service workers and fishermen fits the earlier finding that Homer's economic base is built upon **the** tourism and recreation and the commercial fisheries industries.

TABLE 84
 OCCUPATION OF ALL EMPLOYED ADULTS
 PERCENT DISTRIBUTION
 CITY OF HOMER
 1976

	<u>Percent</u>
Professional, Technical	21.0
Managers, Officials, Proprietors	12.0
Clerical and Sales	7.5
Crafts, Foremen	9.0
Operative Workers	6.5
Service Workers	24.0
Laborers, Fishermen	20.0
Farmers, Farm Managers	--
 <u>TOTAL</u>	 <u>100.0</u>
N =	(200)

Source: Bureau of Management and Urban Affairs, and Anchorage Urban Observatory, University of Alaska. 1977. Profile of Five Kenai Peninsula Towns. Anchorage.

Income Levels "

The most pertinent data for estimating incomes at Homer is the income **data** previously cited for the **Kenai-Cook Inlet** region as a whole. " According to the Alaska Department of Labor, the average wage in the **Kenai-Cook** Inlet region in 1977 was \$23,386, nearly 10 percent above the Statewide average. Other things being equal, Homer wage earners would, by inference, also have above average earnings. While there is no specific income data to support a different conclusion, there are circumstantial factors which suggest that Homer incomes may be somewhat below regional averages. This hypothesis is based on the composition of employment at **Homer**. There are relatively few jobs in construction and mining, the two best paying sectors (see Table 83). 'On the other hand, a disproportionate share of Homer's employment is concentrated in trade and services and fish processing, each of which tends to pay low average wages on a seasonal basis.

Data on income assistance program disbursements **reveal** that the financial assistance distributed through such **programs** in Homer is not large. In March 1979, a total of \$15,086 was paid to Homer residents under the Old Age Assistance, Aid to the **Blind**, Aid to the Disabled and Aid to Families With Dependent Children programs. For the entire year of 1978, only \$5,112 was distributed to assist Alaska Natives under the Bureau of Indian Affairs' general assistance program administered by the Cook Inlet Native Association (see Tables 85 and 86).

PUBLIC ASSISTANCE PROGRAM PAYMENTS
HOMER, ALASKA
MARCH 1979 a/

TABLE 85

Aid to Families with Dependent Children	Aid to the Disabled	Aid to the Blind	Old Age Assistance	Number Of Cases	Average Payment
\$ 11,617	\$ 957	\$ 179	\$ 2,333	18	\$ 130
\$ 363	120	179	130	1	\$ 179
32	8	1	18	59	\$ 256
<u>Total</u>					
\$15,086					

a/ March is considered to be a representative month for public assistance payments to individual cases.

Source: Alaska Department of Health and Social Services, Office of Information Systems, Juneau.

TABLE 86
 GENERAL ASSISTANCE PAYMENTS
 HOMER, ALASKA
 FY 1973 - FY 1978

	<u>FY 1973</u>	<u>FY 1974</u>	<u>FY 1975</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u>
Total Payment	\$1,382	\$ 355	\$ 753	\$ --	\$2,650	\$5,112
Number of Cases	2	2	3	--	4	3
Average Payment						
Annual	\$ 691	\$ 178	\$ 251	\$ --	\$ 662	\$1,704
Monthly	\$ 58	\$ 15	\$ 21	\$ --	\$ 55	\$ 142

Source: Cook Inlet Native Association, Social Services Department.

Land Use

OVERALL LAND USE PATTERNS

Unlike many **Southcentral** Alaska coastal communities where relief has constrained development to a narrow strip abutting the waterfront, Homer is located on a glacial outwash plain and has developed in a more dispersed pattern paralleling major roads. Pioneer Avenue and its extension, Homer East Road, which runs in an east north-easterly direction parallel to the bluff, make up the main route through the community (see Figure 17). Historically, most of Homer's businesses have been interspersed with homes and vacant **lots along** Pioneer Avenue between the Sterling Highway and the Homer Spit Road; however, the recent construction of the 16-shop Lakeside Mall and adjacent professional building has resulted in some shifting of commercial activity to the area between Lake Street, Homer East Road and **Beluga** Lake. Some commercial activity is also concentrated near the end of the Homer Spit.

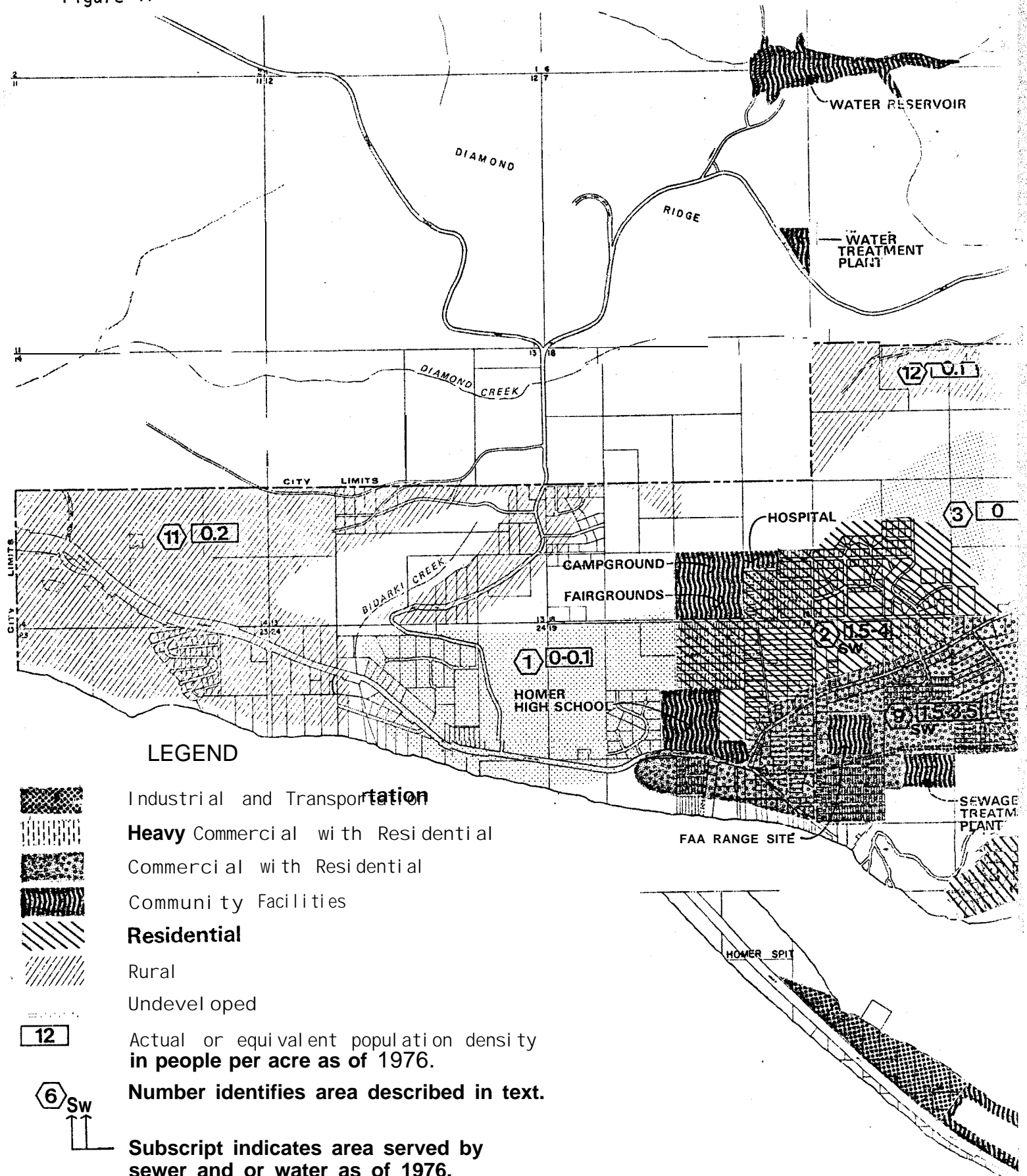
Residential development is widely dispersed off the Sterling Highway approach to Homer, in the area of the City Campground and the High School and along Homer East Road and Kachemak Bay Drive. Because there is a lack of east-west residential roads paralleling Pioneer Avenue and connecting the existing north-south spur roads, there are large areas near the main commercial area which have no road access and are therefore undeveloped. Furthermore, within the built-up area of Homer along the few existing roads, there are many vacant lots.

Almost all industrial activity in Homer is concentrated near the tip of the Homer Spit. This includes two major seafood processing plants, petroleum products storage tanks, and marine transportation activities associated with the City dock. Although land for industrial expansion on the Homer Spit is limited, it is anticipated that future industrial development requiring a waterfront location will locate here.









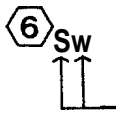
Planning is an areawide responsibility of the Kenai Peninsula Borough which is headquartered in Soldotna. Homer's first comprehensive development plan was prepared by the Alaska State Housing Authority in 1969 and was adopted by the Kenai Peninsula Borough several years later. In 1974, changing community attitudes and concern about conflicting land uses on the Homer Spit made some of the recommendations in the development plan obsolete and led to the preparation of the Homer Spit Land Use Study. "More recently, the Borough Planning Department staff prepared a series of baseline studies for incorporated cities within the Borough, including one for Homer in 1977. This effort provided the data for revisions to the comprehensive development plan undertaken by the Borough planning staff in 1978.

Two additional planning efforts now underway by the Borough are of relevance to Homer. These include the Kenai Peninsula Borough Port and Harbor Demand and Feasibility Study and the Coastal Management Program. The port and harbor study will develop a recommended course of action for port and harbor development on the Peninsula which will then be used to guide decisions as to the siting of energy facilities, cargo docks,

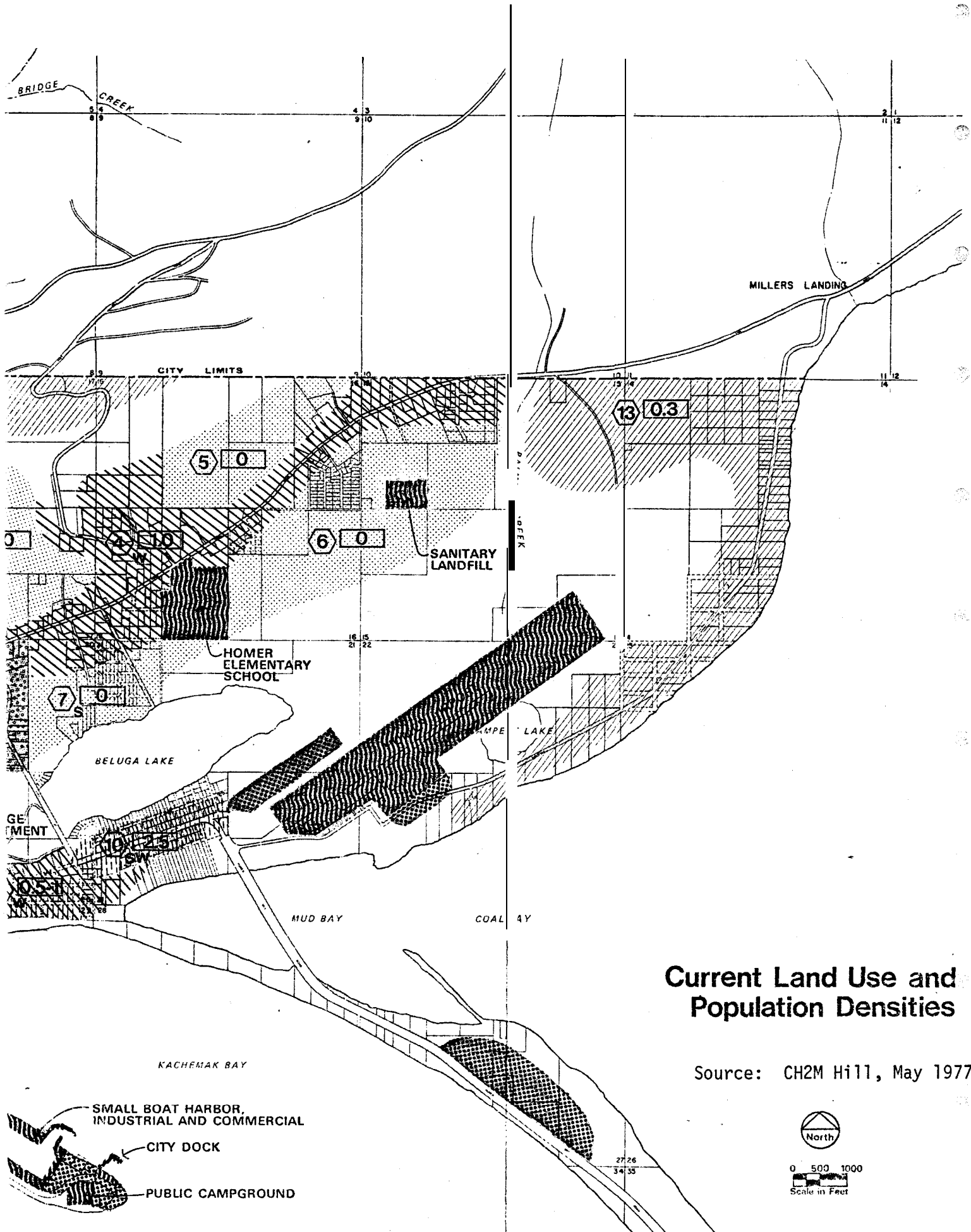
Figure 17



LEGEND

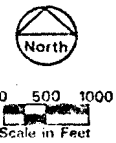
-  Industrial and Transportation
-  Heavy Commercial with Residential
-  Commercial with Residential
-  Community Facilities
-  Residential
-  Rural
-  Undeveloped
-  Actual or equivalent population density in people per acre as of 1976.
-  Number identifies area described in text. Subscript indicates area served by sewer and or water as of 1976.

Note Land not identified is generally unsuitable for development.



Current Land Use and Population Densities

Source: CH2M Hill, May 1977.



small boat harbors, fish processing plants and other port development. Closely related to this study is the Borough's coastal management program. According to Borough planning staff, Phase I coastal management program work scheduled for completion in the summer of 1979 includes population and economic development projections which will be as area specific as possible; a general land and water use plan which will include implementation strategies; and management-recommendations for each identified resource area, including a listing of compatible and incompatible uses. The Borough's entire coastal management program is designed to meet State regulations and is scheduled for completion in 1981.

DEVELOPMENT CONSTRAINTS

The physical setting and land ownership patterns limit the amount of land available for development in Homer. In addition, the poor drainage characteristics of the area's predominant soil types require special consideration in selecting construction sites and in construction practices. Topographic features delineate the two major soil types in Homer. In the sloping lowlands between Kachemak Bay and the bluff, where the City is situated, the most extensive soils are of the **Beluga** series, while in the steep bluff area behind the City and in the Caribou Hills above, the soils are of the Kachemak series.

Soils of the **Beluga** series consist of stratified silty and sandy materials over a firm, **slowly** permeable layer at depths of 50.8 to 101.6 centimeters

(20 to 40 inches). Drainage from higher ground keeps these soils wet most of the time; consequently **it is** generally necessary to dig a ditch above the construction site to intercept the seeping water. Septic tanks and seepage pits do not function efficiently in these soils and pollution of ground and surface water is a hazard where they are used. As population grows and housing density increases, it will be essential to install public sewers to maintain public health standards in these areas.

Kachemak soils consist of silty materials 38.1 to **76.2** centimeters (15 to 30 inches) deep overlying thick deposits of stratified shale and sandstone. Septic tanks will operate effectively in most areas if outlets are located in the sandy substrata; however, if this precaution is not taken there is a danger of pollution being **carried** to lower ground. Major construction problems are caused by the high erosion potential of Kachemak **soils**. In combination with the steep slopes of the bluff area, these **soils** are particularly susceptible to **rill** and gully erosion resulting from modifications **in** the natural drainage pattern by development. To prevent erosion, it is necessary to ensure that construction sites are not prematurely stripped and that they are landscaped as soon as possible following completion of construction.

Homer is in a zone of **high probability** for earthquake activity. According to the **U.S. Geological** Survey, the entire I-tamer area appears to be one where steep slopes, the fine texture and weak consolidation of the rocks of the **Kenai** formation, and the common condition of **soils** saturated with

water favor earthquake-induced landslides and earth flows. While hazards on the mainland are not considered substantial if sound construction principles are practiced, building in areas above or close below promontories where slides might occur should be avoided.

As a result of the 1964 earthquake, the entire Homer Spit subsided up to 1.8 meters (5.9 feet). In addition to extensive damage by flooding caused by subsidence, a submarine slide removed most of the seaward side of the small boat harbor. Today there remains some question as to the ability of the Spit to support extensive development. Immediately following the earthquake, a survey of the Spit by the U.S. Geological Survey determined that extensive building on the outer end of the Spit was unwise; however, in recent years, several studies have concluded that the Spit is presently a relatively stable landmass with only nominal risk of general dynamic failure during an earthquake.

In most early post-earthquake years, it also appeared that subsidence had profoundly affected the stability of the Spit's beaches and that erosion was a serious problem. In the intervening years, natural forces, artificial fill and riprapping have stabilized the beaches and the shores of the Spit which are now building up rather than declining. Nevertheless, a 1974 Corps of Engineers report on beach erosion control found that because beach borrow directly induces erosion, removal of shore material from the Spit should be prohibited and any material dredged from tidelands areas should be used to reclaim upland areas of the Spit.

While there is ample private land available on the mainland for commercial and residential development, land on the Homer Spit, the center of the community's fisheries and tourism and recreation-related economy is in short supply. Of the total 208 hectares (515 acres) of land on the Spit identified as available for development by Unwin, Scheben and Korynta in its 1974 Homer Spit Land Use Study, more than 140 hectares (350 acres) of land are submerged by water at high tide. This includes all but 28 hectares (70 acres) of land which was vacant at that time (see Table 87). At the distal end of the Spit, an area encompassing about 47 hectares (115 acres) and where almost all existing development is located, publicly owned land and rights-of-way, easements and the small boat harbor account for nearly 90 percent of the acreage, leaving only 5 hectares (12 acres) or 10.4 percent of the land in private hands.

Unwin, Scheben and Korynta made a number of recommendations directed at maximizing the use of lands on the Spit to ensure that adequate acreage is available for future development needs. These included encouraging industrial users to consolidate future operations in the area northwest of the highway between Coal Bay and the small boat harbor; concentrating commercial uses in vacant lots along the perimeter of the small boat harbor; establishing land reserves around the port and small boat harbor to meet future operational and access requirements; identifying access requirements; identifying alternative locations away from the end of the Spit for boat and fishing gear storage and recreational vehicle parking and the establishment of seasonal public transportation from these parking and storage areas to the end of the Spit; and the use of abnormally large easements and rights-of-way for essential vehicle parking.

TABLE 87

**EXISTING LAND USE
HOMER SPI T**

<u>Category</u>	<u>Number of Acres</u> a/	<u>Percent of Total</u>
Residential	2.0	0.4
Commercial	6.5	1.3
Industrial	8.8	1.7
Public	1.9	0.4
Rights-of-Way, Easements and Small Boat Harbor	120.1	23.3
Vacant	375.6 <u>b/</u>	72.9
<u>TOTAL</u>	<u>514.9</u>	<u>100.0</u>

a/ Multiply by .4046945 to obtain hectares.

b/ All but approximately 70 acres is submerged at high tide.

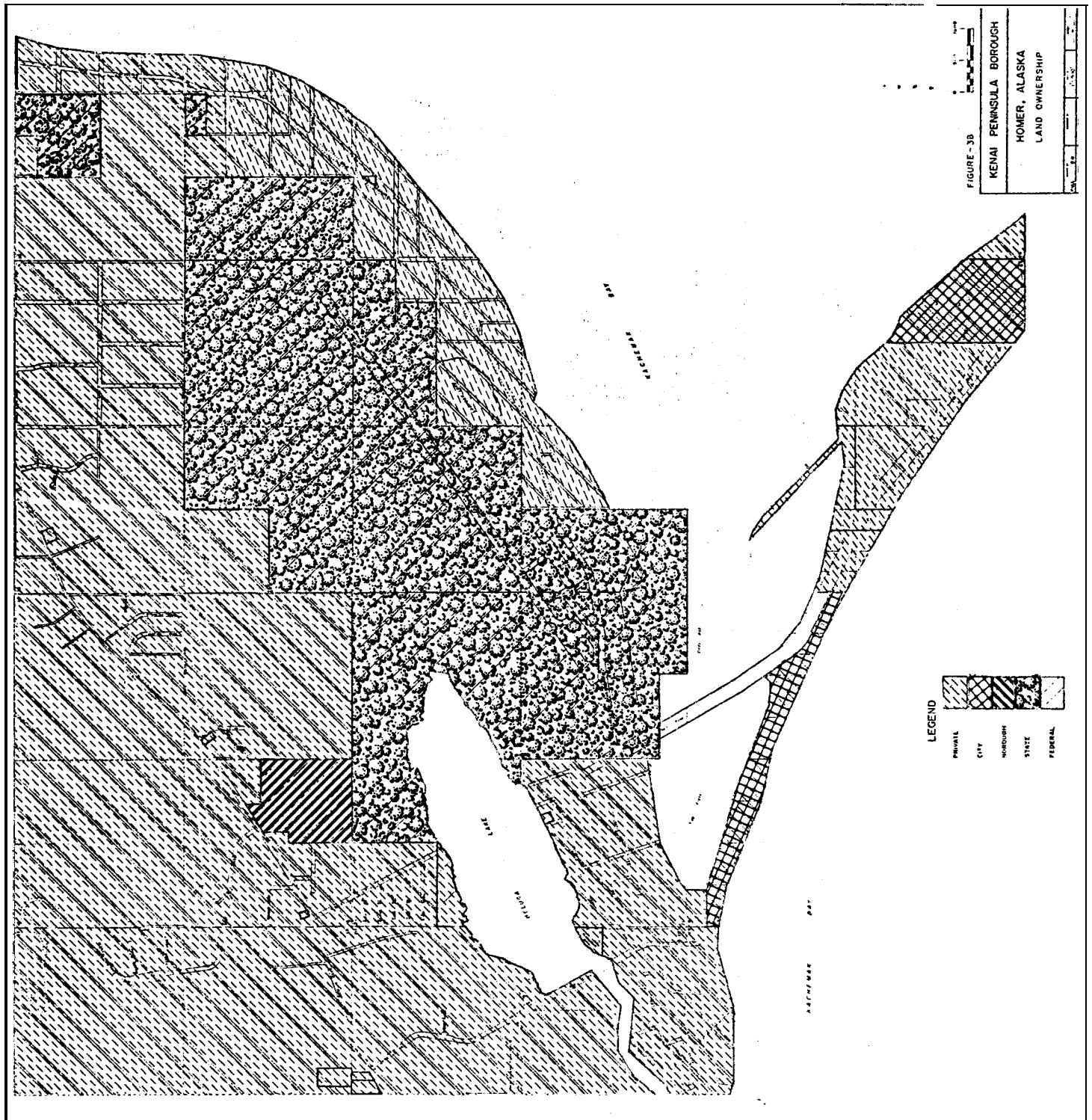
Source: Unwin, **Scheben, Korynta**. 1975. Homer Spit Land Use Plan.
Anchorage.

LAND STATUS ,

Within Homer's corporate limits, privately owned land predominates; however, a good portion of the community's prime industrial land is in the public domain (see Figure 18). The City owns several parcels totaling approximately 20 hectares (50 acres) on the Homer Spit near the small boat harbor and port facilities while the State owns a substantial amount of land surrounding the airport (see Table 88). Otherwise, small pockets of State, Borough and City owned land occur throughout the community, generally associated with public facilities.

Outside the City, road accessible and waterfront property is also mostly privately owned, while the uplands were selected by the State under the terms of the Statehood Act. Much of this State land has subsequently been selected by Cook Inlet Region, Inc. Under the provisions of the Alaska Native Claims Settlement Act, Cook Inlet Region, Inc. is entitled to select approximately 600,000 hectares (1.5 million acres) of land within its 98,420 square kilometer (38,000 square mile) region. Since most of the land in the region could not be selected because of prior existing rights, the corporation was not able to obtain its entitlement except by selecting mountain tops, glaciers, or other undesirable land. To remedy this situation, a complicated land trade was negotiated by the regional corporation, the State of Alaska and the U.S. Department of the Interior which makes some previously restricted State land eligible for Native selection. On the Kenai Peninsula, this includes 46,540 hectares (115,000 acres) of State patented and tentatively

Figure "18



Source: Kenai Peninsula Borough, 1977.

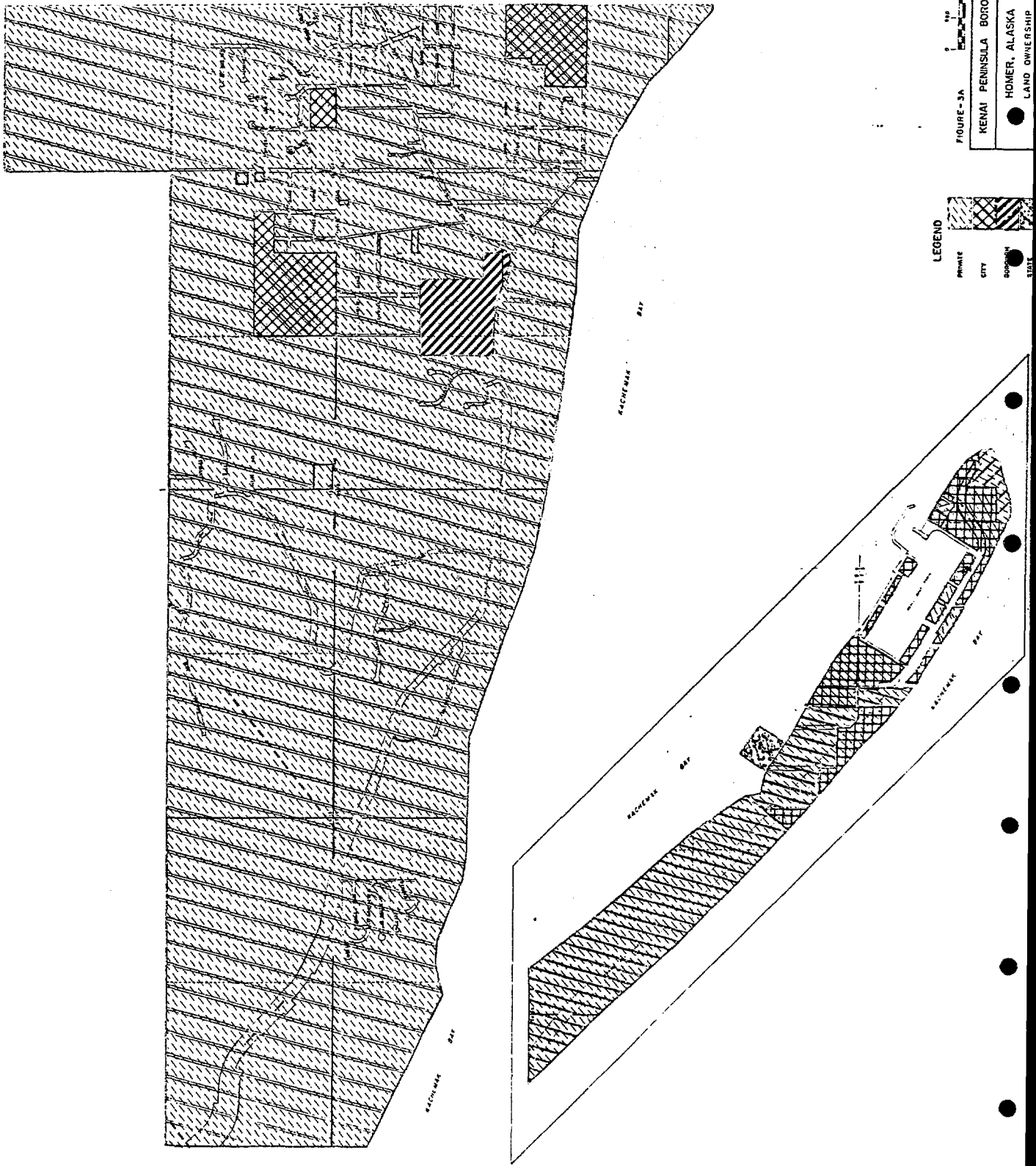


TABLE 80
 LAND STATUS
DI STAL END OF HOMER SPIT

<u>Status</u>	<u>Number of Acres a/</u>	<u>Percent of Total</u>
Rights of Way, Easements and Small Boat Harbor	53.3	46.3
Private Ownership	12.0	10.4
City Ownership	49.0	43.3
Unleased	(33.6)	(29.2)
Long Term Lease	(2.2)	(1.9)
Medium Term Lease	(4.4)	(3.8)
Short Term Lease	(6.3)	(5.5)
Temporary Lease	(2.1)	(1.8)
State Lease	(1.3)	(1.1)
 <u>TOTAL</u>	 <u>115.2</u>	 <u>100.0</u>

a/ Multiply by .4046945 to obtain hectares.

Source: **Unwin, Scheben, Korynta.** May 1975. Homer Spit Land Use Study.
 Anchorage.

approved land between North **Kenai** and Homer Spit. The regional corporation has selected most of the State land in **the** uplands area north of the City of Homer, but none of this land has yet been conveyed.

Although there is no Native village corporation in Homer, the City does fall within the selection withdrawal area of the **Seldovia** Native Association, Inc. With an enrollment of 254 persons, the **Seldovia** village corporation is entitled to select a township or 46,540 hectares (115,000 acres) of land under Section **12(a)** of the Claims Act. As required by law, the village **corporation** chose all land **available** to it within its core township; however, because of the limitations imposed by the Kachemak Bay Wilderness State Park, it was necessary to select some acreage outside the immediate **Seldovia** area. This includes a 59.6 hectare (147.33 acre) tract west of Homer and 400 acres east of the City. Both parcels have been conveyed to the village corporation.

Under the Municipal Entitlement Act, the **Kenai** Peninsula Borough is entitled to select 63,043 hectares (155,780 acres) of State land Boroughwide. The Borough has already received title to approximately 19,425 hectares (48,000 acres) of this, some of which is in the Homer **area**. Additional selections are **currently** under consideration to determine conflicting Native claims or overriding State interest.

HOUSING

An inventory of housing conducted by the Anchorage Urban Observatory in 1976 counted 432 housing units inside Homer's corporate limits. Two hundred and fifty one units, or 58.1 percent, were single family, 31 (7.2 percent) were multi family units, and 31.0 percent or 134 units were trailers. Another 16 units were on boats or in rooms attached to commercial enterprises, primarily on the Homer Spit (see Table 89).

Compared to other Kenai Peninsula communities surveyed by the Anchorage Urban Observatory in 1976 (Seward, Kenai, **Seldovia** and Soldotna), Homer has a high percentage of housing in mobile home or trailer units and a very low percentage of multi family units. The absence of multi family or apartment units has resulted in a high proportion of owner occupied units in Homer. In 1976, 72.1 percent of the housing units in the community were owner occupied, while only 27.9 percent were renter occupied. The ratio of single family to multi family units remains high; however, new construction since 1976. has substantially increased both the number and proportion of multi family units. According to the U.S. Department of Housing and Urban Development, 234 building permits have been issued for housing construction in Homer since 1976, including 114 for single family units, 36 for trailers or mobile homes and 84 for multi family units, of which 18 were for five or more families and 30 for duplexes or **four-plexes**.

TABLE 89
HOUSING COMPOSITION
HOMER, ALASKA
1976

<u>Type of Unit</u>	<u>Number</u>	<u>Percent of Total</u> -
Single Family	251	58.1
Multi family	31	7.2
Mobile Home	134	31.0
Other	16	3.7
<u>TOTAL</u>	432	<u>100.0</u>

Source: Bureau of Management and Urban Affairs and Anchorage Urban Observatory. 1977. A Profile of Five Kenai Peninsula Towns. Anchorage.

According to the 1970 U.S. Census, Homer had an average of 2.94 people per household, somewhat below the Statewide average of 3.42 persons at that time. University of Alaska 1976 data indicate that household size has since risen somewhat as it found the average number of persons per household to be 3.3. This rise in household size is contrary to national trends toward smaller family sizes and probably reflects a previous shortage of housing and consequent crowding in Homer rather than an increase in family size.

According to the Kenai Peninsula Borough Planning Department many of the older housing units in Homer are in poor condition. This results, no doubt, from the fact that much of the older housing in Homer dates from the early years of the community when homes were built largely by the individual homeowner. Because of the age of the housing and because knowledge of construction methods and materials was often limited, much of Homer's older housing falls below accepted standards for larger communities. Much of Homer, both inside and outside the City limits, is sparsely settled, making the provision of sewer and water service difficult and expensive. In 1978, the University of Alaska found that only 65.7 percent of the community's households received City water, while just over half (53.5 percent) were on the City sewer system. In general, however, most new housing within the City limits receives both services and is in good condition.

According to Borough planning officials, housing remains in short supply in Homer despite the recent construction of a large number of new

units. As a result, both purchase prices and rents are higher than in other Peninsula communities. In addition, home financing is difficult to obtain, particularly for medium priced homes. The Farmers Home Administration, a primary source of funding for medium priced homes in the State, has placed a moratorium on financing in Homer until the City solves its drainage problems. The Federal Housing Administration, another source of home financing for medium income families, has historically been reluctant to insure financing for homes not connected to public sewer and water systems.

Community Facilities and Services

PUBLIC SAFETY

Police

The Homer Department of Public Safety provides police protection within the City of Homer from its headquarters on the corner of Heath and Fairview Streets, uphill from the main commercial area of town. The new 280 square meter (3,000 square foot) facility has five offices, of which two are occupied by the City police, two by Alaska State troopers and one by Fish and Wildlife Service protection officers; a squad room and a booking room also shared with State trooper personnel; a dispatch room; and miscellaneous storage space. The Homer jail, also housed in this facility and shared with the State, has four cells, one of which is reserved for juveniles and women.

The Department of Public Safety is staffed by six police officers (a chief, a sergeant, and four patrolmen), one animal control officer and five dispatchers who also handle calls for the fire department. In addition, the Harbor Master and six harbor officers stationed on the Homer Spit also have police powers. City police powers extend to Homer's corporate limits, with areas beyond handled by three Alaska State troopers stationed in Homer.

Police equipment includes three radio-equipped patrol cars, traffic surveillance equipment and a central communications system which connects the Public Safety Department with the Homer Hospital, the fire department, the harbor, the animal control officer and the State Department of Public Safety communications system. In addition, the Harbor Master and animal control officer are both provided with vehicles.

The police station and jail were constructed in 1978 and both are considered adequate for present needs, although the jail is sometimes crowded during the summer when the community has a large transient population and there is a concomitant rise in the incidence of crime. Although there are no major problems with the new facility, the jail's heating system is inadequate and in need of upgrading.

The number of criminal complaints in Homer has fluctuated widely since 1970, making it difficult to determine any coherent trends in criminal activity (see Table 90). The total number of criminal complaints increased by about 700 percent from 1970 to 1978 because of substantial

TABLE 90
 CRIMINAL COMPLAINTS
 HOMER PUBLIC SAFETY DEPARTMENT
 1970 - 1978

<u>Year</u>	<u>Number of Service Calls</u>	<u>Percent Change</u>
1970	340
1971	369	8.5
1972	554	50.1
1973	1,261	127.6
1974	1,898	50.5
1975	1,845	(2.8)
1976	1,791	(2.9)
1977	2,898	61.8
1978	2,798	(3.5)

Source: Homer Department of Public Safety.

increases from 1970 to 1974. However, since 1974, complaints have declined in all years except 1977. In 1978, roughly 40 percent of all complaints involved traffic citations, traffic accidents and abandoned or impounded vehicles. According to the Homer chief of police, almost 90 percent of all criminal complaints involve alcohol abuse.

Of more significance than the downward trend in total criminal complaints is the recent dramatic rise in arrests, particularly for felony or the more serious crimes (see Table 91). In 1977, the Homer Department of Public Safety made 93 arrests, of which 85 were for misdemeanors or less serious crimes. In 1978, the Department made a total of 144 arrests, an increase of 55 percent over 1977. The 119 misdemeanor arrests represented a 40 percent increase over 1977, and the 25 felony arrests represented an increase of about 212 percent.

This upward trend in more serious crime has occurred in recent years in other coastal Alaska communities which, like Homer, have large transient populations. At Homer, continued increases in crime will obviously result in an increase in Public Safety Department activity. Ultimately, this will mean increases in staff and support equipment and probably an expansion of the jail facility. Moreover, because of the increasing incidence of such crimes as burglary, larceny, theft and breaking and entering, at least some of the staff will require special training in crime scene and physical evidentiary investigation, skills which do not now exist within the Department.

TABLE 91
 CRIMINAL ARRESTS
 HOMER DEPARTMENT OF PUBLIC SAFETY
 1977 - 1978

<u>Type of Crime</u>	<u>Number of Arrests</u>		<u>Percent Change</u>
	1977	1978	
Felony <u>a/</u>	8	25	212.5
Misdemeanor <u>b/</u>	85	119	40.0
<u>TOTAL</u>	<u>93</u>	<u>144</u>	<u>54.8</u>

-
- a/ Felony offenses include criminal homicide, rape, robbery, aggravated assault, burglary, larceny and motor vehicle theft.
- b/ Misdemeanor offenses include other assaults, arson, forgery, and counterfeiting, fraud, embezzlement, stolen property, vandalism, violations of narcotic drug laws, gambling, violations of liquor laws, including drunken driving and disorderly conduct and so forth.

Source: Homer Department of Public Safety.

Fire Protection

The Homer Volunteer Fire Department is housed in two adjacent concrete block structures near the intersection of Pioneer Avenue and Lake Street, close to the community's main commercial district. The first building was built prior to 1952 and contains three bays. The second structure, added in 1975, provides an additional four bays. Fire protection service is provided throughout the City and, when possible, to road-connected areas outside the City limits. Fire protection at the State airport is provided by the City under contract to the State. The Coast Guard vessel has its own firefighting capability although Coast Guard firefighting personnel have occasionally been used by the City in emergencies.

The fire department is staffed by a volunteer chief and 28 volunteer firemen. Firefighting equipment includes a 1971 triple combination pumper with a 3,785 liter (1,000 gallon) per minute capacity; a 1952 military surplus pumper with a 1,892 liter (500 gallon) per minute capacity and light water capability; a 1947 military surplus tanker equipped with a 284 liter (75 gallon) tank; and a 1976 heavy rescue truck fully equipped with emergency gear. In addition, a 1953 City-owned 4,920 liter (1,300 gallon) tanker with foam capacity and a State-owned crash/rescue vehicle equipped with 113 kilograms (250 pounds) of dry powder and light water are housed at the two-bay airport fire station.

The City of Homer has a relatively poor Insurance Services Office (ISO) rating of 7 (on a scale of 1 to 10, where 10 is the worst rating).

Major deficiencies in the City's firefighting capability noted by the ISO in 1976 were the lack of any full-time fire department staff; however, inadequate pumping and water storage capacity, fire hydrant distribution and outmoded equipment **were** also noted as major problems,

Homer's two reservoirs provide a 2,839 kiloliter (750,000 gallon) water supply for firefighting purposes. According to the 1977 Homer Comprehensive Water **Plan**, Homer requires an **additional** 5,678 kiloliter (1.5 million gallon) storage capacity to meet ISO standards. This includes a 2,385 kiloliter (630,000 gallon) reservoir on the Homer Spit and a 1,892 kiloliter (500,000 gallon) storage reservoir in the fast growing East Hill area.

Homer's major fire problem area is the Spit where the crowded small boat harbor and a heavy concentration of high value commercial and industrial structures increase the potential for serious fires. Six major vessels in the 12 to 24 meter (40 to 80 foot) range have been destroyed in boat harbor fires in the past five years. According to the fire chief, this problem is directly related to the overcrowded boat harbor where, during the height of the fishing and tourist season, boats are often moored three and four deep and mobility within the harbor is severely constrained. The length of time required to move equipment from the downtown station to the Spit seriously exacerbates the fire protection problem. Expansion of the **small** boat harbor, the planned acquisition of a new 63 liter per

second (1,000 gallon per minute) pumper to be stationed on the Spit and the construction of water storage capacity here should help alleviate this problem.

In addition to fire protection, the Homer Volunteer Fire Department provides emergency medical services within Homer and to road-connected areas outside the City when possible. EMT equipment consists of a 1977 **Modulance** unit ambulance and a 1970, 4-wheel drive ambulance. The Department has 25 personnel who are EMT trained, all of whom are also firemen.

HEALTH AND SOCIAL SERVICES

Health and social services in the Homer area are provided by a combination of State, Borough, City and private organizations. Health facilities include the 17-bed South Peninsula Hospital and privately operated doctors' offices housed in the old Homer Hospital adjacent to the present facility. The Cook Inlet Council on Alcohol and Drug Abuse is housed temporarily in a trailer just off Pioneer Avenue. Funded with City, State and federal monies, the Council provides alcohol and drug abuse education, information and intervention programs. In addition, two private dentists have offices in Homer.

The State of Alaska's Department of Health and Social Services operates the Homer Health Center in the old Homer Hospital. A public health nurse offers the full range of public health nursing services, while a

State social worker provides assistance in the area of child and adult protection. A City-funded clinical psychologist provides mental health services from an office in the new hospital; however, patients requiring long-term care are sent outside the **community** to the Alaska Psychiatric Institute or to facilities in other communities such as the Wesleyan Nursing Home in Seward.

South Peninsula Hospital

The South Peninsula Hospital was built in 1977 and replaces the old Homer **Hospital** which now provides office space to the State of Alaska, Department of Health and Social Services and Homer's four physicians. The new **facility** is located adjacent to the old hospital on Bartlett Avenue uphill from the City offices and serves Homer and its environs to just north of **Ninilchik**. Occasionally, the facility accepts patients from **Seldovia** and the **Jakolof** Bay area although these communities are not officially part of its service area. The hospital is administered by South Peninsula Hospital, Inc., a **non-profit** corporation which leases the building from the **Kenai** Peninsula Borough.

The hospital has 17 beds, of which 4 are used for long-term care and 2 for maternity cases. In addition to patient beds, the hospital has a surgery, delivery room, a nursery with 3 to 4 bassinets, an emergency room, outpatient clinic, X-ray facilities and a laboratory. Emergency transportation services are provided by the City's two ambulances manned by EMT trained Fire Department personnel. The medical staff associated

with the hospital includes 4 doctors with offices in the old Homer Hospital and an additional 2 doctors from the general Homer area. The hospital has a consulting staff of about 35 specialists who visit Homer periodically and who provide on-call assistance.

The hospital's professional staff includes 8 registered nurses, 3 licensed practical nurses' aides, 2 medical lab technicians, an X-ray technician and the hospital administrator. An additional 8 persons perform kitchen, laundry, janitorial, maintenance and clerical functions.

According to South Central Health Planning and Development, Inc. statistics, a total of 1,981 patient days were logged at the hospital during fiscal year 1977, with the length of stay of patients averaging 3.2 days (see Table 92). This is well below the national average, but is consistent with the average length of stay experienced by like-sized facilities around the State. The 38.5 percent hospital occupancy rate in fiscal year 1977 was also well below the national average of 60 percent and below the 50 percent occupancy rate recommended by South Central Health Planning and Development, Inc. for hospitals the size of the Homer facility. This relatively low occupancy rate would seem to indicate that the Homer hospital has adequate room to absorb some additional population growth in the community.

Hospital officials report that Homer's health problems are normal for a community of its size but that because the Homer service area includes a large number of high risk occupations, the hospital probably has more

TABLE 92
SOUTH PENINSULA HOSPITAL PATIENT LOADS
FY 1975 - FY 1977

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Percent Change 1975 - 1977</u>
Patient Days	1,416	1,489	1,981	39.9
Average Length of Stay	2.3	2.9	3.2	39.1
Percent Occupancy	30.0	41.0	38.5	

Source: South Central Health Planning and Development, Inc.
Anchorage.

TABLE 93
SOUTH PENINSULA HOSPITAL OUTPATIENT SERVICES
FY 1975 - FY 1977

<u>Service</u>	<u>Outpatient</u>			<u>% Change</u>
	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	
Emergency Room Visits	544	652	1,087	99.8
Laboratory Procedures	2,296	3,440	4,945	115.4
X-Ray Procedures	1,001	3,032	1,816	81.4
Subtotal	<u>3,841</u>	<u>7,124</u>	<u>7,848</u>	<u>104.3</u>
<u>Service</u>	<u>Inpatient</u>			<u>% Change</u>
Laboratory Procedures	1,530	1,895	2,564	
X-Ray Procedures	439	466	545	24.1
Subtotal	<u>1,969</u>	<u>2,361</u>	<u>3,109</u>	<u>57.9</u>
<u>TOTAL</u>	<u>5,810</u>	<u>9,485</u>	<u>10,957</u>	<u>88.6</u>

Source: South Peninsula Hospital.

TABLE 94

PROVISIONAL DIAGNOSIS
HOMER COMMUNITY MENTAL HEALTH PROGRAM CASELOAD
FY 1978

<u>Diagnosis</u>	<u>Number of Cases</u>	<u>Percent of Total</u>
Alcohol Disorder	13	9.6
Drug Abuse	2	1.5
Mental Retardation	2	1.5
Depressive & Affective Disorder	17	12.5
Schizophrenia	3	2.2
Organic Brain Syndromes	3	2.2
Other Psychoses	1	0.7
Disturbances & Behavior Disorders of Childhood & Adolescence	34	25.0
Other Nonpsychotic Mental Disorders	31	22.8
Social Maladjustment	24	17.6
No Mental Disease	6	4.4
Not Indicated	0	0.0
<u>TOTAL</u>	136	<u>100.0</u>

Source: Alaska Department of Health and Social Services, Division of
of Mental Health and Development Disabilities. January 1979.
Community Mental Health Client and Services Summary FY 78.
Juneau, Alaska.

than its share of trauma patients. The hospital is in good physical condition but, according to the administrator, will require additional beds in the future if the service area population continues to grow at its present rate.

EDUCATION

Elementary and secondary school services in Homer are provided by the Kenai Peninsula Borough School District headquartered in Soldotna. The School District is responsible for the hiring of teachers and maintenance of the school plants, while the Borough is responsible for the construction of new school facilities, as they are required.

Homer school children are presently housed in separate elementary and secondary school complexes. East Homer Elementary School (grades K through 5) serves the Homer road-connected area up to, but not including, Anchor Point. The school occupies a 25 hectare (62 acre) site; however, only about 4 hectares (10 acres) of this is usable because of poor drainage.

The elementary school includes 14 general classrooms, a media center, library, a multi-use room for art and music, a multi-purpose room which accommodates both physical education classes and a cafeteria, and administrative offices. Outdoor facilities include a playground equipped with a variety of play equipment and an asphalted area which is flooded in the winter for skating. The school's professional staff consists of

an administrator and 18 teachers assisted by several aides and tutors, a secretary, a cook and custodial personnel.

The Homer Junior/Senior High School **serves** students from grades 6 through 8 in the Homer area as far north as, but not including, Anchor Point. In the absence of a high school in that community, Anchor Point students from grades 9 through 12 attend the Homer facility. In addition, students in the Old Believers community of **Nikolaevsk** who choose to go beyond grade 8 may also attend high school in Homer.

The junior/senior high school consists of 3 separate buildings and occupies a 15.3 hectare (37.8 acre) site on the corner of the Sterling Highway and Pioneer Avenue. Altogether the three school buildings contain 19 general classrooms, 9 of which were added in April 1979, a shop area for vocational education classes, business education and home economics classrooms, offices, a swimming pool and two gymnasiums, one of which is also used as a cafeteria. The school grounds are equipped with an athletic field, track and hockey rink. The school's professional staff consists of 2 administrators and 28 teachers, and an additional 6 to 8 persons are engaged in secretarial, tutorial, janitorial and culinary pursuits.

Besides regular academic courses, a number of special programs are available to Homer students. Title I and Title IV federal funds provide individualized instruction in mathematics, reading and language. Specialized instruction is also available for gifted students and for

those with learning disabilities and, if required, bilingual instructors are provided for students whose primary language is not English. The community schools program, held at the schools during nonschool hours, offers a wide variety of recreational courses, the content of which . . . depends upon demand and instructor availability.

Unlike many school districts around the State which have experienced declining enrollment in recent years, the Homer school system has seen substantial growth since 1970. Enrollment in the Homer school system in 1978/79 was 788 students, a 40 percent increase over 1970/71 when there was an initial enrollment of 563 students (see Table 95). Secondary school enrollment has grown at a faster rate than elementary school enrollment (50 percent as opposed to 34 percent since 1970); however, much of the secondary school's faster growth can be attributed to the removal of grade 6 from the elementary school to the secondary school in 1973/74. Since 1974, elementary school enrollment has continued to increase while secondary school enrollment has remained fairly constant.

Enrollment projections for the Homer schools through 1982-83 anticipate additional increases in both elementary and secondary enrollment (see Table 96). With the recent addition of 9 classrooms, Borough School District officials feel that classroom capacity at the Junior/Senior High School will be adequate through this period. However, the Borough does plan to construct a new facility to house a theater, cafeteria, library, home economics classroom and administrative offices.

TABLE 95

ENROLLMENT TRENDS
HOMER SCHOOL SYSTEM
1968/69 - 1978/79

<u>School Year</u>	<u>Final Enrollment a/</u>					<u>Total</u>
	<u>Grades K - 5 b/</u>		<u>Grades 6 - 12</u>		<u>Total</u>	
	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>		
968/69	256	51.3	243	48.7	499	
969/70	252	49.4	258	50.6	510	
970/71	278	49.4	285	50.6	563	
971/72	285	50.5	279	49.5	564	
1972/73	300	50.9	289	49.1	589	
1973/74	309	50.1	308	49.9	617	
1974/75	273	41.4	386	58.6	659	
1975/76	310	42.9	413	57.1	723	
1976/77	314	43.1	414	56.9	728	
1977/78	339	44.5	422	55.5	761	
1978/79	371	47.1	417	52.9	788	

a/ Enrollment data are as of the first day of school in October.
b/ From 1968/69 to 1973/74 East Homer Elementary School housed grades K - 6.

Source: **Gallagher, P.G. and F.M. McIlhargey.** March 23, 1978. Enrollment Projections and School Construction Report. Kenai Peninsula Borough. Soldotna.

TABLE 96

HOMER SCHOOL ENROLLMENT PROJECTIONS
1979/80 - 1982/83

<u>Year</u>	<u>Elementary</u>	<u>High School</u>	<u>Total</u>
1979/80	371	444	815
1980/81	383	458	841
1981 /82	387	469	856
1982/83	414	495	909

Source: **Gallagher, P.G. and F. McIlhargey.** March 23, 1978. Enrollment Projections and School Construction Report. Kenai Peninsula Borough. Soldotna.

The East Homer Elementary School is seriously overcrowded and cannot accommodate anticipated enrollment increases. Two portable classrooms added in 1978/79 and a third portable to be added in the summer of 1979 will provide temporary space relief but, according to the Borough . . . School District, a long term solution will require the construction of additional permanent classrooms. Two expansion proposals are currently under consideration by the Borough. The first would add 6 classrooms to the existing facility, while the second would involve acquisition of a separate site and the construction of a new 10-classroom school.

RECREATION

As an important tourist and recreation center for Southcentral Alaska, Homer has a wide variety of recreation facilities available to its residents. While most of these have been designed to meet tourist rather than local recreation demands, they nevertheless provide an important local recreation resource.

Facilities provided by the City for purely local use are limited. These include the playground and two baseball diamonds included in the Hillside Campground and an unfenced outdoor tennis court near the elementary school . In addition, the City operates the 30-unit Hillside Campground which is used primarily by visitors. A 150-unit campground on City property on the Spit is operated by a private concern. Other City-owned property on the Spit provides parking space for large numbers of recreational vehicles.

The City of Homer does not have an organized recreation program; however, the community schools program, administered by the Kenai Peninsula Borough and directed by a Homer-based CETA employee, offers a wide variety of leisure time activities for local residents. These include extremely popular summer day camps, softball and baseball programs and winter basketball and volleyball leagues and **swimming** activities. The **community** schools program also offers classes in arts and crafts and in a number of vocational, technical and academic subjects.

As in most small Alaska communities, the public schools in Homer are a focal point for community recreation activity during **nonschool** hours. Community school athletic and educational programs are held in the elementary and junior/senior high school gyms and classrooms, and school grounds allow additional room for outdoor play. The elementary school playground, equipped with swings and seesaws, supplements the Hillside playground, and playing fields associated with the high school serve recreation needs of teenagers and adults.

Aside from public recreational facilities, Homer has a number of privately owned attractions. The Homer Family Theatre shows movies seven nights a week and the Kachemak Bowl is open nightly. A number of bars and restaurants offer music and dancing which cater to some adult recreation needs. In addition, the Elks Club offers recreation activities for its members.

Besides formal recreation facilities, the Homer area offers a wide variety of outdoor recreation experiences. During the summer months, the Homer small boat harbor provides access to Kachemak Bay's superb recreational boating and fishing resources. Charter boats offering sightseeing trips are also berthed here. Popular local picnicking spots are the Hillside Campground and waterfront areas along the shoreline and Spit accessible by car while other picnicking spots on **Kachemak** Bay are accessible only by boat. In addition, the **Kachemak** Bay State Park 9.7 kilometers (6 miles) across the Bay from the Homer Spit and a number of State parks on the Sterling Highway north of Homer offer a wealth of both summer and winter recreation opportunities for Homer residents.

Homer is heavily used as a recreational center by other **Southcentral** Alaska residents, primarily those from the Anchorage area. During the summer months, Homer's hotels, motels and particularly its camping and picnicking facilities are filled to capacity. Additional facilities for visitors are considered essential.

The City of Homer has identified a site on City land at the base of the Spit for the construction of a campground and has hired a consultant to develop a site plan, engineering design, environmental assessment and bid specifications for the facility. Furthermore, the State of Alaska's Division of Parks, has identified several sites in the vicinity of Homer as available and appropriate for recreational development. During the **summer** of 1980, the Division of Parks will develop a campground at **Cohoe** Beach on State land north of **Homer**. In addition to camping units, the

Cohoe Beach site will include trail access to the beach where clam digging is a popular pursuit, parking and picnicking facilities. The State also plans to develop campgrounds at Whiskey Gulch and in the area of Cottonwood and Eastland Creeks. The latter site is at the head of Kachemak Bay on the northern shore and accessible from Homer by East End Road. The Division of Parks also plans to develop campgrounds, picnic sites and hiking trails in Kachemak Bay State Park.

The Homer small boat harbor operates far beyond capacity and substantial additional berthing space for both recreational and commercial craft is urgently needed. Current plans are to expand the existing facility with \$2 million from the 1978 State bond issue plus Corps of Engineers and local funds. Proposed expansion will alleviate the problem in the short run; however, additional expansion or construction of a second boat harbor is considered essential to meet anticipated long range demand.

UTILITIES

Water

Homer presently derives its water from the Bridge Creek Reservoir located 1.6 kilometers (1 mile) north of town where the waters of Bridge Creek are impounded and which has a storage capacity of 548,825 kiloliters (145 million gallons). A reservoir at the water treatment plant and a second reservoir located near the hospital on Bayview Drive together provide approximately 2,839 kiloliters (750,000 gallons) of storage

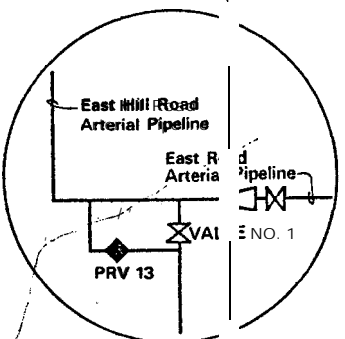
capacity. All water is filtered, chlorinated and treated with soda ash before it enters the distribution system. Water service is provided within the City limits, including the Homer Spit. According to City public works officials, there are currently 509 hookups to the system.

Two transmission lines, one 20.3 centimeters (8 inches) and the other 30.5 centimeters (12 inches) in diameter carry water from the treatment plant to the major distribution system (see Figure 19). A 25.4 centimeter (10 inch) transmission line transports water from the major distribution network in the City center to the end of the Homer Spit. The distribution system consists of **arterials** of 25.4 centimeters (10 inches) in diameter and 15.2 and 20.3 centimeter (6 and 8 inch) distribution mains. Because of the great differences in elevation throughout Homer, pressure reducing valves are required throughout the distribution system. These prevent excessively high pressures from occurring in pipelines at lower elevations,

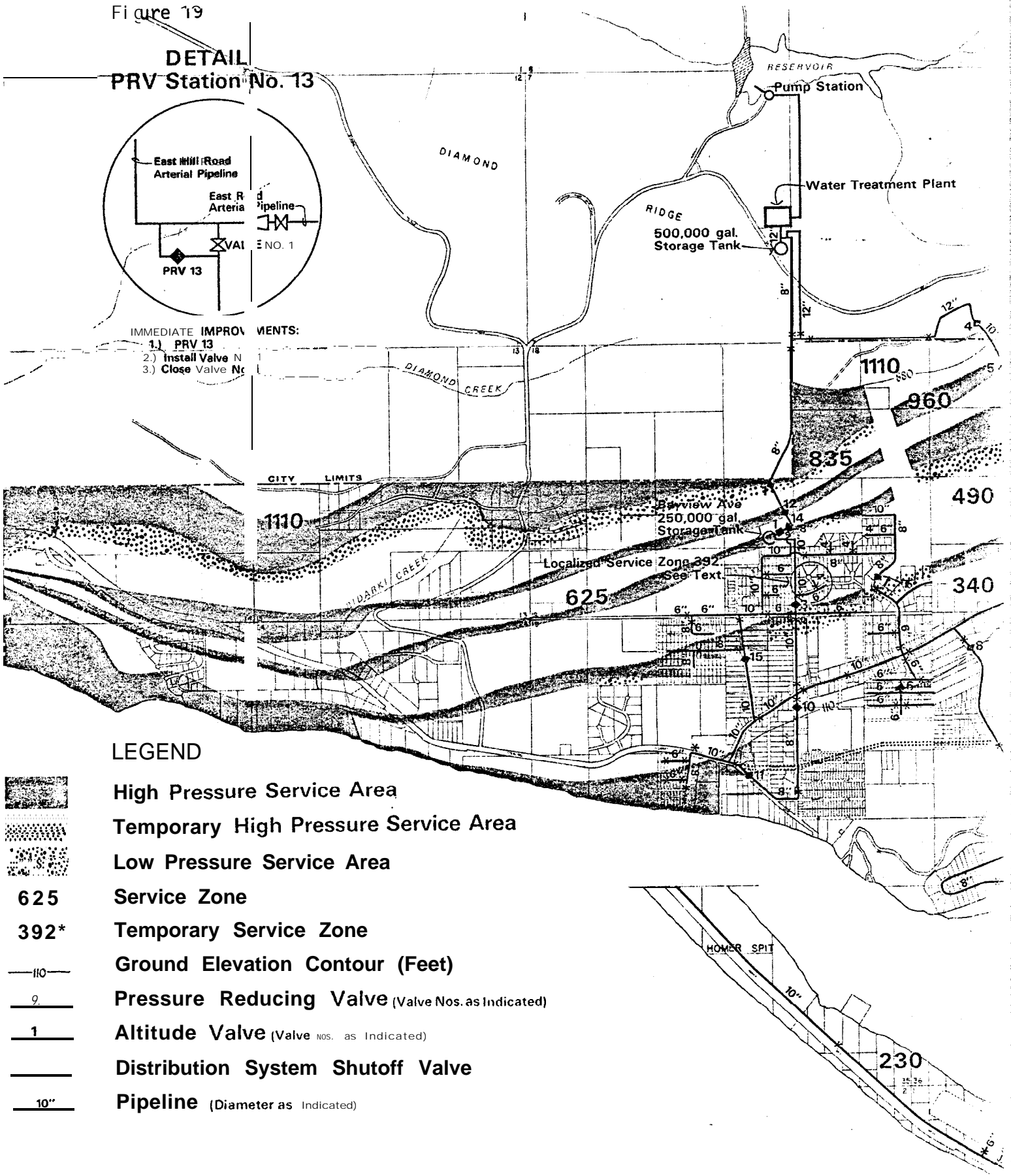
Construction of Homer's existing distribution system began in 1966 and water service was extended to the Homer Spit in 1968. Improvements to the system during the past five years include construction of the Bridge Creek Reservoir and the water treatment **plant** and associated storage reservoir during 1974-76. During this same period, the distribution system was expanded substantially. Additions included the East Hill Road transmission pipeline, the East Road and Main Street **arterials**, and a distribution pipeline along Bayview Avenue connecting the Main Street arterial and the **Kachemak Way** distribution pipeline. Several pressure reducing valves have also been added to the system.

Figure 19

**DETAIL
PRV Station No. 13**

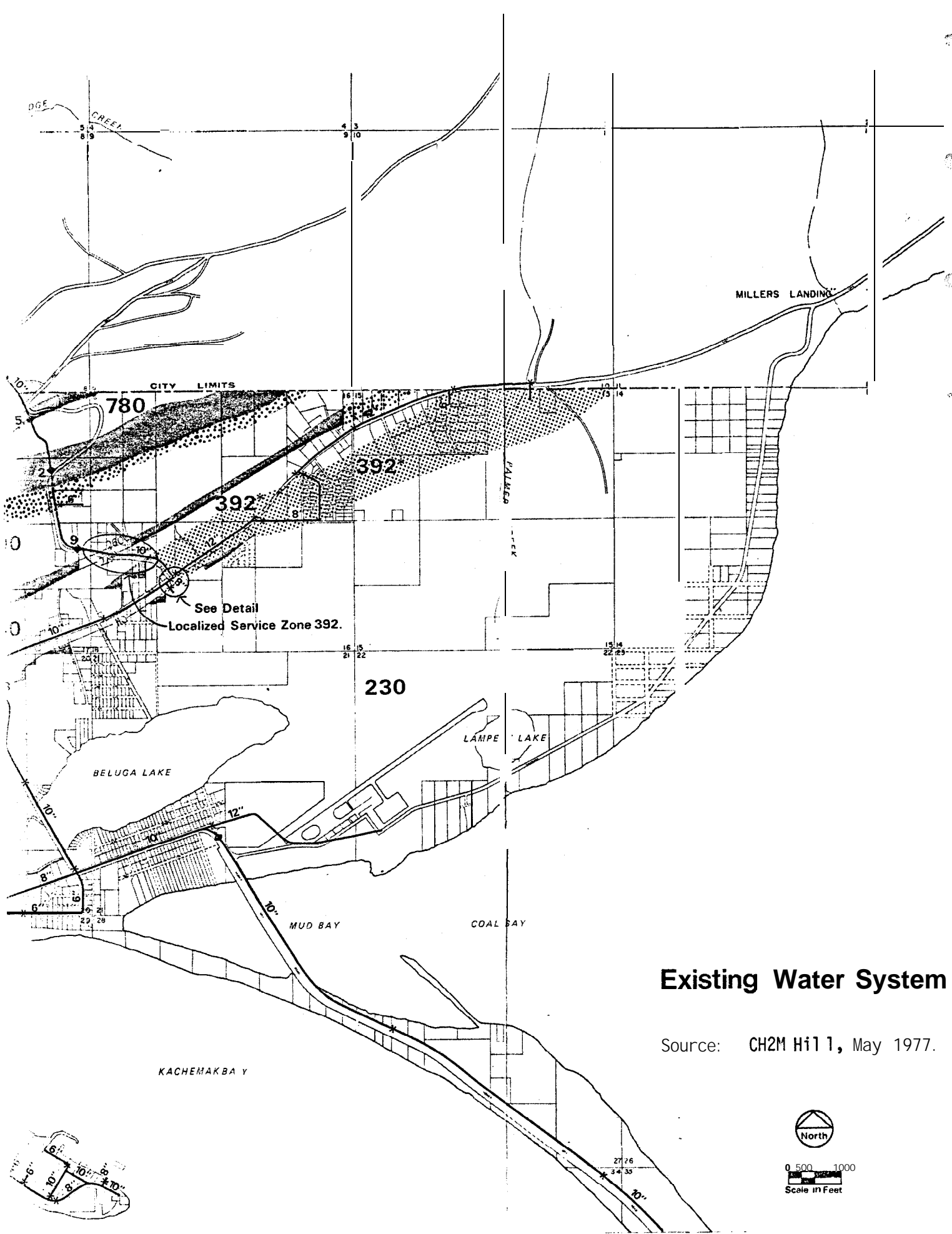


- IMMEDIATE IMPROVEMENTS:**
- 1.) PRV 13
 - 2.) Install Valve No. 1
 - 3.) Close Valve No. 1



LEGEND

- High Pressure Service Area
- Temporary High Pressure Service Area
- Low Pressure Service Area
- 625 Service Zone
- 392* Temporary Service Zone
- 110 Ground Elevation Contour (Feet)
- 9 Pressure Reducing Valve (Valve Nos. as Indicated)
- 1 Altitude Valve (Valve Nos. as Indicated)
- Distribution System Shutoff Valve
-



Existing Water System

Source: CH2M Hi11, May 1977.

In 1976, water consumption in Homer peaked at about 2,820 kiloliters (0.744 million gallons) per day in August at the height of the fishing season and averaged about 1,544 kiloliters (0.408 million gallons) per day on an annual basis. During periods of peak demand, industrial consumption accounts for as much as 90 percent of the total demand; however, on an annual basis, industrial consumption accounts for about 56 percent of the total demand. Residential, commercial and public demand ranges from 16 percent of the total consumption during peak periods to 20 percent on an annual basis.

Recent population growth in Homer has placed significant demands on the City's water system. While the Bridge Creek water supply is adequate to accommodate substantial additional growth in both residential and industrial demand, water storage and treatment facility capacities are restricted. Existing capacity at the treatment plant is sufficient to serve a population of 2,350 if industrial demand remains relatively constant. The Kenai Peninsula Borough Planning Department estimates that an additional 2,650 kiloliters (0.7 million gallons) in water treatment capacity will be required by 1980/81.

Water systems are usually designed to provide firefighting capability in addition to meeting maximum daily demands. The Insurance Services Office (ISO) grades municipal water systems on their ability to provide water to a fire site at a sufficient rate and duration to extinguish the fire. A favorable rating results in lower fire insurance rates. A study conducted by the City in 1977 found that compliance with ISO water

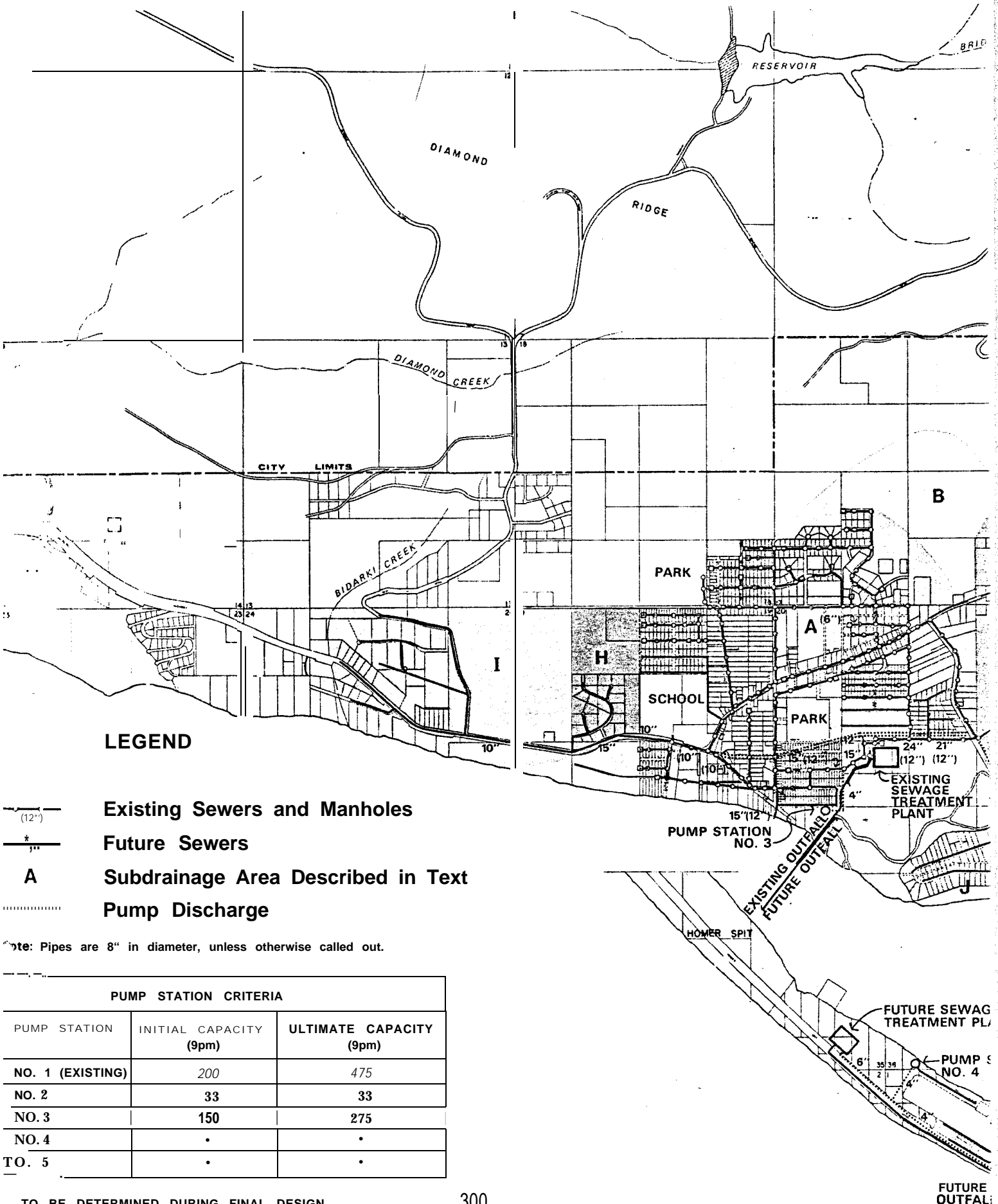
supply standards would require the construction of two additional reservoirs, one with a 1,892 kiloliter (500,000 gallon) capacity in the East Hill area and a second reservoir with a capacity of 2,385 kiloliters (630,000 gallons) on the Homer Spit. This latter facility is necessary because the 25.4 centimeter (10 inch) transmission line to the Spit does not allow sufficient water flow to satisfy both peak and firefighting demand. Design and engineering of the Spit storage facility will be completed during the summer of 1979, and the City is attempting to obtain funding for its construction from the U.S. Economic Development Administration (EDA). There are no current plans for additional storage capacity in the East Hill area.

Sewer

The City-operated sewer system serves the central commercial district and residential areas to the north and east of town. According to Homer Public Works Department officials, there were about 397 hookups to the system in April 1979. Not served by the system are the Homer Spit and outlying subdivisions within Homer's corporate limits (see Figure 20). The City has no storm sewer system.

The Comprehensive Sewer plan, developed by CH2M Hill in 1977 and subsequently adopted by the City, forecasted that Homer's sewer system would be adequate for service area needs through 1984. This was based on the assumption that the community's population would continue to increase at an annual rate of 7 percent and that residential densities

Figure 20



LEGEND

- Existing Sewers and Manholes
- Future Sewers
- A** Subdrainage Area Described in Text
- Pump Discharge

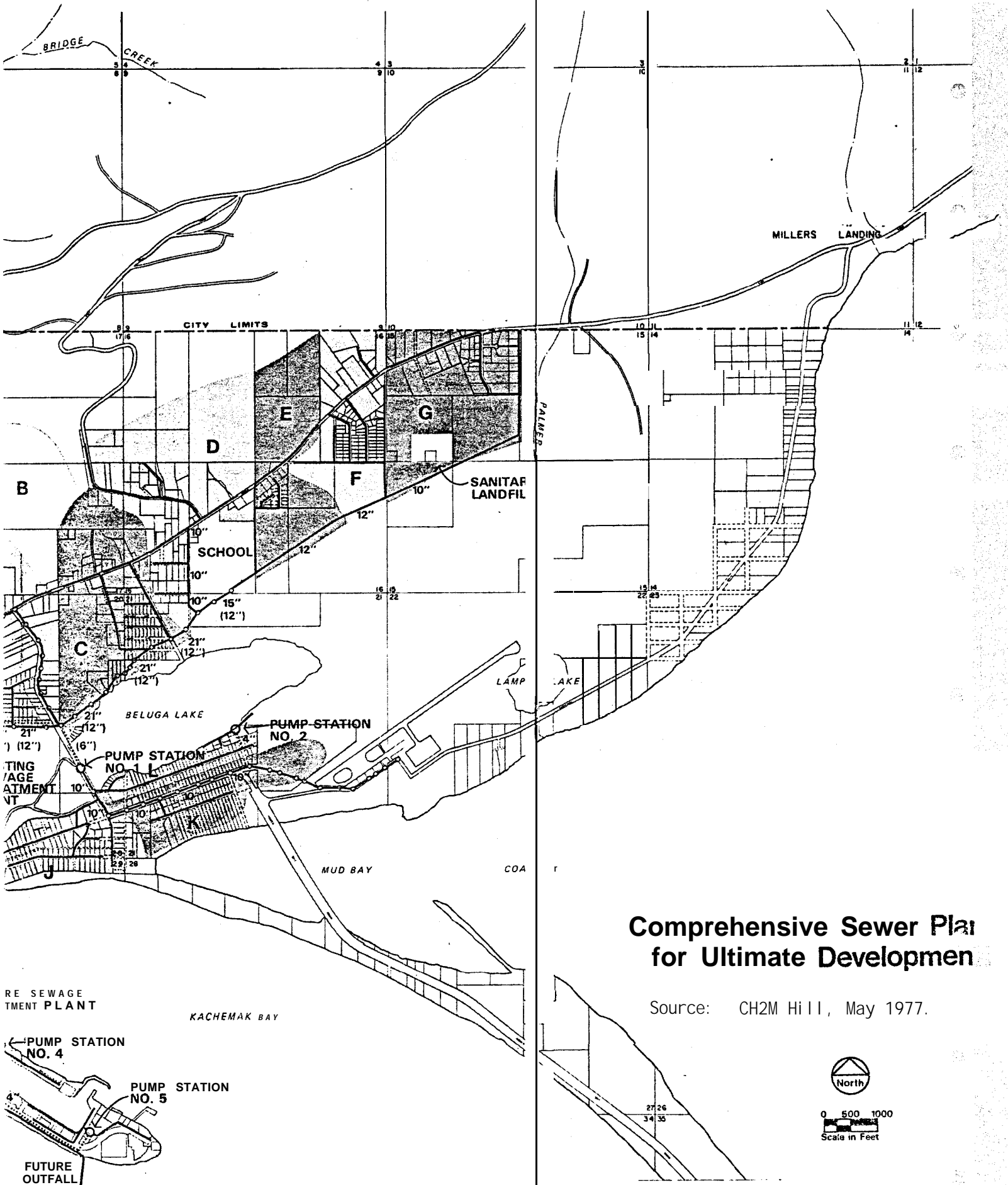
Note: Pipes are 8" in diameter, unless otherwise called out.

PUMP STATION CRITERIA

PUMP STATION	INITIAL CAPACITY (9pm)	ULTIMATE CAPACITY (9pm)
NO. 1 (EXISTING)	200	475
NO. 2	33	33
NO. 3	150	275
NO. 4	.	.
NO. 5	.	.

.TO BE DETERMINED DURING FINAL DESIGN.

FUTURE
OUTFALL



Comprehensive Sewer Plan for Ultimate Development

Source: CH2M Hill, May 1977.

would remain relatively constant. Since 1977, however, population has increased faster than projected and new residential development is of a higher density than anticipated. The **Kenai** Peninsula Borough Planning Department estimates that if these trends continue, new sewer construction will be necessary by 1982.

Other than anticipated capacity constraints, the only reported problem with the existing sewer system results from the inflow of storm water through manhole covers dislocated by frost heaving. Because raised manhole covers located in roadways are subject to being cut off by snowplows, current practice in Homer is to locate sewers and manholes alongside roadways, often within or near drainage ditches. This **allows** heavy surface runoff to enter through the dislocated manhole sections. Proper maintenance and placement of manholes outside drainage ditches in the future should keep inflow at acceptable levels.

Homer's sewage treatment facility is located on a 12 hectare (30 acre) site on the north edge of the tidal **Beluga** Slough. This plant provides secondary treatment of non-industrial wastes. Treated wastewater from the plant is dumped into a holding pond equipped with an automatic tide gate which, when operating properly, discharges effluent through an outfall into the ocean at high tide. At the present time, however, effluent is discharged constantly about 198 meters (650 feet) beyond the beach berm at mean lower low water and is visible at any minus tide. The outfall is in need of modification and extension to solve this problem.

The treatment facility can process **1,048 kiloliters** (0.277 million gallons) a *day*, adequate to service the sewage treatment needs of a population of 2,800. The 1977 Comprehensive Sewer **Plan** estimated that plant capacity would be reached in 1984 and that expansion of the facility **would** be required at that time. However, Borough planning officials predict that with the recently accelerated population growth experienced in Homer, plant capacity may be reached as early as 1982. The existing treatment facility site has adequate space for any required expansion.

Sewage treatment on the Homer Spit is presently handled by individual septic tanks with soil absorption systems. The Homer Spit Sewerage Facilities Plan prepared by CH2M Hill in **1977 in conjunction with the Comprehensive Sewer Plan** found that in general these systems operated efficiently and effectively. What problems did exist resulted from inadequate tanks or **drainfields**, unsuitable soil conditions or poor maintenance. The 1977 **plan** studied three possible alternatives for Spit sewage treatment: continued use of individual septic tanks with soil absorption systems, construction of a sewer system and a small treatment facility, and construction of a sewer system with export of the wastewater to the existing Homer treatment facility. **CH2M Hill** found the continued use of individual septic tanks with soil absorption systems superior to the other alternatives on economic, engineering and environmental grounds. The plan recommended that municipal **wastewater** should continue to be treated in this manner. It further **recommended** that a septic tank system for treatment of boat holding tank wastes be installed on the Spit and that a **septage/recreational** vehicle holding tank dump station

be constructed near the existing Homer treatment plant. Although the plan has been adopted by the City, construction of new sewer treatment facilities on the Spit is being postponed until the City determines exactly what port facilities will be developed here in the future.

Electric Power

Since 1950, Homer's electricity has been provided by the Homer Electric Association, Inc. (HEA), a consumer cooperative. HEA purchases power from Chugach Electric's natural gas facility at Beluga. The local service area includes Sterling to the east, Bishop Creek to the north, the Old Russian village of Nikolaevsk and the communities of English Bay, Port Graham and Halibut Cove across Kachemak Bay. However, HEA also provides power from the same source to Kenai, Soldotna and Seldovia. In the spring of 1979, HEA served a total of 9,332 customers, a 180.3 percent increase since 1970. Kilowatt hour sales have shown a remarkably similar growth pattern (see Table 97).

In 1978, power demand peaked at 51 megawatts while firm demand was about 30 to 35 megawatts. The present power supply is deemed adequate by HEA to meet present and future demand as long as there are no prohibitions imposed on the use of natural gas for power generation. Cable capacity from Beluga across the Inlet to the Kenai Peninsula could also impose capacity constraints. According to HEA officials, the system in the Homer area is in generally good condition with all on-line equipment less than 20 years old. However, the system's voltage transmission

TABLE 97

HOMER ELECTRIC ASSOCIATION, INC. CUSTOMERS AND SALES
 1970, 1977 AND 1978

	<u>1970</u>	<u>1977</u>	<u>1978</u>	<u>Percent Change</u>
No. of Customers	3,329	7,980	9,332	180.3
Kilowatt Hour Sales	79,999,751	93,064,964	224,592,513	180.7

Source: Homer Electric Association, Inc.

capacity here does need upgrading and HEA plans to boost the current transmission voltage from 69 kilovolts to 115 kilovolts which will about double the system's transmitting capacity.

Power costs in Homer are quite reasonable when compared to similar sized communities around the State which depend upon diesel fuel for power generation. A typical residential household will consume between 800 and 1,000 kilowatt hours per month, excluding heat. In the spring of 1979, Homer residents paid between \$35.50 and \$42.50 for this amount of power. While this is slightly higher than the \$25.38 to \$31.26 paid for similar amounts of power by Anchorage residents, it is substantially below rates paid by residents of **communities** such as Kodiak and Cordova.

Solid Waste Disposal

Garbage collection in the Homer area has historically been operated by private firms. Since 1977, this has been provided by Burton Carver and co. From its Homer base, the company collects garbage in the Homer road-connected area as far north on the Sterling Highway as **Kasilof**. Residential service is generally once per week, while commercial customers are serviced as often as required. Residential rates are \$3 per month. **Commercial** rates vary depending on the size of the container collected and the frequency of service. Once weekly collection for a 3.8 cubic meter (5 cubic yard) container costs \$74.88 per month, **while** the same frequency of collection for a 1.9 cubic meter (2.5 cubic yard) container costs \$34.52 per month. Equipment used by Burton Carver includes two

compactor type trucks and a roll-off unit for **commercial** service and for intermediate transfer of residential garbage **to** the dump site.

The 4 hectare (10 acre) Homer landfill has been the responsibility of the Kenai Peninsula Borough since 1974 and is located just inside the City limits south of Fritz Creek Drive. The facility has reached capacity and a new sanitary landfill is being developed on the Sterling Highway north of the City. The new facility covers 4 hectares (10 acres) and is estimated by Kenai Peninsula Borough Department of Public Works officials to have a 5 year useful life, although proper landfill management might extend this several years. A specific contractor has not yet been selected by the Borough to operate the new landfill, but it is assumed that the conventional method of **landfill** operation will be employed. This includes trenching, dumping, compacting and backfilling.

Communications

Telephone service in Homer is provided by Glacier State Telephone, a subsidiary of the Continental Telephone System. The service area includes Homer and its environs and Anchor Point and extends up the Sterling Highway as far as the outskirts of **Ninilchik**. Glacier State maintains a service and installation facility in Homer and regional offices are located in Kenai. As of April 1979, the system included 1,908 stations, 1,328 main stations and 580 extensions. According to Glacier **State** officials, there were 128 new hook-ups in the first quarter of 1979. Over the past several years, the number of new stations has increased

roughly 17 percent annually. Although capacity is added as needed, the company is currently way behind demand in adding new stations and there is often a delay in phone installation. No major equipment changes or additions are anticipated in local service in the near future.

Twenty-six trunk lines connect the Homer telephone system to the outside world. These currently operate at capacity during normal working hours; however, the addition of 26 outgoing and 19 incoming trunk lines in the near future should substantially improve long distance communications.

Local Government Organization

The City of Homer was incorporated as a first class city in 1964 with a population of 800. The City is organized under the council-manager form of government. The City council has six members, plus an elected mayor.

CITY POWERS

The City of Homer exercises a broad range of local governmental powers consistent with its statutory authority under Title 29 of the Alaska Statutes. Major public functions provided for by the City include police protection, water and sewer utilities, road maintenance, parks and recreation, library, animal control and a volunteer fire department. The City also oversees the management of the Port of Homer, including the small boat harbor and dock.

At the end of 1978, the City employed 31 regular employees and 18 CETA workers. Among the professional staff of the City government were a city manager, police chief, treasurer, public works director, water and sewer superintendent, harbormaster and a volunteer fire chief.

The Kenai Peninsula Borough is a second class local government unit which takes a 66,304 square kilometer (25,600 square mile) area and which in addition to Homer also includes the cities of Kenai, Seldovia, Seward, Soldotna and Kachemak plus a number of unincorporated settlements. The Borough has three mandatory areawide powers as per AS 29.33. These are assessment and collection of taxes, education, and planning, platting, and zoning. In addition to these mandatory powers, the Kenai Peninsula Borough has assumed responsibility for solid waste disposal on an areawide basis. It has also formed a number of special service areas, one of which, the South Hospital Service Area, provides hospital services to the unincorporated area around Homer through the South Peninsula General Hospital.

LOCAL GOVERNMENT FINANCES

In order to evaluate the fiscal condition of the City of Homer, the most recent City financial statement for the fiscal year ending June 30, 1978 was reviewed, along with data on assessed valuations, municipal debt and real property and sales tax rates published by the State Assessor's Office.

As of 1978, Homer's assessed valuation per capita stood at \$32,553 (see Table 98). This was well below the Statewide per capita valuation of \$50,398 for that year. However, the Statewide average is seriously distorted by the inclusion of the **trans-Alaska** pipeline and related taxable real property. If the pipeline-related property tax base is omitted, then the resulting average Statewide per capita figure would approximate Homer's per capita valuation.

An examination of the trend of Homer's equalized assessed valuation over the past decade shows that the assessed value of Homer's real property tax base has risen from \$10,913,000 in 1969 to \$66,896,000 by 1978, an increase of 513 percent. The great bulk of this increase accrued in the last three years, coincident with the spurt of economic and population growth which Homer experienced during this period. Those years were also a time of rapid inflation in property values (see Table 99).

The City of Homer's debt situation as of June 30, 1978 included \$2,348,000 in outstanding general obligation bonds for water and sewer improvements and for the recently built public safety building and \$1,168,000 in revenue bonds for water utility improvements and port facilities.

(Table 100 does not reflect the full amount of the City's bonded debt because the 1970 sewer general obligation bonds are recorded in the Sewer Utility Fund and are being repaid from sewer special assessments). This debt does not consider the burden on Homer's taxpayers of their share of the **Kenai** Peninsula Borough's general obligation indebtedness. If a portion of the Borough's debt is apportioned to the City of Homer

TABLE 98

INDICATORS OF FINANCIAL CONDITION
CITY OF HOMER, ALASKA
FY 1978

Population	2,055 a/	
Full Value Determination	\$66,896,480.00	///
Full Value Per Capita	\$ 32,553.00	
General Obligation Debt	\$ 2,357,812.00	
Total Debt b/	\$ 4,444,678.00	
Per Capita Debt		
General Obligation	\$ 1,147.00	
Total	\$ 2,163.00	
Debt as Percent of Full Value		
General Obligation		3.52%
Total		6.64%

Guidelines for Per Capita Debt

Direct	\$ 618.48	
Overall	\$ 733.93	
Percent of Full Value c/		5.50%

- a/ Homer's July 1977 population as accepted by the Department of Community and Regional Affairs for State Revenue Sharing purposes.
- b/ Total debt equals Homer's G.O. bonded debt plus a pro-rated share (\$2,086,866) of the Kenai Peninsula Borough's G.O. bonded debt based on the City of Homer's accounting for 4.3 percent of the Borough's 1978 full value determination.
- c/ Median value for selected places of under 10,000 population used by Moody's Investors Services, Inc.

Sources: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

TABLE 99
 CITY OF HOMER
 COMPARISON OF FULL VALUE DETERMINATION
 1969 - 1978
 (in \$000's to nearest \$1,000)

<u>Year</u>	<u>Full Value Determination</u>
1969	\$10,913
1970	\$11,450
1971	\$12,969
1972	\$12,552
1973	\$17,616
1974	\$22,789
1975	\$25,406
1976	\$32,129
1977	\$42,918
1978	\$66,896

Source: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

TABLE 100

CITY OF HOMER
GENERAL BONDED DEBT
SCHEDULE OF DEBT SERVICE REQUIREMENTS TO MATURITY
JUNE 30, 1978

<u>Fiscal Year</u>	<u>Princi pal</u>	<u>Interest</u>	<u>Total</u> <u>Annual Requi rement</u>
1979	\$ 54,000	\$ 90,124	\$ 144,124
1980	60,000	86,488	146,488
1981	61,000	82,845	143,845
1982	71,000	79,584	150,584
1983	72,000	76,160	148,160
1984	83,000	72,368	155,368
1985	84,000	68,156	152,156
1986	84,000	63,823	147,823
1987	85,000	59,373	144,373
1988	40,000	56,355	96,355
1989	42,000	54,568	96,568
1990	43,000	52,701	95,701
1991	43,000	50,817	93,817
1992	44,000	48,913	92,913
1993	49,000	46,991	95,991
? 994	50,000	44,799	94,799
1995	52,000	42,570	94,570
1996	53,000	40,263	93,263
1997	32,000	38,330	70,330
1998	31,000	36,791	67,791
1999	30,000	35,250	65,250
2000	30,000	33,750	63,750
2001	35,000	32,250	67,250
2002	35,000	30,500	65,500
2003	35,000	28,750	63,750
2004	40,000	27,000	67,000
2005	40,000	25,000	65,000
2006	40,000	23,000	63,000
2007	45,000	21,000	66,000
2008	45,000	18,750	63,750
2009	50,000	16,500	66,500
2010	50,000	14,000	64,000
2011	55,000	11,500	66,500
2012	55,000	8,750	63,750
2013	60,000	6,000	66,000
2014	60,000	3,000	63,000
	<u>\$1,838,000</u>	<u>\$1,527,019</u>	<u>\$3,365,019</u>

Source: Arthur Young & Co. September 22, 1978. City of Homer, Financial Statements, Year Ended June 20, 1978 with Report of Certified Public Accountants.

based on its prorated share of the Borough's assessed valuation, then another \$2,086,866 in debt can be tallied against the City of Homer's property tax base.

Compared to other small cities across the nation, Homer's ratio of direct general obligation bonded debt to its assessed valuation is 3.52 percent which compares favorably with the median value of 5.5 percent reported by Moody's Investors Service, Inc. for selected cities under 10,000 population. However, if Homer's share of the Borough's debt is included, the City has a less favorable 6.64 percent ratio of bonded debt to local assessed valuation. Nevertheless, the City's overall financial position has improved measurably in the last couple of years due to increases in assessed valuations and to retirement of a portion of the City's outstanding bonds.

The greater part of the City of Homer's direct debt was incurred for bonds for water utility improvements and the public safety building. These bonds are being retired by means of a City sales tax levied and pledged for those projects.

City general fund expenditures in 1978. totalled \$1,048,415. The most heavily supported local government functions were police protection (\$263,997), general government administration (\$168,630) and public works administration (\$167,687) (see Table 101). These three functions absorbed well over half of the City's general fund budget. Not included in this account of general fund expenditures were a variety of other

enterprise fund and debt service funds whose outlays were financed by special assessments, user charges and other non-general fund sources.

The primary source of general fund revenues was property tax levies which yielded \$500,758 or 55.1 percent of all general fund revenues. Intergovernmental revenues from the State and federal governments contributed another 36.2 percent, while **miscellaneous** fees, etc., provided the remainder.

The property tax rate for Homer in **1978** was 12 mills, a rate the City has maintained since 1972 except for 1975 when it rose to 14 mills (see Table **102**). This property tax rate is slightly lower than the average for the four other major settlements in the Borough where 1978 rates ranged from a low of 11.0 mills at **Soldotna** to a high of 16.5 mills at **Seldovia**. Above the local City property tax, Homer real property owners are also assessed an additional 6.5 mills by the **Kenai** Peninsula Borough for purposes of school support (4.035 mills), hospitals (2.0 mills) and Borough administration (**0.465** mills).

Homer residents also pay a 5 percent sales tax composed of a 3 percent City sales tax earmarked for debt service and a 2 percent Borough sales tax allotted to finance the school system.

Overall, the City of Homer appears to be in generally sound fiscal health, especially with the improvement shown in its debt **situation** in the last few years. Assessed valuations are about average for **Alaska**

TABLE 101
 GENERAL FUND
 STATEMENT OF REVENUES AND EXPENDITURES
 CITY OF HOMER
 YEAR ENDED JUNE 30, 1978

	Estimated as <u>Amended</u>	<u>Actual</u>	Actual - Over (Under) <u>Estimated</u>
<u>Revenues</u>			
General property taxes	\$ 517,681	\$ 507,516	\$(10,165)
Less: Uncollectable taxes	<u>(10,388)</u>	<u>(11,389)</u>	<u>(1,001)</u>
Total taxes	507,293	496,127	(11,166)
Penalties and interest on taxes	<u>2,500</u>	<u>4,631</u>	<u>2,131</u>
	<u>509,793</u>	<u>500,758</u>	<u>(9,035)</u>
State of Alaska:			
Shared revenue:			
Public utilities	16,000	14,459	(1,541)
Business license	55,000	62,044	7,044
Alcohol beverage licenses	8,900	12,600	3,700
Gaming devices	396	706	310
Fish tax	3,500	6,475	2,975
Shared revenue	74,775	74,775	--
Other appropriations:			
Roads and trails	--	10,889	10,889
Street signs	--	4,445	4,445
Other	--	4,117	4,117
	<u>158,571</u>	<u>190,510</u>	<u>31,939</u>
Grants and interfund transfers:			
CETA program grant	108,532	113,013	4,481
Interfund transfers:			
Anti-recession funds	13,000	7,992	(5,008)
Federal shared revenue	27,000	--	(27,000)
Public works services	29,000	17,546	(11,454)
	<u>177,532</u>	<u>138,551</u>	<u>(38,981)</u>
Other revenue:			
Public safety building use/services:			
Rent revenue	2,706	2,210	(496)
Dispatcher services	19,250	19,250	--
Other services	4,200	4,200	--
Municipal fees:			
Permits and licenses	1,500	1,808	308
Fines and forfeitures	10,250	9,730	(520)
Animal licenses	2,500	2,475	(25)

TABLE 101
continued

GENERAL FUND
STATEMENT OF REVENUES AND EXPENDITURES
CITY OF HOMER
YEAR ENDED JUNE 30, 1978

	Estimated as <u>Amended</u>	<u>Actual</u>	Actual Over (Under) Estimated
Interest earned on deposits	\$ 13,000	\$ 21,485	\$ 8,485
Cemetery plots	900	1,681	781
Camping fees	9,000	9,182	182
Commission - sales tax collections	600	585	(15)
Payment - land sale contract	3,091	1,291	(1,800)
Miscellaneous	5,000	5,044	44
	<u>71,997</u>	<u>78,941</u>	<u>6,944</u>
 TOTAL REVENUES	 <u>\$ 917,893</u>	 <u>\$ 908,760</u>	 <u>\$ (9,133)</u>
			Actual Over (Under) Budget
	Appropriations as <u>Amended</u>	<u>Expenditures</u>	
<u>Expenditures</u>			
Departmental :			
General government	\$ 179,858	\$ 168,630	\$(11,228)
Legal, judicial and elections	18,271	18,880	609
Police protection	263,997	260,147	(3,850)
Animal control	28,150	26,537	(1,613)
Fire protection	38,800	39,632	
Public works	166,256	167,687	1,431
Parks and recreation	12,308	10,226	(2,082)
Commissions	16,268	12,758	(3,510)
C ETA	108,532	112,449	-3,917
Total departmental	<u>832,440</u>	<u>816,946</u>	<u>(15,494)</u>
Nondepartmental :			
Contributions to local agencies	15,600	14,311	(1,289)
In-kind contributions	--	6,572	6,572
Interfund transfers	228,624	208,966	(19,658)
Debt service	1,620	1,620	--
Contingencies	82,609	--	(82,609)
Total nondepartmental	<u>328,453</u>	<u>231,469</u>	<u>(96,984)</u>
 TOTAL EXPENDITURES	 <u>\$1,160,893</u>	 <u>\$1,048,415</u>	 <u>\$(122,478)</u>

Source: Arthur Young & Company, September 22, 1978. City of Homer Financial Statements, Year Ended June 30, 1978, with Report of Certified Public Accountants. Anchorage.

TABLE 102

CITY OF HOMER
PROPERTY AND SALES TAX RATES
1972 - 1978

	Property Tax (mills)						
	1972	1973	1974	1975	1976	1977	1978
City of Homer	12.00	12.00	12.00	14.00	12.00	12.00	12.000
Borough - Administration							0.465
Borough - Schools	5.00	5.00	5.00	5.00	5.00	5.00	4.035
Borough - Hospital (South)		1.70	1.70	1.70	2.00	2.00	2.000
<u>TOTAL</u>	17.00	18.70	18.70	20.70	19.00	19.00	18.500

	Sales Tax (percent)						
	1972	1973	1974	1975	1976	1977	1978
City of Homer			1.00	1.00	2.00	4.00	3.00
Borough - Schools	3.00	3.00	3.00	3.00	2.00	2.00	2.00
<u>TOTAL</u>	3.00	3.00	4.00	4.00	4.00	6.00	5.00

Source: Alaska Department of Community and Regional Affairs, Division of Local Government Assistance. Alaska Taxable: Municipal Property Assessments and Equalized Full Value Determinations. Juneau. (Annual Report).

municipalities and property tax and sales tax rates are comparable to other cities in the region, although they are above State averages.