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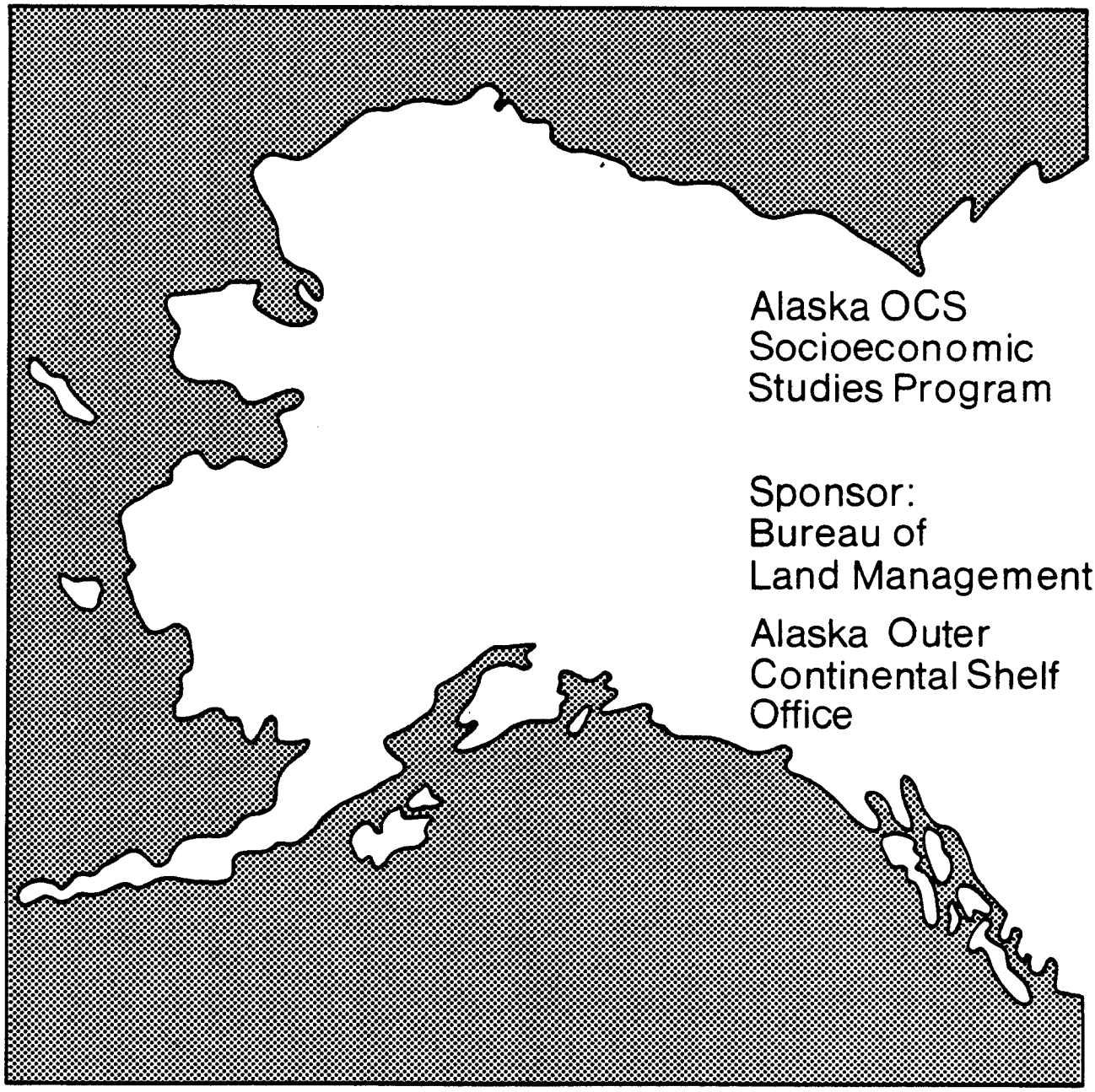

Alaska OCS
Socioeconomic
Studies Program

Sponsor:
Bureau of
Land Management

Alaska Outer
Continental Shelf
Office

Anchorage Socioeconomic and Physical Baseline

FOREWARD

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.

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 analysis addresses the differing effects among various geographic units: the State of Alaska as a whole, the several regions within which oil and gas development is likely to take place, and within these regions, the local communities.

The overall research method is multidisciplinary in nature and is based on the preparation of three research components. In the first research component, the internal nature, structure, and essential processes of these various geographic units and interactions among them are documented. In the second research component, alternative sets of assumptions regarding the location, nature and timing of future OCS petroleum development events and related activities are prepared. In the third research component, future oil and gas development events are translated into quantities and forces acting on the various geographic units. The predicted consequences of these events are evaluated in relation to present goals, values, and expectations.

In general, program products are sequentially arranged in accordance with BLM's proposed OCS lease sale schedule, so that information is timely to decision making. In addition to making reports available through the National Technical Information Service, the BLM is providing an information service through the Alaska OCS Office. Inquiries for information should be directed to: Program Director, Socioeconomic Studies Program, Alaska OCS Office, Post Office Box 1159, Anchorage, Alaska, 99510.

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ALASKA OCS SOCIOECONOMIC STUDIES PROGRAM

ANCHORAGE SOCIOECONOMIC AND PHYSICAL BASELINE

FINAL REPORT

Prepared by

DR. RICHARD L. ENDER
JAN GEHLER
SUSAN GORSKI
SUSAN HARPER

Prepared for

PEAT, MARWICK, MITCHELL & CO.

AND

BUREAU OF LAND MANAGEMENT

ALASKA OUTER CONTINENTAL SHELF OFFICE

June 1978

III

NOTICE

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Alaska OCS Socioeconomic Studies Program
Anchorage Socioeconomic and Physical Baseline

Prepared by

Dr. Richard L. Ender
Jan Gehler
Susan Gorski
Susan Harper

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16. Abstract

This document is a community profile on the Municipality of Anchorage encompassing socio-economic and physical data. Topics include a brief history of the inception of Anchorage as a township with an overview of significant historical events; a comprehensive discussion of the Anchorage economy and current demographic information; local government revenues and expenditures; community support service sectors including health services, social services, leisure and recreational services, education, police (state and local), fire, and emergency medical services; physical characteristics of Anchorage; utilities; and transportation. Within each section, where applicable, current issues are identified and planning efforts designed to alleviate problem areas are discussed.

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I. INTRODUCTION

The purpose of this baseline study is to provide a profile of Anchorage, Alaska. The study will examine historical trends and current data, identify key issues or problems within specified sectors of the community, and, where possible, will explore planning processes designed to respond to critical issues.

This study will provide necessary baseline information for the analysis of the impact of proposed petroleum development in the Beaufort Sea region.

Descriptive indicators, beginning with an historical overview and community origin, examination of population and economic growth, and governmental institutions provide the framework for the profile of Anchorage.

Current demographic and economic information provide a thorough description of the heterogeneous nature of Anchorage. Discussion in this section focuses on baseline population estimates, individual census data, household census data, and individual based economic data.

Attitudes toward change and perception of development in the Anchorage area are important indicators of public opinion. Community attitudes specifically reflect the incidence and degree of receptivity or rejection of future petroleum development. This section examines the Anchorage public's perceived problems, perceptions of future growth, community values, attitudes toward growth and development, and community services.

Discussion of Anchorage's service support sectors indicates the capability of Alaska's largest city to cope with its needs. Investigation of health and social services, education and educational opportunities, public safety, and utilities are identified as key indicators in this section.

The influence of service support sectors in Anchorage extends beyond the municipal boundaries to affect not only the southcentral region of Alaska, but, in many cases, the entire state. Services provided in Anchorage are often not available in the more sparsely populated regions of Alaska. It is likely that future development in the Beaufort Sea region will have a direct impact on the Anchorage community.

Inherent in future petroleum development in Alaska is the indirect impact on Anchorage. Indirect impact would be expected to occur to a greater degree, and current demographic and economic profiles will undoubtedly be altered.

II. ANCHORAGE BASELINE DATA

Historical Background

This section is based on a two-year study program of the Anchorage Urban Observatory. (Wangsness, 1977)

HISTORICAL PATTERNS OF GROWTH

Anchorage was established as a construction camp for the building of a major section of the Alaska Railroad. The purpose of President Wilson's signing of an authorizing bill in March of 1914 was resource development: in this case, coal in the Matanuska Valley. The initial boom consisted of 3,000 persons housed in a tent city on Ship Creek townsite laid out by the Alaska Engineering Commission. By 1916 the population was 6,000, but World War I curtailed construction and brought the boom to an end. The 1920 census showed a population of 1,856, and the City of Anchorage incorporated on November 23 of that year.

For 20 years, Anchorage demonstrated only modest growth. The coal in the Matanuska Valley was not available in commercial quantities; the U.S. Navy switched to oil burning ships; and the depression served to further dampen growth in the area. By 1940 the census showed a population of 3,495 persons.

The 1940's marked a turnabout for Anchorage as the military began major construction. Two thousand and twenty-three hectares (5,000 acres) were set aside for an air base. Approximately 3,200 troops arrived in 1940,

followed by civilian workers and families. The tripling of the population in five years created regional problems as areas outside the incorporated city were settled. The first annexation and the formation of the Spenard Utility District were two mechanisms used to cope with growth and service demands. The end of the war did not bring the expected economic slump. The construction of Fort Richardson for the Army, general rebuilding of the railroad, and the development of expanded air transport facilities brought more growth exacerbating an existing housing shortage. The 1950 census showed an Anchorage city population of 11,254, while the greater Anchorage area showed a population of 32,060.

The 1950's was a period of vigorous growth with a 157 percent increase in population from 1950 to 1960 (82,736 by 1960). The City of Anchorage itself grew primarily through aggressive annexation (44,237 by 1960). Construction was the heart of the boom. The Korean War and military construction projects, such as the DEW Line and White Alice, statewide Federal Aviation Administration (FAA) facilities construction, and commercial and residential building, all added to the prosperity. This "boom town" atmosphere also gave Anchorage its reputation for vice and heavy use of alcohol. The adoption of the state constitution in 1956 and statehood in January 1959 set a new direction and new powers for local government. Anchorage voters approved a home rule charter for the city.

The construction boom faded during the decade of the 1960's. A major upgrading of service by Sea-Land Corporation in 1961 helped spur the

economic growth of the area. It was, paradoxically, the devasting earthquake of 1964 that opened a flood gate of economic recovery for the area. Hundreds of millions of federal dollars rebuilt much of Anchorage, wiped out unemployment, and generally increased contractor and business activity. For example, reconstruction of the Alaska Railroad provided 400 new jobs. Because of heavy damage to other areas, such as Seward and Whittier, the activity of the Anchorage port greatly increased. This led to enlarged bulk petroleum storage capacity. While the mid-1960's were years of cleanup and rebuilding, towards the end of the decade the pace quickened again as North Slope oil became important. The state's $900 million lease sale in the fall of 1969 set off wild speculation in real estate. Land prices soared and many businesses changed hands without much actual commercial expansion.

Population figures for the Anchorage area illustrate the rapid acceleration in population growth during the latter part of the decade. Between the 1960 census and the special census of 1968, the population increased by almost 31,000: from 82,736 to 113,522. From 1968 to the 1970 census, it increased by almost 13,000. The 1970 census showed a City of Anchorage population of 48,081, while the greater Anchorage area population was 126,333.

The decade also saw several governmental actions. The state legislature's Mandatory Borough Act led to the formation of the Greater Anchorage Area Borough (GAAB) in 1964. The potential for overlap and duplication of powers and services by the City and the Borough initiated efforts to

unify those two governing bodies as early as 1966. The first charter commission was formed in October 1969, leading to final unification in 1975.

The speculative boom of the late 1960's deflated in late 1970 and early 1971, forcing many into receivership and bankruptcy. The economy picked up in late 1972 as oil companies increased their exploration. The Alyeska Pipeline Service Company was formed from a consortium of oil companies. Service industry development accelerated in transportation, finance, banking, and insurance.

The passage of the Native Claims Settlement Act and Pipeline Act in 1975 spawned a new spiral of economic growth. Within the Anchorage urban center, growth created increased public service needs, with governmental employment rising sharply to accommodate them. One should note that the State of Alaska, as well as Anchorage, has been heavily dependent on government as a primary employer; and in November of 1977, it was still the largest general sector employer (27.3 percent [Alaska Dept. of Labor, 1978a]). Rapid growth of the population in the 1970's for the Anchorage area is illustrated by the estimated increase of 64,700 people from 1970 to 1977.

GOVERNMENT INSTITUTIONS

Anchorage's first local government was a mixture of Alaska Engineering Commission (AEC) officials and the local Chamber of Commerce. Responsible for building the railroad, the AEC laid out the original townsite grid

pattern. A seven-member advisory council was established to advise the AEC on routine management questions. In 1920 the AEC threatened to curtail municipal services, urging the residents to accept self-government. On November 23, 1920, the federal district judge declared the city legally incorporated, and a seven-member city council was elected under a weak mayor form of government. This continued until April 1946 when voters approved the city-manager form of government.

Early government was primarily concerned with basic services including water, sewer, light, and power. Telephone was added in 1933. Services improved through raising the assessed valuation to 100 percent, raising the mill rate from ten to 15 mills, and obtaining substantial amounts of public works administration money. Growth also necessitated the establishment of a utility board and planning commission.

The city began to change its boundaries in 1945 with its first annexation. More major changes occurred after 1954 with the development of a vigorous annexation policy. These annexations placed heavy demands on city services. It created open conflict between city utility and Chugach Electric Association as both competed for customers. Public utility districts (PUD's) partially resolved this problem. The territorial legislature passed enabling legislation in 1935 providing for PUD's with an unusually wide range of possible services. Of four PUD's established in Anchorage, three were eventually dissolved as a result of annexation. Spenard, established in 1949, endured the longest. The most common services were snow removal and road grading. The Spenard District also

contracted for fire protection, street lighting, and water service. Other services, though not well performed, included dog control, sewer, and garbage collection. Two major weaknesses of PUD's were the lack of enforcement powers and their small size. Though the battles were loud and long, only Spenard successfully resisted annexation.

Statehood in 1959 brought a home rule charter to the City of Anchorage and the establishment of the Greater Anchorage Area Borough (GAAB) in December 1963. The latter grew slowly as many of the earlier residents were hostile to local government fighting its birth and later its growth. The City of Anchorage also vigorously opposed the borough in virtually all of its development. The Mandatory Borough Act gave the GAAB areawide powers for planning and zoning, education, property assessment, and tax collection. Subsequent action by voters or the assembly added additional functions. These included health, sewers, dog control, and transit, as well as service area provisions for fire, police, libraries, roads, and drainage.

The City of Anchorage was now a large government with a broad range of services. In addition to the usual city services of police, fire, public works, parks and recreation, library, water, and power, Anchorage also operated a deep water port, a museum, a small airport, and a large telephone utility. Utility services were extended beyond city boundaries. City police service was provided to Spenard by contract in 1969, and libraries were contractually extended to the borough.

UNIFICATION

The concept of governmental unification began less than two years after the GAAB was formed. The Borough Assembly set up a citizen's committee to study the idea of a single government. In 1969 a city-borough study committee recommended unification into a single government. Operation Breakthrough, a citizens' action group, also recommended unification in 1969. Concurrently, petitions were circulated to move the issue to the ballot. In March 1969 city voters overwhelmingly approved a ballot issue which asked that the city withdraw from GAAB if unification failed. In October 1969 voters approved the concept and elected an eleven-member commission (see table 1). The charter was accepted by city voters in October 1970 but was strongly rejected outside the city. The commission redrafted the charter but failed similarly in September 1971 (see table 1).

Bickering and conflict between the two governments increased. The GAAB failed to acquire areawide police powers in 1974 as the city council spent $7,500 and GAAB, $10,000, to defeat or support the attempt respectively. In 1974 the city attempted unification through annexation of Muldoon. This effort also failed.

On November 7, 1974, by a vote of seven to four, the GAAB Assembly voted to put unification and charter commission propositions on the February 1975 election ballot. Exclusion of Eagle River/Chugiak voters because of their new borough status and general low turnout resulted in a small but very positive vote (see table 1). After extensive interaction with concerned interests and the general voters, the commission brought the

third charter to public vote and was successful. The opposition to the charter came from strongly conservative groups and residents of Eagle River/Chugiak whose new borough attempt was ruled unconstitutional.

TABLE 1

ANCHORAGE UNIFICATION VOTES[a]

Date	Type of Vote	Area	Yes	No	Total
Oct. 1969	Unification and Charter Commission	Inside City	3,342	1,241	4,583
		Outside City	3,475	3,074	6,549
Aug. 1970	First Charter	Inside City	3,033	2,617	5,650
		Outside City	3,491	6,167	9,658
July 1971	Second Charter	Inside City	3,129	3,846	6,975
		Outside City	2,896	6,927	9,823
Feb. 1975	Unification and Charter Commission	Inside City	2,000	800	2,800
		Outside City	2,600	300	2,900
Sept. 1975	Third Charter	Inside City	5,144	2,716	7,860
		Outside City	6,582	5,797	12,379

[a]P. H. Wangsness, A History of the Unification of the City of Anchorage and the Greater Anchorage Area Borough, Anchorage Urban Observatory, University of Alaska, 1977.

Current Demographic and Economic Profile

The present population of Anchorage can be characterized as young, composed of small nuclear households, predominately white, well-educated, and reasonably affluent. These generalities, however, do mask some major social-economic disparities in the community. Economically, Anchorage appears to have benefited from the growth of the 1970's with a real rise in the general economic indicators.

BASELINE POPULATION ESTIMATE

As of January 31, 1978, the estimated population of the Anchorage Municipality was 195,316. This represents a 3.5 percent increase in population over July 1, 1977 (188,304). Table 2 represents mid-year populations by benchmark years, and figure 1 graphs the population curve over an historical event continuum. The population estimates after 1970 are based on an analysis of the Anchorage housing stock utilizing corresponding vacancy data and sample census data of household size.

TABLE 2

ANCHORAGE POPULATION GROWTH 1929-1978

Year	Anchorage Population[a]
1929	2,736
1939	4,229
1950	30,060
1960	82,736
1970	126,333
1975	174,890
1976	180,960
1977	188,304
1978	201,790

[a]Estimates from 1929 to 1970, Greater Anchorage Area Borough, 1974e; 1975 to 1978, Anchorage Urban Observatory.

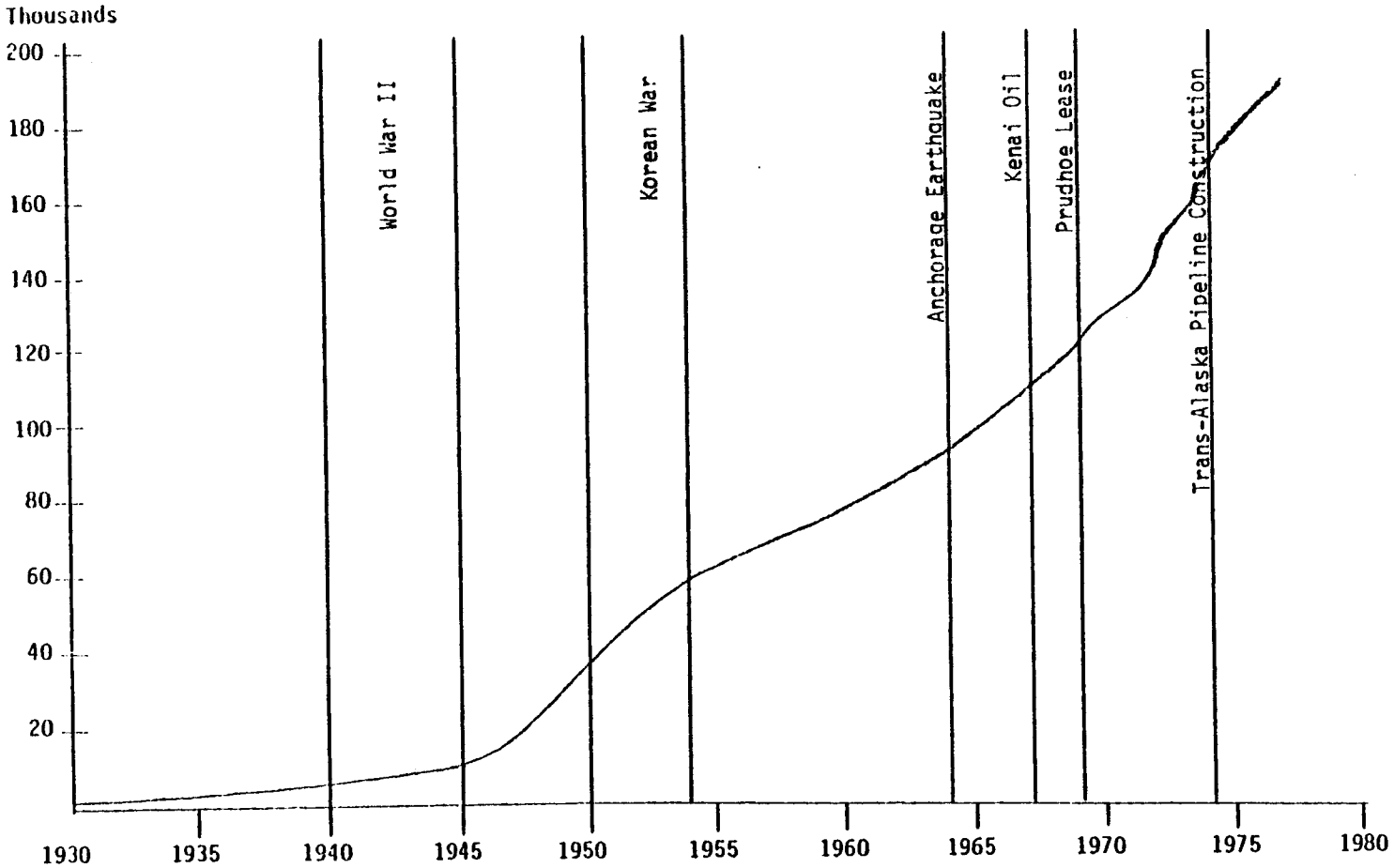


FIGURE 1

ANCHORAGE POPULATION GROWTH [a]

[a]Municipality of Anchorage, Economic Development Commisssion, Anchorage Overall Economic Development Program, September 1977.

Unless noted, the following data are based on a sample census conducted in June 1977. A random stratified cluster housing sample was used to select 1,177 households. A census evaluation of all members of the household created a data set of 3,753 individuals living in the non-military reservation areas of Anchorage. No attempt was made to extrapolate the data to the military reservations (except for race), and, therefore, conclusions based on this information should note the population it is based on. A computer weighting program produced community level census data used for this analysis. Though the research was conducted under a Department of Housing and Urban Development/National League of Cities contract in joint cooperation with the Municipality of Anchorage, the data have yet been published in any widely distributed form.

INDIVIDUAL CENSUS DATA

Age and Sex

The population as of June 1977 revealed slightly more males (52.4 percent) than females (47.6 percent). (This gap is somewhat wider than the 1970 census and may be due to the influx of young males seeking construction work during the pipeline boom.) The median age is 25.0 years and 33.4 percent of the population are 17 years or younger. Only two percent of the residents are 65 years or older. It appears that Anchorage is getting slightly older in terms of its population. In 1970, 29.4 percent of the residents were under 18 years, and 1.6 percent were 65 years or older. The median age in 1970 was 23.9 years.

Figure 2 presents a sex-age population pyramid which highlights the youthful

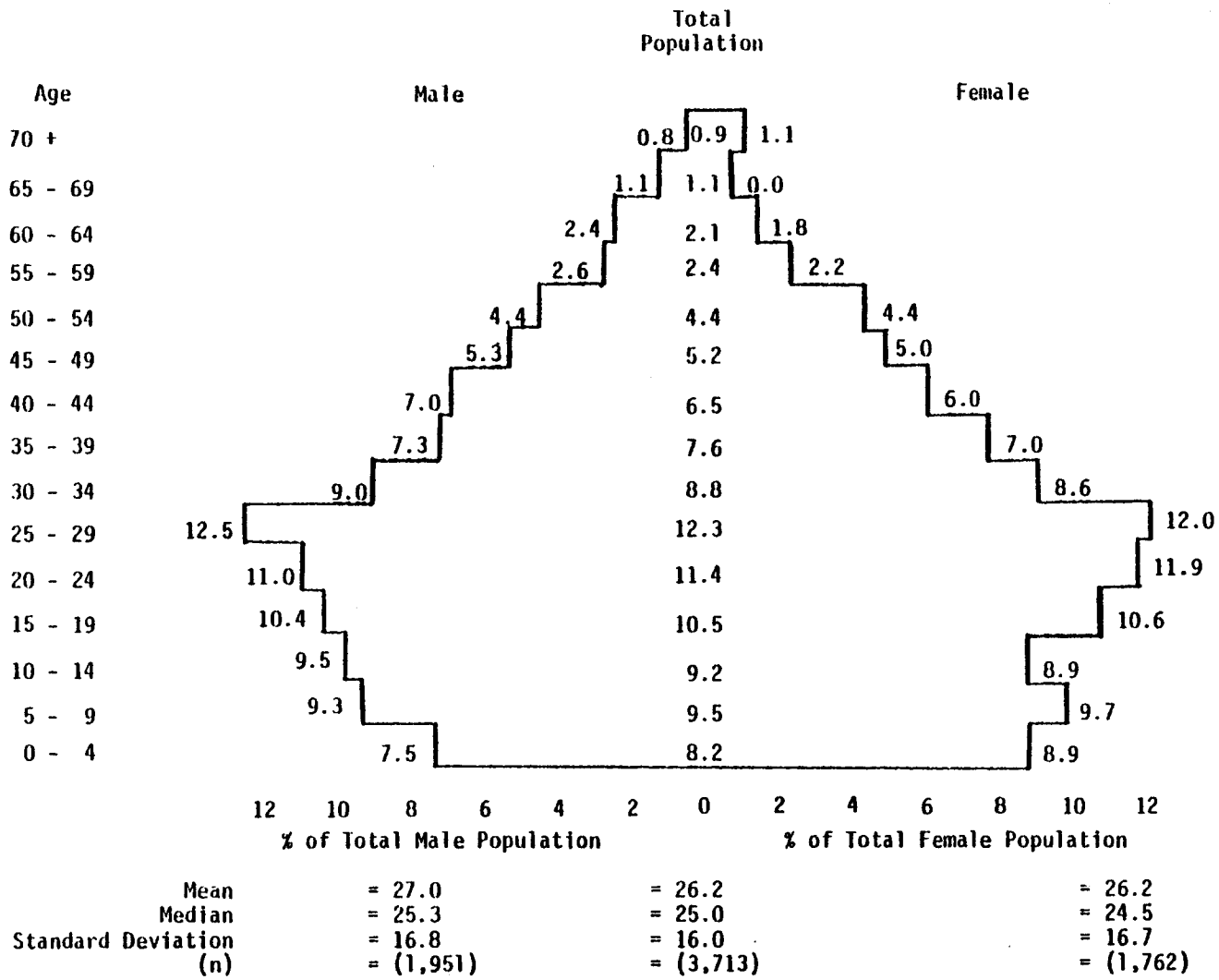


FIGURE 2

AGE/SEX POPULATION PYRAMID[a]

[a]R. L. Ender, 1977 Anchorage Census Update (unpublished), Anchorage Urban Observatory, University of Alaska, Anchorage, AK.

composition of Anchorage. The predominant group is still the 20 to 29 year olds; however, the proportion of 30 to 49 year olds is growing. With the existing high degree of transiency, the Anchorage population is expected to continue aging but at a slow, incremental pace.

Race

The racial composition of the community has been relatively stable in recent years. Since 1960, the proportion of whites has decreased almost three percent to 89.5 percent. The black and Alaskan native populations have stabilized at about three and four percent of the population respectively. Inclusion of the military reservations increases the proportion of blacks to just over four percent and reduces the proportion of Alaskan natives to just under four percent. Three groups - Orientals, other Asians, and Spanish-Americans - compose the remainder of the minority population (see table 3).

While racial minorities comprise only about ten percent of the population, they are disproportionately found in the northern and older parts of the city - Fairview, downtown, Government Hill, and Mountain View. Outside the original city, only Abbott Loop has a significant minority population.

TABLE 3

RACIAL DISTRIBUTION IN ANCHORAGE

Race	Non-military 1977[a]	Total 1977[a]	Non-military 1970[b]	Military 1970[b]	Total 1970[b]
White	89.5%	90.6%	91.3%	87.7%	92.4%
Black	3.0	4.3	2.9	10.2	4.4
Native	4.2	3.8	5.8	2.1	3.2
Other	3.3	1.3			

[a]Anchorage Urban Observatory, June 1977, unpublished.
[b]Greater Anchorage Area Borough (GAAB), People in Anchorage, December 1974.

Education

The average Anchorage adult (18 years and older) has had 13.3 years of education. The educational mode is achievement of a high school diploma (38.1 percent). Only 12.7 percent have failed to complete high school. Those with four or more years of postsecondary education constitute 22.7 percent of the adults. The upward trend in educational attainment is reflected by an approximate eight percentage points increase in the proportion of adults going beyond high school. While males have slightly more postsecondary education than females, race produces the greatest differences in attainment. The gap between white and blacks is .56 years; and natives, 1.73 years.

Head of Household

Males comprise 89.7 percent of the area's heads of household. The average age is 38.4 years, and the median age is 36.0 years. Heads of household have a median educational attainment of 13.2 years. Black and Alaskan

native households have two and one-half times more female heads of household than whites.

HOUSEHOLD CENSUS DATA

Household Composition

Anchorage has experienced a slight decline in houseshold size during the 1970's. In the last census, nonmilitary reservation housing had an average person per household size of 3.28. In 1975 it was approximately 3.27, and by 1977 it was 3.18. While a one-tenth of a person drop may not appear large, it adversely affects population estimates by 5,000 people. The reason for the drop is a decline in the number of children.

While the school age population grew about 14 percent in the 1970's, the whole population increased more than 50 percent. School enrollments today are approximately what they were in 1973 and have been declining over the past three years. This has effectively reduced the proportion of residents under 18 years of age by six percentage points, with a child per household average of 1.08. In 1970, 69.6 percent of the "families" in Anchorage had children under 18 years of age. In 1977 only about 61 percent have children. Of all households, 45.7 percent do not have any members under 18 years of age. In explaining this shift, it appears that the decline in the incidence of children has occurred exclusively in multifamily and mobile home units. Apartments dropped from .85 to .58 children per household between 1975 and 1977; and mobile homes, 1.22 to .81. Single family housing remained stable and may have increased slightly. Interestingly, the average number of adults per household has not changed significantly in any type of housing

unit.

The traditional nuclear family is the dominant relational pattern in Anchorage. Some 46.8 percent of the population is composed of husband/wife teams. Another 36.9 percent are the son or daughter of the head of household. Only two percent of the population are related to the head of household other than spouse or son/daughter, and 5.2 percent are not related to the head of household. Single member households make up 11.1 percent of all households.

Mobility

Anchorage has always been characterized by a large transient population. Fifty percent of the existing population have resided in Anchorage six years or less. While 19.8 percent have been here less than two years, only eight percent are residents of 25 years or more.

Housing turnover is very high. Forty point two percent of the residents have lived in their present homes less than 18 months. Almost 80 percent have moved within the past six years. While the median occupancy length is only 2.0 years, it is much higher in owner-occupied units (3.0 years) than in rentals (.6 years). Rental units generally bear the brunt of transiency in Anchorage with 40.3 percent of renters having lived here less than two years (a median of 2.9 years). Owner-occupied units have a median residency in Anchorage of eight years.

The origins of those moving to Anchorage can facilitate understanding the

composition of the existing population. Other locations in Alaska are commonly mentioned (17.3 percent) as last previous residences. Not surprisingly, California (12.2 percent) and Washington (10.6 percent) lead the list of previous locations. Texas is third (5.9 percent), which is an indication of the increased economic importance of oil and gas production in Alaska. Oregon follows Texas with 5.5 percent of the population. In terms of regions, the West Coast leads with 29.3 percent, the South and Border South compose about 18.3 percent; while 12.7 percent come from the East and Upper Ohio Valley, and 14.2 percent from the Plains and Rocky Mountain states. Only 3.8 percent said they had always lived in Anchorage, and 4.2 percent came from outside the United States.

These past patterns also carry over into future relocation. Almost half of the renters (49.4 percent) plan to move in the next twelve months. Only 18.2 percent of the owners are planning to move in the next year. In all, 28.8 percent have plans to move, which suggest that the area's population could turn over in about three and one-half years. It would appear that about 40 percent of the population is reasonably stable and about 40 percent could be characterized as highly mobile.

This movement does not necessarily mean out of the Anchorage metropolitan area. Of those planning to move, 48.9 percent said it would be to another part of Anchorage. There is a great turnover in housing as people move up - from renter to owner - and in terms of acquiring a higher standard of living. Residents indicated that 19.9 percent were planning to go to another part of Alaska, and 28.3 percent were leaving Alaska. While plans change, so do the plans of those who had no intention of moving. Conserva-

tively, 20,000 to 25,000 people will migrate out of Anchorage in 1978, and 27,000 to 32,000 others will replace them.

The future movement of people will have a major affect on the patterns of growth in the Anchorage area. While 38.9 percent of the sample preferred their own location to other possibilities, this preference was not distributed evenly throughout the population. In Government Hill, 85.9 percent wanted to leave their neighborhood. Also, 82.5 percent of North Mountain View and 72.4 percent of Downtown/Fairview would like to move. Generally, the reverse was true for more affluent areas such as Lake Otis, Hillside, Inlet View/Turnagain, and Eagle River/Chugiak. Preferred areas are also those areas experiencing and expecting the greatest growth pressure. The Hillside area is clearly the most desirable area in Anchorage today. Thirty percent of all mentions identified the Hillside as the place to live. Sand Lake gathered 10.3 percent of the mentions, 8.6 percent responded with areas in South Muldoon and Lake Otis, and 6.3 percent noted Eagle River/Chugiak. The only areas within the original city boundaries included Turnagain and Inlet View/Downtown areas (15.3 percent). This suggests some possible opportunities to pursue additional desirable downtown living opportunities.

INDIVIDUAL BASED ECONOMIC DATA

Employment Status

Measuring the size of the work force in Anchorage may vary depending on the assumptions used. However measured, the work force has shown substantial increases in the 1970's. The largest increases took place in 1974

and 1975 during the height of pipeline construction. In terms of employer-reported total nonagricultural wage and salary employees, the work force increased from 41,995 in 1970 to 74,955 in 1977 (data are based on the average of the first three quarters of 1977), which is a 78 percent increase. The 1977 average civilian work force was estimated to reflect an 81.5 percent increase over 1970. Under a new reporting system which excludes seasonal workers while not working during the off-season, the total force was estimated to average 67,426 in 1977 (estimated from the first ten months of the year). This represents an 11.6 percent annual increase in the civilian work force since 1970. Table 4 displays the growth of the work force as well as the increase of the participation rate which represents a major shift in both its composition and effect on the demographics of the population. (Alaska Dept. of Labor, 1977b and 1977c)

In the June 1977 sample census, 71.5 percent of the adult population was employed. For heads of household, this increases to 87.3 percent.

Historically, unemployment in Anchorage has been higher than the national average. This has been the result of high seasonal variation in certain employment categories, employment expansion unable to keep up with the increase in the work force, and the inability to match skill needs in employment openings with the available labor pool. During the 1970's, the unemployment rate averaged 8.5 percent. The rate declined to 6.7 percent during the pipeline boom. However, as a large number of these workers returned at the end of construction in 1976 to their permanent residences maintained in Anchorage, an excess supply of workers in the construction trades developed. The highest unemployment rates were during the period

February through May 1977, but significantly high rates persisted through the summer to the present (see table 4). In January 1978 the new adjusted rate was 8.0 percent and rose to 8.4 percent by March 1978. This represents an increase over the fall 1977 trends but is still below the 10.3 percent rate of February 1977 (Alaska Dept. of Labor, 1978b and 1978c).

TABLE 4

GROWTH OF CIVILIAN LABOR FORCE[a]

Year	Civilian Labor Force	% Change	Population	Participation Rate	Annual Unemployment Rate	Number Unemployed
1970	49,024	0.0%	126,333	38.8%	6.7%	3,267
1971	53,902	10.0	135,777	39.7	8.2	4,418
1972	57,535	6.7	144,215	39.9	8.9	5,140
1973	60,630	5.4	149,440	40.5	9.7	5,818
1974	69,308	14.3	162,499	42.7	8.6	5,980
1975	79,043	14.0	174,890	45.2	6.7	5,279
1976	87,472	8.6	180,960	48.3	8.4	7,372
1977[b]	91,742	3.7	188,304	48.7	(8.6)	(5,823)

[a]Alaska Dept. of Labor, Anchorage Area Manpower Review, October 1977, with revisions based on data from the Anchorage Urban Observatory

[b]1977 is adjusted to remove seasonal unemployment. An estimate comparable to earlier years is 9,358 with a rate of 10.2%.

About one and one-half to two percent of the average unemployment rate is due to seasonal unemployment. A redefinition of the unemployment index using the Civilian Population Survey has excluded this group and caused a drop in the reported rate (1977 was estimated to be 8.6 percent) and probably reflects the problem of unemployment in more accurate terms. Neither of these definitions include the worker who has given up looking for a job but still considers himself/herself unemployed. A survey in May and June of 1977 of 2,522 adults revealed an unemployment rate of 12.3

percent of the work force. Underemployment is also a problem with 7.3 percent of the employed adults working only part-time, though 6.8 percent are holding down two or more jobs.

The rate of unemployment is substantially lower for heads of households than for the total population. While 12.3 percent of the total adult work force was unemployed in June 1977, only 7.9 percent of the heads of household were. Major disparities occur between racial groups and by sex. Unemployment rates for whites, blacks, and other non-native minorities are similar. For Alaskan natives however, it was estimated to be 36.7 percent in 1977. This rate is three times higher than the proportion of natives in the total Anchorage population illustrating a major economic difficulty for the urban native population. Unemployment is also higher for female heads of household than for male counterparts (15.5 percent versus 6.3 percent). The discrepancy is less when comparing all employed adults (females, 16.0 percent; males, 9.7 percent). Females also have a greater chance of being underemployed: 13.7 percent have only part-time employment compared to 3.3 percent for males.

A picture of the unemployment situation can be seen by looking at the people drawing unemployment insurance (U.I.) in Anchorage. The number of applicants for 1977 was well above that for 1976 and peaking in April 1977. By August 1977, the number of U.I. claimants still was 35 percent greater than the year before.

While this situation is in contrast to net employment gains, it was not able to affect the effects of pipeline layoffs, construction, and other

industrial seasonality. Characteristics of the insured unemployed are displayed in tables 5 and 6. This includes about one-half of all unemployed persons and represents experienced workers who qualified for U.I. benefits. In August 1977 a majority of the claimants were employed by the construction industry, with 60 percent in structural or miscellaneous occupations. This reflects the closing of the pipeline construction and the general seasonal nature of the construction industry. The claimants are largely male (73.1 percent). In the past, summer trends indicated a more even distribution between males and females.

TABLE 5

CHARACTERISTICS OF THE INSURED UNEMPLOYED IN ANCHORAGE[a]

Vertical Distribution by Industry
(percent)

Industry	August 76	April 77	August 77
Total	100.0	100.0	100.0
Mining	3.3	1.8	2.1
Contract Construction	34.1	56.0	50.6
Manufacturing	3.3	3.2	3.5
Transportation, Communication, and Utilities	10.8	7.2	8.8
Trade	21.4	12.3	14.7
Finance, Insurance, and Real Estate	3.3	2.7	2.6
Service and Miscellaneous	21.3	15.7	16.8
Other	2.2	0.6	0.9
INA	0.3	0.2	0.0

[a]Alaska Dept. of Labor, Anchorage Area Manpower Review, October 1977

TABLE 6

CHARACTERISTICS OF THE INSURED UNEMPLOYED IN ANCHORAGE[a]

Vertical Distribution by Occupation Group
(Percent)

Occupation	August 76	April 77	August 77
Total	100.0	100.0	100.0
Professional and Managerial	11.4	7.1	7.0
Clerical and Sales	18.5	13.1	18.2
Service	15.3	8.7	9.6
Farming, Fishing and Forestry	0.5	0.4	0.2
Processing	0.7	0.5	0.7
Machine Trades	3.7	2.2	3.4
Bench Work	0.8	0.4	0.3
Structural Work	31.5	46.8	42.4
Miscellaneous	14.3	17.1	17.1
Unknown	3.3	3.5	1.1

[a]Alaska Dept. of Labor, Anchorage Area Manpower Review, October 1977

The U.I. age distribution is more evenly spread in 1977, suggesting a serious oversupply of workers, specifically construction industry craftsmen. Also, claims beyond five and 15 weeks have increased in proportion to claims in general, especially in the construction occupations which suggests a structural inbalance in the job market.

The other large category of unemployed includes clerical, sales, and service personnel. However, these occupations are subject to high turnover and a lower wage structure. The job market in these areas does not appear to have serious problems, and the trade and service industries have shown strong employment growth.

Outside the salaried employment sector, there are three additional

categories to be noted. The first is retired persons, which represents 3.4 percent of the adult population and 4.3 percent of the heads of household; add to that about 2.7 percent of the employed heads of household who said they were also retired. The latter is likely due to career military and civil service personnel who retire in Alaska and then pursue a new career path.

Students constitute 1.5 percent of the adult unemployed population. This statistic is misleading in that about twice that number are also pursuing education on a part-time basis while employed. The total portion of students in postsecondary education options is about 4.3 percent of the adult population.

The designation of homemaker as an exclusive occupation has declined as more females have entered the job market. About 12.4 percent of the total adults classify themselves as a homemaker. Among adult females only approximately 26 percent are homemakers. Approximately 35 percent of the total female adults see themselves as having dual roles with either a part-time or a full-time role as homemaker and an employee outside the home.

Employment Trends by Industry

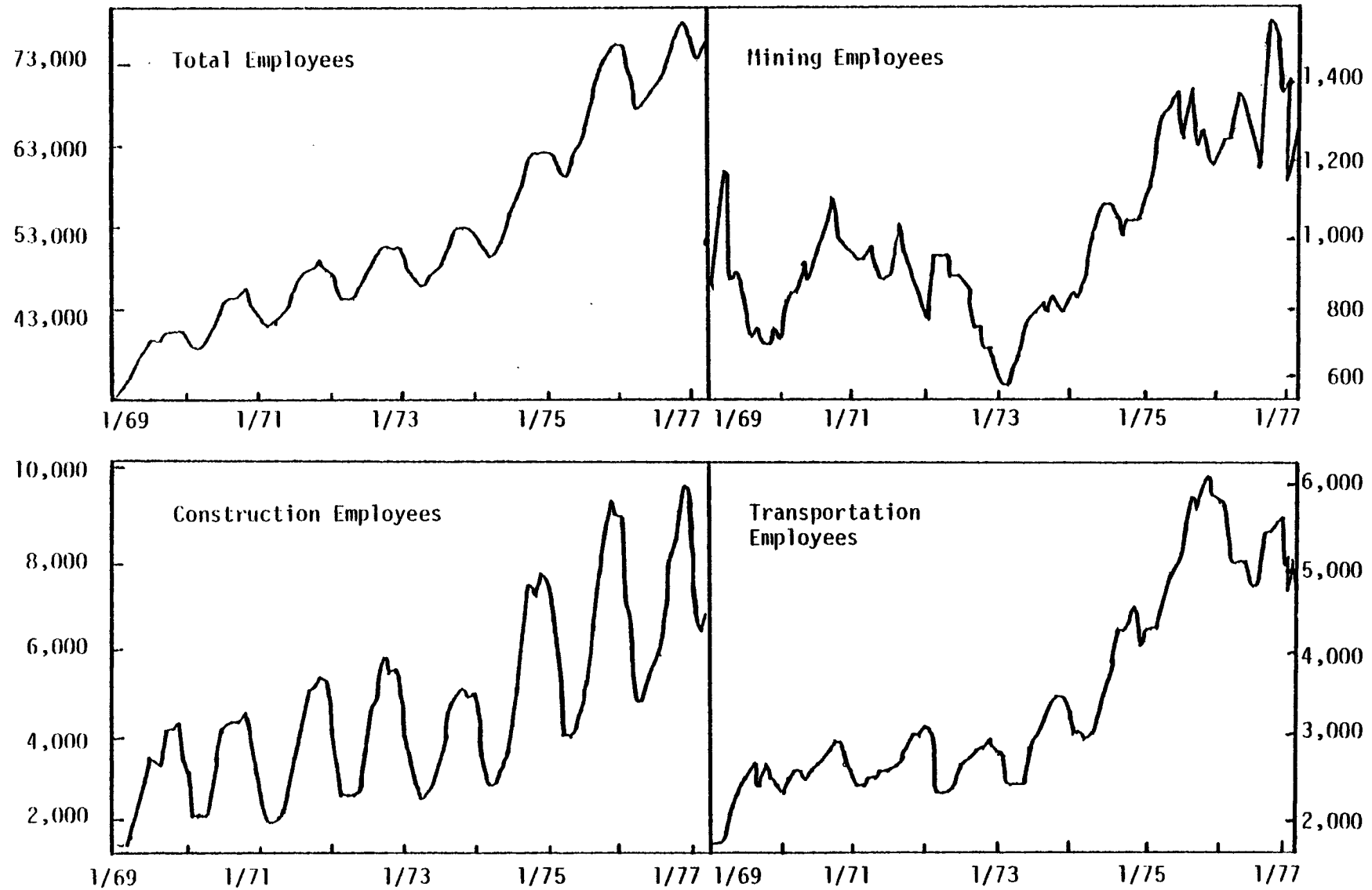
Employment trends in the 1970's reveal some important shifts in the composition of the categories of employed persons. The most pronounced is the drop of government as employer of 34 percent of all employees to 26.9 percent. This can be attributed to stable federal employment levels

within a rapidly growing total civilian work force. There was also a drop in local government employees in 1976 due to unification. This level rebounded in 1977 as local government began to grow somewhat faster than the total force. The biggest gain in the work force was in services (up to 22.3 percent of the employees), a major growth area in Anchorage. Fast food restaurant facilities grew especially strong. Contract construction and transportation grew rapidly in 1975 and 1976, with work related to the pipeline and a secondary sector construction boom. The pipeline construction ended in 1977, but local construction in hotel facilities, residential units, and commercial space remained very strong despite predictions of a downturn in activity. Other industries increased proportionately with the total growth in the work force or gained incrementally. Table 7 traces the growth of the general employment trend and three key industries related to the development of oil and gas in Alaska. Note the seasonality, especially in construction. Services, however, suggest a high degree of growth beginning in 1974 and seem to be seasonally stable; as services become a major factor in the overall industrial composite, drastic employment swings should begin to smooth out.

Employment in the military sector has also been a major factor in Anchorage. Two large military installations contribute importantly to the economic stability of the southcentral area. Their impact has declined slightly. as reductions in force have caused a substantial decrease in terms of contribution to local employment. In 1960 uniformed military in Anchorage was 14,183 and 17.1 percent of the total work force. In 1976 it stood at 12,179 and composed 6.6 percent of the total. Total government employment has decreased from 49.8 percent of the total civilian and noncivilian

TABLE 7

ANCHORAGE AVERAGE MONTHLY NUMBER OF EMPLOYEES BY INDUSTRY



Computerized presentation of Alaska Dept. of Labor, Statistical Quarterly, First Quarter 1969 to First Quarter 1977.

employment in 1970 to only about 34 percent in 1977. While state and local employment has grown at about the same rate as the total work force, federal government employment has stabilized and therefore declined in relation to other rapidly growing industrial sectors. Table 8 chronologically traces the relative strength of each industry in terms of employment.

TABLE 8

EMPLOYEE INFORMATION TRENDS[a]

Industry	1970	1975	1976	1977[b]
Mining	2.1%	1.9%	1.9%	2.8%
Contract Construction	7.7	10.1	10.4	8.6
Manufacturing	2.2	2.3	2.2	2.4
Transportation, Communications, and Utilities	8.5	10.5	10.1	9.9
Trade	18.8	21.4	21.8	21.1
Wholesale	(4.8)	(5.9)	(5.8)	(5.4)
Retail	(14.0)	(15.6)	(16.0)	(15.6)
Finance, Insurance, and Real Estate	4.3	5.2	5.8	6.0
Services	14.1	19.5	21.3	22.3
Government	34.0	29.1	26.4	26.9
Federal	(10.8)	(14.7)	(13.4)	(13.4)
State	(5.3)	(5.8)	(5.5)	(5.6)
Local	(7.9)	(8.6)	(7.4)	(7.9)
Total Number of Employees	(45,757)	(69,647)	(73,096)	(74,550)

[a]Alaska Dept. of Labor, Anchorage Area Manpower Review, October 1977
[b]1977 based on average from October 1976 to September 1977

The mining industry in Anchorage is mainly comprised of firms connected with oil. Outer continental shelf leasing, exploration and discovery assure growth in this industry. However, even large changes in this sector will have relatively small impact, since presently mining comprises only two percent of the employed work force. Future demand will increase

for clerical and general office personnel, while professional/technical needs will continue to be met from outside the local labor market area.

With the completion of the trans-Alaska pipeline, 1977 construction employment reverted to lower levels than existed in 1974. Local construction activity was very high with a large number of major projects underway. Residential housing construction starts remained at an all time high. This was still insufficient to offset the heavy impact of the completion of the pipeline. As major projects are completed in 1977 and 1978 (the federal building, National Bank of Alaska building, hotel towers, Cook Inlet building, etc.), construction activity should level off or slightly depress. A general statewide decline in construction contributes in the increase in competition for local project opportunities. Projects are not sufficient to cope with the number of people seeking employment in this field. Only statewide activity, such as a gas pipeline or the new capital, could solve this problem in the short term without out-migration or retraining of the surplus work force. An expected tapering off of housing construction in the next few years should only aggravate this problem.

The manufacturing sector is closely related to and affected by the construction industry. Any slowdown in construction should significantly affect this sector's employment picture. However, manufacturing is currently very active and should continue increasing growth in the areas of food products and building products.

Transportation, communications, and public utilities have shown a mixed but basically no growth trend. The amount of general cargo at the Port

of Anchorage and air passengers going through Anchorage continue to increase. The decline in air transport activity associated with the pipeline has been mitigated by increased outer continental shelf (OCS) activity. Communications' employment should increase but presently is hampered at least for Radio Communications of America (RCA) by a rate dispute with the Alaska Public Utilities Commission (APUC). Strikes against the marine ferry system and Wien Air Alaska have also affected employment levels and indirectly affected tourism. Though several areas in this group are highly seasonal, the future growth trend is optimistic and should return to an upward pattern.

Trade is a more stable industry reflecting modest seasonality for the summer tourist season and again for the Christmas season. Trade employment generally flattened out in 1976-77 as retail establishments became conservative in the post-pipeline period. The large number of new firms established recently, especially food services, will begin to increase the number of employment openings. The future is also bright in that Anchorage is reaching the critical market size necessary to support a diversity of businesses, including franchised firms.

Finance, insurance, and real estate have seen a decade of steady growth. New facilities in each of these sectors, such as the new National Bank of Alaska headquarters, assure a steady, if not dramatic, continued growth pattern.

The service industry was particularly flat in 1976 after several years of strong growth related to pipeline activity. Generally, seasonality is not

a strong factor but is reflected in the hotel/motel sector as a result of tourist demands. In 1977 service employment increased rapidly. The Golden Lion Motel/Restaurant opened, two more hotel towers are being added to the total inventory, and possibly a third planned. The short-term prospects seem promising. A major tourist attraction effort appears to be working, and Anchorage should benefit from that. This feeling, plus the long-term role of Anchorage as the service provider to the state, make the future very positive for this industry.

Government has had a more erratic pattern. With a strong seasonality factor, federal employment levels remained steady for two and one-half years and then grew strongly in 1974 and peaked in mid-1975. Levels dropped back to about 10,000 employees, which is approximately five percent higher than pre-pipeline levels. The result is that except for the short-term summer employment the federal government is a major but not a growth factor in the economy. State and local government have, however, grown steadily, without the wide swings of seasonality. The unification of Anchorage government decreased employment levels in 1976, which have since returned upward in 1977. Oil revenues accruing to the state, continued public service employment monies, general growth in municipal services, all point to increasing employment opportunities in these sectors.

Occupational Patterns

As displayed in table 9, occupational patterns have been fairly stable over time. Note, however, the increase in the proportion of service workers

which corresponds to the growth in this sector. Numbers of clerical and sales personnel declined compared to other occupations but still constitute the largest occupational category. Projected demand for specific occupational categories is shown in table 10. The numbers projected annual job openings result both from the growth of the economy and from turnover in present positions. Projections are based on prepipeline rates of growth, so any major economic stimulus on the small Anchorage economy could significantly alter the projections.

TABLE 9

OCCUPATION OF EMPLOYED CIVILIANS

Occupation	1970[a]	1977[b]
Professional, Technical	19.6%	19.1%
Managers, Officials	12.0	13.8
Clerical, Sales	28.4	24.6
Craftsmen, Foremen	15.1	13.0
Operatives	7.6	7.2
Service Workers	12.3	16.5
Laborers	4.1	5.8

[a]U.S. Bureau of the Census, April 11, 1973

[b]Alaska Dept. of Labor, Anchorage Annual Planning Report for 1978, 1977.

TABLE 10

EMPLOYMENT FORECAST BY OCCUPATION, ANCHORAGE[a]

Occupation	1977 Estimated Employment	1978 Estimated Employment	1982 Estimated Employment	Avg. Annual Job Openings 1977-82
Total - All Occupations	82,500	89,600	113,700	9,300
Professional, Technical	15,720	17,195	22,390	1,990
Managers, Officials, Proprietors	11,420	12,290	15,240	1,070
Sales Workers	4,130	4,430	5,440	355
Clerical Workers	16,180	17,660	22,870	2,395
Service Workers	13,620	14,960	19,560	1,735
Crafts, Operatives, Laborers	21,380	23,010	28,140	1,750
Farmers and Farm Workers	45	50	55	5

[a]U.S. Bureau of the Census, April 11, 1973

Group Employment and Occupation Differences

Race is a strong predictor of employment trends. Blacks living off military bases are disproportionately employed by the federal government (31.5 percent). Half of these, however, reflect military employment. Approximately 37 percent of all blacks in Anchorage are military employees. Transportation, communication, and utilities employ 15.7 percent; nonprofessional services, 12.2 percent; construction, 11.4 percent; and finance, insurance, and real estate, 9.7 percent. Predominant occupations for blacks, including services (21.1 percent) and armed forces (15.2 percent), tend to be semi-skilled blue collar and white collar positions.

Alaska natives are employed most often by nonprofessional services (27.4 percent), federal (20.1 percent) and state government (8.1 percent), and the construction industry (16.4 percent). The occupations are more often unskilled laborers (11.8 percent), clerical and sales (22.0 percent), and service workers (17.5 percent).

Other racial minorities are disproportionately found in nonprofessional services (38.5 percent) and commercial fishing (5.5 percent) as service workers (23.1 percent) and unskilled laborers (20.1 percent).

While all minorities tend to hold lower prestige occupations, this tends to mask a significant number of minorities in managerial and professional positions. About one-fifth to one-fourth of each minority are so employed. Whites, on the other hand, are found in these positions about 40 percent of the time and are two to two and one-half times more likely to have professional/technical occupations. In industry, whites are more often found in mining (4.3 percent), retail-wholesale trade (12.8 percent), and professional services (12.0 percent).

Employment patterns also strongly differ when comparing males and females. Males are more often found in mining (5.6 versus 1.9 percent) and construction (19.1 percent males versus 2.0 percent females) industries. Females are found in finance, insurance and real estate (10.4 percent females versus 4.8 percent males), professional and other services (35.0 percent females versus 17.8 percent males), and education (9.3 percent females versus 3.6 percent males). Blue collar occupations (craftsmen, operatives, and laborers) are dominated by males (37.8 versus 7.1 percent),

while females dominate clerical, sales and service workers (58.4 percent female versus 12.0 percent males). While men occupy a greater proportion of professional, technical, and managerial occupations, the discrepancy between males and females is less than in the occupations mentioned above (42.7 versus 32.8 percent).

Income Structures and Cost of Living

There has been a dramatic alteration of the income patterns in Anchorage within the last decade. In 1969 the median "family" income was $13,590. The median income for unrelated individuals was $3,936. By 1976 total "household" median income was estimated to be $30,115. Per capita income in 1969 was $4,196, and in 1976 was estimated to be $10,377 (Alaska as a whole was $10,178). Table 11 compares the consumer price index with per capita income. Between 1974 and 1976 income was rising at twice the rate of cost of living. This occurred for a number of reasons. First, the average monthly wage has escalated rapidly. As table 12 illustrates, wages rose about 213 percent between 1969 and 1977. General inflationary pressures and the high wages due to pipeline construction activity spilled over into other industrial sectors, forcing a general increase in all wages. The second reason is that Anchorage has always had both a high percentage of women participating in the civilian labor force (1970, 41.7 percent; 1978, 43.0 percent [this is about three to four percentage points higher than the national average]), and a relatively high number of employed persons per household (1.5 in 1977). These factors foster a high total household income. Table 13 demonstrates the impact of additional wage earners on total household income. With 47.4 percent of the house-

holds having two or more employed adults, one can easily recognize the effect.

TABLE 11

PER CAPITAL INCOME AND CONSUMER PRICE INDEX

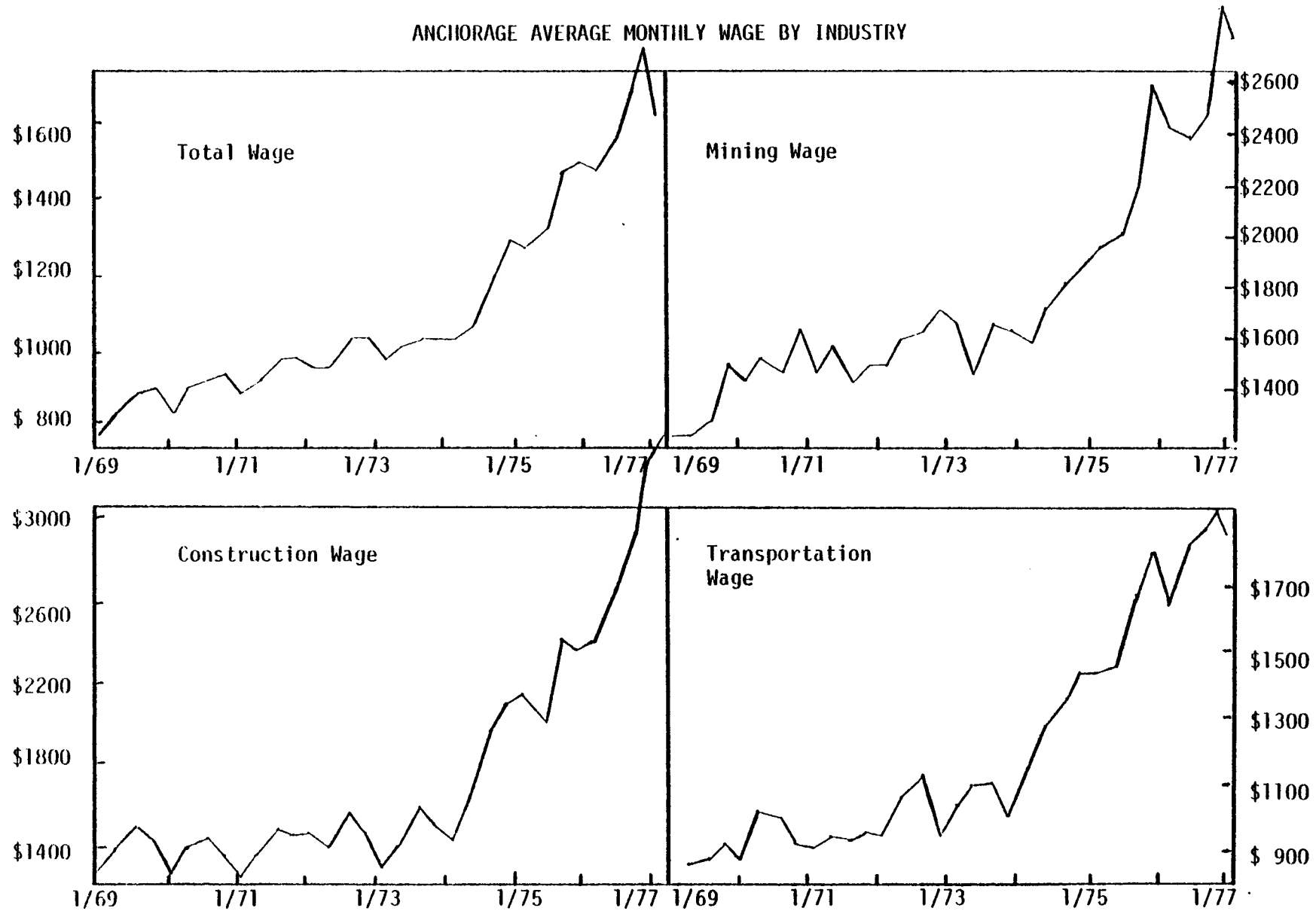
Year	Anchorage Per Capita Income	Anchorage Real Per Capita Income	Anchorage Yearly Avg. CPI[a]	U.S. Per Capita Income	U.S. Real Per Capita Income	U.S. Yearly Avg. CPI[a]
1969	$ 4,196[b]	$ 3,910	107.3	$ 3,119	$ 2,823	110.5
1973	5,823[c]	4,820	120.8	5,049	3,793	133.1
1974	7,159[c]	5,347	133.9	5,486	3,714	147.7
1976	10,377[d]	6,234	164.1	6,441	3,778	170.5

[a]Alaska Dept. of Commerce and Economic Development, 1977
[b]U.S. Bureau of the Census, April 11, 1973
[c]U.S. Dept. of Commerce News, October 1976
[d]Anchorage Urban Observatory, 1977

1969 is an October 1969 figure rather than annual average.

TABLE 12

ANCHORAGE AVERAGE MONTHLY WAGE BY INDUSTRY



Computerized presentation of Alaska Dept. of Labor, Statistical Quarterly, First Quarter 1969 to First Quarter 1977.

TABLE 13

MEDIAN INCOME STATISTICS[a]

Households Headed By:	Median Household Income
Male	$ 31,379
Female	13,177
White	$ 30,395
Black	18,713
Alaska Native	20,860
Other Minority	24,472
Own	$ 34,526
Rent	18,433
0 Employed Adult	$ 9,989
1	26,515
2	32,307
3	38,172
4 or More	56,610
1 Persons Household	$ 15,697
2	27,861
3	31,747
4	33,867
5	36,062
6 or More	33,685

[a]Anchorage Urban Observatory, June 1977, unpublished

The economic activity of the pipeline and general economies of scale operating within the transportation industry have permitted the consumer price index in Anchorage to rise at about the same rate as the U.S. average. While Anchorage per capita income rose 247 percent in seven years, the cost of living rose only 53 percent. The problem is that the relative buying power of the Anchorage dollar is not the same as the U.S. average. Using the U.S. urban average as a 100 base, Anchorage stands at about 131. Using this as a guide, Anchorage per capita income would have had to be $4,086 in 1969 to be on a par with the U.S. average. With an

income of $4,196, Anchorage was $110 above this base. Thus, Anchorage had a per capita purchasing power roughly equivalent to the U.S. urban average. By 1976 the adjusted income in Anchorage would have had to be $8,438 to equal the U.S. average. Actual income was $1,939 above this base. Even if the 42.1 percent difference generated by relating urban family budgets is used, Anchorage per capita income would be $1,224 above the cost of living allowance (COLA) adjusted U.S. average. Table 11 shows the adjusted per capita income of both Anchorage and U.S. average and reflects the gains Anchorage has made. Basically, the U.S. average income has not kept up with inflation, while Anchorage incomes have moved proportionately upward.

Another way to view income is to look at the cost estimates for urban family budgets. Using the intermediate family-of-four budget, Anchorage families had to have an income of $23,071 to maintain buying power compared to the U.S. urban average income family earning $16,236. The actual median income for a four person household in Anchorage is $31,747. Within this household type, 89.5 percent are above the lower budget (which represent 80.5 percent of all Anchorage households), 78.6 percent are above the intermediate budget (which represent 63.8 percent of all Anchorage households), and about 49.7 percent are above the highest budget (which represent 40.9 percent of all Anchorage households) (see table 14).

Income gains, however, have not been evenly distributed throughout the Anchorage population. Female heads of household earn $18,202 less than male heads of household. This is due in part to differential earning power of the heads of household ($11,537 for females and $24,284 for

males), and the fact that the male head of household has a greater chance for multiple wage earners in the same household (39.2 percent of female households are made up of only one adult compared to 8.9 percent for male households). In addition, female heads of household participate in the work force at a rate 11.3 percent below males and have an unemployment rate twice that of males.

TABLE 14

COST ESTIMATE FOR URBAN FAMILY BUDGETS, AUTUMN 1976[a]

Urban Area	Lower Budget	Index Difference	Intermediate Budget	Index Difference	Higher Budget	Index Difference
Anchorage	$16,492	164.2	$23,071	142.1	$33,273	140.0
Seattle-Everett	$10,771	107.3	$16,204	99.8	$22,935	96.5
U.S. Urban Average	$10,041	100.0	$16,236	100.0	$23,759	100.0

[a]Alaska Dept. of Commerce and Economic Development, The Alaskan Economy, 1977

The income gap between whites and racial minorities is not as severe, but nonetheless significant, as noted by table 13. This is partially due to three factors: 1)lower earning power of the minority heads of household compared to whites, 2) greater proportion of female heads of household for blacks (20.6 percent) and Alaska native (24.1 percent) compared to whites (9.5 percent), and 3) higher unemployment rates for Alaska natives.

OTHER ECONOMIC DATA

Payroll

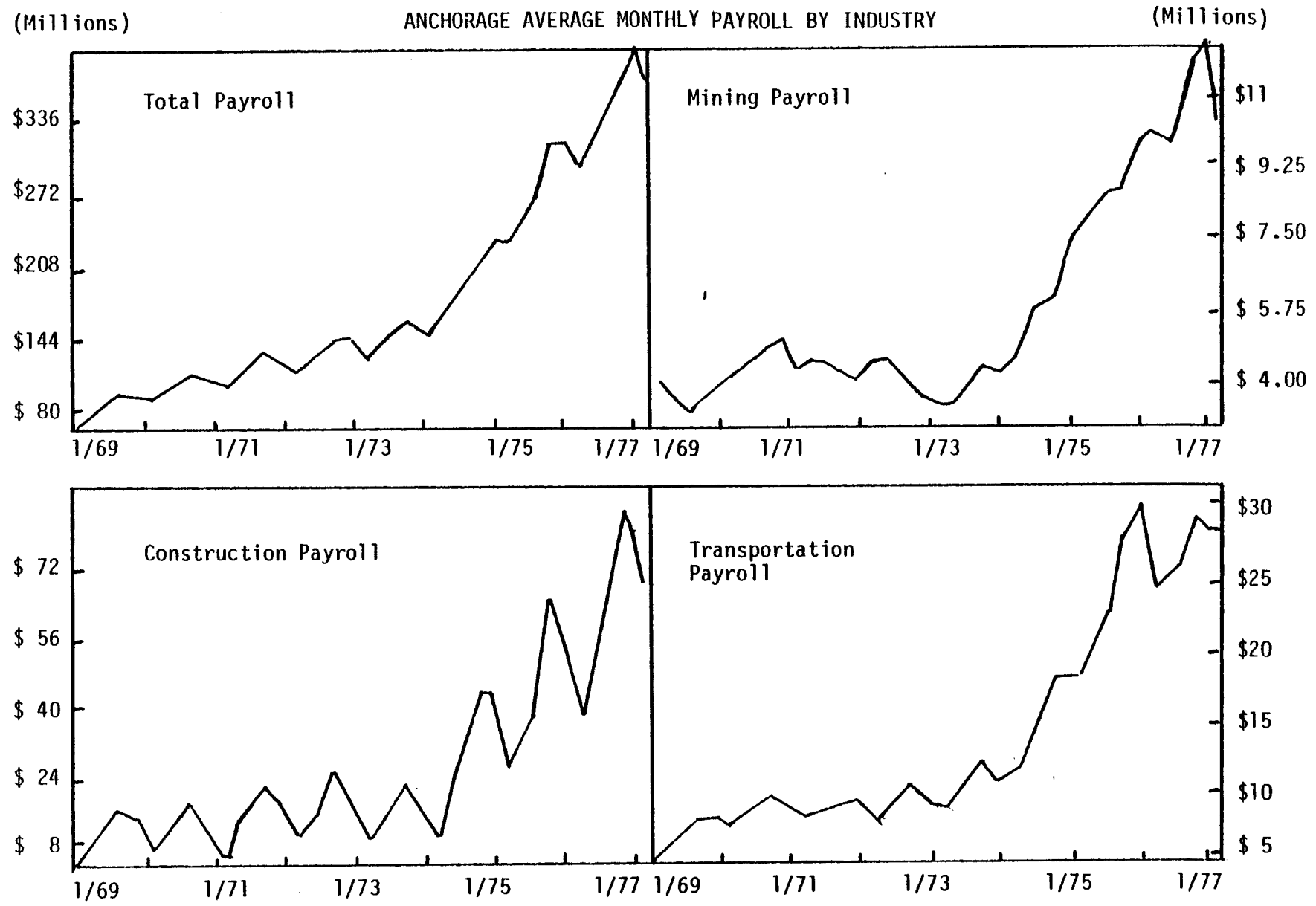
The total quarterly payroll for the Anchorage metropolitan area is an excellent indicator of the general growth and economic health of the area. Payroll combines both employment totals and monthly wage to produce an overall indicator of economic conditions. Table 15 outlines the total nonagricultural payroll over a 33-quarter period as well as three barometer industries related to future OCS development - mining, construction, and transportation.

Total nonagriculatural payroll demonstrated a slow but upward growth from 1969 to 1973 when the pipeline boom caused major gains in all industrial sectors. Payroll reached its peak in the third quarter of 1976. The end of pipeline construction was countered with seasonal increases. Despite these shifts, the total growth rate of 455 percent over the entire period yielded a 55 percent annual growth rate.

The mining industry peaked in 1970 with Cook Inlet oil activity and then decreased to a low point in 1972. The pipeline period saw very rapid increases beginning in 1973 and declining sharply only in the last quarter of 1976. This represented a 275 percent total increase. If one considered the low and high points exhibited, the increase would have been as high as 421 percent.

The construction industry is the most susceptible to seasonal employment trends. It is also a major beneficiary of both direct and indirect oil

TABLE 15



Computerized presentation of Alaska Dept. of Labor, Statistical Quarterly, First Quarter 1969 to First Quarter 1977

and gas activities induced growth. As the growth spiraled after 1973, seasonal swings in construction became extreme. For example, between the third quarter of 1976 and the first quarter of 1977, payroll declined 23 percent. Despite this, the overall increase was still 1,000 percent, more than double the rate of the total industrial payroll.

The transportation industry is similar to construction with less extremes in seasonality (though the same pattern of wide variation occurs as the growth rate increases). The industry peaked in 1975, a year earlier than the other trends. The overall increase was 564 percent (643 percent to its 1975 peak).

Business Activity

A supplemental indicator of the health of the economy is the amount of business activity in the metropolitan area. In 1971 the gross business receipts of Anchorage were $1,110,205. A growth rate of 15.1 and 10.0 percent followed in 1972 and 1973. In normal times, this could be seen as vigorous economic growth. However, gross business receipts climbed 62.5 percent in 1974 and 49.7 percent in 1975. By 1975 receipts totaled $3,419,879. (Alaska Dept. of Commerce & Economic Development, 1977)

Attitudes Toward Change and Perceptions of Development

It would be difficult for any one individual to seriously alter the dynamics of the Anchorage economy. Aggregate public opinion, however, is important now and in the future. Since major decisions relating to development are so intertwined with governmental action, the role of collective opinions can be devastating or instrumental for major economic investment decisions. The purpose of this section is to provide a picture of citizen attitudes toward growth and development. This section is based on survey research carried out by the Anchorage Urban Observatory. Unless noted, the data presented are based on a sample of 584 Anchorage households interviewed in June 1977. A discussion of the methodology and basic data are found in Ender, 1977b, with specialized analysis in Ender, 1977c and 1977d.

PERCEIVED PROBLEMS IN ANCHORAGE

The Anchorage citizens are very concerned about population growth and the resulting urban problems which growth generates. When asked what is the most important problem facing Anchorage tody, 57.4 percent responded with two general categories of answers (see table 16). Growth, overpopulation, and transiency issues constituted the most mentioned topics. Eliciting such a high proportion of responses for any one topic on an open-ended question is unusual. This would suggest that concern over the rapid pace of growth and change is unsettling to a broad section of the population.

The second topics mentioned were traffic and transportation issues. Complaints about roads, congestion, and maintenance of the transportation system constituted 27.7 percent of the responses. The transportation system is the most

visible and frequently encountered consequence of rapid growth. With well over one-half of the responses clustering on these two interrelated topics, the consistency of opinion becomes apparent. Interestingly, the pipeline, the cause of the growth, was mentioned as a problem only .4 percent of the time.

While no other issue ranks near the first two, the balance of the responses are significant. Public safety and general government/taxes/services received interest. Economic issues (seven perceng) are about equally divided between the unemployment/job issue and the cost of living. One should note that compared to Anchorage citizens' attitudes on national polls, economics is listed more often as a serious problem. Environmental quality and pollution received 1.4 percent of the mentions in this study. This could be an indicator of the strnegth of specific environmental concerns. However, this is misleading to th extent that general concern with growth is a measure of the concern of respondents for their community's environment.

TABLE 16

PROBLEMS IN ANCHORAGE

Issue	%
Growth, Overpopulation, Transiency	29.7
Transportation, Traffic Congestion, Number of/and Deficiencies in Roads	27.7
Public Safety	9.0
Government/Taxes/Services	9.0
Economics/Unemployment/Prices	7.0
Social and Health Issues	5.9
Environmental Pollution	1.4
Pipeline	.4
Other	5.5
None/Don't Know	4.4
	100.0

POPULATION PREFERENCES AND PREDICTIONS

The concern about growth is translated into specific preferences to limit population growth. Only 13.8 percent wanted to increase Anchorage's population, and 34.8 percent wanted to decrease it. A plurality (47.7 percent) preferred the same level as exists today. When asking the sample what would be their population preference, the responses ranged from under 20,000 to over one million. However, the mean and median amounts were just below the present levels of 197,000.

While most residents did not want Anchorage to grow, most pragmatically thought that it would regardless of their interests. Only 2.6 percent felt it would maintain its present level or decrease. The median response for the expected population in 1990 is 350,390, and the mean was 401,430. These expectations appear overly cynical since OCS population scenarios suggest that the population will be substantially lower.

COMMUNITY VALUES

Anchorage residents face a dilemma in their preference for limiting population growth and encouraging economic development. This dichotomy is illustrated in their values concerning their community. Table 17 illustrates responses given to questions of what is valued most and least about living in Anchorage. Responses indicating things least valued reflect answers to an earlier question of the greatest problems in Anchorage, i.e. growth and transportation system. Cost of living, distance from the lower 48, and climate received greater attention than in the previous question. The qualities valued most highlight two very different

orientations. Some 20.8 percent mentioned economic opportunities as highly valued. Conversely, 28.8 percent of those polled mentioned the Alaskan environment, its beauty, clean air and accessibility, and the potential for an outdoor lifestyle (28.8 percent is an aggregate of those categories mentioned). Those topics accentuate the two major rewards of Alaskan living which are in some ways incompatible - the natural beauty of Alaska and its potential for economic rewards.

TABLE 17

WHAT CITIZENS VALUE MOST AND LEAST ABOUT LIVING IN ANCHORAGE

Value Most	%	Value Least	%
Everything	6.7	Everything	.6
Economics/Job/Opportunities	20.8	Growth, Overpopulation, Transiency	27.7
Open Space, Access to Outdoors	15.4	Transportation, Traffic Congestion, Number of/ and Deficiencies in Roads	20.8
Family/Friends	9.1	Prices, Cost of Living	9.0
Beauty of Alaska	7.5	Climate	8.6
Recreation/Culture	6.6	Social, Health, Public Safety	3.3
Convenience to Services	6.6	Government/Taxes/Services	2.5
Clean Air/Environmental	6.3	Distance from Lower 48	2.3
Climate	4.8	Lack of Culture/Recreation	2.0
Other	7.4	Environmental Pollution	2.0
None/Don't Know	8.8	Other	9.5
		None/Don't Know	11.1
	100.0		100.0

While environmental reasons are most often mentioned as values for staying in Alaska, respondents were also asked why they moved to Anchorage. Fifty-three point eight percent said they came to Anchorage for reasons of economic opportunity. Only 3.7 percent mentioned environmental factors

associated with an "Alaskan" lifestyle as the reason from coming to Alaska.

ATTITUDES TOWARD GROWTH AND DEVELOPMENT

Concern over growth does not preclude endorsement of specific economic options which would be beneficial to the Anchorage economy even if at the risk of increasing population expansion. When asked how new job opportunities should be expanded, only 6.9 percent said few new jobs should be opened. Moreover, 49.8 percent responded rapidly, and 37.3 percent said slowly. When measured against one's personal economic livelihood, the sampled majority supported expansion of economic opportunities at the possible expense of more aesthetic values.

To measure the differential attitudes toward development alternatives, 12 options were presented for evaluation (see table 18). The majority of respondents supported encouraging development for ten of the alternatives. Seven of the options have strong support with over 70 percent favoring the development option. All are traditional Anchorage industries (transport and storage, the port, trade, and tourism), or "clean" industries in that they are not involved in primary refinement of raw materials (education, health, and light manufacturing). While educational and health facilities are categories which are "easy" to support, encouragement may be indicative of perceived deficiencies in the present delivery system.

As a second level of support, a clear but smaller majority chose to encourage petrochemical, finance, banking, real estate, and hard refining industries. The lower level of support for finance, banking, and real estate seems

unusual and may be a reaction to the speculative period through which the real estate industry has moved. Dramatic escalation of housing costs may have fostered resentment and subsequent negative reaction.

TABLE 18

ECONOMIC AND DEVELOPMENT ACTIVITIES FOR ANCHORAGE

Activities	Encourage	Discourage[a]
Educational and Research Facilities	91.5%	5.8%
Medical and Health Facilities	87.9	7.4
Light Manufacturing	80.3	13.7
Transport and Storage Facilities	78.7	11.9
Retail and Wholesale Business	77.0	15.1
Deep Water Port	74.7	12.7
Tourism	73.0	21.6
Petrochemical Industries	59.2	34.8
Finance, Banking, Real Estate	55.3	36.9
Refining Hard Rock Minerals	51.8	38.3
Government Civilian Services	46.9	44.9
Military	32.3	58.9

[a]Residual responses were no opinion.

The petrochemical industry is supported by 59.2 percent of the respondents, while 34.8 percent would discourage development in this area. Based upon this level of support for the oil industry, one might classify Anchorage as an oil town. The petrochemicals industry is generally supported. When the same question was asked in five communities on the Kenai Peninsula, support for that industry ranged from 17.4 percent in Homer to 55.0 percent in Kenai (a town heavily depdendent on oil) (Hitchins, et al., 1977).

Development of government employment (civilian and military) received minimal support. About the same number of people would encourage or discourage civilian government, and a majority would discourage military expansion.

This seems interesting in light of the historical role of government as a primary employer in Anchorage. The largest single employer is still government. About 28.4 percent of the heads of household and 26.5 percent of all employed adults in the households interviewed work for some level of government. (This excludes those living on the two military bases.) If any conclusion can be made, it is that citizens would prefer future growth to occur in the private sector rather than the public sector.

Group Characteristics and Their Relationship to Growth and Development Attitudes

Race. The impact of race on development attitudes is marginal. Alaska natives tend to be most opposed to the rapid urban growth pattern found in Anchorage (67.3 percent would rather have fewer people living in Anchorage compared to 47.7 percent for the population as a whole). Blacks, on the other hand, are the most pro-growth group. The economic realities of these two groups in terms of employment opportunities make both blacks and Alaska natives much more supportive of rapid job expansion compared to whites (62.6 percent, 66.4 percent, and 48.5 percent respectively). In terms of the oils and gas industry, blacks are clearly more supportive of its expansion than any other groups (see table 19).

Income. Income differences on development issues are not strong. Those with incomes between $17,500 and $39,900 tend to favor maintenance of existing population levels. Low (less than $17,500) and high (above $40,000) income persons, however, slightly favor general

TABLE 19

GROWTH AND DEVELOPMENT ATTITUDES BY

SOCIO-ECONOMIC CHARACTERISTICS IN THE POPULATION

Characteristics	% Favoring Fewer People in Anchorage	% Who Would Encourage Petrochemical Industry
Race		
White	47.3	59.0
Black	35.1	71.8
Alaska Native	67.3	60.0
Other	53.5	49.9
Income		
Less than $17,499	43.6	52.0
$17,500 - $29,999	52.7	60.7
$30,000 - $39,999	49.1	59.1
Greater than $40,000	44.8	65.4
Length of Residence		
0 - 1.9 Years	35.9	54.2
2.0 - 3.9	42.6	64.7
4.0 - 7.9	41.0	53.6
8.0 - 16.9	57.0	59.4
17.0 - Highest	60.3	65.1
Education		
Less than a High School Diploma	51.9	58.7
High School Diploma	51.3	69.8
1 to 3 Years of College	48.3	56.4
4 or More Years of College	37.9	47.4
Age		
18 - 24 Years	49.4	50.6
25 - 34	43.7	50.4
35 - 45	47.3	62.6
46 - 59	53.9	76.8
60 and Older	38.3	74.0

TABLE 19, continued

Characteristics	% Encourage Fewer People in Anchorage	% Who Would Encourage Petrochemical Industry
Occupation		
Professional/Technical	42.5	44.9
Manager/Official	51.0	69.7
Clerical/Sales	45.9	54.4
Craftsmen	22.3	71.8
Operative Workers	54.1	75.2
Service Workers	55.4	50.2
Laborers	58.3	67.9
Armed Forces	46.5	69.2

population and job expansion. Carried through to specific industries only, high income persons more than any other income group consistantly support industrial development.

Length of Residence. There is a linear relationship between how long one lives in Anchorage and one's desire to inhibit growth. This trend is not operative in relation to demands for job opportunities or to the encouragement of specific industries. In these two cases, length of residence has no bearing on attitudes about development.

Sex. There are no significant differences between male and female respondents concerning growth and development.

Education. A number of inconsistencies appear in an analysis of responses and educational achievement. Well educated persons (4 years of college or more) support population expansion in the Anchorage

area. This group is less dependent on a rapidly expanding job market or on industrial development; therefore, they become least supportive of growth in these areas.

Ownership of Housing and Type of Housing. There are no significant differences concerning growth and development attitudes when comparing either ownership of housing or type of dwelling unit in which one lives.

Age. The impact of age on attitudes regarding growth varies. Those over 60 years of age consistently maintain a more positive view of development than the population in general. Age appears to be a much better predictor of attitudes in relation to specific industrial development. The petrochemical industry is the clearest example of this. The older one is, the more one supports expansion of this industry. The greatest level of support for development in almost all areas is generally found in the 46 to 59 year old group. The only exception is government civilian services. In this case, those under 25 years are most supportive (58.3 percent), while the 45 to 59 year old group tends to discourage development in this area (51.9 percent). This difference might be the function of a public (the younger) versus private (older) sector orientation.

Occupation. Analysis of the occupations of respondents produces a number of general tendencies. Craftsmen are fairly consistent in their pro-growth attitudes, favoring a growing community and expansion of industries requiring craftsmen. Operatives, laborers, and managers

vary somewhat but also are generally supportive of growth options. Professional/technical, clerical, and service workers produce a more mixed result but are less supportive of development in heavy industry options (i.e. petrochemicals) and more supportive of growth in white collar industries (i.e. education, finance, etc.).

PERCEPTIONS OF SERVICE QUALITY AND FUTURE PRIORITIZATION

The Municipality of Anchorage and private utilities provide a wide variety of public services to the area's citizens. These range from traditional public safety and road maintenance functions to newer programs in such areas as manpower training, noise and air pollution, and community schools programs. Table 20 reviews 32 types of services and the general "good job-bad job" assessment by the respondents of the Municipality service delivery. The measure used was a seven point semantic differential scale ranking the mean of each scale in order to evaluate the relative standing of each service within the list. The closer the mean is to 1.0, the better the service ; the closer to 7.0, the worse the job performance was judged.

Generally, recreation and leisure services and public safety (except for animal control) are rated positively. Utilities range from electricty, garbage collection, and water service, which rank positively to sewer and telephone systems that elicit a mixed ranking. Roads and general planning are ranked low. This trend corresponds to initial responses to an earlier question regarding major problems in Anchorage. For example, 42.7 of the 1977 Anchorage survey sample responded "very poor" to road maintenance

TABLE 20

PERCEPTION OF PRESENT PERFORMANCE OF LOCAL SERVICES

Rank	Municipal Service	Mean Score	
1	Bike Paths	2.258	
2	Fire Protection	2.390	
3	Ambulance Service (EMS)	2.427	
4	Electricity	2.670	
5	Garbage Collection	2.672	Very Good Job
6	Public Libraries	2.707	
7	Community Schools and Centers	2.806	
8[a]	Parks	2.876	
8[a]	Health Services	2.876	
10	The Water System	2.936	
11	Street Lighting	3.115	
12	Bus System	3.159	
13	Recreation Activities	3.188	Good Job
14	Elementary Public Schools	3.223	
15	Police Protection	3.248	
16	Senior High Schools	3.434	
17	Enforcing Traffic Laws	3.534	
18	Junior High Schools	3.537	
19	The Sewer System	3.598	
20	Controlling Air Pollution	3.650	Mixed Reaction
21	Service for Elderly	3.731	
22	Telephone Service	3.770	
23	Traffic Control	3.944	
24	Manpower Training (Program for Unemployed)	4.032	
25	The Municipality of Anchorage Since Unification	4.070	
26	Noise Pollution Control	4.095	
27	Building Inspections	4.126	Poor Job
28	Animal Control	4.179	
29	Zoning Regulation	4.341	
30	Planning for Growth	4.400	
31	Paving and Widening Present Roads	4.594	Very Poor Job
32	Downtown Parking	4.652	
33	Road Maintenance and Repair	5.382	Extremely Poor Job

[a]Tie rank

and repair. Programs dealing with pollution control and social services drew a mixed to poor ranking, while the public school system and health services received a mixed to good score.

Based upon the results of this survey, it appears that respondents are not generally satisfied with the Municipality in terms of general performance. This may be due to unrealistic expectations of the effects of unification. In the October 1975 Anchorage Urban Observatory survey, 62 percent of the sample thought services would get better, while only 20 percent felt nothing would change. It is possible that citizens overestimated the ability of local government to meet their needs and generally improve the quality of local government. The result is a gap between public expectations and perceived municipal performance.

One reason for this problem is people's perception of their neighborhood services compared to those in other areas of Anchorage. Thirty percent of the respondents felt their neighborhood services were not at good as those in other Anchorage neighborhoods. Comparing opinions assessed in 1975 and in 1977 (see table 21), it appears that there has been an incremental decline of favorable opinion of the Municipality's performance. The majority of respondents indicated that while maybe services have not improved, they have not become worse.

TABLE 21

COMPARISON OF NEIGHBORHOOD SERVICE

EVALUATION BETWEEN 1975 AND 1977

Neighborhood Evaluation	1975[a]	1977[b]
Better than Other Areas	38.8%	14.8%
About the Same	34.9	43.1
Not as Good	16.9	30.2
Don't Know	9.3	11.9
	99.9%	100.0%
(n)	(504)	(403)

[a]Ender, 1976

[b]Ender, 1977b

Support Levels for Specific Service Categories

Applying a general spending philosophy to specific service categories is complex and can lead to conflict over priorities. Thirty-eight separate municipal services were presented to each of 400 respondents in a telephone survey in February 1977. The responses constitute the data for the analysis. See Ender, 1977a for a discussion of the methodology and findings.

Respondents were asked to rate each service in terms of increasing the service, maintaining it at present levels, or cutting it back. In addition, this section of the questionnaire was prefaced by a warning that one must balance service increases by service cuts or suffer increased taxes. Respondents found it much easier to increase services than to reduce them. In applying general philosophy to specific situations, decision-makers must be aware that the result for this item may tend to contradict earlier attitudes.

Table 22 ranks the 38 service categories by support levels. The services are grouped into four levels of priorities. Individual rankings are derived from two scores - the arithmetic mean of each service scale and the percent favoring service increases. The former represents an aggregated support for the service, while the latter denotes client demands for improvement. An overall rank is developed by averaging the two.

TABLE 22

CONSTITUENCY SUPPORT LEVELS FOR SPECIFIED MUNICIPAL SERVICES

Overall Rank	Services	Ranked by Arithmetic Mean Scores	Ranked by % Favoring Increases
	Highest Priority		
1	Maintaining and Repairing Present Roads and Streets	1	1
2	Widening and Paving Present Roads	2	2
3	Police Protection	3	3
4	Traffic Control	4	4
5	Drug Abuse	8	5
6	VD Clinic	6	10
7	Animal Control	7	9
8	Alcohol Control	12	6
9	Emergency Medical Service	5	14[a]
	Strong Priority		
10	Transportation Planning	10	12
11	Downtown Parking	15	8
12	Recreation	13	11
13	Mental Health Care Program	11	16
14	Clinics for Babies to Get Checks and Shots	14	13
15	Manpower Training	21	7
16	Fire Protection	9	20
17	Social Services	20	14[a]
18	Home Health Care	16	18
19	Community Schools and Centers	19	19
20	Libraries	17	20

TABLE 22, continued

Overall Rank	Services	Ranked by Arithmetic Mean Scores	Ranked by % Favoring Increases
	Moderate Priority		
21	Building New Roads	25	17
22	Bus System	18	24
23	Parks	22	21
24	Sanitation	23[a]	25
25	Planning for Residential Growth	26	23
26	Snow Removal	23[a]	28
27	Building Safety	27[a]	26
28	Family Planning	27[a]	27
	Low Priority		
29	Zoning	32	29
30	Performing Arts	31	20
31	Museum	29	33
32	Planning for Commercial and Business Growth	33	31[a]
33	Port	30	35
34	Equal Employment Opportunity	35	31[a]
35	Air Pollution	36	34
36	Garbage Collection	34	38
37	Noise Control	38	36
38	Civil Defense	37	37

[a]Tied Ranks

The table illustrates strong support and high priority for three service areas. The first is transportation. Within that service area road maintenance (first), road improvement (second), and traffic control (fourth) dominate the list. Transportation planning (tenth) and downtown parking (11th) also receive strong support. Despite this intense concern for the traffic problem, mass transit or the bus system (22nd) is not necessarily viewed as a method of solving the problem.

The second priority service area is public health. Drug abuse (fifth), veneral disease clinics (sixth), and alcohol control (eighth) were ranked

as highest priority. Three other health areas fell within the strong category. Only family planning (28th) is not within the first 20 services.

The third service priority area is public safety with police protection (third), animal control (seventh), and emergency medical service (EMS) (ninth) ranked as highest priority area. Fire protection (16th) also ranks as strong, but building safety and civil defense fail to find strong public support.

The areas of leisure and human development fall into a middle support category. Recreation activities rate much higher than parks. Community schools and libraries also receive good support, while performing arts and the museum rate quite low. Of the three human development programs, manpower training (15th) and social services (17th) are both strongly supported, while equal employment opportunity ranked a weak 34th.

The two areas which attract inconsistent support are community development and environmental protection. None of the seven programs or services in these two areas rank in the top half of the priorities. Two patterns appear to emerge in these two areas. The majority of the residents either support maintaining the present level of service or are divided in their opinion over whether to increase or cut back on the service. For example, 72 percent of the sample favoring maintenance of current levels of garbage collection. People appear to be generally satisfied and see no need for improvement. However, about 23 percent support an increase and 23 percent support a cut in services related to noise control. There is significant division of public opinion over this service with no clear message for the

public official.

It appears that in no case does a majority or even a plurality of respondents support a service cutback of any program. The key to understanding the various support levels comes in measuring the difference between maintenance and improvement. Seventy-six percent of the sample population is willing to increase taxes in order to maintain and repair the roads and streets of Anchorage. This is an unusually strong and consistent opinion and represents a major demand on the governmental system, whether state or local, to do something about this clearly identified problem. Contrast the support for road and street maintenance with the lack of it for civil defense. Only 17 percent favored an increase, while 60 percent wanted to maintain the present program.

In addition to evaluating support for specific services, each of the seven general program areas were evaluated. As table 22 suggests, whether one looks at the support of the general program titles or averages the service ratings within each program, the result is the same. Transportation clearly ranks first, with public health and safety ranking a strong second level of support. Leisure and human development occupy a middle level, and community development and environmental protection warrant the least public interest for improvement.

REVENUES AND EXPENDITURES

The size, complexion, and role of local government in the Anchorage Bowl has changed commensurately with the growth of the area. Beginning as a tent city for railroad construction, Anchorage incorporated in 1920 and grew through population increases and annexation until unification with the Greater Anchorage Area Borough in 1975. The Borough had been established in 1963 by state mandate to provide areawide service to the region. Local government in Anchorage is just completing a transitional period resulting from unification of the former city and borough governments. Using different fiscal years, the new Municipality ran parallel budgets and took the first two years to integrate the various services and develop the management systems necessary to monitor the fiscal process.

Four tables (23 through 26) summarize the revenues and expenditures of the former City of Anchorage and the former Greater Anchorage Area Borough (GAAB). The data are inherently incompatible. First, the city worked on a January through December fiscal year while the GAAB observed a July through June year. Second, the categorization of expenditures does not lend itself to aggregation. The new Municipality did develop a six-month budget (July 1, 1976, to December 31, 1976) allowing the GAAB to syncronize its budgets with the city's. In 1978 the Municipality of Anchorage completed the first combined expenditure budget (see table 27). Despite these difficulties, local government in Anchorage has expanded rapidly in recent years. In five years, GAAB expenditures increased 263 percent and revenues went up 266 percent. The city's expenditures increased 223 percent

TABLE 23

GENERAL REVENUES BY SOURCE[b]

City of Anchorage Service Area

Fiscal Year	Taxes[a]	Licenses and Permits	Fines and Forfeits	Charges for Services	Rents and Interest	Contributions from Other Funds	Revenue From Other Agencies	Cost Recoveries	Other	Total
1969-70	$6,174,700	$288,695	$714,803	$ 886,808	$133,953	$ 854,727	$1,924,254	$1,420,380	$116,695	$12,515,015
1970-71	7,076,804	311,829	740,574	1,679,714	135,312	1,140,149	3,135,346	680,451	154,850	15,055,029
1971-72	8,027,181	384,876	729,585	1,988,796	241,864	1,273,286	4,223,549	686,098	40,181	17,795,416
1972-73	8,400,888	371,034	816,227	1,820,148	354,298	1,233,841	3,953,862	732,830	434,248	18,117,376
1973-74	7,991,383	458,647	700,197	2,382,948	551,051	2,527,923	5,615,951	1,715,719	337,271	22,281,090
1974-75	10,785,553	526,549	568,567	3,071,778	589,198	2,632,144	6,701,590	1,701,200	660,349	27,237,928
1975-76	12,893,227	547,388	416,801	4,137,622	664,359	1,329,113	6,496,360	134,096	597,573	27,216,539

[a]Includes payments in lieu of taxes from city owned utilities for years 1967-1973.
[b]Municipality of Anchorage, Annual Financial Report of the Municipality of Anchorage, City of Anchorage Service Are 1976, 1977.

TABLE 24

GENERAL GOVERNMENTAL EXPENDITURES BY FUNCTION[b]

City of Anchorage Service Area

Fiscal Year	General Government	Public Safety	Highway and Streets	Sanitation	Culture Recreation	Airport	Debt Service	Payments To Special Assessment Fund	Other	Total
1969-70	$1,174,935	$ 4,075,441	$1,332,166	$298,697	$1,290,113	$103,031	$2,547,749	$1,082,199	$171,171	$12,075,702
1970-71	1,857,313	5,471,595	1,646,909	260,351	1,597,370	87,405	1,543,560	1,923,870	119,802	14,507,455
1971-72	2,686,848	5,898,137	2,119,650	355,972	1,863,212	83,502	1,613,025	2,371,880	119,475	17,111,701
1972-73	2,753,021	5,994,627	1,969,923	317,253	2,023,103	96,678	1,758,664	2,365,462	254,325	17,533,083
1973-74	2,661,313	8,705,687	2,537,091	366,812	2,591,040	111,047	2,237,796	2,489,901	342,405	22,043,092
1974-75	4,001,410	10,975,504	2,780,959	501,644	3,209,195	252,329	2,511,785	2,130,885	371,088	26,734,799
1975-76	2,879,085	13,344,982	3,347,010	301,317	4,038,829	187,584	1,205,159[a]	1,453,490	195,233	26,952,689

[a]Effective January 1, 1976, Debt Service on Port General Obligation Bonds is classified as Debt Service of the Port of G.O. Bond Redemption Fund.
[b]Same as above.

TABLE 25

REVENUE BY SOURCES[f]

Former Greater Anchorage Area Borough

Fiscal Year	General Property Taxes[a]	Licenses and Permits	Charges for Services	Revenue from Use of Money and Property	Inter-Governmental Revenue	Cost Recoveries	Other	Total
1969 - 1970	$14,033,485	$ 23,073	$1,521,162	$ 267,819	$24,225,339	$158,069	$ 437,639	$ 40,666,586
1970 - 1971	11,677,267	25,605	1,599,793	1,373,812	38,626,937	29,876	705,766	54,039,056
1971 - 1972	16,594,282	90,607	1,987,466	2,032,430	44,740,791	400,614	1,401,767[b]	67,247,957
1972 - 1973	23,170,694	256,492	2,023,845	1,886,932	46,639,037	271,361	886,614[b]	75,340,115
1973 - 1974	33,065,461	26,111	1,110,977	3,808,807	54,955,655		5,641,359	98,608,370
1974 - 1975	30,619,257	33,347	1,427,128	3,100,149	68,196,518		5,016,643[c]	108,303,042
6 Mos Ended 12/31/75	23,048,031	36,929	1,374,619	990,105	5,936,436	97	499,591[d]	31,885,808
6 Mos Ended 12/31/76	30,211,541	65,230	1,471,638	1,112,536	7,356,598		1,843,049[e]	42,060,592

[a]Includes payments in lieu of taxes.
[b]Includes towel fees and data processing rental.
[c]Includes interfund transfers of $1,469,261.
[d]Includes interfund transfers of $338,073.
[e]Includes interfund transfers of $1,213,430.
[f]Municipality of Anchorage, Financial Reports - Municipality of Anchorage 1976, 1977.

TABLE 26

EXPENDITURES BY FUNCTION[d]

Former Greater Anchorage Area Borough

Fiscal Year	General Government	Health	Public Safety	Conservation of Natural Resources	Education	Debt Service	Other	Total
1969 - 1970	$ 3,448,875	$ 532,715	$ 583,699	$ 157,393	$30,285,306	$ 4,897,497		$ 39,905,485
1970 - 1971	4,734,642	813,488	1,343,803	142,097	41,369,487	6,102,168		54,505,685
1971 - 1972	6,998,311	1,375,697	2,424,155	704,624	45,059,846	8,520,706	$ 238,886	65,322,225
1972 - 1973	8,295,199	2,584,248	3,769,372	760,289	46,864,579	10,579,310	7,835	72,860,832
1973 - 1974	11,556,074	2,620,576	4,214,376	3,346,489	56,792,775	13,786,418	1,689	92,318,397
1974 - 1975	13,396,217	3,452,918	6,269,675	2,026,406	64,232,006	14,131,363	1,461,845[a]	104,970,430
6 Mos Ended 12/31/75	8,593,553	2,640,856	3,690,398	1,127,483		1,165,841	299,836[b]	17,517,967
6 Mos Ended 12/31/76	10,384,569	3,088,642	5,327,937	622,994		1,524,947	1,680,183	22,629,277

[a]Includes interfund transfers of $1,469,261 and cancellation of prior year encumbrances of $ 9,327.
[b]Includes interfund transfers of $ 338,073 and cancellation of prior year encumbrances of $38,237.
[c]Includes interfund transfers of $1,213,430 and cancellation of prior year encumbrances of $ 647.
[d]Municipality of Anchorage, Financial Reports - Municipality of Anchorage 1976, 1977.

TABLE 27

1978 APPROVED BUDGET DISTRIBUTION OF

REVENUES AND EXPENDITURES[a]

Revenue Distribution By Source	Amount	Percentage
Taxes	$50,175,350	56%
Local Sources Other than Taxes	11,077,590	13
State Revenues	19,782,620	22
Federal Revenues	6,539,340	7
Fund Balance	1,976,810	2
Total	$89,551,710	100%

Distribution of General Funds Expenditures	Amount	Percentage
Police	$16,352,740	18%
Fire	12,866,950	14
Streets & Drainage Maintenance	10,669,160	12
General Services	8,393,790	9
Health & Environmental Services	5,737,020	7
Parks & Recreation	5,654,660	6
Transit	4,039,140	5
Debt Service - General	2,749,980	3
Library	2,792,460	3
Planning	2,767,180	3
Building Safety	2,233,040	3
Emergency Medical	2,137,890	2
Solid Waste	1,402,400	2
All Other Services	11,755,300	13
Total	$89,551,710	100%

[a]Municipality of Anchorage, 1978 Annual Operating Budget, Vol. 1

while revenues went up 217 percent. The city's slower rate occurred because a portion of the cost of general government and other categories was removed from the city budget in 1976. This created a no growth situation from 1975 to 1976.

In 1976 the City of Anchorage expended $26,952,689 and general revenues totaling $27,216,539. In 1974-75 the GAAB spent $104,970,430 and took in $108,303,042 (this included schools which constituted 61.2 percent of the budget). The 1978 budget was the first unified budget for the Municipality. Expenditures of $89,551,710 were authorized and revenue of the same amount were projected. Traditional services of police, fire, road maintenance, etc. make up the largest expenditure categories. Local property taxes make up the majority of revenues (56 percent), but state and federal sources are an increasingly important component (29 percent).

ISSUES

Local Government Revenue Capacity

Local government revenue capacity is finite in terms of the legal limits and the willingness of the taxpayer to accept increased taxation. Presently, Anchorage local government receives the majority of its local revenues from the property tax. The assessed value of all taxable land in the metropolitan area was estimated to be $4.19 billion in 1978. Using both the areawide and service area concept, the mill levy varies in relation to the services delivered. Spenard, Sand Lake, and Muldoon have the highest levy (18.53 mills) with the old city following at 18.28 mills. Less densely populated areas which do have services such as police, fire, road maintenance,

etc. have lower levies. Eagle River is 13.18 mills, Chugiak is 11.09 mills, and Rabbit Creek-Oceanview is 15.93 mills.

These differential rates will produce an expected $40,633,330 in real property taxes in 1978. This excludes property tax (6.98 mill) revenues dedicated for public schools. Other local tax sources include personal property and motel/hotel taxes. Under the present tax system, the real property tax has the best chance of expanding to produce sufficient local tax revenues in the future. The latest projection of real and personal property tax suggest a pattern of sharp growth over the next seven years (see table 28). This increase comes from new construction and the additional value of real property due to inflation. The 1978 real property value is expected to be $3,966,884,540 and increase to $8,324,218,750 by 1983.

TABLE 28

1965 TO 1984 ASSESSED VALUE OF ANCHORAGE[a]

REAL AND PERSONAL PROPERTY

Actual		Estimate[b]	
1965	$ 624,800,000	1978	$ 4,800,000,000
1970	1,105,600,000	1979	5,525,000,000
1972	1,661,000,000	1980	6,900,000,000
1974	2,301,900,000	1981	7,850,000,000
1975	2,935,200,000	1982	8,800,000,000
1976	3,739,900,000	1983	10,000,000,000
1977	4,537,700,000	1984	11,000,000,000

[a]Alaska Dept. of Commerce and Economic Development, The Alaska Economy, 1977

[b]G.M. McKee, March 3, 1978

The implementation of annual revaluation of property is the main cause for

adjusting these estimates over those made as late as fall. Personal property value is also expected to increase from $833,115,460 in 1978 to $1,675,781,250 in 1983. Projecting local capacity past 1984 is speculative, but OCS growth scenarios suggest a slowdown of the upward trend after 1987. It would be reasonable to suggest property valuation would follow this pattern. How high the tax can rise on residential property before the taxpayers react negatively is difficult to say. Legally, the local government has a 30 mill limit at 100 percent valuation. However, the inflationary increase in Anchorage property valuation could cause this to occur well below the legal limits. Also, the market could force values into a slower rate of growth if housing costs continue to rise beyond the capacity of those who want to buy. This, of course, would effect revenue. However, all indicators are that property tax revenue will continue to grow rapidly at least through the mid-1980's. The long term limit on property tax is the finite amount of land available to be developed. As land becomes more scarce, development must slow and redevelopment would unlikely be able to increase the tax base as rapidly as the 1970's.

Local Tax Alternatives

If the present local tax mix becomes insufficient for meeting future revenue needs, other alternatives are available. The Municipality, a mayor's ad hoc group, the Operation Breakthrough Committee, and others have looked at various revenue alternatives including sales tax, income tax, user's tax, assessment districts, etc. The most discussed options are a gas user's tax to pay for road improvements and a sales tax suggested for both general revenues or specific purposes, such as a civic center.

A number of groups have recommended various sales taxes. Estimated revenues from a one percent sales tax, exempting food and medicine to remove the regressive problems of the tax, is shown in table 29. A three percent tax in 1978 would general $23,304,000 in revenues. This is about 57 percent of real property tax projections in 1978. The major impediments to this alternative is its controversy within the electorate. While a plurality selects the sales tax as the preferred tax for additional revenues, there are about as many bitter opponents as backers of the option.

TABLE 29

ESTIMATE OF SALES TAX REVENUE

Year	1% Sales Tax Revenue
1977	$6,998,000
1978	7,768,000
1979	8,622,000
1980	9,570,000

Revenue Sharing

Intergovernmental transfers constitute an important source of revenue for the Anchorage Municipality. In 1978 it is estimated that 29 percent of the budget will be paid by state and federal dollars. Federal dollars (7 percent) will continue to be important, especially with Anchorage's designation as a depressed area because of its high unemployment. It is unlikely, however, that federal contributions will grow faster than the total budget.

State revenues, on the other hand, have greater potential. With massive

resource potential, the state will have a substantial capacity for revenue sharing in the coming years. The 1977 legislature did pass a state bill of relief of school construction debt service payments. Up until now, category grants have been the approach for state revenue sharing. There is a bill in the present legislature which would change the approach to a general grant formula approach. Municipal evaluation suggests that Anchorage will be hurt by this approach as it is weighted against Alaska's only urban area.

Bonding

Bonding for capital outlays is an integral part of the Municipality's approach to financing. Presently, $394,105,005 of debt is carried by local government ($330,537,987 will be outstanding as of December 1978). Twenty percent are for roads and drainage projects, 6.8 percent for port facilities, and 63 percent for utilities (with about one-half of this being telephone). In 1978, $29,726,425 will be paid out in principal and interest payments. Most is paid out of user fees or assessments but about three percent of the general expenditures also go to debt service.

Presently, the two major sources for bondable projects are the Municipality's Six-Year Capital Improvement Program (CIP) and Operation Breakthrough. The former has developed roughly $60 million in bonding proposals over the life of the program. These include areas such as transportation, culture and recreation, public works, and sewer. In 1978, $13,403,000 in bonds are scheduled for voter review. Operation Breakthrough has made an ambitious proposal to have the government make the largest

single capital investment in history. Their proposals would at a minimum double the Municipality's nonutility indebtedness. Presently, the group is asking for $126,000,000 in bonds to be placed on a fall 1978 ballot. A companion bill was submitted to the state legislature to share in the cost with an additional $126,000,000. The projects in many instances are drawn from the CIP and include a civic center, regional library, park acquisition, and municipal office building (Hunter, 1978b). The cost of servicing just $126 million (though there appears to be little chance for the state legislation at least in this session) would be $10,875,000 a year. This is 12.1 percent of the estimated 1978 budget. Without major additional financing this would be impossible. This could mean a 1.5 percent sales tax or a two mill increase in real property tax. It is likely that the Municipality will place a combination CIP/Breakthrough bond package before the voters in late 1978. The outcome of this election will most likely set the tone for capital improvements in the years to come.

Changing Demand and the Rising Cost of Government

One of the most difficult issues to quantify is a two-bladed sword. First, survey and census analysis suggest that the character of the community is changing. The population has increased with a greater proportion of newer residents whose expectations for government services are greater than long time residents. The demand for services, both in type and scope, has increased in recent years. While the basis of public safety, roads, schools, etc. are strongly preferred, even amenities or nontraditional services are given majority support. The perceptions of what the government's role is have increased to a more expansive one. If this trend continues, the

problems of balancing revenue with expenditures would become serious.

The second edge is the rapid rise in service costs. General inflation, expanded services, and rapid unionization of most employees have tended to move costs steadily upward. Unification has taken more than two years, but now the Municipality is probably in the best position it ever has been in to manage the costs of government. This required a slow and not easy task of establishing a financial management system, which, only now, is providing the information necessary for good fiscal planning.

The Planning Process

Despite this progress, an Anchorage Urban Observatory study concluded that "Amongst municipal personnel, there is a widespread lack of understanding of the planning process, although many department directors and program managers are aware that their planning is currently unsatisfacotry. This situation exists because of the very rapid expansion and development that has taken place in the Anchorage area in recent years, which has led to many services simply trying to keep up with demand, reacting to the situation rather than rationally planning future provision of services. The situation was further exacerbated by the unification process: much time was absorbed simply trying to fuse the services of the former borough and city, and little time was available to analyze the services being fused. Some directors and managers were simply overwhelmed by the side effects of growth and unification, and, though knowledgeable about the planning processes, were unable to put their knowledge into practice. However, many more are lacking in the knowledge of what a planning process should involve." (Hitchins,

1977, P. 105)

"One particular area of confusion is the distinction between long-term planning and program, or short-range planning. Since the distinction is not clearly understood, neither is the responsibility for the two different types of planning. It is apparent that this confusion extends right into the Planning Department itself. It appears that each different municipal department has a different conception of what the Planning Department should be doing and what it actually does, and each individual within the Planning Department has a different conception of the role his department should be playing does play in the planning process." (Hitchins, 1977, P. 105)

The recommendations resulting from this study include the development of a unified data base information system and the need for more long-range planning as well as planning for the day-to-day operation of government.

Community Service Support Sectors

HEALTH SERVICES

Introduction

The Municipality of Anchorage provides primary (early detection and routine care), secondary (acute, emergency, critical care), and tertiary (special, highly technical care) health care to its residents and residents of all contiguous areas. It also serves as a secondary and tertiary health care center for the entire State of Alaska. As the predominant metropolitan area and transportation center of the state, Anchorage encompasses a health care delivery system based upon both local and statewide determined health needs. Therefore, a discussion of the status of health care delivery in Anchorage must reflect the dynamics of socio-economic changes and impacts throughout the state. The information from the health services section is based on The Health Services Plan of the Municipality. Unless noted, data in this section is derived from that document. (Municipality of Anchorage, 1977h)

A significant portion of the employed population tends to be well educated, young, and involved in technical and professional occupations. One may assume that these citizens are consistently more aware of the importance of and able to afford sound preventive health care. Two additional phenomena which impact the development of a health care delivery system are the significantly low percentage of local and statewide population over the age of 65 years, and the influence of the Alaska native population and their resultant health care needs. Also underlying the health care picture are the major impacts and constraints associated with the remoteness of the area. The net result

is the shift away from strictly curative modalities (treating illnesses) to health maintenance, preventive care and rehabilitation.

Within the past five to ten years, the health care delivery system in Anchorage has evolved from a primary care unit, with limited service capabilities, to a comprehensive acute care delivery system, utilizing a broad base of modern manpower, equipment and facilities. Traditionally, critical care needs, beyond family practice and relatively routine surgeries, were administered by relocating patients to Seattle, Washington, or other centers of health care in the lower 48. With the evolution of the Anchorage population and economic growth, the health care industry has matured and now more thoroughly meets the medical needs of the metropolitan population. However, Seattle continues to play a support role to the Anchorage system, especially in certain treatment specialities. The majority of Anchorage citizens who seek medical care outside of Alaska do so predominantly for diagnostic work and the more uncommon specialities. A recent study of the patient composition in Seattle hospitals indicated that approximately 20 percent of the patients enrolled in March 1977 were from Anchorage. The Seattle facility most frequently attended by Anchorage residents is the Virginia Mason Clinic, well known for its comprehensive diagnostic services.

Health care has also evolved for the Alaska native population. Increasing numbers of primary care units and clinics are being developed in rural villages and towns. Village residents now enter the health care delivery system at a local and less expensive level. The impact of local village health care has resulted in the expansion of services provided by the

Alaska Native Medical Center in Anchorage. Once primarily a tuberculosis treatment center, the facility now sees numbers of critically ill and accident victims.

Organizational Context

Direct Delivery Facilities.

- Facilities. Anchorage residents and residents of outlying areas have access to a broad spectrum of health care and medical services. A relatively high ratio of health care providers to population is due to the isolation of Alaska, and to the role Anchorage plays as the center for service delivery for the entire state. Facilities and services are categorized as follows:
    - Health maintenance facilities
    - Ambulatory care
    - Emergency medical services
    - Acute care facilities
    - Skilled nursing facilities
    - Intermediate care facilities
    - Rehabilitative care facilities
    - Residential care facilities
    - Coordinated home care services

  For the purpose of this report, these facilities have been aggregated into 1) acute, 2) long term, 3) ambulatory, and 4) emergency care facilities and services. Table 30

illustrates current inpatient utilization data in Anchorage for the facility categroies mentioned above.

TABLE 30

INPATIENT UTILIZATION DATA[a]

Facility	Year	No. of Beds Licensed	No. of Beds Available	Admissions	Avg. Length of Stay	Occupancy Rate	Avg. Daily Census
Alaska Hospital	1970	85[b]	85	2,569	5.9	53.0	41.4
	1976	154	202	6,157	4.3	72.1[c]	70.6
Alaska Native Medical Center	1970	295	295	4,560	16.2	61.6	202.7
	1976	170	170	4,850	9.9	77.2	131.3
Alaska Psychiatric Institute	1970	224	224	419	155.4	79.2	175
	1976	200	200	765	38.0 (57.6)	60.5	121
Careage House	1970	---	---	---	---	---	---
	1976	102	102	87	411.0	93.1	95
Elmendorf	1970	200	200	6,573	9.16	82.4	165
	1976	145	200	6,449	5.7	71.0	100
Glenmore[d]	1970	---	---	---	---	---	---
	1976	100	100	274	121.2	91.0	91
Providence Hospital	1970	150	150	7,617	5.5	83.8	125.7
	1976	232	268	11,679	4.5	77.7	145.4

[a]Municipality of Anchorage, Health Services Plan, October 1977
[b]Moved into new facility in October; prior to that had 85 licensed beds.
[c]January-October, based on 85 beds, was 77.9.
[d]Glenmore is currently completing the construction of 100 new beds.

- Acute Care. There are currently 404 licensed acute care beds serving the civilian, non-native population (Alaska Hospital and Providence Hospital). The Alaska Native Health Service Hospital provides 170 beds, and the Elmendorf Air Force Base Hospital provides 125. Present

usage rates in Anchorage reveal that 560 inpatient days per year are generated per 1,000 population. The average length of stay is less than five days, and average cost per day is $455. This cost includes room, board and auxillary services, but does not include physician's costs.

- Long-term Care. Considering convalescent or maintenance service providers, long-term care is offered by the following:

  1. Skilled nursing facilities. There are 100 skilled nursing beds for 24-hour professional restorative care to the non-native civilian population. Inequities in categorical reimbursement practices have precluded construction of additionally needed beds. As the cost of acute care increases, the need for more cost-effective alternative becomes more predominant.

  2. Intermediate care facilities. The role of the intermediate care facilities is to provide limited nursing and personal care to long-term patients with chronic medical problems. There are currently 101 intermediate care beds available in Anchorage.

3. Residential and custodial care facilities. Residential and custodial care facilities constraints involved in securing licensing and adequate funding have precluded the development of needed residential and custodial facilities. There are currently 100 beds in the Anchorage Pioneer Home for 65 year old Alaskan residents (of at least 15 years). Because of federal government reimbursement requirements, custodial care is more costly to the state than intermediate care; and therefore, this element of a comprehensive health care system has not developed in relation to the needs indicated within the community.

- Ambulatory Care. As an alternative to institutionalized care, ambulatory care is designed to facilitate at-home convalescence.

- Emergency Care. Introduction to the Anchorage acute care facilities is often via the Municipality of Anchorage Emergency Medical Services. For additional discussion, see the section on public safety.

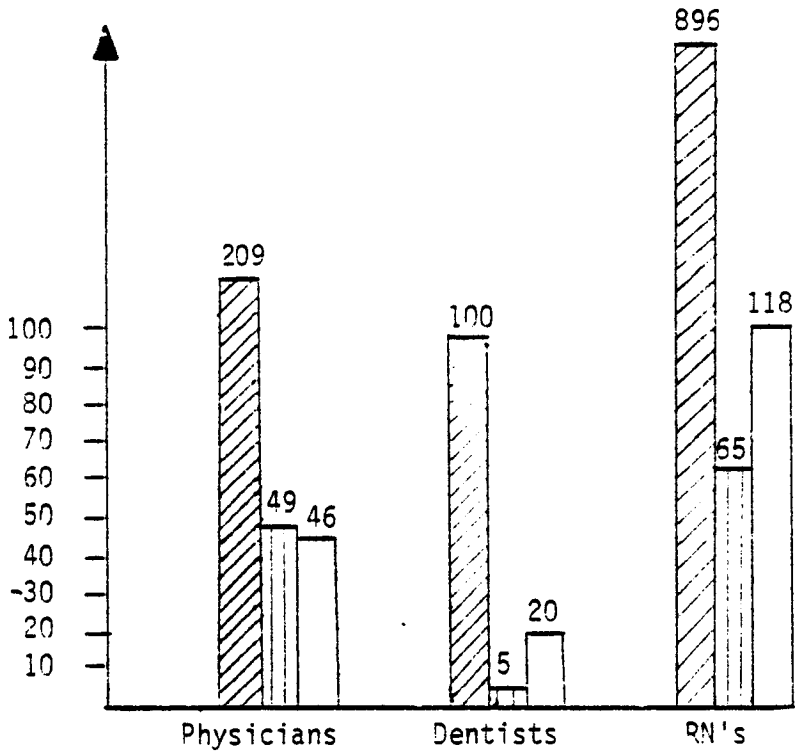
The inability of the Anchorage health care system to serve the needs of its residents is rapidly becoming myth. While

difficult to document, increasing number of persons are seeking critical care in Anchorage as opposed to going "outside" for help. Improved manpower, variety and sophistication of services are responsible for increased reliance on local care. The scope of care available to Anchorage residents parallels and often exceeds that provided by communities of comparable size. In addition to the standard medical services and specialities the local health care delivery system provides:

1. A head and full body computerized axial tomography (C.A.T.) scanner at Providence Hospital;
2. A head C.A.T. scanner at Alaska Hospital;
3. A full burn unit and de-briding room at both hospitals;
4. The leading expert in the U.S. on hypothermia, Dr. Mills;
5. A comprehensive orthopedic surgical and therapy unit;
6. A neurosurgeon;
7. Two of three neurologists practicing in the state;
8. Comprehensive critical care unit in both hospitals;
9. Comprehensive neo-natal unit at both hospitals; and
10. Open heart surgical capability.

TABLE 31

ANCHORAGE HEALTH PROVIDERS



Private Anchorage 1976

Military Anchorage 1976

Public Health Service Anchorage 1976

Sources:
1. Health Directory, Alaska State Medical Assoc. 1976
2. State Center for Health Statistics, Anchorage 1977
3. Alaska Dental Assoc. 1977
4. Adrian Barber, Chriopractor 1977
5. Health Resources Statistices, National Center for Health Statistics, HEW 1975

- Services. In addition to the facilities and services outlined above, the residents of Anchorage may avail themselves of almost any specialized services needed, including everything from family and well-child clinics to renal dialysis, chiropractic and psychiatric services.

- Manpower. The majority of Anchorage physicians are in private practice. Additional medical manpower is drawn from the military and Public Health Service. Manpower shortages exist in semi-professional medical personnel and ancillary service areas. Specialized practice shortages exist in certain physician and dental provider categories (obstertrics, pediatrics and general dental surgery). Table 31 illustrates numbers of health care providers (physicians, dentists, and registered nurses) for Anchorage.

Specialized Health Delivery Systems.

- Low Income. Critical to the discussion of provision of health care to the low income population in the Anchorage area is a description of the major mode of financing health care services across the nation. Of the $120.4 billion spent on health care in 1976, 40 percent was paid for by some unit of government, 34 percent by private direct payments, and 26 percent by direct insurance benefits.

  Locally, Anchorage residents' patterns of health care payments generally reflect nationwide trends. Large group insurance policies are predominant, as is relatively inexpensive or free preventive care and physical examinations, provided by a federally supported neighborhood level health center and the Municipal Department of Health and Environmental Protection.

  A recent survey of the Anchorage area indicated that only seven percent of the population was not covered by some form of health insurance either public or private. More than half of those without insurance had been Anchorage residents for more than 16 years (Municipality of Anchorage, 1977h).

- Elderly. Many of the same characteristics describing care for low income can be used to describe care for the elderly in Anchorage. Health care needs for the elderly generally

revolve around the availability of skilled nursing, intermediate, residential, custodial and home health care, as less costly alternatives to institutionalized treatment. As was mentioned earlier in this report, the available beds and services in these areas are insufficient, and consumer costs for those existing have risen dramatically. Average costs per service unit for each type of care mentioned is as follows:

- Skilled nursing care $ 129
- Intermediate care $ 112
- Residential care $ 45
- Home care $ 35

Also mentioned earlier, federal cost reimbursement restrictions have had a negative effect on the availability of medicare certified beds. Generally, fixed incomes of the elderly and the limited capacity of medicaid and medicare effect the elderly population's ability to secure adequate health care. Consequently, reoccurring health needs and their resultant costs have been one course for this segment of the population to relocate out of the state.

- Native. The Alaska Native Medical Center is the primary provider and referral facility for native residents or visitors to the Anchorage area. The average utilization rate for this 170-bed facility is 1,400 days per 1,000 population, or almost three times that of the non-native rates. Reasons

postulated for this phenomena are 1) increased severity of cases upon admittance and 2) insufficient follow-up and rehabilitation services for released patients. The average length of patient stay has been reduced, however, from 16.2 days in 1970 to 9.9 days in 1976. This reduction may be related to 1) improved medical care, 2) increased reliance on outpatient care, 3) referral to the two major non-native hospitals for critical care cases, and 4) significant reduction of the incidence and prevalence of tuberculosis throughout the native population. As the Alaskan native becomes more assimilated into the total Anchorage community, she/he will increasingly avail him/herself of the various sources of free or inexpensive health care provided by public and/or private providers.

- Handicapped. Data relating to health care for the handicapped is generally expressed under the category of developmental disabilities. In the state of Alaska, developmental disabilities of mental retardation, cerebral palsy, autism, epilepsy and dyslexia comprise 3.88 percent of the population. (Municipality of Anchorage, 1977h) Of these 16,780 people, approximately 7,000 are considered significantly handicapped and many of these will enter the Anchorage health care delivery system for some degree of care. Table 32 illustrates the developmentally disabled population of Anchorage according to type of disability.

TABLE 32

DEVELOPMENTALLY DISABLED IN ANCHORAGE[a]

Age	0-2	3-5	6-20	21+	Total
Mentally Retarded	112	337	1,682	2,022	4,153
Epilepsy	42	88	918	2,921	3,969
Cerebral Palsy	24	25	129	111	289
Autism	5	5	28	49	87

[a] State of Alaska Planning Council for Persons with Developmental Handicaps

Many disabled can and do function successfully on an outpatient basis. Others need intermittent short-term and even long-term custodial care. As mentioned previously in the report, the Anchorage area currently provides 100 skilled, 101 intermediate, and 100 long-term residential beds. Plans for construction of 24 new beds at the Alaska Treatment Center will provide much needed assistance to this considerably underbedded portion of the local health care delivery system.

Current Issues

Social-Health Care Problems.

- Alcoholism. Alcoholism and alcohol abuse are recognized by most in the community as the number one health and safety problem in the Anchorage area. Based upon calculations derived from the Fiscal Year 78 Supplement to the Alaska State Plan for the Reducation of Alcoholism and Alcohol Abuse,

it has been determined that approximately 13,183 problem drinkers existed in Anchorage in 1975.

During 1976 the Community Grant in Aide Supported Programs for Alcohol Abusers reported 1,644 unduplicated client intakes for the state.

The Municipality of Anchorage Department of Health and Environmental Protection estimates that there are approximately 2,000 habitual public inebriates, of which an estimated 400 are "street" residents.

While most victims of alcoholism and alcohol abuse receive treatment and care from the two major hospitals and the native public health facility, additional providers exist throughout the community. The types of service and bed levels are as follows:

- Detoxification 26 beds
- Long-term care (90 days) 40 beds
- Transitional care 50 beds
- Therapeutic communities 65 beds
- Short-term care (30 days) 18 beds

The current belief by Anchorage residents and alcohol service providers as well is that present treatment modalities are insufficient. The major service provider is the Salvation Army, as a subcontractor for the Municipal Department of

Health and Environmental Protection. The major criticism of the existing program is that it is a "revolving door" maintenance program, repeatedly treating, but not curing, the street inebriate. Public opinion reflects a need to "rid the street" of the inebriate, but also recognizes the larger problems and deleterious effect of the alcohol abuser.

The Municipality of Anchorage Health Commission and the Department of Health and Environmental Protection are in the process of developing a model comprehensive treatment program based upon a variety of educational, prevention and treatment activities. The model proposes to use schools, public media, service groups, public safety, judicial, etc. to educate the public on the manifestations and effects of alcoholism and alcohol abuse. The treatment portion of the program will be based on a triage, or multifaceted intake program, including referral, rehabilitation and follow-up to measure and assure effective treatment. Where appropriate cooperation with the judicial system (arrest related to driving while intoxicated) will become an element in one's treatment program.

While the model is still in early formative stages, it appears to represent sound, long-range planning as an effort to solve a leading health care problem in Anchorage.

- Drug Abuse. A 1976 needs study by the Drug Abuse Council in

Anchorage estimated the presence of 700 narcotics addicts in the Anchorage area over the past three years. However, the Metropolitan Drug Unit, consisting of state and local police, estimated the number of addicts at 1,500 to 2,000. Even this low estimate greatly exceeds the national average for a city of this size.

As for victims of alcohol substance abuse, drug abusers must rely predominantly on outpatient care and treatment. Facilities serving alcohol abusers also provide services to drug abusers.

- Abused Persons. Adequate data collection in this area is virtually non-existent. In 1971 the Alaska Child Protection Statute (AS47.17.01070 and AS46.10.142) encouraged the initiation of reporting of physical abuse data in 1972. At that time reports for the state indicated a rate of 48 per 100,000 children under 16 years of age, which was significantly higher than the highest reported (40 per 100,000) in the United States.

  Because of failure of some areas to report, changes in program personnel, forms, reporting format, contractors, etc., subsequent efforts to collect accurate abuse reports have been unsuccessful. Therefore, a clear picture of the true target population in need of services in not available.

Throughout Anchorage there has emerged a number of providers whose programs are designed to serve abused parents and children. In addition to traditional emergency and physician care, there are approximately four private agencies providing everything from drop-in counseling to full 24-hour care for persons fleeing from an abusive environment to emergency referral in cases of medical need. Bed capacity ranges from five to ten depending on the type of care needed.

- Mental Health. Mental health care is provided by both private and public sector. Types of service existing throughout the community are as follows:
    - Psychiatric inpatient (280 beds at Alaska Psychiatric Institute)
    - Outpatient therapy and counseling
    - Crisis lines
    - Rape and assault counseling
    - Battered women and children's services
    - Group homes
    - Facilities for developmental and emotional disabilities
    - Pastoral counseling

In addition, each acute care facility provides inpatient psychiatric services as well as many other of the services listed above.

Health Economic Problems.

- Projected Local Bed Need. Critical to the discussion of any facet of health care in Anchorage and the state is the cost of care. Health care is a nonmarket allocation phenomena. An increase in availability of services does not necessarily result in a decreased cost to consumers. The cost of inpatient (acute) care in Anchorage is determined by examining the total number of beds available and current bed utilization rate (days per 1,000 population) in light of a desirable occupancy rate (85 percent), to yield the number of beds needed at specific levels of population. Table 33 illustrates Anchorage bed need projections through 1989.

TABLE 33

ANCHORAGE BED NEED PROJECTIONS

Year	Civilian Non-Native Population[a]	Occupancy Rate[b]	No. of Beds Required[a]
1977	156,825	85%	303
1982	203,728	85%	403
1985	255,524	85%	494
1989	298,116	85%	577

[a]Municipality of Anchorage, Health Services Plan, 1977
[b]Average optimum occupancy for facilities with 200-300 beds.

Anchorage currently has 470 acute care beds available, which is an excess of 167 beyond that which is required by the population. Based upon latest population projections, the Anchorage area will not need all existing acute care

beds until 1985. The increase in outpatient ambulatory and noninstitutional care alternatives may extend the need for that number of beds even beyond 1985. Current attempts to construct an additional 125-bed facility would reduce the existing Anchorage occupany rate from 59 percent to 48 percent. The net effect of a reduction in occupancy rates is a proportionate increase in real cost of care. The daily additional cost of each empty bed is $364 per day, resulting in an average cost per bed at 48 percent occupancy of $849 per day. With increasing numbers of unfilled beds, that real cost mounts; and so, subsequently, does the cost to the consumer.

- Medically Underserved Areas. In April 1977 the Department of Health, Education and Welfare officially designated Anchorage as a medically underserved area. The designation is determined through use of an Index of Medical Underservice, calculated by applying a weighted value to key indicators: infant mortality rate, ratio of primary care physicians to total population, and the percentage of population over 65 years of age. This designation qualifies Anchorage for receipt of special federal assistance programs designated to help meet local health needs.

The severity of the health manpower shortage varies within specialities. The significantly high birth rate and child-

bearing age female population have resulted in a serious shortage of pediatricians and obstetricians. The average lead time for scheduling nonemergency physician visits ranges from three weeks to three months, depending on the nature of the visit. Several OB-GYN clinics will only accept a specified number of new obstetrical cases per month.

The manpower shortage is a complex phenomenon. The youth and relative good health of Anchorage residents is reflected in a generally lower rate of physician visits per capita. Based on future population projections, this trend is not likely to soon change. Physicians accept increasing numbers of clients to compensate for low visitation rates. This patient load effects accessability to the physician which, in turn, is translated into a shortage of physicians of that speciality.

Alternatives to relieve this shortage exist primarily in the emergence of neighborhood level clinics or other sources of ambulatory care and/or the introduction of increasing numbers of physicians into the Anchorage area. Construction and support, in both public and private sector, of such clinics with general medical, obstetrical, pediatric and other needed specialities, would significantly relieve much of the manpower shortage and provide a less costly care alternative to the consumer.

- Health Demographics. Anchorage residents visit a physician 3.7 times per year compared to 5.7 times per year for the nation as a whole. The crude death rate for local residents is approximately 3.1 (deaths per 1,000 population); the U.S. rate is 9.0. The Anchorage birth rate is 18.3 per 1,000 population; the U.S. rate is 14.8. The infant mortality rate here is 11.0 per 1,000 live births; whereas the U.S. rate is 16.1 per 1,000 live births. Leading causes of death in Anchorage have consistently been 1) accidents, 2) heart disease, and 3) cancer, since 1973. The phenomena described above are a direct reflection of the existing younger median age and a proportionately smaller population of persons in advanced age groups.

- Communicable Diseases. Anchorage and Southcentral Alaska consistently demonstrate a higher incidence (initial contact) and prevalence (repeated contact) of respiratory diseases, venereal diseases, hepatitus and tuberculosis.

  While most common respiratory conditions are not reported in terms of incidence and prevalence, it should be noted that they are the cause of the second largest number of deaths in the one through 14 age group in Anchorage.

  Syphilis and gonorrhea are the two most common venereal diseases in Anchorage. The incidence of gonorrhea has grown over the past five years, at a rate greater than the population

has grown. Table 34 illustrates rates for both compared to similar rates in the U.S. as a whole.

TABLE 34

GONORRHEA/SYPHILIS RATES PER 100,000 POPULATION

Year	Gonorrhea[a]	U.S. Rate[b]	So. Central Alaska Rate Syphilis[c]	U.S. Rate
1976	1,248.4	470.5	13.7	23.0

[a]Alaska Dept. of Health & Social Services, Communicable Disease Control Section
[b]Communicable Disease Control Form 9.688 HEW, PHS, Bureau of State Services, V.D. Control Div.
[c]The incidence of syphilis in Anchorage is not available.

In 1954 the State Office of Communicable Disease Control reported 348.6 cases per 100,000 population of tuberculosis for Alaska. While the incidence is highest for Alaska natives, rates have been declining due to a major effort by local health care providers, especially the Alaska Native Health Service. That Anchorage more closely reflects incidence levels of the total U.S. is a possible reflection of the small native population (4.0 percent) within the community.

An incidence of infectious hepatitus, which is consistently high for Anchorage and the region, may be due to contaminated water supplies from home wells, typical of rural lifestyles. A large outbreak in 1976 was most likely associated

with the military reservations.

TABLE 35

INFECTIOUS HEPATITUS RATES PER 100,000 POPULATION

Year	Anchorage Rate[a]	So. Central Alaska Rate	U.S. Rate[b]
1975	30.4	27.7	16.8
1976	114.5	442.5	N.A.

[a]State of Alaska, Dept. of Health & Social Services, Div. of Public Health, Communicable Disease Control Section
[b]U.S. Dept. of Health, Education and Welfare, Center for Disease Control, Morbidity & Mortality Annual Supplement, 1975

The incidence of serum hepatitus, transmitted intravenously, intramuscularly or subcutaneously is significantly higher in Anchorage than the nation as a whole. High incidence of this disease usually parallels high use of drugs, generally occurring in younger population. Anchorage's younger population would be expected to reflect higher drug usage and potential resultant serum hepatitis.

Health Planning

The 33-member Anchorage Municipal Health Commission was established by Municipal Ordinance No. 255-76 on February 1, 1977. The commission is an advisory, composed of consumers and providers of health services, whose function include:

- Developing and updating a health plan

- Performing duties as subarea advisory council to the Regional Health Systems Agency (HSA);
- Advising Mayor and Municipal Assembly regarding health related issues and programs;
- Performing as a public information body, conducting research and fact finding on health-related issues.

The comprehensive Health Services Plan produced by the commission is local ordinance,and as such is the basis for planning, implementation, evaluation and revision of the Anchorage health care industry. Through adherence to baseline information and data needs reflected in the plan, the commission, local administration, regional health administrators and local providers can best work to alleviate existing and present impending problems in the delivery of an effective health care system in Anchorage and Southcentral Alaska.

SOCIAL SERVICES

Organizational Context

Social services delivery in the Anchorage area is provided predominantly by field offices of the state and federal government. A limited scope of services is also provided by the local municipal government, as well as select private agencies and organizations.

As described in the Proposed Comprehensive Annual Social Services Plan: Plan Year 1979, published by the State Department of Health and Social Services, Division of Social Services, proposed social services delivery throughout the state will focus on the following categories:

a. Information and Referral Services
b. Individual and Family Counseling Services
c. Child Protective Services
d. Adult Protective Services

Informational and referral, child and adult protective services are available to Alaskans without regard to income. Individual and family counseling services are available on the basis of available staff. With a few exceptions, however, programs target their services to low income populations.

The services listed above have been designated as high priority programs for implementation, based upon needs assessment studies and service utilization statistics collected in 1977. However, limited federal allocations under Title XX, Social Security Act, plus increased service costs, preclude

expansion of existing or development of new services to meet identified needs.

Federal-State Coordination for Service Delivery

The Alaska Division of Social Services and select federal agencies signed memoranda of agreement to facilitate coordination of the following services:

a. Office of Aging with Division of Pioneers' Benefits (Alaska's Pioneers' Home and the Longevity Bonus Program) to assure efficient service to the elderly;

b. Divison sponsored children's services with Criminal Justice Planning Commission, Dept. of Education, Dept. of Community and Regional Affairs, as well as private children's service providers, to insure that optimum benefits accrue to children in need;

c. Division of Public Assistance with Division of Vocational Rehabilitation, Dept. of Education, and Employment Security Division of the Dept. of Labor, to ensure effective implementation of the Work Incentive Program (WIN);

d. Division of Social Services with the Divisions of Public Health and Public Assistance, to coordinate delivery and insure compliance to regulations for family planning services.

Current Issues

Cost of Services. Critical to a comprehensive social services delivery system is the cost of such a system. The accelerating cost of social services is due to 1) higher manpower and labor costs, 2) higher cost of facilities and program operations, 3) higher costs due to economies of scale in a less dense and more remotely populated area, and 4) political constraints regarding management decisions and delivery systems. At this point the local industry is largely reactive to overt demonstrations of public need; i.e., unemployment insurance payments, employment placement assistance, supplemental income assistance, etc. The recently published Proposed Comprehensive Annual Social Services Plan: Plan Year 1979 is the first significant planning attempt to identify social services needs in the state. While the plan has identified four program thrust areas, the consensus is that insufficient dollars have been allocated to adequately address each area. The unpopular task of increasing the existing state tax rate to support additional services would not be acceptable.

Locally financed social services operate under the same constraints as federal and state systems and face the unpopular alternative of increasing taxes or reducing some portion of services delivered to the public.

The impact of Anchorage population growth and subsequent demands for services have yielded management inefficiences, procedural changes

and client levels in excess of trained staff. These conditions have precipitated inefficient service delivery leaving the client dissatisfied, frustrated, and often, unserved. There seems to be a definite need on the local level for a comprehensive social services delivery plan. To be effective, this local planning effort must be coordinated with similar efforts on the state and federal level and with private and nongovernmental providers as well. The Municipal Planning Department, Divison of Human Resources Plannning, has identified the initiation of such a plan as a target activity for 1978. Theoretically and practically, the result of such an ongoing effort will be 1) to clearly identify service area target populations and their respective needs, and 2) to align service providers in accordance with documented needs, thereby reducing nonproductive program duplication and/or service gaps.

Information and Referral. There currently exists no centralized information and referral (I & R) system for social services delivery in the Anchorage area. Limited I & R is available through many individual local, state and federal providers. However, the client is only exposed to such information after s/he has actually entered the service system. The Anchorage Neighborhood Mental Health Center, in conjunction with the Municipality of Anchorage, Divison of Human Resources Planning, developed a portable inventory of those health, social and recreational services provided by municipal and nonmunicipal agencies and organizations. The inventory is computer stored and will be updated on a regular basis. Access to the system at this time is limited, pending securing a funding source to implement and

maintain it. Use of such a system by all health and social service providers should enhance client satisfaction and facilitate vital service follow-up.

Local Social Services Availability

Social services available in the Anchorage area fall into six categories:

1. Childrens' services
2. Senior citizens' assistance
3. Employment assistance
4. Income assistance
5. Housing assistance
6. Youth services

Childrens' Services. A combination of state, federal and local funding is used to support the following children's services:

Service	Type of Assistance	Service Level
AFDC	Economic - $300/Mo.	3,000±persons/year
Alaska Children's Services	Residence - 5 homes Counseling	55 beds 22 families/mo.
Family & Children's Services - Eagle River	Counseling	400 contracts/mo.
Anchorage Head Start	Pre-school	60 children
State Day Care Assistance	Economic counseling	601 clients

A study conducted by the University of Alaska, Institute of Social and Economic Research indicated that 19.7 percent of the Anchorage

children (11,043) of working parents are without adequate day care funds. Limited economic assistance for day care and health care is available through a variety of local programs which offer cost deferment and/or reduction based upon economic need, such as:

- 45 licensed day care centers
- 120 licensed day care homes
- 4,700 early periodic screening conferences
- 678 well child examination/immunization clinics

Psychiatric and family counseling services are provided by many private mental health clinics and churches, as well as most of the public agencies listed above. Other local ancillary services include Anchorage School District's Whaley Center, providing psychological evaluation and diagnosis as well as an early childhood day school program for 115 educationally handicapped children. The municipal health department provides sudden infant death counseling through individual and small group conferences.

Based upon existing studies and service inventories, it appears that the Anchorage area is deficient in three major areas relating to childrens' services. They are:

- Inexpensive, quality day care for working families
- Inexpensive family and child counseling
- Long term and intermediate care facilities for children with severe development disabilities.

The significant proportion of single and/or both working parents in Anchorage makes day care availability a critical issue. Current efforts in the state legislature are directed at increased appropriation for all day and latch string (before and after school) day care. Economic aid would come in the form of increased program grants in aid and increased state day care assistance payments for qualified low income recipients. Similar advocacy efforts in the past have not been successful. However, the existence of better need documentation and actual lobbying efforts increase the prognosis for success in this legislative session.

Senior Citizens' Assistance.

Financial and housing assistance for Alaskan senior citizens is available from the following sources:

Service	Type of Service	Service Level
Adult Public Service	Economic aid Rent subsidies	1400 ± persons/year
Alaska Longevity Bonus	Economic aid $125/mo.	4000 ± persons/year
Pioneers' Home Program	Residential Sliding scale fee	96 persons

Transportation, social contacts, legal services, nutrition services

and volunteer activities are available locally through all of the following organizations:

- American Association of Retired Persons - 350 members
- Chugiak Senior Citizens' Center - 45 participants
- Mabel T. Caverly Center - 667 participants
- Older Persons' Action Group - 7400 on mailing list
- Retired Senior Volunteer Program - 86 participants

Many of approximately 6,000 seniors form an active and vocal group in Anchorage. Just as for others on a fixed income, costs of maintaining satisfying lifestyle is their most difficult problem. As the Anchorage population grows increasingly older, needs for inexpensive recreation, housing assistance, convenient transportation, and low cost alternatives to institutionalized health care will become a predominant element in a social services delivery system. Improved state and federal legislative advocacy for increased economic benefits to seniors is necessary if local providers are to be able to meet the increasing demands of this target population.

Employment Assistance. Employment training and job placement are provided primarily through the Alaska Department of Labor's Job Service Center and federal programs sponsored under the Comprehensive Employment Training Act of 1974 (CETA). Additional centers which provide assistance include the Work Incentive (WIN) program, the Alaska Skill Center, the National Alliance of Businessmen, the Young Adult Conservation Corps, Youth Employment Service, the Vocational Rehabilitation Center, Union Apprenticeship Programs, and the

Educational Opportunity Center. (Anchorage Area Manpower Review, October 1977).

- Anchorage Job Center matches available jobs with job seekers. The center filled between 397 positions in February 1976 and as many as 1,199 positions in June 1977.

- CETA. The municipal government, through the Human Support Services Division, and the Cook Inlet Native Association (CINA) are the local prime sponsors for Anchorage CETA funds. The Municipality implements programs under Titles I, II, VI and IX; the CINA focuses on Titles III and VI. Dollars are spent on basic programs, i.e, Title I classroom and job-site training, Title III and IV youth programs, Title II and VI job subsidies. The following summarizes the types and levels of service provided for Anchorage residents (Municipality of Anchorage, 1977i).

Service	Type of Service	Levels of Service
Title I	Classroom training Prevocational and vocational referral	234 persons
	Job site training Adult and youth	357 persons
Title III and IV	Summer program Economically disadvantaged youth	350 youth
	Job Corps recruiting	
	Youth Community Conservation	
	Youth Employment and Training program	

Service	Type of Service	Levels of Service
Title II Regular	Federally subsidized jobs	69 persons
Title VI Regular	Federally subsidized jobs	110 persons
Title VI Special	Federally subsidized jobs Low income and long-term unemployed	484 persons

- WIN is designed to assist in placement of employable welfare recipients. WIN registration is a criteria for receipt of Aid for Dependent Children. The local WIN program placed 171 persons during the period from October 1976 to July 1977.

- Alaska Skill Center provides entry level training and job skills development in four major areas: mechanics, food service, office occupations and basic building trades. The center placed 174 graduates on the job in 1976.

- The National Alliance of Businessmen is a cooperative effort between agencies of both the private and public sectors, in an effort to help disadvantaged persons gain meaningful jobs. The Alliance has obtained job pledges for 78 disadvantaged, nine ex-offenders, 1,369 youth, 113 Vietnam era veterans and eight disable veterans.

- The Municipality of Anchorage Human Support Services division coordinates the Youth Employment Services (Y.E.S.) program, which is a cooperative effort between the Municipality, State

Employment Services, State Department of Education, and the Anchorage School District. The Y.E.S. program is a labor exchange service providing recruitment for local businesses and schools for over 3,000 positions.

- The Youth Adult Conservation Corps provides one year jobs for youth between 18 and 23 with the U.S. Forest Service and the Bureau of Land Management. The program is projected to place 600 to 900 individuals throughout the state.

- Vocational Rehabilitation is a division of the State Department of Education. Approximately 800 unemployed physically or mentally handicapped clients are counseled and referred for on-the-job training and/or employment in facilities and agencies throughout the community.

- Anchorage maintains union apprenticeship programs with 18 joint apprenticeship committees, affecting 25 crafts. There are currently approximately 1,200 registered apprentices in Anchorage.

- The University of Alaska, Anchorage, Educational Opportunity Center provides career information and counseling in an effort to improve career development and educational/vocational training and placement for Anchorage citizens.

Income Assistance. Income assistance is provided by the Alaska

Division of Public Assistance for non-natives, and CINA, Social Services for Alaskan natives. Types and levels of services are indicated below:

Service	Type of Service	Level of Service
Alaska Division of Public Assistance	Food stamps	3600 ± cases/year
	General relief	12,000 cases/year
	Medicaid	4400 cases/year
	Unemployment	Confidential
CINA Social Services	Financial assistance	7200 ± cases/year
	Counseling	

Housing Assistance. State and federal assistance in the area of housing focuses primarily on establishing rent schedules for low rent housing (through the Alaska Housing Authority) and providing limited dollars for rent subsidies (through Department of Housing and Urban Development). Local government serves as an information and housing referral unit, helping Anchorage residents with landlord/tenant problems, and with location of low rent housing.

Availability of low cost housing is becoming an increasingly severe problem in Anchorage. There are currently approximately 300 units available at monthly rates from $50 to $450 (four bedrooms) depending on income. About 120 new units for low income, elderly are due for completion during late winter 1978. The Alaska State Housing Authority (ASHA) Section 8 program has the potential to serve 554 persons, awarding supplemental rent subsidies according to a sliding scale.

With the high cost and resultant profit to building contractors, it

appears unlikely that local low cost housing needs will be adequately met unless through increased federal and state construction project and/or rent payment subsidies.

Youth Service. Most available youth services are in the form of crisis, family, individual, career and legal counseling services. The most active providers are those listed below:

Service	Type of Service	Level of Service
Alaska Superior Court	Premarital (minors) custody	N/A
Alaska Youth Advocates	Crisis Family Legal	500 ± contacts/ year
CINA - Shisagvik and Youth Services	Educational Career Personal Drop-in	200 students/year
Family Connection	Runaway Foster care Crisis	200 ± families/ year
Hilltop Group Home	Residential (delinquent) Career	16 boys/year
Youth Manpower Services (Municipality)	Emergency medical/dental CETA training Occupational	266/school year 364/summer

Plans

To date, there exists no unified planning effort for the coordination of social services delivery in the Municipality of Anchorage. The State of Alaska, Department of Health and Social Services, Division of Social Services has produced the Proposed Comprehensive Annual Social Services

Plan: Plan Year 1979. Major constraints impacting the development and implementation of the plan are 1) unsuccessful attempts to synchronize plan development with the state budget process and legislative cycle, and 2) insufficient personnel and dollar resources to address identified needs, such as adult foster care. At the time of this writing, it was determined that there would be no appreciable increase in scope and/or depth of state social services delivery.

The Municipality of Anchorage, Department of Planning, Human Resources Division is in the initial stages of developing a local plan for social services delivery, coordinating efforts of federal, state, local governmental and private providers in the Anchorage area. The initial phase will involve completion of an inventory of types of services and service levels, followed by an analysis of existing service gaps and overlaps. Ultimately, the plan will be used to facilitate coordination of services between all Anchorage providers, and to provide a data base upon which the Municipal Assembly will determine the direction and scope of local social services planning.

EDUCATION

Primary and Secondary

The majority of Anchorage kindergarten through twelfth (K-12) grade students attend public schools under the jurisdiction of the Anchorage School District. The district covers an area 4,403 square kilometers (1,700 square miles) - the approximate area of the Municipality of Anchorage, including Elmendorf Air Force Base and Fort Richardson. About 1,579 of K-12 grade students attend about eight private education facilities that have enrollments ranging from 52 to 533 pupils and a total teaching staff of 94 instructors. About one-fourth are kindergarten students, but the overall enrollments have increased significantly in recent years. These schools are almost solely supported by student tuition fees and their enrollment is limited by their physical capacity. (Markee, 1978)

Student Population. Historically, Anchorage has been characterized by rapid growth as also reflected in its past school enrollment. Between 1940 and 1950 and again between 1950 and 1960, the enrollment quadrupled. From 1960 to 1970 the enrollment almost tripled. (Anchorage School District, 1978b) Since 1970 the enrollment has increased only 23 percent (7,428 students). This increase is negligible compared to previous years, and approximately 3,700 students of this total are due to the addition of the military based schools to the school district. Currently, the district serves a student population of 39,269. This includes 21,602 pupils in elmentary grades, of which 3,063 are on-base and 17,667 in secondary

grades.

TABLE 36

ANCHORAGE SCHOOL ENROLLMENT 1970-1977[a]

Year (October Enrollment)	Elementary	Secondary	Total
1970	17,812	14,018	31,841
1971	18,231	15,266	33,497
1972	18,531	15,632	34,163
1973[b]	18,474	17,397	35,871
1974	18,431	17,883	36,314
1975[c]	22,098	18,179	40,179
1976	21,863	18,310	41,183
1977	21,697	17,812	39,509

[a]Anchorage School District, Administration Office
[b]Addition of military based junior high grades
[c]Addition of military based elementary grades

By 1984 the Anchorage School District projects the student enrollment to increase to 42,867 pupils (Anchorage School District, 1978d).

TABLE 37

PROJECTED SCHOOL ENROLLMENT 1978-1983[a]

Grade	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Kindergarten	2,834	2,877	2,920	2,964	3,007	3,053
1 - 6	18,229	18,502	18,780	19,061	19,348	19,638
7 - 12	17,580	17,844	18,112	18,384	18,660	18,940
Special Services	1,148	1,165	1,182	1,200	1,218	1,236
	39,791	40,388	40,994	41,609	42,233	42,867

[a]Anchorage School District, Six-Year School Building and Sites Program, 1978

Each year represents a 1.5 percent growth factor.

Using a 1.5 percent growth factor for projection purposes may be valid only for a few more years, perhaps until 1985. There are a number of factors that should be taken into consideration. A study conducted by the Anchorage Urban Observatory shows that three percent of the total school age population sampled are enrolled in private schools (Ender, 1977b). While this is a small percentage of the school age population, a greater proportion of these students who may have intended to go to a private school may be entering the public schools if the present facilities in private schools are not expanded. Furthermore, looking at the Anchorage population in general, it is characterized as predominately young, transient, and one (1.08) child families. If the population stabilizes, those couples who are presently starting a family will have an effect on the enrollment by 1984. Likewise, for those cohorts in the 25 to 29 age bracket who presently predominate the population and who have delayed having children, by 1983 they will be at the crucial child-bearing age (30 to 34) and may also affect school enrollments.

Personnal and Facilities. To meet the educational needs of its students, the school district endeavors to maintain a student/teacher ratio of 26 students per elementary teacher and 30 students per secondary teacher. It appears this goal has been maintained in the previous ten years (Anchorage School District, 1977a). Statistics are available only with the combined primary and secondary student/teacher ratio (see table 38).

TABLE 38

AVERAGE PUPIL TEACHER RATIO, 1967-1977[a]

Fiscal Year	Teaching Staff	Enrollment K-12 & Special Ed.[b]	Pupil/Teacher Ratio[c]
1967-1968	948.0	23,637	24.93
1968-1969	1,085.0	27,447	25.30
1969-1970	1,176.5	29,882	25.40
1970-1971	1,321.1	31,387	23.76
1971-1972	1,363.5	32,124	23.56
1972-1973	1,559.5	32,749	21.00
1973-1974	1,630.0	34,554	21.20
1974-1975	1,658.1	35,407	21.35
1975-1976	1,675.0	35,957	21.47
1976-1977	1,721.0	35,490	20.62

[a]Anchorage School District, Annual Financial Report for the Fiscal Year Ended June 30, 1977

[b]Based on June enrollment.

[c]Pupil/teacher ratio does not include on-base schools.

The January 1978 student/teacher ratio shows 22.63 students per teacher (number of teachers employed is 1,600; students enrolled is 36,206).

To accomodate the student enrollment, the school district maintains 68 school buildings. These include 53 elementary schools, seven junior high schools, six high schools, one special education facility, and one career education center. These schools encompass an area from Eagle River to the north, Turnagain Arm to Alyeska/Girdwood to the south, Chugach Mountains to the east, and Knik Arm/Cook Inlet to the west. Due to migration to the suburban areas of Anchorage, schools to the north and south are experiencing a fast rate of growth and have reached their saturation level. Pupil ratios exceed facility

capacity. (The school district strives to maintain a pupil/classroom ratio of 24 students per elementary classroom and 25 students per secondary classroom. In fact, the formula is more complex than this, since the student/teacher and student classroom ratios differ and additional variable are added to attain an overall space requirement.) To the north, Eagle River secondary school is filled to capacity, as well as six elementary schools (Bayshore, Chinook, Gladys Wood, Oceanview, Rabbit Creek, and Sand Lake) to the south. However, schools located in the older, well-established areas of Anchorage (downtown, Fairview, Government Hill) are experiencing a decline in enrollments (Harper, Community Contact, 1978d). To meet the immediate needs of the overcrowded classroom conditions and to maximize the use of existing facilities, several alternatives have been suggested by the Anchorage School Board in the Six-Year Building and Site Program, 1977-1983:

- Change existing boundaries
- Relocate some programs
- Bus students to available facilities
- Eliminate student attendance exceptions
- Reorganize some schools into new grade patterns

In addition, the school board is recommending the construction of two elementary schools in south Anchorage (one in the Rabbit Creek area, one in the Bayshore/Oceanview area) and a 32-room junior high school in north Anchorage (Eagle River/Chugiak area) to be opened in 1980. To satisfy other projected student enrollment increases,

the following have also been recommended:

- Construction of a new elementary school in Girdwood or expansion of the present one;
- Construction of two junior high schools - one in southeast Anchorage, the other in southwest Anchorage;
- Rehabilitation of existing buildings and site development.

Cost Per Student. In the past ten years, the cost per student has quadrupled, as shown in the following table:

TABLE 39

GENERAL EXPENDITURES PER STUDENT CAPITA[a]

Fiscal Year	General Expenditures	Average Daily Membership K-12 and Special Ed.	Expenditures Per Student
1967-68	$18,780,674	23,732	$ 791
1968-69	23,688,680	26,362	899
1969-70	26,911,979	29,204	922
1970-71	36,951,703	30,678	1,205
1971-72	38,698,876	31,806	1,245
1972-73	42,843,148	32,596	1,311
1973-74	51,586,328	34,386	1,500
1974-75	57,891,626	34,718	1,667
1975-76	72,443,472	35,632	2,033
1976-77	82,782,708	35,458	2,335

[a]Anchorage School District, Annual Financial Report for the Fiscal Year Ended June 30, 1977

These costs are attributed to a combination of factors. A rise in labor costs is one factor. Salaries account for 70 percent of the total expenditures of the school district. Moreover, these labor

costs affect the rise in cost of services for which the school district contracts out; i.e. when the private bus service raises its labor costs, the school district is directly charged this increase as part of the contract price. The addition of new programs has also greatly contributed to the rise in cost per student. New programs, especially in special education, mean more teachers, more support staff, and more specialized learning materials and equipment. Likewise, the trend toward smaller class size has created a need for more teachers, which, of course, increases costs (Harper, Community Contact, 1978c). Lastly, one must consider the effect of the decrease in purchasing power of the dollar.

The school district has thus far been able to meet their projected costs (Harper, Community Contact, 1978d). Plans to meet increased costs depend on four sources of revenues: local, state, federal, and facilities rental.

The largest single source of revenue comes from state aid and is directly related to that provided by local sources. State and local aid are based on the Public School Foundation Program (PSFP) which establishes the formula that determines the dollar amount needed by the district to run its programs. This dollar amount is derived by multiplying the number of instructional units (the aggregate of all direct and indirect services necessary to provide a standard of instruction for a group of people [Coon, et al., 1976]) by a base amount and percentage set by the state legislature. (For 1977-78,

the base amount is $27,500; and the state provides 95 percent of this; local sources provide five percent). The state periodically reevaluates the base and percentage to keep up with rising costs. For example, for 1978-79 the base has been increased to $29,000 and the percentage increased to 97.5 percent for the state share with 2.5 percent from the local share. Therefore, increased costs are provided for through the PSFP. The revenue provided by federal sources includes monies to support the Reserve Officers Training Corps (R.O.T.C.) program and monies mandated by Public Law 874. The final source, facilities rentals, is derived from that which the district charges to other agencies for use of their facilities and represents only reimbursement of actual expenses (Harper, Community Contact, 1978c).

Special Education Services and Needs

The Anchorage School District provides a special education program for students (ages three to 20) who are moderately mentally retarded, educable mentally retarded, orthopedically handicapped, visually handicapped, behavior disordered, deaf and hearing impaired, visually impaired, institutionalized, and temporarily home or hospital bound (Anchorage School District, 1978b). Also included are programs for academically gifted students and students with speech impediments. The programs are located in various schools throughout the district in addition to Whaley Center, Hope Park, Booth Memorial Home, and Jesse Lee Home.

Statistics indicate that student enrollment in special education programs

has gradually increased during the past seven years. Enrollments are predicted to decrease for 1978-79 due to the elimination of a program under special education funding.

TABLE 40

SPECIAL EDUCATION STUDENT AVERAGE DAILY MEMBERSHIP

STATISTICS FOR EIGHT YEARS[a]

Year	Enrollment
1971-72	950
1972-73	1,050
1973-74	1,070
1974-75	1,250
1975-76	1,276
1976-77	1,374[b]
1977-78	1,073[b]

[a]Anchorage School District, Preliminary Financial Plan, 1978-79

[b]Lois Wier, Budget Director, Anchorage School District, March 9, 1978

The school district projects the special education enrollment to be 1,236 students (general fund students only) in 1984 (see table 37).

Future classroom needs to meet the anticipated increases are included in the six-year building program and, therefore, are incorporated into the proposed construction of the elementary and junior high schools previously mentioned. (Classroom need for the special education program is calculated by establishing the student/classroom ratio to be nine students per elementary special education classroom and 13.5 students per secondary classroom [Anchorage School District, 1978d].)

Higher Education and Postsecondary Career and Vocational-Technical Training

For purposes of this report, higher education and postsecondary career and vocational-technical training will be divided into three categories: 1) public supported, 2) private, nonprofit, and 3) proprietary institutions.

Public Supported.

- University of Alaska, Anchorage. The University of Alaska, Anchorage (UAA), offers baccalaureate degrees in arts, business administration, education, fine arts, music, science, and technology; master's degrees in arts, arts in teaching, business administration, civil engineering, education, fine arts, public administration, and science, in addition to credit and noncredit short courses, i.e. self-improvement seminar type classes.

  As with other educational institutions, statistics reveal a rise in student population.

TABLE 41

UAA FTE STUDENT[a] ENROLLMENT, 1969-1977[b]

Fall Semester	FTE Enrollment
1969	282.4
1970	436.0
1971	725.0
1972	747.3
1973	877.7
1974	786.2
1975	806.7
1976	901.9
1977	1,239.2

[a]Full-Time Equivalent Student (FTE) = 15 credit hours

[b]University of Alaska, Anchorage, Office of Institutional Studies, 1978

As of fall 1977-78 semester, there were 106 full-time faculty employed at UAA, with an additional 170 adjunct instructors.

Classrooms, faculty offices, and support staff are housed mainly in the College of Arts and Science building and share several facilities with Anchorage Community College. There is limited classroom and office space currently available, but the opening of the Health Occupations Facility (HOF) will ease some of this burden. To meet the present need for space, classes are held off-campus in local junior high and high school buildings and on military based facilities. There is definite need for expanded facilities. During the fall 1977 semester, 100 sections were deleted in part due to the lack of available space (University of

Anchorage, 1977b). The University is requesting in a special bonding fund known as "1978 University of Alaska Activity Facilities Fund: the construction of a building that will provide an additional 40 classrooms and 50 offices to meet future demands" (Alaska State Legislature, 1978).

- Anchorage Community College. Anchorage Community College (ACC) is the largest community college in the state. As a center for higher learning, it focuses on the needs of the community with flexibility in its programs to change as the interests of the community change (Tadlock, 1978). ACC provides associate degrees in arts and applied science and certificated degrees in ten occupational/technical programs, plus adult basic education and community service programs. Its enrollment is on the rise as shown in the following table:

TABLE 42

ACC FTE STUDENT ENROLLMENT, 1969-1977[a]

Fall Semester	FTE Enrollment
1969	1,153.6
1970	1,501.5
1971	1,983.1
1972	3,235.0
1973	2,932.0
1974	2,987.1
1975	2,974.2
1976	3,177.7
1977	3,060.0

[a]University of Alaska, Anchorage, Office of Institutional Studies, 1978

The college employs 150 full-time plus 175 part-time faculty members. The campus is comprised of five buildings and shares other facilities with UAA. There is no immediate request for building construction with the exception of additional monies to complete existing construction and upgrade present nonclassroom facilities. However, there is a proposal for the construction of a building in 1981.

There are no official UAA and ACC enrollment projections available, but in the past three years enrollment has kept pace with the Anchorage population growth, thereby remaining at about four percent of the population growth for ACC and one percent for UAA. However, UAA has increased this pace to two percent in the last year (see table 43).

TABLE 43

ENROLLMENT AS PERCENT OF POPULATION

Year	Anchorage Population[a]	ACC Headcount[b]	% of Pop.	UAA Headcount[b]	% of Pop.
1975	174,890	7,091	4.1	2,117	1.2
1976	180,960	7,346	4.1	2,266	1.3
1977	188,304	8,168	4.3	3,938	2.1

[a]Anchorage Urban Observatory

[b]University of Alaska, Office of Institutional Studies, 1978

Interestingly, future enrollments may not be dependent on graduating high school students. From a recent survey conducted of high school students, there is an indication that 73 percent of those students

planning to go on to higher education expect to go outside Alaska for school. Moreover, this may not have a direct impact on the institutions, as the average age of students attending UAA and ACC is about 30 years and represents people returning to school after leaving the military, others choosing second careers, or women returning to school after raising children (Sourdough, 1978). However, the average student age has fallen in recent years and now about one-half the student body consists of the younger more traditional full-time student.

The present status of both UAA and ACC is dependent on state legislation. Monies delegated to these institutions to employ new faculty members and to build new facilities to meet enrollment increases are contingent upon legislative action. There is presently a request for new buildings for both campuses in order to meet the needs of the growing institutions. Currently, there is insufficient classroom and faculty office space.

Private, Nonprofit

- Alaska Methodist University. Alaska Methodist University (AMU) provides an alternative educational program to that provided by the Alaska state university system. Baccalaureate and master's degrees in liberal arts are offered as well as noncredit self-improvement and self-interest programs; i.e. bookkeeping, bee keeping, management seminars, etc. There were 170 students enrolled for spring 1978 semester and 120 enrolled in the previous fall 1977 semester.

These figures include both full-time and part-time students. AMU employs three full-time faculty, nine administrators with teaching responsibilities, and 13 adjunct instructors.

It is difficult to compare the past enrollment figures of AMU with the present ones. (The enrollment for fall 1975, the last semester before AMU temporarily closed, was 319 full-time, 362 part-time and 60 off-campus students.) The university experienced financial problems and closed its doors in 1976. (At that time, junior and senior level students were allowed to transfer to the University of Alaska with the agreement that they could continue their studies under AMU requirements.)

Future enrollment is also difficult to predict as the future of AMU is still tenuous, depending upon financial support. However, at its peak in 1974, the university enrolled 1,773 students. Campus buildings, sufficient to house that large a student population, include classrooms, a theater-auditorium, a student center, and residence halls (Anchorage Times, 1978a).

- Apprenticeship Programs. Various labor organizations offer apprenticeship training programs preparing participants for journeyman status. These are usually on-the-job training experiences together with minor traditional classroom instruction. Generally, enrollment in the training programs is based on the need for that particular skill in the labor

force. All unions are required to furnish one apprentice per five journeymen on a job site. Presently, enrollment in most apprenticeship programs is at a minimum, if any at all, due to the lack of demand for those specific skills. Unemployment statistics show an excess of already trained people in the job market. This is due to the cutback on North Slope pipeline work which has directly affected the number of skilled workers available to the local work force.

Proprietary Institutions.

Those private institutions which operate for profit and serve the needs of business and industry through professional training (Behlke, 1975) come under the category of proprietary. There are approximately twenty-four such insitutions in Anchorage, offering training in business, hair-design, modeling, real estate, flying, etc. They are supported by tuition and registration fees with completion in most schools dependent upon the number of hours trained in a specified area of study. Enrollments are limited to the number of students that the institution can handle at one time due to facility size.

ANCHORAGE POLICE DEPARTMENT/ALASKA STATE TROOPERS

A profile of the law enforcement system in Anchorage requires discussion in two interrelated areas: the Anchorage Police Department and the Alaska State Troopers. Baseline information will be developed in both areas; however, the emphasis will focus on the Anchorage Police Department.

Anchorage Police Department

Much of the statistical information and part of the organizational information has been extracted from A Management and Operational Study of the Anchorage Police Department.

Introduction. The first law enforcement activity was sanctioned by the city council in the early 1920's. On January 1, 1921, a marshal was hired by the council to patrol the small community of Anchorage. As Anchorage grew, so did the need for increased police protection, and by 1936 a second patrolman was hired for the night shift. The first official police car was purchased in 1937 and police uniforms were finally adopted in 1940 (Moerlins, 1975).

In the 1940's and early 1950's, the police department was characterized by "poor pay and bad working conditions." In an effort to alleviate their plight, Lt. John Lindquist, from California, was recruited for several months to revamp the system and his efforts were deemed successful. He was responsible for hiring John C. Flannigan as Chief of Police who remained with the depart-

ment in that capacity until 1973. He was considered a very positive asset to the department especially in creating a feeling of professionalism and in boosting morale.

In 1970 the Spenard area, located outside the corporate city limits of Anchorage, contracted with the city for police protection.

As the service area grew, so did the demand for increased public safety. Table 44 represents the increased manpower of the force and its relation to the population within the service area.

TABLE 44

POLICE MANPOWER

Manpower	1956	FY 70-71	FY 71-72	FY 73-74	FY 75-76	1977[a]
Sworn Officers	44	111	112	159	156	163
Civilian Officers	7	57	56	57	54	58
Total	51	168	168	216	210	221
Estimated Population[b]	30,000	72,000	78,000	84,000	100,520	107,000[c]
Police/1,000 People	1.47	2.54	1.44	1.89	1.55	1.52

[a]Capt. Weaver, March 6, 1978

[b]Estimated population of Anchorage for the corporate city limits and Spenard area

[c]Anchorage Urban Observatory, 1978

Since Flannigan's retirement in 1973, the department has had two chiefs of police: Earl Hibshun and the current chief, Charles G.

Anderson, a long time veteran of the department.

In the past few years, many changes have occurred within the Anchorage Police Department (APD). This is primarily a result of the dynamic growth Anchorage has recently experienced from the impact of the trans-Alaska oil pipeline. One major change has been the APD affiliation with the Alaska Teamsters Union, a very politically and influencially strong institution in Alaska. Other changes affecting the department encompass revisions in the penal code and changes in the law enforcement techniques brought about by Law Enforcement Administration Funds.

State and Local Spending. The annual cost for the APD to field one sworn officer is approximately $56,000 per year (Gorski, Community Contact, 1978f).

The 1976 annual expenditures for the department were $11,541,850. This increased in 1977 to $15,188,070 (June 30th figure). The adopted budget for 1978 calls for $15,503,950 in expenditures. Table 45 gives approximate state and miscellaneous revenues for 1976 through 1978.

TABLE 45

REVENUES[a]

Year	Revenues
1976	$ 4,387,910
1977	4,792,050
1978 (projected)	5,710,670

[a]Gorski, Community Contact, 1978g

The balance between state and miscellaneous revenues and expenditures is met through local taxes (Gorski, Community Contact, 1978g).

Organizational Context. The primary objectives of the APD, as stipulated by the Municipal Organizational Plan, Ordinance #21-76 (April 6, 1976) are as follows:

- Enforce the observation of all laws and ordinances;
- Protect the lives and property of citizens;
- Promote and maintain order.

To realize these objectives, the department is classified into three major divisions: Field Operations, Administrative Services, and Technical Services (Hitchins, 1977).

- Field Operations Division. The Field Operations Division is largest of the three divisions in the APD. The Division is subdivided into two areas: Uniformed Services and Investigative Services. As well as being designated the largest of the three divisions, it could well be considered the most important division in the community since it is generally the citizen's initial contact with the APD.

    - Uniformed Services. Uniformed Services has three bureaus: Patrol, Traffic and the Reserve Unit.

      The responsibility of the Patrol Bureau includes

enforcement of laws and ordinances, preserving the peace, and providing services on call to the community using both vehicular and walking units. Currently, the division has 123 sworn officers and one civilian officer.

Contact of the Patrol Bureau by a citizen usually proceeds as follows:

1. A call is initiated by the complainant by dialing the emergency number, 911. The call is answered at the communications center and recorded on a dispatch ticket.

2. The dispatch ticket is then relayed to the dispatcher who assigns a unit to respond to the complaint.

3. The unit then responds to the call to assist the citizen.

4. When the officer completes the call, the dispatcher is then notified that the unit is available for other assignments.

A priority system is in effect which determines the speed of response based on the seriousness of the

complaint. These temporal indicators are defined in Table 46.

TABLE 46

PRIORITY SYSTEMS

Priority Number	Definition
1	Low Priority - respond at convenience
2	Immediate response - no emergency equipment - obey traffic regulations.
3	All emergency equipment utilized - maintain speed limit.
4	In progress incident, emergency response.

Table 47 indicates response and travel time based on the priority system. This information was extracted from calls received during January through March 1976.

TABLE 47

RESPONSE TIME

Priority	No. of Calls	Average Processing Time At Communication Center	Average Travel Time
1	62	25.9 minutes	15.5 minutes
2	9,082	9.2 minutes	9.0 minutes
3	371	1.4 minutes	9.4 minutes
4	309	1.2 minutes	3.3 minutes

The National Commission on Standards and Goals recommends that travel time in an urban setting should not exceed three minutes for a priority four call. Anchorage closely meets this criteria with their 3.3 minutes travel time. However, priority two should be reduced to less than five minutes.

The APD service area is divided into nine patrol districts. Except during the overlap of the three shifts, 13 patrol units are available. Three of these are supervisory units and one is a special uniformed investigation car.

The Uniformed Services Section is also responsible for maintaining a traffic bureau which handles hit-and-run accidents, traffic enforcement, and impounding vehicles. This department employs 12 personnel.

In addition, a reserve unit of 25 persons is available to assist the force as needed.

- Investigation Services. The Investigation Services are responsible for investigating violent crimes against persons, property, buncos, frauds, and arson. In addition, follow-up investigation is handled on felony cases. Investigation

Services are also responsible for vice control, narcotics and drug enforcement, juvenile deliquency, and child abuse. The staff also serves summons and warrants.

Objectives include recovery of stolen property, collection and evaluation of information on real or potential crime, provisions of certain community services, preparation of criminal cases for prosecution, and control of vice and related activities.

Investigation Services maintain four bureaus employing 49 APD personnel. The first is the Investigations Bureau whose functions include investigating homicide, rape, armed robbery, and crimes with a deadly weapon. The Juvenile Bureau is responsible for junvenile burglary, rape, child molesting and child abuse, assault and assault with a deadly weapon, and vandalism. The third bureau is the Metropolitan Drug Enforcement Unit which works closely with the State Troopers in identifying and arresting narcotic and drug dealers and in curbing the abuse of narcotics and drugs through enforcement of laws.

The Warrants Bureau also falls under the Investigation Services. Their responsibility lies in the service of summons and warrants.

- Administrative Services Division. The Administrative Services

Division's functions include community relations, personnel training, and administrative duties. The division has four separate bureaus: Personnel, Budget and Fiscal, Police Community Relations, and Training. This division employs four personnel.

- Technical Services Division. The third division in the APD is Technical Services. The bureaus under this division include Records, Communications (and operation of the 911 emergency communication system), Property and Evidence, Crime Lab, and Data Systems. Technical Services has 54 personnel.

Incidence of Crime. Part I crimes are considered to be the most serious in terms of their impact on the victim and the community. There are seven classes of Part I crimes as determined nationally by the Uniform Crime Reports. They are murder, forcible rape, robbery, aggravated assault, burglary, larceny, and auto theft. Crime statistics in these areas are a good barometer of the level of crime in a particular community. Part II crimes are less serious in nature and are classified as simple assault, forgery, fraud, embezzlement, vandalism, weapons possession, prostitution, and disorderly conduct. Table 48 illustrates the crime index statistics from 1974 through 1977 for Part I crimes.

TABLE 48

ACTUAL NUMBER OF REPORTED CRIMES

Crime	1974	1975	1976[a]	1977[a]
Murder	14	13	17	15
Rape	60	77	80	102
Robbery	175	289	277	241
Aggravated Assault	333	330	326	235
Burglary	1,367	1,615	1,653	2,050
Larceny	4,141	4,951	6,473	6,446
Vehicular Theft	833	1,288	1,174	1,242
Total	6,923	8,562	10,000	10,331

[a]Capt. Weaver, March 6, 1978

Comparing 1974 and 1975, there was a 23 percent increase in the absolute number of reported Part I crimes. Between 1975 and 1976, there was a smaller increase of 16.8 percent; and between 1976 and 1977, there was a further decline in the increase or reported Part I crimes to three percent. During these same periods, the population within the service area exhibited minimal growth.

There are several indicators which could account for the decrease in the crime rate. Such factors include better police service, stabilization of the community from the impact of the trans-Alaska pipeline, and the completion of the pipeline in 1977.

Crime Clearance. Crime clearance is defined in two ways: either by the arrest of the perpetrator or by knowing who committed the crime; but for a particular reason, the APD cannot apprehend the suspect. Examples of the second clearance would be death of the

suspected offender or apprehension of the offender in another jurisdiction. Table 49 illustrates the clearance rates for 1974 through 1977 by the APD for Part I crimes.

TABLE 49

CRIME CLEARANCE RATES

Part I Crimes	1974	1975	1976[a]	1977[a]
Murder	100.0%	91.7%	41.1%[b]	66.6%[b]
Rape	21.7	22.1	11.2	9.8
Robbery	17.7	23.9	18.4	15.3
Aggravated Assault	44.4	38.5	35.8	36.9
Burglary	10.2	8.8	9.8	7.5
Larceny	22.4	19.6	20.3	15.7
Auto Theft	7.4	7.1	4.5	4.6

[a]Capt. Weaver, March 6, 1978

[b]Low percentage due to low general frequency.

Table 50 gives the loss and recovery rate of stolen property for 1974-1977.

TABLE 50

PROPERTY LOSS AND RECOVERY RATE EXCLUDING MOTOR VEHICLES

Loss/Recovery	1974	1975	1976[a]	1977[a]
Loss	$1,053,419	$1,957,346	$1,455,347	$2,743,907
Recovered	60,369	79,284	122,444	229,154
% Recovered	5.7%	4.1%	8.4%	8.3%

[a]Capt. Weaver, March 6, 1978

Current Issues.

- Manpower. At a minimum, the APD would like to maintain 1.52 sworn officers per 1,000 in the population (includes only sworn officers). However, in 1977, the department received 63,906 calls for service which amounts to approximately 173 calls per day. The department would like to see additional manpower to supplement the force. However, budget constraints make this a difficult goal to achieve (Gorski, Community Contact, 1978f).

- Areawide Police Service. On October 4, 1977, Proposition 8 was placed before the Anchorage voters for approval of areawide police service. Areas which passed Proposition 8 included Muldoon, Sand Lake, and Eagle River. Muldoon and Sand Lake will receive municipal police service effective July 1, 1978. Eagle River will have APD services available to them beginning January 1, 1979.

  By a narrow margin, the communities of Hillside, Rabbit Creek, and Potter's Marsh voted down police service. As these areas become more densely populated, an increase might be expected in the frequency of Part I crimes. At such time, police expansion is more likely to receive voter approval.

- Clearance Rates - Part I Crimes. Comparing Anchorage to the national average, Anchorage clears less Part I crimes specif-

ically in the areas of rape, burglary, aggravated assault, and auto theft. Several factors could alter these low clearance rates. First, Anchorage currently has no access to a local forensic laboratory. All evidence is sent to the FBI facilities in Washington, D.C. Although this has worked well in the past, the area is now experiencing a high enough crime rate and a sufficiently low clearance rate to make the installation of a forensic lab a viable consideration for Anchorage. Second, officers assigned to the investigative units have little or no training other than that acquired on the job. By upgrading the training procedures, more sophisticated investigative skills could facilitate in crime clearance (recommendations of the PRC Public Management Services, 1976). The third factor is intrinsic throughout most urban areas across the country. The problem lies in the apathy or unwillingness of the public to become involved. Better public awareness of the crime profile could assist investigation and crime prevention (Gorski, Community Contact, 1978f).

Planning. To service the newly acquired areas of Sand Lake and Muldoon, the APD palns to increase their staff by 51 sworn officers and 19 civilian officers. To accommodate the Eagle River area, an additional 24 sworn officers and two civilian officers will be required. The APD has 24 officers currently in training and plans for recruitment and training of the remaining personnel (Gorski, Community Contact, 1978f).

The Home Car Program, maintained by the APD, is viewed as a real asset in crime prevention. Under this program, an officer is assigned a car and uses it as his own vehicle on or off duty. This means increased visibility of patrol cars in local neighborhoods and around the service area. The advantage lies in the public's inability to determine whether or not the officer in the car is on duty. Currently, there are 26 home cars in this program (Gorski, Community Contact, 1978f).

This is a definite need for the APD to obtain their own computer system. Currently, they are sharing computer time with several other municipal agencies. This procedure has proved to be insufficient for their needs. Through the Capital Improvement Plan which is the planning tool for the APD, the department has requested this facility. By computerizing the high crime hours, time of year, frequency and location of crimes, the department will be better able to plan the patrol procedures in the high crime risk areas (Gorski, Community Contact, 1978f).

Alaska State Troopers

Introduction. The APD, since unification of the Greater Anchorage Area Borough and the old City of Anchorage, continues to serve the old city limits and the Spenard area. Outside of these areas, law enforcement is currently provided by the Alaska State Troopers. Alaska State Troopers, C Detachment, presently patrols for approximately 71,000 people within the municipal boundaries. The detach-

ment's actual jurisdictional boundaries extend from the Knik Bridges south to Portage. To serve this area, C Detachment employs 29 commissioned troopers, five sergeants, one first sergeant, one lieutenant, and one captain. The troopers operate with single man units (Gorski, Community Contact, 1978a).

From four to seven units are on duty per shift within the municipal boundaries. This means that at any one time, there are between .06 and .09 troopers available to serve 1,000 persons. This may seem low in comparison to the ratio of APD to the population; however, statistics indicate that crime is not as prevalent in less densely populated regions such as the area served by the Alaska State Troopers (see table 51). Currently the ratio of the total force is .40 per 1,000 in the population.

Functions. The troopers' primary functions are oriented toward highway patrol and law enforcement for the area outside the old city limits and Spenard.

Incidence of Crime. Using Part I crimes as an index o f criminal activity, table 51 shows a breakdown of the frequency of violent crimes in C Detachment jurisdiction.

TABLE 51

ACTUAL NUMBER OF OFFENCES[a]

Type of Offense	1975	1976	1977
Murder	7	6	4
Rape	13	19	32
Robbery	49	54	69
Aggravated Assault	148	111	146
Burglary	488	669	997
Larceny	1,278	1,371	1,426
Vehicular Theft	288	355	466
Total	2,271	2,585	3,140

[a]Bill Brown, March 8, 1978

The average response time, depending on the seriousness of the incident, can range from three to seven minutes depending on location. The response time can exceed seven minutes if the location of the call comes from some of the more isolated regions within their jurisdiction (Gorski, Community Contact, 1978a).

Criminal investigation for Part I crimes is handled by the criminal investigation bureau under the director of the State Troopers. This bureau is mutually exclusive from C Detachment and employs eight persons. Between 1975 and 1977 Part I offenses increased by 38 percent. This increase could be a function of the increase in population density within the trooper's service area (Gorski, Community Contact, 1978a).

A major function of the Alaska State Troopers is highway patrol. Table 52 indicates total number of responses to traffic accidents

between 1975 and 1977.

TABLE 52

RESPONSE TO TRAFFIC ACCIDENTS[a]

Year	No. of Responses
1975	Not Available
1976	2,074
1977	2,092

[a]Bill Brown, March 8, 1978

The majority of accidents take place between 12:00 p.m. and 8:00 p.m. There are two peak accident periods during the year. The first is March-April, and the second is September to mid-November. The latter is due to changing weather patterns creating hazardous driving conditions. During heavily congested traffic periods, such as holiday seasons, the Alaska State Troopers utilize air patrol to increase their effectiveness in patrol and traffic enforcement.

State Spending. Funding for the Alaska State Troopers is provided through state revenues. The 1978 preliminary budget for C Detachment is $1,401,000. To field one sworn trooper, the cost to the state is $67,300 (includes training) (Gorski, Community Contact, 1978b).

Current Issues and Planning. With areawide police service becoming more predominant, law enforcement activities will decrease and emphasis will be placed on traffic enforcement. It is the goal of the detachment to dispatch air patrol every weekend and holiday

during the summer of 1978 (Gorski, Community Contact, 1978a).

No increase in C Detachment staff is planned due the expansion of municipal police services throughout most of Anchorage. The expansion of the municipal police force, in affect, has a positive influence on the troopers by lightening their load in the area of law enforcement (Gorski, Community Contact, 1978a).

FIRE PROTECTION AND EMERGENCY MEDICAL SERVICE

Introduction

Fire protection in Anchorage was initiated in 1921 as a volunteer organization under the authorization of Alaska Statute 29.05.010. Fire protection for the growing community continued on a volunteer basis until 1950 in conjunction with fire fighting facilities of the Alaska Railroad and the military. Under city ordinance in 1950, the volunteer fire protection services were abandoned and a full-time tax supported municipally operated department was developed and continues today in that context (Greater Anchorage Area Borough [GAAB], 1970a).

The Anchorage Fire Department services the Anchorage Bowl and north to Eagle River. The area north of the Eagle River Service Area District is served by the Chugiak Volunteer Fire Department. To the south, Girdwood and Alyeska are served by the Girdwood Volunteer Fire Department. The Turnagain Arm between Girdwood and Potter is not in a fire service area but is served by the Anchrage Fire Department on an "as available/reimbursable" basis. Both volunteer fire departments are under the administrative supervision of the municipal Fire Chief.

Organizational Context

Anchorage Municipal Organizational Plan, Ordinance #21-76 (April 6, 1976) stipulates the responsibility of the fire department: "to prevent the outbreak of fires which might endanger public property and life, to extinguish fires as rapidly and as efficiently as possible, to transport

and provide emergency medical service to persons in need of such rescue and to provide rescue services as required" (Hitchins, 1977, P. 27).

To realize these objectives, the Anchorage Fire Department is divided into four major divisions: Fire and Rescue Operation, Emergency Medical Services, Fire Prevention, and Support Services.

Fire and Rescue Operations is the largest of the four divisions. The division mans 11 fire stations and 15 fire companies in the Anchorage Bowl and Eagle River. (See figure 3 for location of fire stations.) The main function is to extinguish fires and undertake emergency rescue operations. Fire company personnel also conduct fire inspections within their districts and maintain up-to-date, detailed maps of buildings, roads, utilities, and water sources. The division also maintains a training section for new and existing personnel on fire fighting techniques and rescue operations (Hitchins, 1977). The division has 203 personnel.

The Emergency Medical Services Division has five medic units with 37 personnel on staff. The function of the division is to reduce injury and loss of life in emergency situations with on-site aid by trained medics (Hitchins, 1977).

The Fire Prevention Division handles fire code enforcement and works closely with building inspectors in the Municipality's Public Works Department to ensure building safety. The division is also responsible for fire investigations and functions to identify those key indicators which limited or permitted the spread of fire. Through media and local presentations,

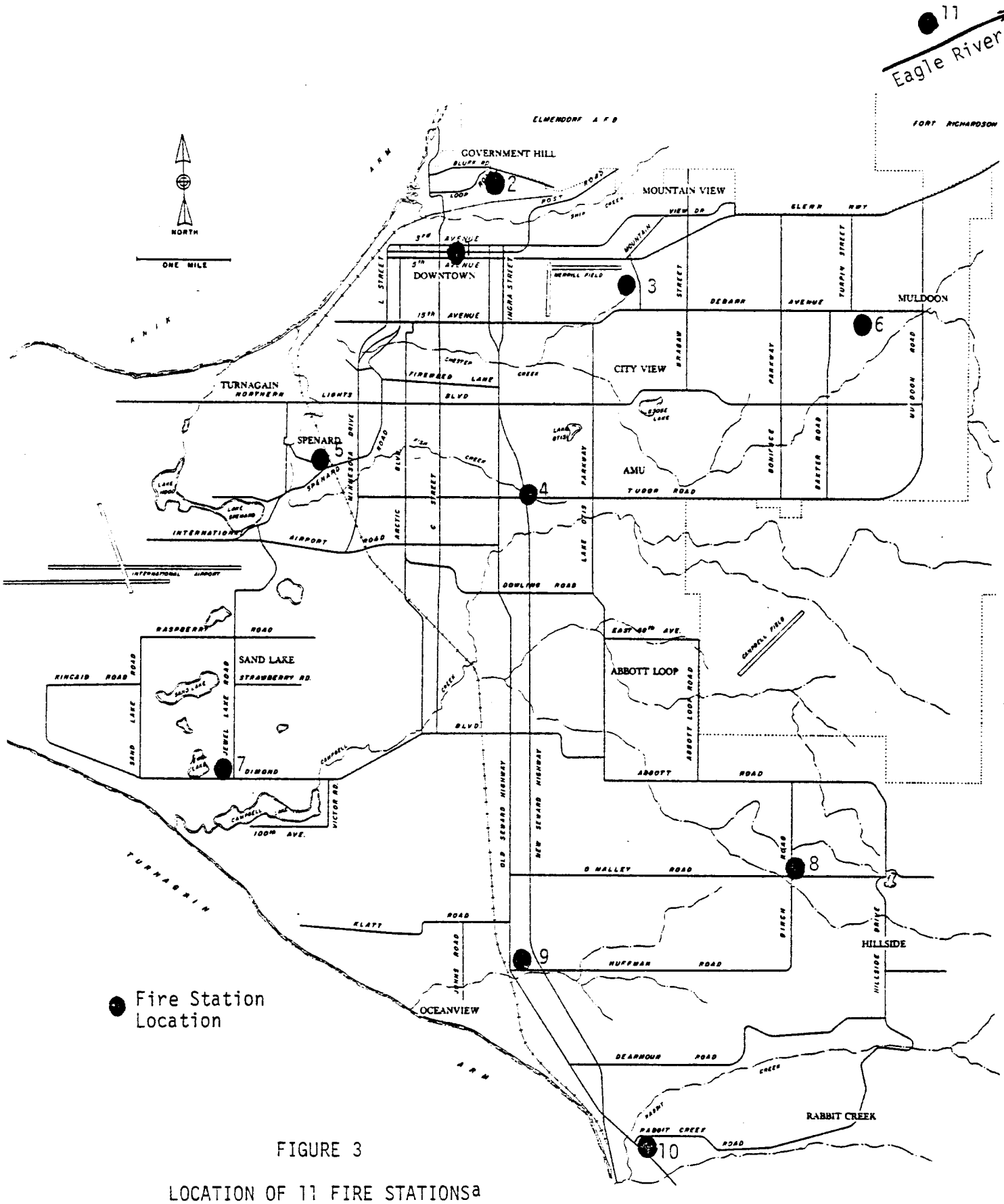


FIGURE 3

LOCATION OF 11 FIRE STATIONS[a]

[a]J. Franklin, Deputy Fire Chief, Anchorage Fire Dept., March 2, 1978

the division engages in public education on the subject of fire prevention (Hitchins, 1977). Fire prevention staffs 14 personnel.

The Support Services Division handles communications and dispatching of emergency personnel. The division is also responsible for maintenance and supplies for the department (Hitchins, 1977). Support Services Division has 19 personnel.

Fire and Emergency Services Profile

The statistical data and organizational information for the remaining sections were obtained from a personal interview with J. Franklin, Deputy Fire Chief, Anchorage Fire Department.

The Fire and Rescue Operations Division responds to all fire calls in the Anchorage Bowl and north to Eagle River. Table 53 shows the frequency of fires and rescue responses from 1975 to 1977.

TABLE 53

FIRE AND RESCUE OPERATIONS RESPONSES

Year	No. of Fires
1975	4,508
1976	4,634
1977	4,793

Between 1975 and 1977, there has been a six percent increase in the number of fires to which the department has responded. During the same period, the population increased approximately 7.6 percent.

The leading causes of fires in 1977 were 1) careless smoking with 265 incidences; 2) suspicious arson (possible arson but unable to prove), 181; 3) children playing with fire, 116; and 4) arson, 113.

The average response time within the service area, excluding Girdwood, is 4.48 minutes.

Approximately five percent of the Fire and Rescue Operation's responsibilities were exclusively in the area of rescue. Extrication is the leading type of response for rescue operations.

There are five active paramedic units located in Anchorage. The location of the newest medic unit is the station at Huffman Road and Jackass Lane. The other units are presently located in downtown, Eagle River, Spenard and McRae Road, and Debarr and Patterson Road. Table 54 illustrates the number of calls to which the Medic Division responded from 1975 to 1977.

TABLE 54

MEDIC RESPONSES

Year	No. of Responses
1975	7,376
1976	8,346
1977	9,177

The response time for the medic units is six minutes or less with the exception of the Hillside area which is under ten minutes. For every real medical emergency, a fire company is dispatched with the medic unit.

The firemen are trained emergency medical technicians and, if necessary, can begin emergency life saving procedures prior to the arrival of the medic units. The most frequent types of calls the medics responded to in 1977 were general illness, 3,184 calls (13.7 percent accounted for cardiac problems); auto accidents, 786; and assaults, 360.

Funding

The 1978 budget for the Anchorage Fire Department is $15.8 million. Six point one million dollars are provided through state revenue sharing. Local taxes support the balance of the budget.

Current Issues

Overall, the Anchorage Fire Department is coping well with demands for service. However, there are two major problems which exist in the area of fire protection in Anchorage. The Upper Hillside area is very vulnerable to fire loss due to the lack of available water resources. No water mains exist in this area and, consequently, no fire hydrants. If a fire breaks out in the Hillside area, all water must be hauled to the site in tankers. Prior to 1978, the Anchorage Fire Department had the assistance of the Bureau of Land Management fire fighting facilities. However, the Bureau of Land Management is phasing out their equipment, and the Anchorage Fire Department will no longer receive local support. According to the Anchorage Fire Department, it is not a question of if but when a major fire will break in the Hillside area. With prevailing winds along the Chugach Mountains, a fire could realistically amount to a multimillion dollar loss in real property. Only with the extension of water mains into this

area could fire losses be reduced.

Another issue the department is concerned with is the amount of arson or suspicious arson occurring in Anchorage. In 1977 of the 181 suspicious fires, 126 were assumed to be arson, based on strong circumstantial evidence. Comparing per capita loss nationally, Anchorage experienced $8,600 loss per capita versus the national figure of $4,500. Even considering the cost of living differential, Anchorage is above the national average.

Planning

The Anchorage Fire Department, under the direction of the Municipal Fire Chief, is involved in planning the fire defenses of the community. In anticipating growth trends, the department works closely with the Municipal Planning Department, the Planning and Zoning Commission, the Chugiak and Girdwood Board of Supervisors, and, where appropriate, with neighborhood community councils. The Fire Department has a contract with the Public Technology Incorporated (PTI) to aid in determining fire station locations. PTI is a computerized method of determining the best location for a fire station in the area based on time/distance criteria. Planning for expansion in fire protection is closely related to the Insurance Service Offices (ISO) schedule for grading fire defenses. This grading determines the insurance premium rate for a community. Planning fire protection involves several factors, for example: ISO recommendations, population density, zoning, distance and response times, and water flow requirements for firefighting.

The Capital Improvement Project Budget reflects the current major projections of the Anchorage Fire Department. The CIP Budget spans a time frame of six years and is updated annually as new information becomes available. As an example, a new fire station is proposed in the vicinity of Dimond and the new Seward Highway. The proposed location is in a developing industrial and residential area in Sand Lake which currently appears to be developing along a low to medium density profile. The projected completion date for the new station is 1985. However, construction could be deferred or accelerated based on development in this area. The goal of the department is to average a 4.0 minute response time for first-due fire companies. For the last quarter of 1977 the response time was 4.8 minutes. Presently, no new manpower or facilities will be added to achieve this goal.

The current ratio of the total force to the population is 1.47 personnel per 1,000. If Anchorage develops along a high density urban profile, the trend of expansion would be in the area of additional personnel and fire companies. However, if land use develops along a low density context, problems could occur in responding to emergency situations within the 4.0 minute time frame. Under this type of land use, additional fire stations would most probably be added to the system.

LEISURE AND RECREATION

Introduction (Municipality of Anchorage, 1977j)

Recreational and leisure activities in the Anchorage area are provided by agencies and organizations in both the private and public sector. The majority of the recreational facilities, programs, and activities are provided by the Municipality's Department of Cultural and Recreational Services. That department maintains and coordinates libraries, the museum, local parks and trails, community schools, community centers, and a variety of recreational programs and activities. Through their work with the Anchorage Art Advisory Commission, the department has input regarding local performing and visual art activities.

State and federal support of leisure and recreational activities come largely in the form of grants to the Municipality (for libraries, museum, community education, etc.) and as grants and endowments to private non-profit agencies and organizations. State and federal government also provide and maintain parkland, trails, and paths.

The Department of Housing and Urban Development, through the Community Development Block Grant, and the Department of the Interior, Bureau of Outdoor Recreation are currently the major sources of funds for recreational development (parkland acquisition and development).

Over 200 organizations, agencies and clubs operate in response to the leisure needs of the Anchorage community. Most are largely self-supporting through fees, donations, volunteer staffing, and fund-raising.

Organizational Structure

The Department of Cultural and Recreational Services is divided into three divisions: Parks and Recreation, Museum, and Library (Gehler, 1978d).

- Parks and Recreation Division. The Parks and Recreation Division includes four sections: Park Operations, responsible for parkland and facilities maintenance; Special Recreation Programs, coordinating activities at the school swimming pools; activities for the handicapped, senior citizens, etc.; Community Programs, directing the community schools and community centers' activities; and Design and Construction, completing specifications and plans for parkland acquisition and parkland/facilities development.

- Museum Division. The Museum Division is responsible for the operations of the Municipal Historic and Fine Arts Museum.

- Library Division. The Library Division coordinates activities within the six-facility municipal library system.

- Eagle River/Chugiak Recreation. The Eagle River/Chugiak Recreation is responsible for personnel work with the Eagle River/Chugiak Park Board under a recreational powers agreement.

- Girdwood Park Operations. The Girdwood Park Operations is to

advise and assist the Girdwood Board of Supervisors (three) regarding park and recreation related efforts.

The State of Alaska serves recreational needs through the provision of state parklands as well as through grant awards for parkland acquisition and development and community education.

The federal government most actively supports recreation in the provision and maintenance of 2,020 square kilometers (780 square miles) of federal parkland, located within or near the Anchorage Bowl area. The major federal funding source for parkland acquisition and development is the Department of the Interior, Bureau of Outdoor Recreation, Land and Water Conservation Funds.

Recreational Inventory

Parks. Within the Anchorage Bowl area there are over 1,503 hectares (3710.36 acres) of parkland. Outside the metropolitan area there are 562 hectares (1,388 acres) of parks. The total accessible parkland equals 327,666 hectares (809,336 acres) in 93 parks and areas (Gehler, Community Contact, 1978c). The size, type, and proprietary status are described in table 55 below:

TABLE 55

PARKLAND INVENTORY[a]

	No. of Parks	Type of Park	No. of Hectares	No. of Acres
Municipal	37	Vest Pocket	20.48	50.59
	12	Neighborhood	49.75	122.88
	7	Community	110.04	271.79
	2	Large Urban	79.82	197.15
	6	Regional	739.09	1,825.55
	8	Special	239.55	591.70
	5	Conservation Areas	113.76	280.98
	13	Open Spaces	149.68	369.72
	3	Regional (Outside Metropolitan Areas)	1,776.52	4,388.00
	3	Greenbelt	275.56	680.64
State	1	Accessible Wilderness	200,404.86	495,000.00

[a]Pete Martin, Physical Planning Div., Municipal Planning Dept., Anchorage, AK.

Paths and Trails. There are currently approximately 322 kilometers (200 miles) of ski/bike paths within the Anchorage Bowl area (municipal - bikeways, 67 kilometers [42 miles]; ski trails, 105 kilometers [65 miles]; snow mobile, 8 kilometers [5 miles]; sled dog trains, 48 kilometers [30 miles]; state - hiking/skiing trails 499 kilometers [310 miles]). An additional 161 kilometers (100 miles) are projected for construction through state and local development by 1982.

Recreational Programs. Of the more than 200 private clubs and organizations which offer local recreational programs, the following are among the most active in this community:

- Girl and Boy Scout
- Campfire Girls
- Little League

- Boys and Girls Clubs
- Y.M.C.A.
- Church Groups

Of the community-wide special events, the following six are most popular:

- Fur Rendezvous
- Anchorage Symphony Orchestra
- Alaska Repertory Theatre
- Festival of Music
- Open Aire Pleasure Faire
- Friday at 8 Concerts

Other major municipal recreation programs include:

- community schools
- summer elementary playground programs
- special recreational events for handicapped
- special recreational events for senior citizens
- swimming programs at school pools
- intermural ath
- special seasonal activities and/or events (i.e. dances, camping trips, Easter egg hunt, Christmas caroling, etc.)

Recreational Facilities. Most of the existing recreational facilities in the Anchorage area are owned and operated by the Municipality. A few exceptions would include one indoor ice rink and one roller

skating rink, three health spa/handball court facilities, one curling gym, and many tennis courts, outdoor basketball courts, picnic areas, etc.

Additional recreational facilities available within the Municipality include those mentioned in table 56, below:

TABLE 56

MUNICIPAL RECREATION FACILITIES[b]

Type of Facility	Number of Facilities
Hockey Rinks	4
Public Rinks[a]	92
Ski Hills	2
Sledding Hills	2
Snow Machine Areas	2
Tennis Courts[a]	60
Bowling Green	1
Baseball Diamonds	14
Outdoor Basketball Court	1
Golf Course	1
Softball Fields	10
Outdoor Volleyball Courts	2
Camer Parks	2
Football Fields[a]	9
Swim Beach	3
Swim Pools	3
Soccer Fields	4
Boating Lagoon	1
Day Camp	1
Tracks[a]	9

[a]The Anchorage Public School District maintains 82 free/hockey rinks, 33 tennis courts, nine tracks, and eight football fields.

[b]L. Penna, Municipal Park Planning & Design

Comprehensive Plan

The objectives within the Comprehensive Development Plan Ordinance which

relate to recreational development reflect a need for the following types of activities (Greater Anchorage Area Borough, 1975h):

- A balance between programs for acquisition and development, except where minimum standards for parkland have not been met;
- Improve usability of publicly owned open space;
- Promote recreational use of known marginal and hazardous lands;
- Encourage use of active recreational and cultural programs within publicly owned lands and facilities;
- Separate mechanized and nonmechanized facilities and/or areas;
- Establish greenbelts along major streams; and
- Combine parks and recreational facilities with school sites for optimum service to neighborhoods.

The Comprehensive Plan is currently being revised to more accurately reflect the evolving needs of the Anchorage community. Comprehensive plan objectives have been translated into departmental and division work programs for implementation action.

Capital Improvement Program (CIP)

The Parks and Recreation Division of the Department of Cultural and Recreational Services has proposed the following activities for inclusion and approval in their Capital Improvement Program budget:

Library. Approximately $17 million will be spent through 1981 for a headquarters library which will house systemwide administrative services, centralized processing, and will serve as a main library for the Municipality. Based upon a projected 1990 population of 365,000 the costs were calculated at 37.16 decimeters (0.4 square feet) per capita at $90 per 92.90 decimeters (square foot). The library will probably be funded by a combination of general obligation bonds and state funds.

Bike Trails. Approximately $14.5 million will be spent by 1984 on the development of Type I and II bike trails throughout the Anchorage area. Trail development is proposed for downtown/Fairview area, Inlet View/Turnagain area, Lake Otis, Sand Lake, South Anchorage, and the Spenard areas.

Land Acquisition. Approximately $2.4 million of general obligation bonds and $2 million in grant funds are to be used for acquisition of more than 271 hectares (670 acres) of parkland throughout the Anchorage area.

Park Development. Approximately $3 million will be targeted for park development including such activities as general upgrading, trails for handicapped and senior citizens, refurbishing community center facilities, paving recreation courts and parking lots, developing picnic areas, greenbelts, and ball fields.

The CIP serves as a six-year plan for capital improvements in the

Municipality. The CIP is revised, approved, and adopted on an annual basis, insuring that the current year's program most accurately reflects real development activities and program expenditures.

Current Issues

A private citizens' committee, named Operation Breakthrough, recently submitted to the Municipal Assembly a proposal for the development of the following recreational efforts:

- development of one community and 38 neighborhood parks (to 1986) to meet the two hectares (five acres) per 1,000 people standard;
- installation of a major botanical display garden and arboretum;
- creation of a Public Lands Conservancy Foundation;
- implement a parks interpretive program in all public schools;
- construction of two new recreation centers in Muldoon and Sand Lake;
- completion of additional activities relating to bike, nature, ski, equestrian, sled dog, snow machine, physical fitness, and handicapped trails.

Many of the proposed acquisition and development activities are currently included in the Department of Cultural and Recreational Services Capital Improvement Program 1978-1983. At the time of this writing the Municipal Assembly had not yet made a decision on the Breakthrough proposals.

Adoption of any of the proposed project would significantly impact the CIP.

A second major issue being examined by the Department of Cultural and Recreational Services is the construction of a new neighborhood library in the Muldoon area. Municipal and community personnel are currently meeting to determine the optimum location, size, and feasibility of completing the library.

Also under discussion is the direction and scope of the Municipality's community schools program. The program has grown from two to 16 schools within two to three years. Parks and recreation personnel, Community Schools Association members, and representatives from other interested groups (UAA, ACC, Federation of Community Councils, Anchorage Public School District, Municipal Planning Department) are currently in the process of developing a long-range plan for community schools. Inherent in this plan is the examiniation and definition of community education and a determination of the most desirable and cost-effective means of coordinating the provision of community education to the public (via Parks and Recreation, ACC, and Anchorage School District). The plan will provide a basis for decisions regarding further expansion of the program by creating new community schools.

Physical Characteristics

LAND USE

General Overview

The Municipality of Anchorage is located in the southcentral portion of Alaska at the head of Cook Inlet on a roughly triangular piece of land between the two estuarine drainages, Knik and Turnagain Arms. The Municipality covers a land area of approximately 4,403 square kilometers (1,700 square miles of which only 15 percent (621.6 square kilometers [240 square miles]) is suitable and available for human habitation. The remaining 85 percent is comprised of the Chugach Mountains which are too rugged and remote for human habitation. Metropolitan Anchorage is located at the western side of the Municipality on a lowland plain that slopes gently away from the mountain front toward Cook Inlet. The southeastern part of the area declines in elevation from 152-183 meters at the mountain front through a series of ridges and isloated hills to a broad trough about 24.38 meters (80 feet) above sea level, that extends north-south through the bowl to Turnagain Arm. The area of the former City of Anchorage and nearby military bases occupy a broad, gently sloping alluvial plain, while the areas to the north and west have extensive hummocky terrains that locally rise to heights of more than 91 meters. The entire lowland is separated from the sea by steep bluffs, and only in the valleys of major streams does the land approach sea level with a gentle gradient (Municipality of Anchorage, 1977a).

Figure 4 delineates the boundaries of the Municipality. Those areas

suitable for urban development is to the west of Chugach State Park, south and east including Alyeska-Girdwood, and north and east to Eagle River-Birchwood. There are a variety of areas within the Anchorage area which either have not or should not be developed with residential uses. Some of these areas lie in hazardous locations such as within the floodplains of the several streams which flow into Cook Inlet, on lands subject to landsliding, or in unusable wetlands. Other areas unsuitable for residential use are those used for commercial and industrial purposes or under the flight paths leading to Anchorage International Airport. Still other areas are in public ownership for recreational use or for future expansion of other public facilities.

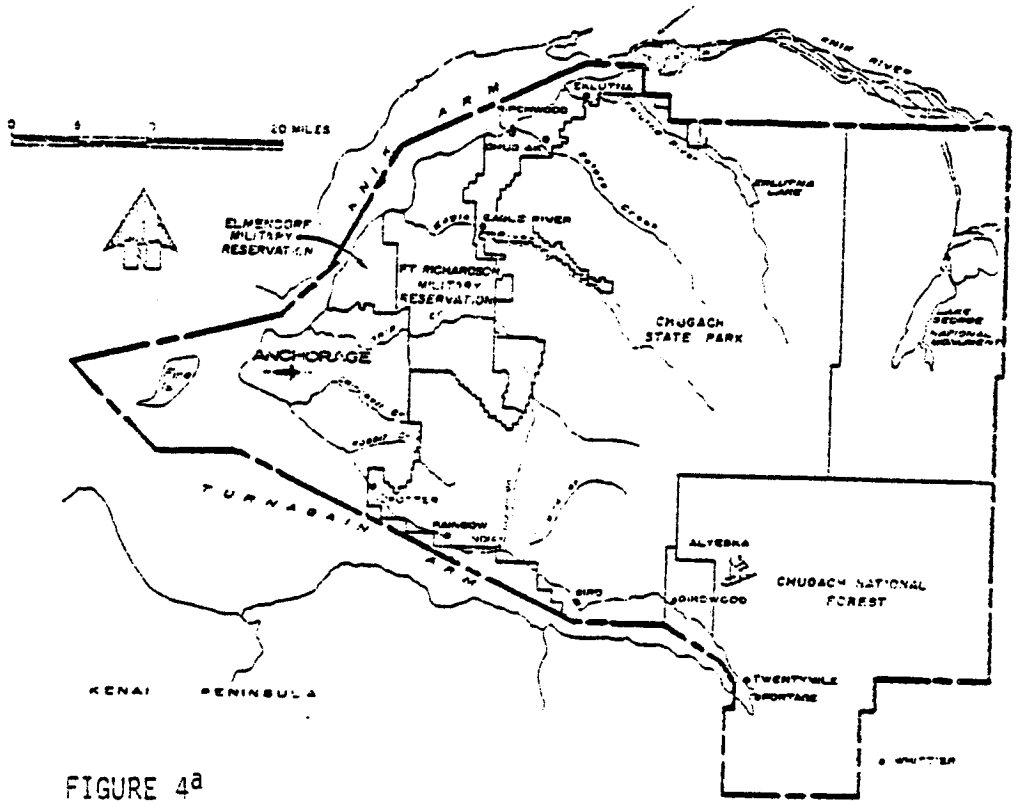


FIGURE 4[a]

THE MUNICIPALITY OF ANCHORAGE

[a]GAAB, People in Anchorage, December 1974

When the Anchorage area began its first period of growth in 1914 near the mouth of Ship Creek, land use in the community was restricted to two single family homes. Until 1920, development was restricted to Government Hill, the Ship Creek Valley, and the original townsite. Events which catalyzed the pattern of development in Anchorage were the construction of Fort Richardson, continued development of the central business district, the dedication of the Anchorage International Airport in 1952, and the opening of the first shopping center on Northern Lights in 1961 (Greater Anchorage Area Borough, 1972b).

Serious attempts to control growth began in August 1961 with the Wilsey, Ham, and Blair 1980 Plan which was adopted by the City Planning Commission. For a variety of reasons the Land Use Plan played a minimal role in controlling development in the Anchorage Bowl. In 1964 the Anchorage Borough was created. The serious problems associated with uncontrolled development contributed to that feature of the state statute which required the new government to exercise the planning and zoning function on an areawide basis. Until 1969 only minimal controls existed in areas outside the old City of Anchorage. In 1969 a new Zoning Ordinance was adopted areawide rezoning program was initiated to zone areas outside the City. Other planning efforts included a complete land use evaluation under the Anchorage Metropolitan Area Transportation Study (1977), the 1966 Tryck, Nyman and Hayes Sewerage Study, the Tippets-Abbett-McCarthy-Stratton Port Study (1960), the Real Estate Research Corporation Land Utilization Study (1964), and the Wilbur Smith and Associates Transportation Studies (1963, 1968-1969) (Greater Anchorage Area Borough, 1974e). A Comprehensive Development Plan was passed as an

ordinance on July 20, 1976 (Municipality of Anchorage, 1976b). As of 1978 urban sprawl has consumed the majority of land suitable for development in a leapfrog pattern which has outstripped the extension of utilities and other community services. (Greater Anchorage Area Borough, 1972b)

Figure 5 presents the present land use classification and figure 6 indicates the intensity of residential development.

Table 57 summarizes the land use at two points in time and projects the distribution in 1995 based upon the Anchorage Comprehensive Plan. Note the sharp increase in the amount of land dedicated to residential land use between 1970 and 1975. No other category had the rate of increase which residential housing experienced. Even though the number of dwelling units increased 43.3 percent during this five-year period, the amount of residential land increased 115.2 percent. The projected residential acreage added between 1975 and 1995 is substantially smaller (31.3 percent). See the section on residential land use for a more detailed discussion on this issue.

The major changes projected between 1975 and 1995 involve commercial land use (a 291.0 percent increase) and water and recreation (a 208.1 percent increase). Development of land for industrial uses (73.9 percent) and highways (76.2 percent) is also substantial. Only public lands, transportation, communication, and utilities are not expected to grow to any great extent.

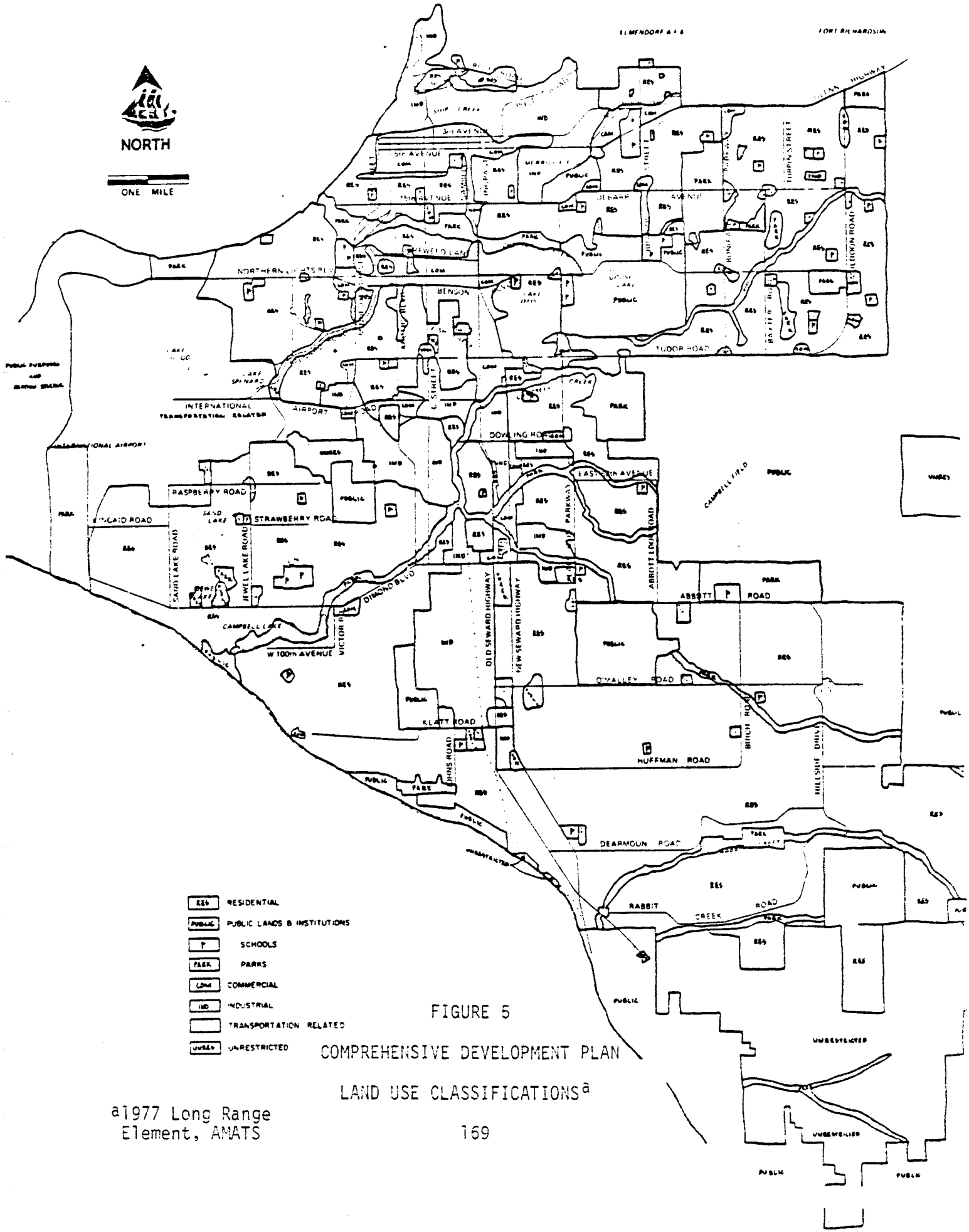


FIGURE 5

COMPREHENSIVE DEVELOPMENT PLAN

LAND USE CLASSIFICATIONS[a]

[a]1977 Long Range Element, AMATS

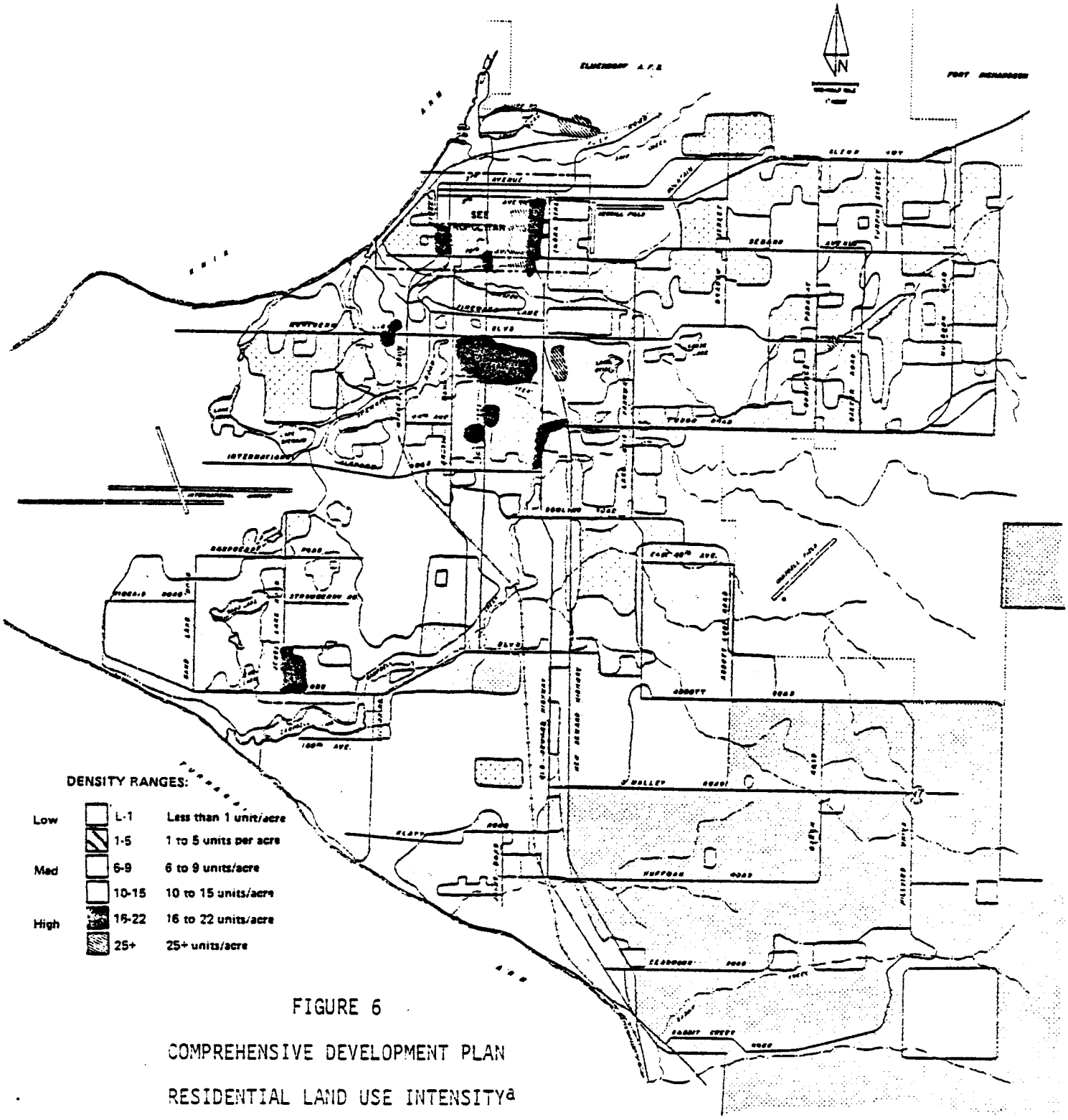


FIGURE 6

COMPREHENSIVE DEVELOPMENT PLAN

RESIDENTIAL LAND USE INTENSITY[a]

[a]Comprehensive Development Plan, Ordinance No. AO-18-75, Adopted July 20, 1976 Municipality of Anchorage (supporting document).

TABLE 57

SUMMARY OF 1970, 1975 AND 1995 LAND USE

Land Use Category	1970[a] Hectares (Acreage)	1970[a] Percent of Developed Land (Not Inc. Mil.)	1975[b] Hectares (Acreage)	1975[b] Percent of Developed Land (Not Inc. Mil.)	1995[b] Hectares (Acreage)	1995[b] Percent of Developed Land (Not Inc. Mil)
Residential	2,186 (5,404)	28.0	4,627 (11,627)	38.1	6,178 (15,266)	30.2
Commercial	563 (1,393)	7.2	781 (1,930)	6.3	3,053 (7,546)	14.9
Industrial	203 (504)	2.6	229 (567)	1.9	399 (986)	2.0
Public/Semi-public	804 (1,987)	10.3	1,021 (2,523	8.3	1,181 (2,920)	5.8
Water & Recreation	791 (1,956)	10.1	989 (2,446)	8.0	3,049 (7,535)	14.9
Highways	1,671 (4,131)	21.4	2,674 (6,608)	21.7	4,712 (11,645)	23.1
Transportation, Communication, Utilities	1,591 (3,932)	20.4	1,942 (4,800)	15.7	1,852 (4,578)	9.1
Military	35,253 (87,110)	--	35,253 (87,110	--	35,253 (87,110)	--
Vacant	22,213 (54,888)	--	17,682 (43,694)	--	9,599 (23,719)	--
TOTAL AREA	65,280 (161,305)	--	65,280 (161,305)	--	65,280 (161,305)	--
TOTAL DEVELOPED	7,813 (19,307)	100.0	12,343 (30,501)	100.0	20,427 (50,475)	100.0

[a]Greater Anchorage Area Borough, Land Use Inventory, October 1972

[b]Municipality of Anchorage, Long Range Element, October 1977

Residential Land Use

The most visible impact of rapid growth on Anchorage has been the availability and cost of housing. Anchorage has had a history of residential housing shortages and surpluses. A rapid expansion of the population in the 1970's occurred in response to the economic boom. The housing stock in Anchorage increased 38.5 percent from April 1970 to July 1975, while the population rose 38.4 percent. Housing shortages began in the summer of 1974 and reached severe levels in 1975 when the overall housing vacancy fell to one percent. While population pressures began to ease in 1977, residential building remained active, especially in multiunit structures (a 27.2 percent increase is expected between July 1976 to July 1978). The single family unit stock is growing at a much slower rate (a projected 11.4 percent increase) which has resulted in an oversupply of apartments and a continuing tight market for the single family house.

Housing Type. About 40 percent of the developed land in Anchorage is devoted to residential uses. Table 58 shows the distribution of housing stock. Some questions exist on the actual distribution by housing type. Using the 1970 census and the 1975 Municipal Land Use Inventory System (LUIS) produces the same totals but different ratios of single family to multifamily dwellings. Anchorage Urban Observatory sample data and the current postal vacancy surveys suggest that the best prediction of housing stock can be made by combining the LUIS study and housing permit data. In 1977, 52 percent of the civilian housing stock were single family units; 37 percent, multifamily; and 11 percent, mobile homes. Of the multifamily units, about 21 percent

were duplex units and 79 percent were in structures of three or more units. All but 34 of the military units are multifamily.

TABLE 58

ANCHORAGE HOUSING STOCK

Housing Stock	April[a] 1970	July[b] 1975	July[b] 1976	July[b] 1977	July[b] 1978
Single Family	15,538	26,081	28,012	29,281	32,215
Multifamily	13,059	16,194	18,416	20,858	23,420
Mobile Home	4,864	5,668	5,721	6,190	6,634
Military	4,154	4,154	4,154	4,154	4,154
Total Civilian Stock	33,461	47,943	52,149	56,329	61,269
Total Housing Stock	37,615	52,097	56,303	60,483	65,423

[a]U.S. Census, 1973

[b]Adjusted data derived from the Municipal Land Use Inventory System

Housing Demand. In anticipation of the oil pipeline, about 3,000 units a year were added to the housing supply from 1970 through 1972. Due to construction delays, available housing units began to exceed the demand, causing an increase in the vacancy rate from 4.5 to 6.4 percent in 1973. Temporary decreases in residential construction occurred in 1973 and 1974. Activity soon returned to an historical high of 4,010 units in 1975 and another 3,938 units in 1976. Despite a decline of economic growth in 1977 an additional 4,513 permits were issued in the first ten months of the year. This active building program created a temporary oversupply of all types of housing beginning in late 1975. While unanticipated gains in population eased the situation, the demand did not increase suffi-

ciently to match the 1977 construction program. The vacancy rate in multifamily housing crept up to 6.3 percent by July 1977 but went over 10 percent by January 1978 and has since remained high (see table 59). This contrasts with a continued low vacancy rate for all single family homes except for harder to sell expensive units. The vacancy rate for multifamily units is more serious than it may appear. Excluding military and duplex units, the vacancy rate for remaining multiunit structures was almost 8.1 percent in July 1976 and was estimated to be 12 percent in January 1978.

TABLE 59

VACANCY RATE FOR ANCHORAGE AREA

Type of Residence	April 1970[a]	April 1972[a]	Nov. 1974[a]	May 1975[a]	Oct. 1975[a]	May 1976[b]	July 1977[b]	Jan. 1978[c]
Total Residences	2.9	4.5	3.9	1.0	2.3	1.8	3.5	(4.9)
Single Family	2.0	2.6	2.3	0.5	2.0	0.8	1.1	(1.3)
Multifamily	4.8	7.6	6.4	2.0	2.9	2.5	6.3	(10.3)
Mobile Homes	1.4	2.5	3.0	0.5	1.7	3.3	3.2	(3.5)

[a]HUD Postal Vacancy Surveys, Director's Release, October 24, 1975

[b]Anchorage Housing Survey, July 1977

[c]Anchorage Urban Observatory estimate

One of the housing market difficulties is the differential demand for housing type. In a 1975 Urban Observatory study (Hitchins, et al., 1976) 76 percent of an Anchorage sample of residents preferred a single family house over all other housing options. Ninety-two percent would prefer to own their own home. The primary factor

example, the average length of residence in Anchorage for renters is very low - .65 years (about eight months) compared with three years for owners. The median income of owners is $34,526, and for renters is $18,433. This $16,000 gap is sufficient to preclude most renters from purchasing their own homes.

Housing Ownership and Housing Payments. About 51.9 percent of the housing in Anchorage is owned and 48.1 percent is rented. The ratio of owner-occupied units to all units increased to 55.7 percent for civilian housing (see table 60). The median mortgage payment is $400

TABLE 60

ANCHORAGE HOUSING STOCK - JULY 1, 1977

Housing Stock	Single Family	Duplex	Multi-Family	Mobile Home	Military	Total
Owner-Occupied	24,655	2,035	2,720	1,975	-	31,385
Renter-Occupied	4,626	2,341	13,762	4,215	4,165	29,109
Total Stock	29,281	4,376	16,482	6,190	4,165	60,494
Vacancy	1.1%	3.3%	8.1%	3.2%	3.1%	3.5%
Total Occupied	28,950	4,233	15,144	5,991	4,036	58,360
Total Vacant	331	143	1,338	199	129	2,134
Estimate Substandard Units	518	943		656	-	2,117

for owners compared to the median rental fee of $350. This difference is larger when considering that 10.7 percent of the owners own their home outright. To conventionally finance a very modestly priced home ($61,000) results in a monthly mortgage payment of about $560

to $575. The most inexpensive housing is the mobile home which has a median combined unit and space payment of $287. About 26 percent do not have a unit payment (the median for only those who have a payment is $254), and the median land payment is $120. One of the primary problems in the housing market is high costs. A middle class three or four bedroom house with 167.22 to 204.38 square meters (1,800 to 2,200 square feet) in a good residential area costs between $70,000 and $120,000. According to the U.S. Department of Commerce, the standard intermediate budget for an Anchorage family of four places the cost of owning a house at 22 percent of the family income. Even if this standard family budget was paying for a new home at the low end of the above scenario, it would constitute roughly 34 percent of their budget. A house in the middle range of this scenario would be prohibitive for the intermediate budget and would constitute 27 percent of the income even for the higher budget family of four.

Housing Conditions. The condition of the housing stock is another potential problem in Anchorage. Only 3.5 percent of the housing can be classified as structurally poor and therefore classified as substandard. A much larger proportion could be classified as in fair condition with sufficient defects to warrant repair. Or, the unit may be expected to leave the market within 10 to 15 years. Much of the housing built in the first years after World War II is of poor quality and will eventually leave the market unless substantial investments are made. Estimating the number of units in this condition is not easy, but the 1975 Housing Assistance Plan indicated a potential 11,000 units in need of such repair.

Future Residential Use

Future residential land use will develop with a high density profile in those communities which currently house older, single family residences. By 1995, it is expected that those areas will experience urban renewal with multifamily dwellings replacing the older, single family homes. Areas which can be expected to experience these changes include the land between the central business district and the Northern Lights commercial strip, portions of Spenard and Mountain View, and some areas within the central business district. The communities located in the more peripheral areas of the Anchorage Bowl will probably continue to develop along a low density urban profile with a predominance of single family dwellings. These communities include Muldoon, Sand Lake, and Abbott-O'Malley-Hillside areas.

Issues in Housing. An issue of primary importance to Anchorage is the pace, location, and character of residential growth within the bowl area. The housing industry within the urbanized area has been unable to meet the demands of a rapidly expanding population. While the present number of available units comes closer to meeting the demand, the distribution of housing by type and price is not adequate for particular groups in the community - particularly low and moderate income families. One barrier is inadequate means of financing those dwelling units which can accomodate low and moderate income families. The U.S. Bureau of Statistics estimated that housing comprised 30 percent of the total budget of the average Anchorage consumer in 1975 (Anchorage Economic Development Commission, 1977).

The nature of residential growth is another problem. Grandfather clauses, zoning exceptions, and simple lack of source planning has resulted in residential development which is aesthetically displeasing and tends to promote concentric density patterns. This trend places multiunits in the least desirable locations in terms of most pollutant measures. Incompatible land uses and the declining usefulness and life of housing in older parts of the city present a number of major problems for planners and developers. Permission to build below the Turnagain bluff that was recently granted by the Municipal Assembly demonstrates the problems in developing a rational residential land use policy. Planners must also consider the fact that Anchorage has sufficient geologic features to make sinking, flooding, and cracking houses a common phenomena.

The limitation on development presented by the Municipality's existing water and sewer systems is a third barrier influencing the location and density of new residential growth. These issues are fully discussed under the section on utilities - water and sewer.

The most serious future issue lies in the planning represented by the Anchorage Comprehensive Plan. The plan seriously underestimates the need for residential land in the coming years. In 1970 there were 33,461 housing units in Anchorage occupying 2,188 hectares (5,404 acres) of land. This is a density ratio of 6.2 units per .40 hectares (one acre). In 1975 the housing stock had increased to 47,943 units occupying 28,719 hectares (11,627 acres) of land which reduced the density to 4.1 units per .40 hectares (one acre). This constituted a 43.3 percent increase in the housing stock and a 115.2 percent increase in the land developed for

residential housing. Part of the reason is that 72.8 percent of the units during this period were single family dwellings which effectively reduced the density of housing in Anchorage by 32.9 percent. The result was that new housing added during this period averaged only 2.3 units per .40 hectares (one acre).

From 1975 to 1978 it is estimated that an additional 13,326 units will have been built with 46.0 percent being single family units. The trend would appear to be toward more densely built housing. The problem is that the 20-year period between 1975 and 1995 would only see 1,473 additional hectares (3,639 acres) developed. A conservative estimate of the land developed during the first three years of this period is 766 hectares (1,893 acres) (assuming four units per .40 hectares [one acre] for single family units and 20 units per .40 hectares [one acre] for multiunits). This is 52 percent of the projected amount for the entire 20 years. To even come close to the 1995 estimates would result in a massive restructuring of the housing patterns in Anchorage. Much of the older areas would have to be redeveloped and virtually all single family construction would have to stop. The more likely outcome is substantially more land developed for housing by 1995 with a reversed trend toward increased density.

Commercial Land Use

Current Commercial Land Use. The 1970's produced an abundance of commercial centers throughout the Anchorage Bowl. However, commercial activity is predominate in two areas: the strip development along Northern Lights and the central business district located in the

northwest corner of the Anchorage Bowl. It is expected that the trend in future land use will be the continued development of Northern Lights Boulevard commercial strip which will ultimately exceed the central business district in traffic volume by 1995. In 1975, 781 hectares (1,930 acres) of land was being used for commercial purposes. Because of the role that Anchorage plays as the economic center for the state, the potential growth in this area is expected to be substantial. Projections for 1995 call for 3,055 hectares (7,546 acres) to be developed for commercial uses.

Issues in Commercial Land Use. Commercial strip development has been one of the most expensive problems to government (see transportation section). Older commercial strips include Spenard Road and the Old Seward Highway. This same process is now threatening Gambell Street, East Fifth Avenue, Mountain View Drive, Muldoon Road, and several other streets. There is little evidence that strip development has declined even though it was identified as a policy for a number of years.

The construction of the Boniface and Dimond Centers predicts the further development of subcommunity commercial centers at multiple sites. This activity will continue the decline of the central business district as a major commercial center. This is likely to make it more difficult to carry out private renewal in the area. One possibility is the transition of the central business district to primarily office space for public and private concerns, a tourist and convention center, and high density housing. The increasing

development of office space in suburban areas including the National Bank of Alaska headquarters also suggests problems for the central business district.

Industrial Land Use

Current Industrial Land Use. Currently the industrial/wholesale activity in Anchorage occurs in three distinct areas: the Ship Creek Port and Merrill Field area, the area surrounding the International Airport, and land bordering the Alaska Railroad south of International Airport Road.

By 1975, 230 hectares (567 acres) were developed for commercial uses. The comprehensive plan projects that 399 hectares (986 acres) will be required by 1995. This is below the average of comparable urban areas in other parts of the United States. This is primarily due to the fact that there is minimal manufacturing activity taking place in the Anchorage area.

The Anchorage Zoning Ordinance, effective January 1, 1976, permits many types of commercial uses to exist on industrially-zoned land. The Planning Department estimates that about 22 percent of the industrially-zoned land is currently occupied by uses other than industrial or wholesale. According to the Planning Department, this latitude in permissible uses has three effects. First, allowing nonresidential uses in areas zoned industrial increases the price of industrial land. Second, since nonindustrial uses increase more

rapidly than industrial uses, good industrial sites are often lost. Third, as a consequence of the first two factors, industrial land use tends to be scattered throughout the Anchorage Bowl. These problems are exacerbated by land speculation accompanied by requests for industrial rezoning.

Industrial Land Use Issues. Because of the time period during which OCS-related activities are expected to occur will extend over several decades, Planning Department staff expect no direct impacts from these activities on the demand from industrial land use. To the extent that OCS activities contribute to Anchorage's overall growth and strengthen its role as the state's financial and distribution center, the demand for industrial land will increase.

A surplus of industrially zoned land exists to meet demand through 1990. The Planning Department, using employment estimates generated by the Institute of Social and Economic Research, estimates that a maximum of 682 hectares (1,685 acres) of industrial land will be needed to accommodate industrial employment through 1990. (This is substantially higher than the Comprehensive Plan.) Currently, about 1,968 hectares (4,860 acres) of land are industrially zoned; a 1975 Planning Department survey showed that a total of 824 hectares (2,036 acres) of industrially zoned land was vacant.

To reduce speculation and to encourage the more orderly development of vacant, industrially zoned land, the Planning Department has suggested that the Planning Commission investigate alternative

taxation policies which discourage speculation, encourage the establishment of municipally owned industrial parks as a way of maintaining stable land prices, and encourage the platting and use of vacant industrially zoned land in the Ship Creek Valley area, which is owned by the State and the Alaska Railroad (Municipality of Anchorage, 1976c).

Though it is likely that industrial development inside the municipal boundaries will continue to be modest, its encouragement is important for the development of a diversified and healthy economic base for the community. Major increases in this area would likely require the Municipality and business community to foster and facilitate its development.

Other Land Uses

As noted earlier in this section, there are a number of other land use categories. Public and semipublic lands occupied 1,021 hectares (2,523 acres) in 1975. The largest concentration is the educational/health complex occupied by the University of Alaska, Providence Hospital, Alaska Psychiatric Institute, Alaska Methodist University, the school district, and other facilities. Other locations include the new federal complex as well as state and local government holdings in the central business district, the scattered school district sites, etc. Development of additional acreage is expected to be modest in the coming years.

These public holdings do not include the substantial land ownership of the

military. Since over half of all the land available for development is military, this institution's impact on the long term land use and land availability issue is substantial. A selectively small change in the status of some of these lands could radically alter the ownership patterns in the Municipality.

The water and recreation category have 1,021 hectares (2,523 acres) of developed land in 1975 and do not include portions of the Chugach National Forest, the Chugach State Park found inside municipal boundaries, and some land tracts adjacent to the military reservations supervised by the Bureau of Land Management. Municipal parks and open space include Centennial Park, Earthquake Park, Chester Creek-Goose Lake Greenbelt, the Parkstrip, the Campbell Creek Greenbelt, Russian Jack Springs, the Abbott Road site, and Kincaid Park. Smaller recreational areas are dispersed in a very irregular pattern throughout the metropolitan area. Recent attempts to increase the number of small urban parks have been a very costly and slow process. (See the recreation section for a more complete discussion of these lands.)

Transportation, communication, and utilities occupied 1,943 hectares (4,800 acres) in 1975 and is actually expected to decrease by 4.6 percent by 1995. This includes the Anchorage International Airport operated by the state, the Port of Anchorage, Merrill Field operated by the Municipality, and the Alaska Railroad operated by the federal government. A large number of small airstrips, broadcasting facilities, the municipal and private utility sites constitute the remaining acreage.

The major increases in transportation are expected to take place in the separate category of highways. Because alleys are only common to a few areas in the central city, Anchorage has less land dedicated to roads than other comparable communities. (Greater Anchorage Area Borough, 1972b) A 76.2 percent in land developed for roads is expected to upgrade a system now seen as ineffective. This is to be done with a minimum of new road construction but is a substantial upgrading program for the existing system. (See the transportation section for a more detailed discussion.)

Issues in Land Use

Current Planning. Planning is not a very effective tool in guiding the pace, location, and nature of growth within the Anchorage urban area.

The rapid growth within the Anchorage Bowl has caused the Municipal Planning Department to focus its attention on a wide range of immediate issues caused by that growth. The 1975 Pipline Impact report focused on the short-term consequences of growth in the areas of population, economy, housing, taxation, health, air quality, police, public safety, public works, parks and recreation, planning, transportation, and schools. The report pointed to instances in which the Municipality's response to short-term impacts on these areas was not adequate or required greater attention.

The Municipality finds itself in a paradoxical situation. The

phenomenon of rapid growth has focused the attention of municipal departments on the short-term disequilibrium between the need for various urban services and the capacity of a given system to respond. As a consequence, resources are not being focused on long-term strategies to meet these problems. Instead, many growth-related problems are being dealt with individually and on an ad hoc basis.

The Comprehensive Development Plan, approved July 20, 1976, is a goal-oriented document calling for normative patterns of land development. While it is a useful reference document, it has not successfully halted the pattern of leapfrog development referred to in the Comprehensive Development Plan as "a serious problem." (Municipality of Anchorage, 1976b, P. 12)

The most significant example of advance planning to meet both an immediate and long term set of needs is the Army Corps of Engineers' Metropolitan Anchorage Urban Study (MAUS). Other studies on the transportation system, the port, coastal zone management, and a municipal space requirement study demonstrate a cognizance of the planning requirements for the community.

Estimates by the Planning Department of population growth leave no doubt that development will fill the Anchorage Bowl by the end of the century. Sewer, water, and electrical extensions will make that growth possible. If present development patterns persist, the growth will be characterized by inefficient use of resouces and compatible land uses existing side-by-side.

Land Quality. Much of the future development in Anchorage will take place on presently vacant land. The problem is that this does not consider the vacant land's capacity for supporting development based upon the physical characteristics of the land itself and the availability of community services. A study on the 1970 undeveloped land by the Planning Department classified land into four groups from prime to unbuildable. Table 61 summarizes the land available for development by class.

TABLE 61

THE QUANTITY OF VACANT LAND BY CLASS, 1977[a]

Class		Hectares	Acres	%
I	Prime	335.9	830.0	2.5
II	Good	2,480.2	6,128.5	18.2
III	Marginal	3,418.9	8,448.0	25.2
IV	Unbuildable	7,358.0	18,181.5	54.1
Total		13,593.0	33,588.0	100.0

[a]Greater Anchorage Area Borough, Land Use Inventory, October 1975

As can be seen, only one-fifth of the vacant land in 1970 could be considered prime or good, while the majority is of the poorest quality for development. While the study did not inventory all available land, the implications are obvious. Since the quantity of vacant land dropped an estimated 25 percent between 1970 and 1978, one can assume the proportion of easy-to-develop land has been further reduced.

The result can only be higher development costs and increasing land costs as the scarcity of land increases. A builder at the University's April 1978 Housing Seminar commented that he expected almost half the residential units in Anchorage to be built on pilings within a few years. This was based on a discussion of the declining quality of available land and the increased costs associated with marginal lands.

Utilities

SOLID WASTE

Introduction

Standard Metropolitan Areas require planned collection and disposal of solid wastes. With national affluence on the rise, a propensity for more densely populated regions and the trend towards rising population, there has been a corresponding increase in the unit quantities of solid waste per person in the population (see table 62).

TABLE 62

SOLID WASTE QUANTITY PER

PERSON PER DAY

Year	Quantity per Person
1920[a]	1.24 kgms (2.75 lbs.)
1970[b]	2.26 kgms (5.00 lbs.)
1975	2.31 kgms (5.09 lbs.)
1980[c]	2.71 kgms (5.97 lbs.)
1985	3.06 kgms (6.75 lbs.)
1990	3.47 kgms (7.64 lbs.)
1995	3.92 kgms (8.65 lbs.)

[a]Preliminary Solid Waste Master Plan, 1975

[b]Request for Proposal, Milling Operation, 1977

[c]1980-1995, Projected Figures, Request for Proposal, Milling Operation

Solid waste is defined as "useless, unwanted or discarded solid materials with insufficient liquid content to be free flowing." (Greater Anchorage Area Borough, 1975f, P. III-1.)

The Municipality of Anchorage currently employs sanitary landfills as the method of solid waste management. Sanitary landfills is defined in the Preliminary Solid Waste Management Master Plan (May 1975) as "a method of disposing of solid wastes on land without creating nuisances or hazards to public health or safety, by utilizing the principles of engineering to confine the solid waste to the smallest practical area, to reduce it to the smallest practical volume and to cover it with a layer of earth at the conclusion of each day's operation or at such more frequent intervals as may be necessary." (Greater Anchorage Area Borough, 1975f, P. II-4).

Organizational Context

For organizational purposes, the Municipality is divided into four geographical areas. The first is termed the Anchorage Solid Waste Disposal Service Area and encompasses the Anchorage basin, housing a population of approximately 166,000. The military bases, Fort Richardson and Elmendorf Air Force Base, are the second area with a population of approximately 17,135. The third area is north of the Anchorage Bowl and is composed of the communities of Eagle River and Chugiak with a population of approximately 13,000. The last geographic area is located along Turnagain Arm and takes in the resort communities of Alyeska and Girdwood. This area has a fluctuating population of 1,700 in the winter months and 700 during the summer season. This seasonal migration can be correlated to the recreational activities associated with Alyeska Ski Resort.

The Anchorage Solid Waste Service Area (ASWSA). The solid waste

disposal for the ASWSA (Anchorage Bowl excluding military bases) functions as a service area under the Department of Public Works. Currently, there is one sanitary landfill for this service area located by Merrill Field (see figure 7 for sanitary fill locations). The City of Anchorage prior to unification with the Greather Anchorage Area Borough maintained this landfill since 1952. The projected life expectancy of the Merrill Field site is 1982. The current facility covers approximately 72.84 hectares (180 acres) and is zoned light industrial and residential. When the sanitary landfill is completed, future plans for the site include recreational facilities such as bike and ski trails, athletic fields, tennis courts, and ski hills (Gorski, Community Contact, 1978p).

Refuse collection is accomplished by municipally owned vehicles as well as private refuse collection companies, the largest of which is Anchorage Refuse, Inc. Collection within the old city of Anchorage is mandatory and handled by municipally owned vehicles. Collection in the area outside the boundaries of the old city of Anchorage is on a subscription basis (Gorski, Community Contact, 1978p).

Military Bases. Elmendorf Air Force Base operates its own solid waste collection and disposal by the base sanitation department within the Base Civil Engineering Section. Elmendorf has maintained a 8.09 hectares (20 acres) sanitary landill on base since

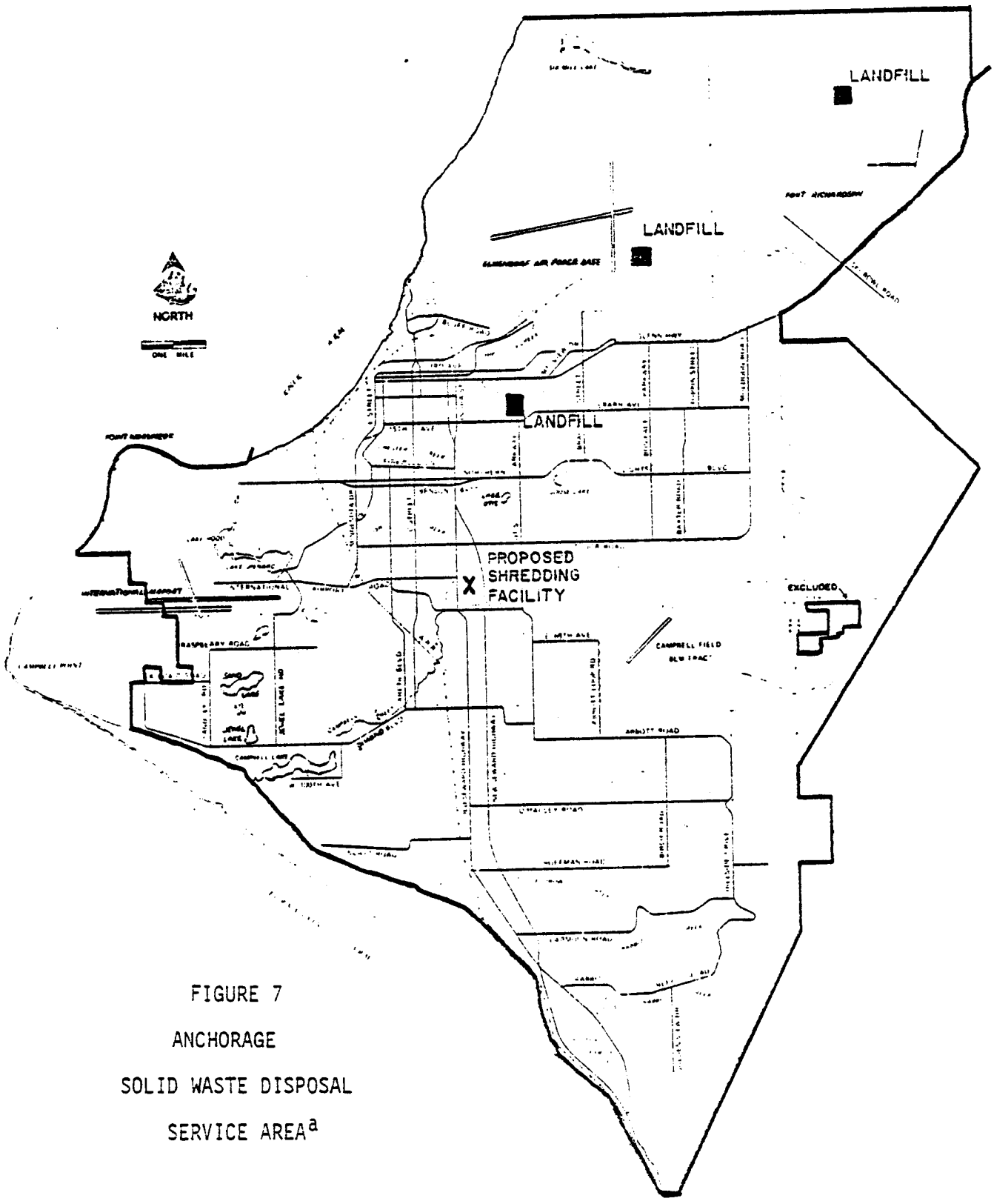


FIGURE 7

ANCHORAGE

SOLID WASTE DISPOSAL

SERVICE AREA[a]

[a]Request for Proposal Milling Operation, 1977

1969. Life expectancy for the 8.09 hectares (20 acres) site is approximately 1980.

Fort Richardson, located directly east of Elmendorf Air Force Base, also maintains its own collection and disposal operation. This is the responsibility of the Roads and Grounds Division of the Base Facility Engineers. The sanitary landfill for Fort Richardson is located directly north of the base on 32.4 hectares (80 acres) of military land. The site will accommodate solid waste disposal through 1994. (Greater Anchorage Area Borough, 1975f)

Eagle River-Chugiak. These communities are located north of the Anchorage Bowl. Subscription collection of solid waste is through Anchorage Refuse, Inc. and Eagle River Refuse (Gorski, Community Contact, 1978p). In addition, private residents do a portion of their own hauling. Since 1968, the Eagle River-Chugiak area maintained a disposal site. This was 16.2 hectares (40 acres) of state leased land located east of the Glenn Highway and south of Eagle River. The facility was closed in 1973 because disposal operations were encroaching on state parkland. In 1974 the Borough converted this open area into a sanitary landfill. The projected life of the site was through 1980 but has recently been closed down due to more rapid filling than anticipated (Greater Anchorage Area Borough, 1975f and Gorski, Community Contact, 1978p). All formal collection is currently being hauled to the Merrill Field landfill.

Turnagain Arm. This service area houses most of its residents in

the communities of Alyeska and Girdwood at the south end of Turnagain Arm. Alpine Refuse, a private corporation, provides subscription collection for part of this area. Solid waste collected by Alpine are disposed of in two locations: either Merrill Field or a sanitary landfill on the Kenai Peninsula (Gorski, Community Contact, 1978p).

The Department of Public Works provides an additional 17 containers in the area for refuse collection and contracts with Alpine Refuse for pickup and collection (Gorski, Community Contact 1978p).

Current Issues

Eagle River Landfill. Population density and land availability are the decision criteria for the development of a new landfill site in Eagle River. With the closing of the landfill in the Eagle River area, the Department of Public Works is examining the feasibility of developing a second landfill site. There are several issues which impinge upon the feasibility. First, the parcel of land which looks most promising as a sanitary landfill site is in dispute between the railroad and the Eklutna Indians. The Eklutna Indians maintain that this parcel is surplus land and rightfully belongs to them. The railroad disputes the surplus land argument by proposing an industrial park on the parcel. If the railroad attains rights, a sanitary landfill would be compatible with the railroad's planned development. The second issue is the economic feasibility of developing and maintaining a formal sanitary landfill as opposed to transporting the solid wastes to Anchorage.

Preliminary reports currently indicate that the cost is about equal. (Gorski, Community Contact, 1978p)

Anchorage Landfill. Preliminary 1975 reports projected the Merrill Field site life expectancy to be about 1991. With the rapid rise in population as a result of the trans-Alaska pipeline, this life expectancy was shortened substantially to 1982. Very shortly, the Department of Public Works will begin formal procedures to obtain a new sanitary landfill location. Preliminary investigations indicate that the most plausible location in the Anchorage Bowl is the gravel pits in the Sand Lake area. This site would provide 323.7 to 404.7 hectares (800 to 1,000 acres) and an approximate life expectancy of at least 50 years (Gorski, Community Contact, 1978p).

Planning - Alternatives as an Adjunct to Sanitary Landfills

Milling. Under the Capital Improvements Plan, the Department of Public Works is proposing a milling operation to be located between the old and new Seward Highway by Dowling Road. This milling or solid waste shredding plant has several distinct advantages. First, shredded solid waste is more aesthetically pleasing and produces a nondescript odor. Perhaps more important is the reduction in the volume of solid waste by 30 percent. This substantially extends the life expectancy of a sanitary fill. In addition, with limited land available in the Anchorage Bowl, this is a sound procedure in utilization of space. The solid waste shredding plant

is due to become operational in May 1979. (Gorski, Community Contact, 1978p) The milling operation would be designed to separate the combustible materials from the noncombustible materials and recover the ferrous metals for further resource utilization.

The Municipality and the military are jointly examining the use of the combustible milled wastes as a possible fuel source for power generation. This procedure would go into effect in about 1982. Not only is this method providing an additional source of fuel for power generation, but reduces volume in the sanitary landfills by 60 to 65 percent.

By implementing milling operations and thermal reduction, the Public Works Department is in hopes of less opposition in securing a new landfill location within the Anchorage Bowl. (Gorski, Community Contact, 1978p)

Resource recovery using the method of recycling is occurring on a limited basis in Anchorage. The Alaska Center for the Environment, a nonprofit agency, collects aluminum cans and newspapers at a central location once a week. The newspaper is being sold to a local insulating firm where it is shredded, treated and used as insulating material. Aluminum is becoming a more valuable element creating an economic incentive to ship to the lower 48 for recycling. Recycling should be considered as a long-range goal of the Municipality, especially as resource recovery techniques are refined and implementation can occur on a local basis.

WATER

Introduction

Anchorage receives an annual precipitation rate of 38-50 centimeters (15-20 inches) per year. Although this seems relatively low, much of the preceipitation is in the form of snow, creating sufficient surface water runoff from the Chugach Mountains to meet much of the water needs of Anchorage.

In addition to surface water sources, ground water is utilized as a resource for the Anchorage area. There are two main sources of ground water in the Anchorage area. The first is described as an unconfined aquifer which is composed primarily of sands and gravels which are capable of storing and transmitting water to wells dug into the system. The unconfined aquifer is generally less than 15 meters (50 feet) in depth and is always underlain by an impermeable layer of clay, silt, or similar material which prevents water from flowing to lower depths. The second source of ground water is the confined aquifer which is composed of porous sands and gravels. This source is encountered anywhere from 30 meters (100 feet) to 91 meters (300 feet) deep and is underlain and overlain by impermeable geologic formations. (U.S. Army Corps of Engineers, 1977)

It is important to note that Anchorage has abundant water resource potential, much of which is untapped and the water quality is very good.

Organizational Context

Water resources in Anchorage are tapped and distributed by three separate organizations. Anchorage Water Utility (AWU), under the Department of Enterprise Activities within the municipal government, is the largest of the providers for public water supply for the former city of Anchorage and much of the surrounding urbanized areas. AWU has a fully interconnecting system and obtains about one-half of its water resources from Ship Creek and the balance from ground water sources (wells) within the Anchorage Bowl.

The military, Fort Richardson and Elmendorf Air Force Base, provide water for their own distribution, utilizing Ship Creek as their source. The military also taps ground water sources during the low flow periods of Ship Creek.

Both AWU and the military extract water from Ship Creek at a dam and intake structure located 16.9 km (10.5 miles) above the mouth of Ship Creek and from there pumped to separate treatment plants. These structures were constructed and placed into service in 1950. (U.S. Army Corps of Engineers, 1977)

Central Alaska Utilities (CAU), a private corporation, provides its customers through a series of wells located in the southern portion of the Anchorage Bowl. Though this system is not interconnected with the AWU or the military distribution systems, temporary connections in the distribution system with AWU have been made in times of water shortage.

This past summer (1977), AWU sold water to CAU throughout the entire season (Gorski, Community Contact, 1978k).

The following table shows a breakdown of each of the providers as well as their respective water sources for 1976.

TABLE 63

1976 PRODUCTION[a]

	AWU	CAU	Military	Other	Total
Consumers	87,000	32,000	20,000	33,000	172,000
Production	59.8 mld[b] 15.8 mgd	18.2 mld 4.8 mgd	18.1 mld 4.8 mgd	12.5 mld 3.3 mgd	106.7 mld 28.2 mgd
Wells	31.0 mld 8.2 mgd	16.3 mld 4.3 mgd	1.9 mld 0.5 mgd	12.5 mld 3.3 mgd	61.7 mld 16.3 mgd
Ship Creek	28.7 mld 7.6 mgd	--	16.3 mld 4.3 mgd	--	3.4 mld 11.9 mgd

[a]U.S. Army Corps of Engineers, Metropolitan Anchorage Urban Study, 1977

[b]mld = million liters per day

That portion of the population not served by AWU, CAU, or the military utilize private ground water resources.

Water Resource Issues

The Anchorage Bowl has experienced rapid growth in recent years due to petrochemical development on the North Slope. This rapid growth has produced a tremendous strain on the current water resources in use and has, in effect, created a water shortage for the Anchorage Bowl residents.

The status of Anchorage water resources is characterized by an inadequate and undependable water supply. The utilities currently experience two peak demand and potential water shortage periods each year. The first is in late winter and the second is midsummer. With limited water shortage facilities, the summer peak stortage is the most critical time.

Excess winter usage is the result of running water to prevent pipes from freezing. Summer peak demands occur from construction activity, lawn watering, car washing, etc. In addition, water is lost through leaks or water discharges in the distribution system. Figure 8 gives a breakdown of estimated consumptive water usage.

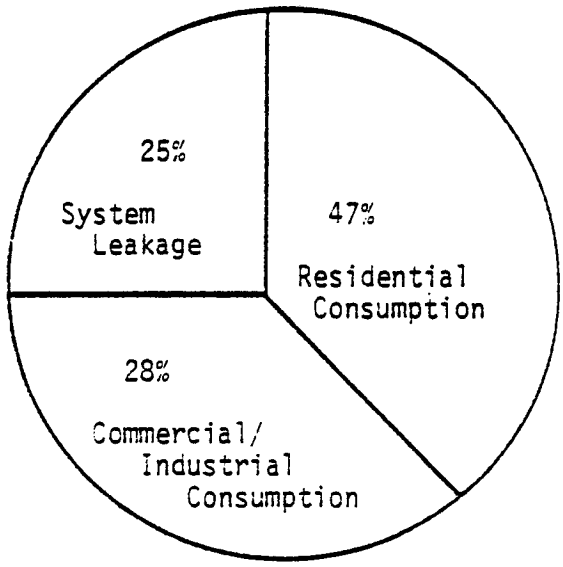


FIGURE 8

ESTIMATED CONSUMPTIVE USE FOR AWU UTILITIES[a]

[a]U.S. Army Corps of Engineers, Interim Report, 1977 MAUS

There is a serious problem in the distribution systems of line loss through leakage. The distribution system is primarily unmetered, making isolation of the extreme leakage areas difficult to detect. However, there is a movement toward metering in multifamily structures and commercial industrial complexes. In addition, AWU is examining the feasibility of metering all new residences. However, large amounts of capital are necessary to implement a full metering system; and, instead, it may be more practical to develop additional water resources (U.S. Army Corps of Engineers, 1977 and Gorski, Community Contact, 1978k).

Recently, there has been an inability to produce usable wells for domestic needs in the southern portion of the Anchorage Bowl. Most of the high producing well locations have been identified and are in use. In addition, drilling in the vicinity of the Pt. Woronzof Sewage Treatment Plant has resulted in a minor intrusion of salt water from Knik and Turnagain Arms; however, the actual water table has not been polluted. (Gorski, Community Contact, 1978k)

Planning Efforts - Short-Term

With respect to increasing the actual summer flow capacity, plans to install a 91.4 cm (36 inch) pipeline from Ship Creek to the treatment plant need to be implemented to supplement the existing 50.8 cm (20 inch) pipeline. However, plans for this proposal have been delayed because of nonconcurrence of the military on whose land the pipeline is to be located. Officials at Fort Richardson have requested a long range water supply plan on which to base their decision for the use of military land.

(U.S. Army Corps of Engineers, 1977)

It is imperative in meeting short-term water needs that the proposed 91.4 centimeter (36 inch) parallel line be realized (Gorski, Community Contact, 1978k).

During the summer of 1977, an additional reservoir was completed at the current treatment plant. This will facilitate the utilities effort to meet summer peak demands in 1978. Currently under construction is a second 18.9 million liter reservoir (five million gallon reservoir) which is due for completion in the fall of 1978. This facility will help to meet the 1979 summer peak demand.

In addition, AWU is currently drilling for an additional high producing well at 42nd and C Street in Anchorage to supplement the water supply.

Planning Efforts Long-Term

AWU believes that further development of Ship Creek is the best source of action to meet long-term water supply demands.

Before proceeding with any major plan, the utilities are awaiting the outcome of the Metropolitan Anchorage Urban Study (MAUS) currently being conducted by the Army Corps of Engineers. The study is due for completion in late 1978. The interim report, published in 1977, proposes four major long-term alternatives for the development of Ship Creek.

Plan I would entail a diversion near the Chugach power plant to a water treatment plant. Water diverted to this location would be treated and pumped into the central business district and Government Hill supplying enough water for an additional 71,000 people. Plan II builds on Plan I with the addition of off-stream storage near the Glenn Highway. With diversion downstream in Plan I and storage upstream in Plan II, it is possible to provide a minimum water flow for fish habitat and downstream users. This plan would yield enough water for an additional 124,500 people. Plan III again builds on Plan II by incorporating an off-stream reservoir. There are problems with site selection in Plan III, but if implemented, it would provide water for an additional population of 219,500. Plan IV, Ship Creek Dam, would be a large storage reservoir and could support an additional 221,000 people. The proposed dam site is located in Ship Creek Valley. Figure 9 illustrates all four plans.

These are all capital intensive projects and require close examination of their economic feasibility. Environmental impact on fish and wildlife will play a major role in the planning process as well,

From an administrative standpoint, one agency will have to be delegated to oversee this type of extensive development of Ship Creek. The agency would most probably act as a bulk water supplier selling water on a wholesale basis to the individual utilities.

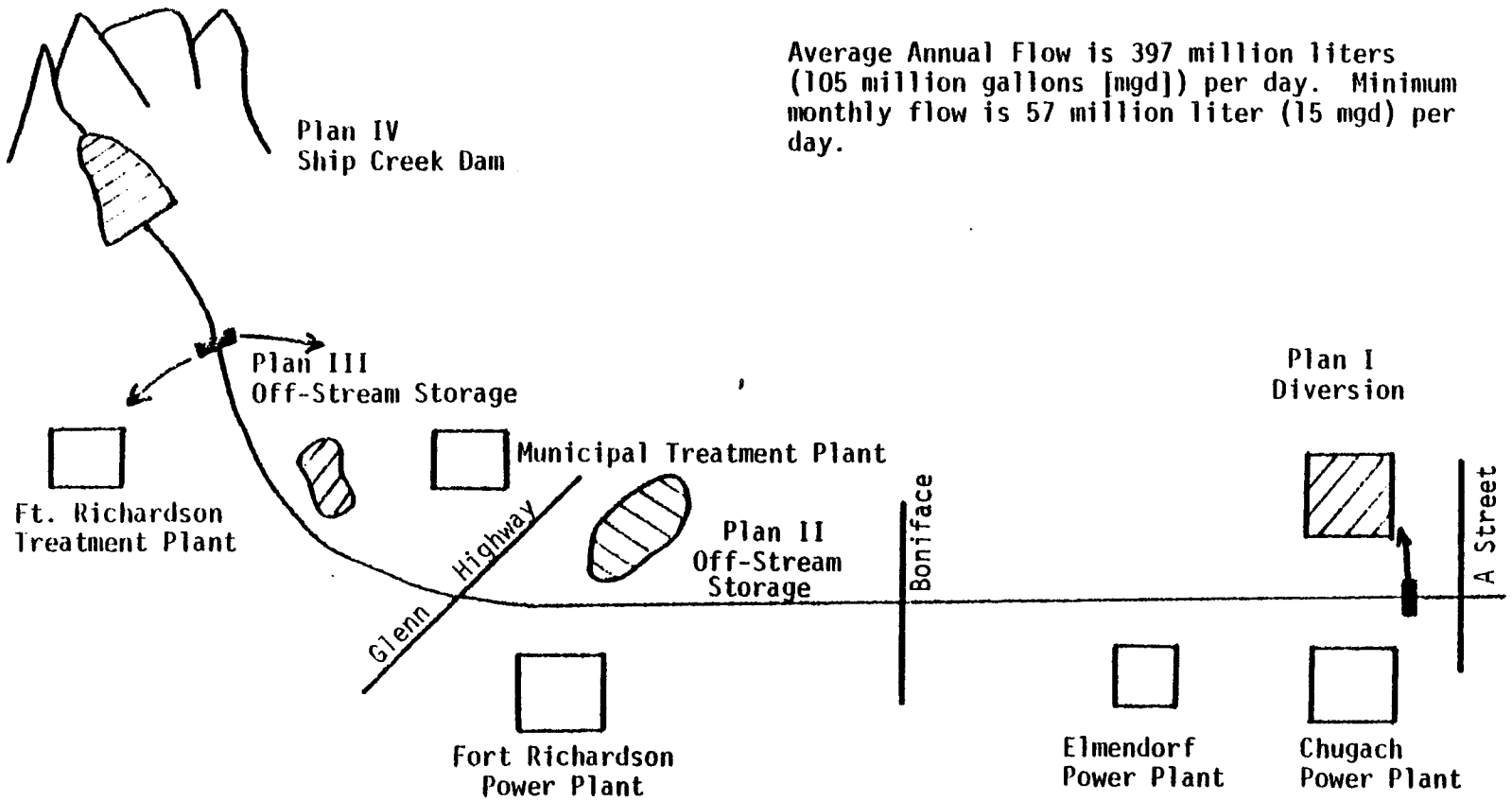


FIGURE 9

FOUR PROPOSALS FOR SHIP CREEK[a]

[a]Metropolitan Anchorage Urban Study, Interim Report, 1977, Army Corps of Engineers

SEWER

Introduction

Wastewater disposal in Anchorage is handled in one of two ways - either by on-site septic disposal or through an extensive sewer system under the jurisdiction of the Department of Enterprise Activities within the municipal government of Anchorage.

Organizational Context

For topographical purposes, wastewater collection and treatment is divided into three mutually exclusive areas.

Service Area 60, located 56 kilometers (35 miles) south of Anchorage is comprised of the resort communities of Alyeska and Girdwood. This area is particularly unique because of a seasonal fluctuation in population of 41 percent. Seasonal migration is a direct result of the Alyeska Ski Resort facilities in the area which produces a peak population of 1,700 in the winter months and a low of 700 during the summer season. Past wastewater disposal procedure for these communities was exclusively on-site. Plans for a secondary sewage treatement plant for Girdwood is scheduled for completion in the summer of 1978. (Gorski, Community Contact, 1978j) The life expectancy for this facility is approximately 1997, at which time the sewage treatment plant would probably need expansion. This life expectancy is based on the Preliminary Report, Public Utilities, by Operation Breakthrough, 1977. The report projects a population in the area of 10,000 by 1997. Operation Breakthrough is a

private interest groups whose goal is providing comprehensive planning for the future course of Anchorage. The Anchorage Sewer Utility believes these projections are realistic, if not low (Gorski, Community Contact, 1978i).

Service Area 50 is located north of the Anchorage Bowl and includes the communities of Eagle River, Chugiak, Birchwood, and Peters Creek. This region's population density is low but has recently been characterized by rapid growth. This primarily results from the more densely populated Anchorage Bowl spilling over into the outlying communities. Of the communities listed in Service Area 50, only Eagle River has a sewage treatment system. The surrounding areas use on-site wastewater disposal but will have systems introduced on a localized basis as the need requires. Ultimately, a comprehensive plan will be introduced on a long-range basis for this service area. (U.S. Army Corps of Engineers, 1976)

Eagle River's treatment facility is a secondary sewage treatment plant operating a capacity in 1977. The facility is to be expanded and due for completion in January 1979 (Gorski, Community Contact, 1978i). Based on the Operation Breakthrough statistics, this plant would be sufficient until 1990 based on a projected population of 17,000. In 1990, expansion of the sewage treatment plant would be necessary.

Service Area 40 hosts the majority of the population in the Municipality. Its borders are delineated on the north by Fort Richardson and on the south be Oceanview residential area. East and west boundaries are physically defined by the Chugach Mountains to an elevation of 610 meters

(2,000 feet) and Cook Inlet, respectively. The 644 kilometers (400 miles) of sewer lines in the Anchorage Bowl deposit wastewaters into two primary lift stations located at the mouth of Campbell Creek and the mouth of Chester Creek. The wastewaters are then pumped to the Pt. Woronzof sewage treatment facility and then released into Cook Inlet from an outfall 61 meters (200 feet) off Pt. Woronzof (U.S. Army Corps of Engineers, 1977). The average outfall from the Pt. Woronzof plant after primary treatment is currently 128.7 million liters per day (34 million gallons per day). The plant was sized to handle peak flows of this amount. However, during spring breakup the plant currently experiences an excess of wastewater which is handled by bypassing the plant and dumping directly into Cook Inlet (Gorski, Community Contact, 1978i). With the fast and turbulent tides of the Inlet, the wastewaters are rapidly dispersed.

An important sidenote to outfall of wastewaters into Cook Inlet relates to the fact that Knik Arm is almost completely devoid of all biological life with the exception of seasonal salmon runs. However, this phenomenon is not related to wastewater disposal but is due to the turbulent waters which are heavily silt laden as a result of natural drainage from the alluvial Anchorage basin. (U.S. Army Corps of Engineers, 1977)

Current Issues in Service Area 40

Infiltration/Inflow Problem. A current hindrance to Service Area 40's sanitary sewer system is an infiltration/inflow problem. The Army Corps of Engineers defines this as water other than sanitary sewer finding its way into the system and views this as a three

dimensional problem. First, infiltration can occur during nonrun-off periods from high ground water seeping into loosely jointed pipes. Second, inflow can occur from water wastage by urban water users to prevent pipes from freezing. Third, infiltration and inflow are a definite problem during spring breakup where runoff enters the system through damaged pipes and manholes or through facilities improperly connected to the system. The seriousness of this problem can be assessed from the assumption that 20 percent of the designed volume is from infiltration.

Along with this problem, the population density is increasing in and around the central business district and flows within portions of the system are exceeding designed capacity. (Gorski, Community Contact, 1978h)

Expansion of Sewer Line Extensions. A particular case of community concern is the wastewater treatment procedure in the upper Hillside area. The procedure currently in use is on-site septic disposal. Drainage fields in the upper Hillside areas are infiltrating into the lower regions water supply resulting in potential polluted water sources. Because of the prohibitive cost to the individual property owner and the desire to maintain a low density development in this area, sewer line extensions have never been instigated. However, future planning should include this area because of the obvious health related problems resulting from polluted water sources.

In the southern portion of the Anchorage Bowl, development has been

occuring along a low density line. This corresponds to the land use expected for the area in the Comprehensive Plan for Anchorage. The Municipality has contracted with Bomhoff & Associates and the URS Corporation to plan line extensions for the Anchorage Bowl including the southern portion and the Hillside area. The sizing of sewer line extensions and their recommended locations will definitely affect the profile of development in these more sparsely populated regions. Recommendations for a low density design in the sewer extensions for the southern bowl and Hillside could on one hand solve the potential health hazards but still retain the low density character of the area.

Topographically, the amount of available land for development in the bowl is limited. As the population increases toward saturation, the problem of adequate sewer and water extensions becomes evident.

Regulatory Permits

Effluent characteristics are currently established by the National Pollution Discharge Elimination System (NPDES) permit. This permit is issued by the Environmental Protection Agency (EPA) under the authority of Section 402, Public Law 92-500 for the operation of the Asplund Water Pollution Control Facility (Pt. Woronzof Plant). The last permit expired on June 30, 1977, but was renewed. PL 92-500 is mandating the installation of secondary sewage treatment facilities throughout the United States; however, waivers are being granted. The amendment provides "for a waiver

from the secondary treatment required for any conventional pollutant in a discharge into marine waters from existing municipal sources if it can be shown that the modification will not interfer with protection of public water supplies and the attainment or maintenance of the national water quality standard, will not require additional controls on any other source, assures that there will be no substantial increase in the volume of discharge (Water & Waste Engineers, 1978). Anchorage generally falls under this description and was granted a permanent waiver which is automatically reviewed every few years by the Environmental Protection Agency (EPA). Installation of secondary treatment facilities at Pt. Woronzof is a capital intensive project with little or no positive environmental affects. Primary treatment is deemed sufficient due to the fast and turbulent tides of Knik Arm creating rapid dispersement of wastewater.

Planning

Pt. Woronzof Expansion. Pt. Woronzof sewage treatment plant is functioning most of the time at its full capacity of 128.7 million liters per day (34 million gallons per day). Under the Capital Improvements Plan, expansion at Pt. Woronzof is planned for 1979 and 1980 (Gorski, Community Contact, 1978i). By 1985, depending on the development in the bowl, further expansion of Pt. Woronzof would be necessary. Another 1985 alternative would be the development of a second sewage treatment plant in south Anchorage (Gorski, Community Contact, 1978i). Using Operation Breakthrough projections, either of these alternative should provide primary treatment for a population of at least 269,000 in the Anchorage Bowl. The Army Corps

of Engineers is in the process of conducting the Metropolitan Anchorage Urban Study on wastewater treatment. The final report will recommend the best practical waste treatment for the Anchorage area and is due for completion in late 1978.

Annexation. Under the Capital Improvements Plan, if 50 percent of the residences of a particular community petition for sewer line extensions, this area qualifies as an improvement district and is put on an areawide ballot for full voter approval. If passed, this could effectively annex an area into the existing sewer system. About 25 percent of the extensions occur through this method. (Gorski, Community Contact, 1978i)

Infiltration/Inflow. To help offset the infiltration/inflow problem, a proposal has been devised for a Sewer System Evaluation Study. The contract has recently been awarded and should be underway in the near future.

Expansion. Bomhoff & Associates and the URS Corporation are in the process of devising a master plan called the Greater Anchorage 1977 Sewerage Study. They are examining current conditions and planning line extensions for the bowl based on a 1995 projected population of approximately 376,000. The final product will recommend a capital improvements plan and is due for completion in 1978 (Gorski, Community Contact, 1978i).

ELECTRICITY

Introduction

The Municipality of Anchorage receives electrical generation and distribution from several utilities. The Anchorage Bowl obtains electricity from Chugach Electric Association and Municipal Light and Power. The Turnagain Arm area, south of the bowl, receives power from Chugach Electric. The communities of Eagle River and Chugiak obtain power from Matanuska Electric Association, a cooperative, which purchases much of its power from Chugach Electric Association. The military bases, Fort Richardson and Elmendorf Air Force Base, provide their own generation needs.

Since the majority of the population receives electric service from Chugach Electric Association and Municipal Light and Power, baseline information will be limited to these two enterprises.

Service Providers and Facilities

Chugach Electric Association operates as a nonprofit cooperative. As of February 1, 1978, Chugach serves approximately 46,000 (residential and commercial) retail customers.

The utility's primary service area consists of the regions outside the commercial and densely populated bowl, delineated primarily by the old corporate city limits (Gorski, Community Contact, 1978o).

The cooperative is responsible for both distribution and generation facilities. Functioning as the largest utility in Alaska, Chugach maintains 56 kilometers (35 miles) transmission line, 1,772 kilometers (1,101 miles) distribution line, and operates five generation plants. The largest plant is the Beluga Station with six gas turbines producing a total of 230.21 megawatts (mw). Bernice Lake Power Plant and the International Station are also natural gas plants. Bernice Lake has three gas turbines with a total power output of 26.23 mw. International Station has six turbines with a total peak production of 48.65 mw. Cooper Lake Power Plant is a hydrogeneration facility with three generators producing 16.50 mw. Knik Arm Power Plant has five steam turbines with a plant total of 10.00 mw. To supplement their own generation facilities, Chugach Electric Association purchases additional power from the Alaska Power Administration. This hydrogenerated power adds nine mw to Chugach Electric Association's electrical capacity. Total generation capabilities for Chugach Electrical Association is 340.59 mw. Surplus power is sold to other utilities intertied with the Chugach distribution system. Figure 10 gives the location of generation facilities and the extensive transmission network of the Cook Inlet Region. (Chugach Electric, 1978)

Municipal Light and Power is a municipally operated utility. In 1977 this utility served approximately 15,737 customers, residential and commercial, and projects an increase in 1978 to approximately 16,569 (Municipality of Anchorage, 1977k). The utility operates two power plants. Plant I is located at First and Ingra Street in downtown Anchorage. The plant contains four gas fired turbines (referred to hereafter

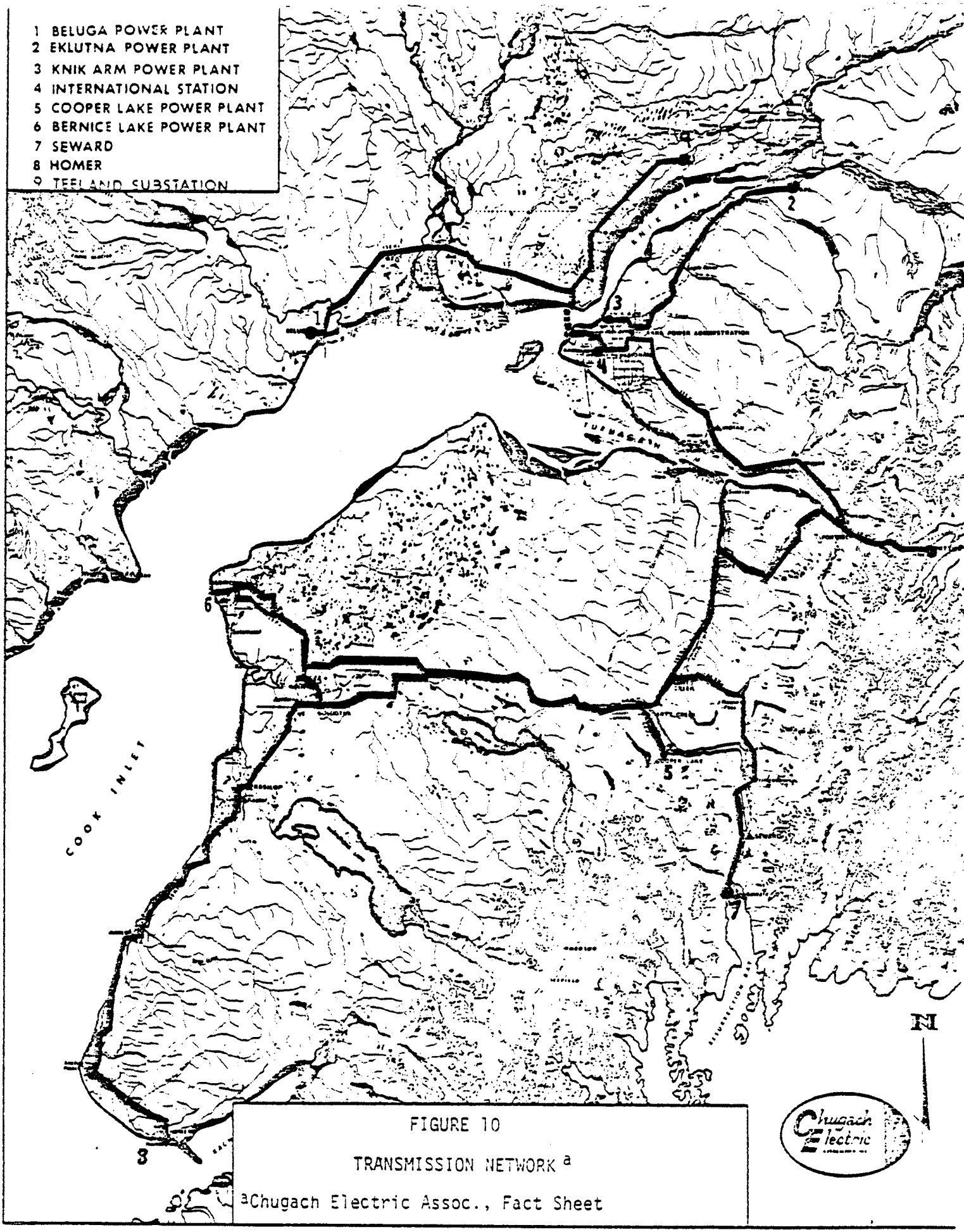


FIGURE 10

TRANSMISSION NETWORK [a]

[a]Chugach Electric Assoc., Fact Sheet

as units one through four). Plant II is located on the Glenn Highway by Oilwell Road. Plant II has one gas fired turbine (unit five) currently on line. The peak generation capacity of all five units is 130 megawatts (mw).

Municipal Light and Power purchases an additional 16 mw from the Eklutna Projects, a federally operated hydrogeneration facility. Total peak generation capacility is currently 146 mw (Gorski, Community Contact, 1978o). Natural gas for Municipal Light and Power is purchased from Alaska Gas and Service Company, which supplies gas via a pipeline from the Kenai gas fields on the Kenai Peninsula (Marshall and Meyer, 1977).
A sixth unit to be located at Plant II is due to come on line in the fall of 1978. Unit 6 is a steam powered turbine and operates off the waste heat generated by Unit 5 through a boiler mechanism. Unit 6 will add approximately 15 mw to the existing 146 mw of peak production. Plans are on board for a seventh gas fired turbine, Unit 7, at Plant II with an accompanying boiler unit to feed waste heat into the Unit 6 steam turbine. The boiler from Unit 5 will supply one-half of the waste heat necessary to operate the steam turbine, Unit 6, and the other half will be obtained from the boiler accompanying Unit 7. Excess heat from the steam generator will be used to heat the holding tanks of water for the Anchorage Water Utility to prevent freezing of the water supply. Projected completion for Unit 7 is fall 1979. Projected megawatt output of this project is estimated to be between 35 to 70 mw (Gorski, Community Contact, 1978o).

The concept of using waste heat from natural gas turbines to power steam turbines is a very economical method of generating electricity. With

increased costs and legislation limiting supply of fossil fuels, utilizing an existing by-product of primary generation is a sound concept in resource utilization. However, it is important to note that waste heat steam turbines are contingent on the operation of the corresponding fossil fuel unit(s). If, for example, the gas fired turbine, Unit 5, in Plant II drops off line, production of power ceases from the steam turbine. This type of generation could have negative implications in times of potential power shortages such as the winter months when the utilities face a higher demand for power.

Current Issues

With the imminent shortage of fossil fuels, specifically natural gas, pressure is being placed on utilities across the country to develop alternate methods of power generation. One proposal pending final decision is a special tax to be imposed on all utilities by 1983 that are still utilizing gas powered turbines (Gorski, Community Contact, 19781).

To comply with one of the goals of the National Energy Plan, it will be necessary to shift the base load generation away from natural gas and petroleum to coal fired, steam, hydroelectric, or nuclear power plants. The Natural Gas and Petroleum Conservation and Coal Utilization Policy Act, HR 5146, if enacted, would prohibit the use of gas fired turbines by 1990. However, there is a provision to exempt Alaska and Hawaii's currently existing gas fired turbines. There are several reasons that account for Alaska exemption. First, although there are substantial coal deposits in the state, there has been little development and extracation.

Secondly, Alaska has a small population density compared to the rest of the United States. (Gorski, Community Contact, 1978l) In the near future it is very unlikely that existing gas powered turbines would be converted to coal primarily because technology has not made this an economical alternative. One possibility might be the conversion of coal into a gaseous state, but this process has yet to be technologically refined to the point of economic feasibility (Gorski, Community Contact, 1978o). If a moratorium occurred with the use of natural gas, the turbines are equipped to use oil as the fuel source. Although this has a stabilizing affect on the system, it is important to note that the use of oil as a fuel source is substantially more expensive than natural gas. Customers would undoubtedly experience a considerable increase in rates.

Both utilities are currently facing potential power shortages during the peak demand months of December and January. Fortunately, for the past three years Anchorage has experienced mild winter temperatures. If the traditionally severe Alaskan winters had occurred, the power demand would most likely have exceeded the supply (Gorski, Community Contact, 1978l). This should not be considered as a bad reflection on either utilities' ability to provide service to customers but rather a result of the tremendous increase in the population of Anchorage stemming from the impact of the trans-Alaska pipeline.

Another obstacle the utilities continually face in long-term planning is obtaining the large amounts of capital necessary to build additional generation facilities. With the strong movement toward conservation of natural resources, it takes a considerable amount of lead time to plan and

build new generation facilities. The utilities must not only obtain large amounts of capital to build additional generation facilities but are required to spend substantial amounts of money to assess the environmental impact of a proposed project.

Planning

Municipal Light and Power engages in planning through the Capital Improvement Plan. This is a six-year plan updated annually as the utility assesses current needs. In addition to the units planned for Plant II, Municipal Light and Power has plans on board for a 100 mw coal fired plant due to come on line by 1983 (Gorski, Community Contact, 1978o). Chugach Electric Association has tentative plans to add approximately seven turbines to the existing system between 1979 and 1986. These turbines are estimated to be 70 mw each. In addition, a two phase coal fired plant is due to come on line in 1984. Phase one will generage 200 mw; and phase two, due for completion in 1986, will add an additional 200 mw (Gorski, Community Contact, 1978l).

It is apparent that the utilities are planning for growth, but it is difficult to correlate their projected megawatt output with actual population projections. The utilities base their plans on demands for power, which is a multivariate process. Historical demand is used as a basis for projection by Municipal Light and Power (Gorski, Community Contact, 1978o).

Other variables which must be considered are the type of industry which may

develop in Anchorage in addition to the general population increase (Gorski, Community Contact, 1978l).

TELEPHONE

Introduction

The telephone system in Anchorage dates back to the inception of Anchorage as a township. In 1915, a local entrepreneur, Mr. Henry Emard, saw the potential development of a communicatons system in Alaska as an adjunct to the government's construction of a railroad from Seward to Fairbanks via Anchorage. Mr. Emard traveled outside and purchased the inital equipment for telephone installation for the township of Anchorage. However, during Anchorage's early history utilities were controlled by the Alaska Engineering Commission. Because of this preestablished jurisdiction, Mr. Emard sold his equipment to the Commission for installation.

From 1916 - 1921, utility control was transferred from Alaska Engineering Commission to the Alaska Railroad.

In 1921, the City of Anchorage was incorporated and the railroad leased the utilities to the City. The telephone department bought the first city owned truck in 1923 - a model "T" Ford. Prior to this purchase, installers were required to walk to the site of work carrying the necessary equipment.

In February 1923 the utilities, telephone, and electrical distribution systems were purchased by the city from the Alaska Railroad with an effective date of December 1, 1932.

Organizational Context

The telephone service for the Anchorage Bowl has been city owned and is now a municipal operated utility since unification of the Greater Anchorage Area Borough and the City of Anchorage. The utility functions as one of several under the Department of Enterprise Activities.

The communities north of the bowl area within the municipal boundaries, specifically Eagle River and Chugiak, receive telephone service from Matanuska Telephone, a cooperative.

The resort communities of Alyeska and Girdwood, south and east of the bowl at the end of Turnagain Arm, receive telephone service from GAB Telecommunications, a private utility.

The primary objective of the Municipal Telephone Utility is "to provide the ultimate in telephone service to all subscribers not only within the present operating area, but within all areas that have a strong community interest with Anchorage."

"Other objectives include providing any and all telecommunications services on an as-wanted/where-needed basis; anticipation of growth

areas of the economy; and continued upgrading of the quality of service provided (Municipality of Anchorage, 1977b)."

Issues

Because of recent demands imposed by the impact of the trans-Alaska pipeline, the telephone utility has engaged in a five-year planning process under the Capital Improvements Plan. In 1970 the city had approximately 21,300 telephones in service. Projected 1978 figures for telephones in service is 134,958. This is a 534 percent increase. Table 64 shows the projected five-year statistics pertinent to communications.

TABLE 64

TELEPHONE PROJECTIONS[a]

Year	Average No. of Customers	Average Telephones in Service
1978	62,311	134,958
1979	67,011	144,958
1980	70,711	153,958
1981	72,611	160,958
1982	77,120	170,053

[a]Municipality of Anchorage, Capital Improvements Plan, 1977

Because of this anticipated increase, the Anchorage Telephone Utility conducted a survey of switching equipment in 1977. The trend of high priority was a move to solid state switching equipment (Municipality of Anchorage, 1977b).

The utility worked this change of equipment into their Capital Improve-

ments Program. The new sophisticated switching equipment requires large amounts of capital expenditures for 1978.

About 25 percent of the existing switching equipment is currently electronic. All future additions will be solid state; and as older equipment becomes too expensive to maintain, it will be replaced with the newer technology. The change to solid state has several distinct advantages such as less maintenance costs and faster time in getting telephone calls through (Gorski, Community Contact, 1978j).

Planning

The criteria used in planning is multivariate. Historical trends, demand for service, and current population forecasts are used to determine future needs for equipment and manpower. Currently, the telephone utility is adding equipment based approximately on an 18-month growth projection (Gorski, Community Contact, 1978j).

The one distinct advantage which the telephone utility has over the other utilities is in lead time. This lead time required to expand their system is minimal compared to water, sewer, electricity and solid waste.

Comments

Currently, the Anchorage Telephone Utility appears to be planning for growth and examining new technology to improve service and meet their primary objectives as stipulated above. Although large amounts of capital are necessary to meet demands and acquire up-to-date equipment, service to customers should not be a problem.

Transportation

As the metropolitan hub of Alaska, all modes of transportation through and within Anchorage play a very significant role in the movement of people and cargo through the state. This section on transportation will address factors within Anchorageincluding long and short range plans for roads and transit systems as well as indicators affecting the state, encompassing the Port of Anchorage and the airports.

ROADS

Road networks and land use share a symbiotic relationship. For example, existing road systems have produced commercial strip development and influenced the type of land use. Zoning ordinances have, in turn, dictated road expansion and maintenance. Future land use will be the key influence in the type of expansion and placement of road networks (see land use section for detailed analysis) in the Anchorage area.

Transportation planning efforts for roads in Anchorage began in 1938 with the Traffic Circulation Plan and culminated in 1972 with the ongoing Anchorage Metropolitan Area Transportation Study (AMATS) Ten-Year Plan.

The AMATS plan is currently based on a review of the 1995 land use plan as proposed by the Comprehensive Plan and the completion of an extensive land use inventory (Municipality of Anchorage, 1977j). The AMATS plans are designed to not only upgrade the existing road network but propose alternatives of expansion in Anchorage.

Issues

Current land use and future changes as noted in the land use section will, in some cases, have a positive impact on relieving certain key areas such as the central business district plagued with traffic congestion. On the other hand, future development will mandate road expansions, especially in the areas which will experience the increases in commercial-industrial development. Changes such as those noted in the land use section produce shifts in traffic patterns from home to work or shopping. Specifically, parts of the Anchorage Bowl are plagued with heavy traffic congestion particularly the central business district and the industrial areas of Ship Creek. Due to the location of this area in the far northwest corner of the Anchorage Bowl, difficult problems are constantly encountered in terms of transportation accessibility. The corridors providing access to this area are currently at capacity (Municipality of Anchorage, 1977j).

The commercial development along Northern Lights and parts of Spenard are also experiencing heavy traffic volume and have problems with transportation accessibility due to inadequate streets and unlimited access to these commercial establishments from major arterials. In part, traffic congestion is the result of land use outpacing transportation improvements (Municipality of Anchorage, 1977j). Land use planning has for some time discouraged commercial strip development. However, as demonstrated by the continued development along Northern Lights Boulevard, the planning process has obviously had little impact. As an adjunct to the first issue, strip commercial development along with heavily travelled arterials is one of the most expensive problems in the area both from the taxpaying public's

and the businessman's standpoints. This type of commercial development has led to very costly replacement of two once vital arterials. Spenard Road was replaced by Minnesota Drive and the Old Seward Highway was replaced by the New Seward Highway. Spenard Road and Minnesota Drive may be used as an example of the process leading to the expense of replacing one with the other. The irony of the process is that the very commercial establishments which contributed to the problem also suffered from the loss of traffic which now bypass their front doors. (Greater Anchorage Area Borough, 1972b)

A third issue of continued concern is the problem of auto emission and air quality control. Fifteen areas within the Anchorage Bowl are potentials for exceeding the National Ambient Air Quality Standards. (See figure 11). Streets characterized by high traffic volume and low speeds are resulting in high carbon monoxide levels (Municipality of Anchorage, 1977j). Figure 12 illustrates the projected traffic volumes used to determine these hot spots. Solutions could include car-pooling and mass transit systems designed to help bring the auto emissions within standards set by the Clean Air Act.

Plans

Short Range - Transportation Improvement Program, 1971-1982. The short-range plan proposes both expansion and widening and improving the road network in Anchorage for calendar years 1977-1982 and is noted as the six-year Transportation Improvements Plan (TIP).

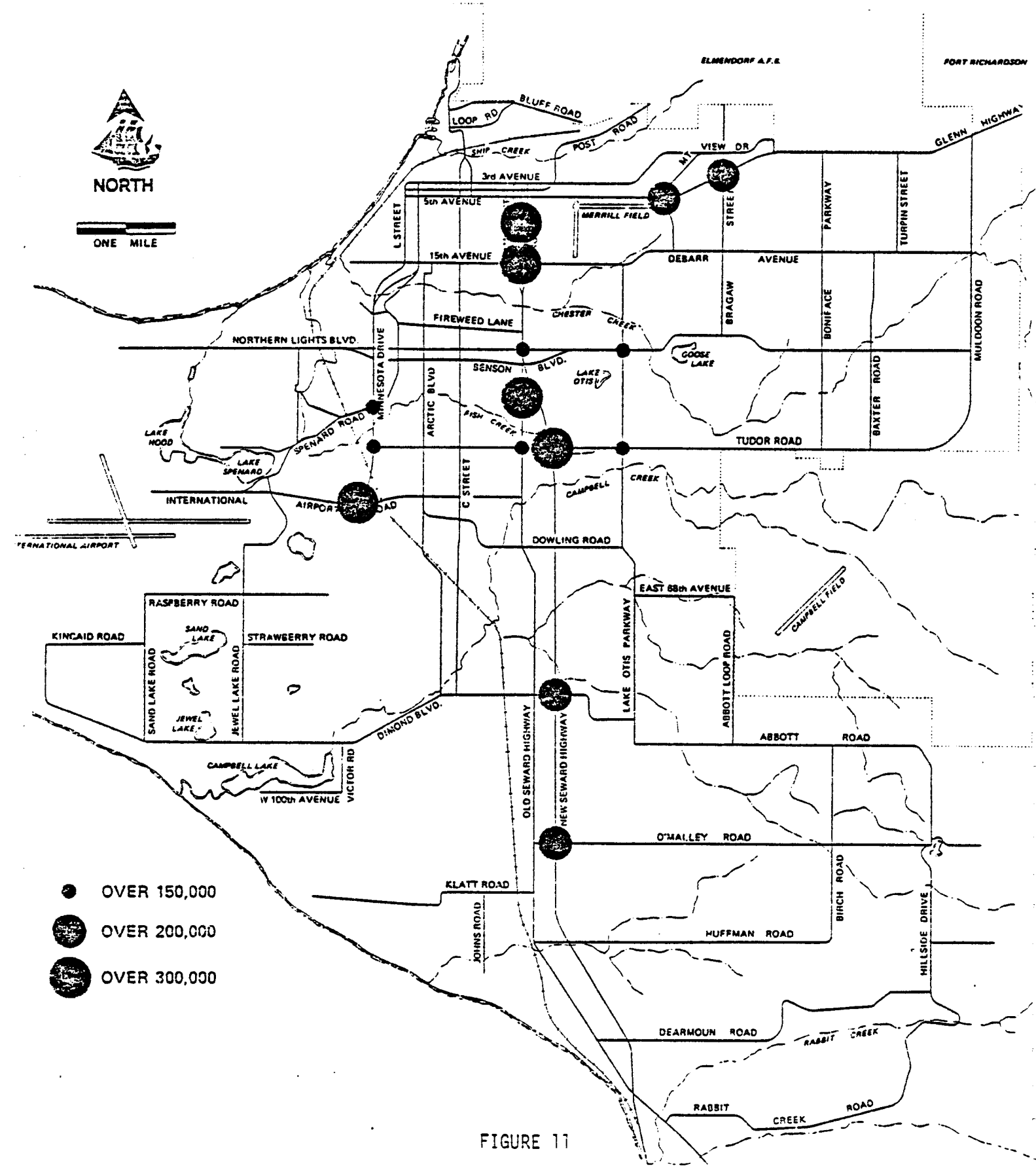


FIGURE 11

POTENTIAL CARBON MONOXIDE VIOLATIONS[a]

[a]1977 Long Range Element, AMATS

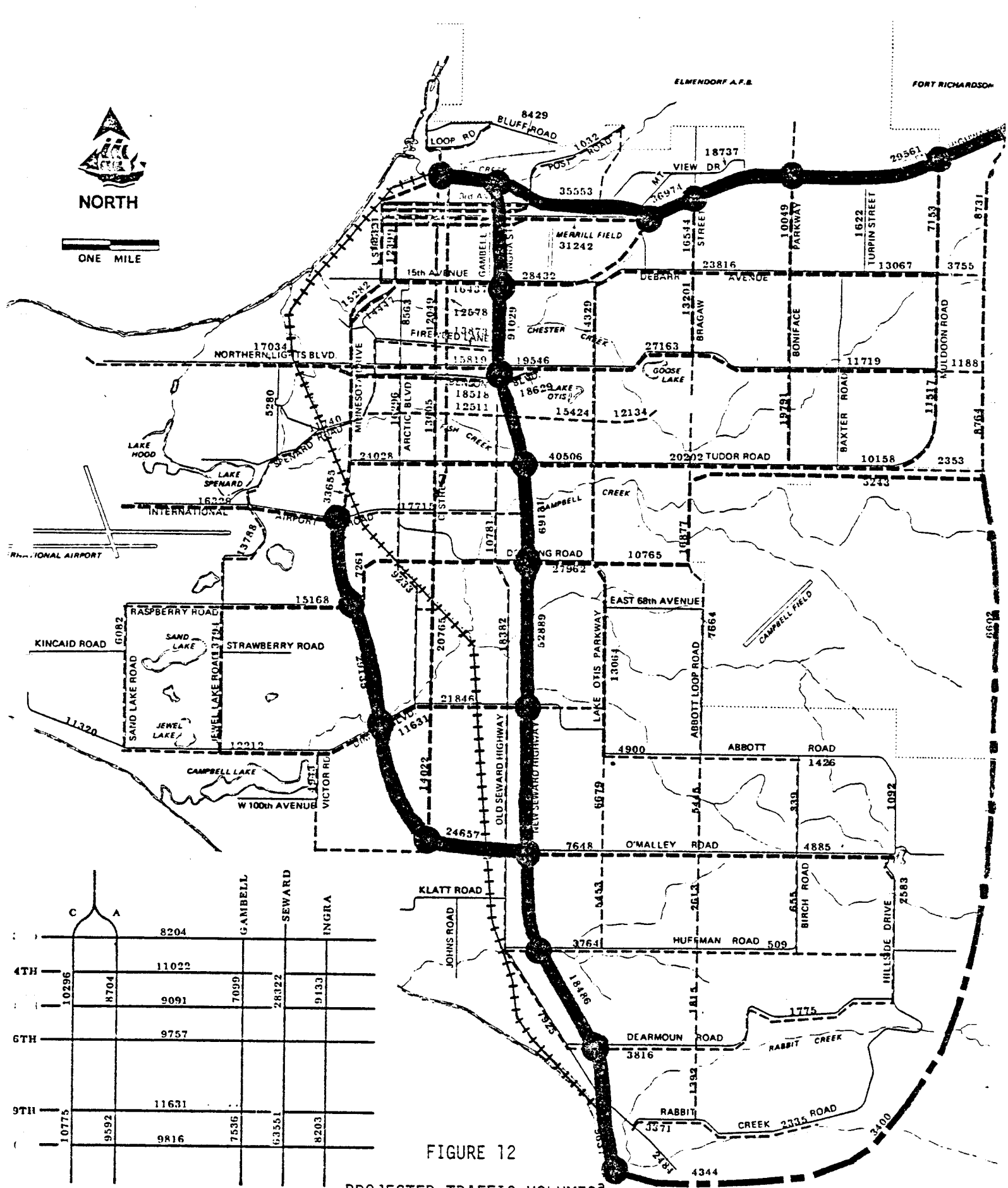


FIGURE 12

PROJECTED TRAFFIC VOLUMES[a]

[a]1977 Long Range Element, AMATS

New construction projects include a road from Minnesota Drive to the airport just north of the existing International Airport Road, the Minnesota Extension, A Street from International Airport Road to Northern Lights Boulevard, the northern corridor, the Elmendorf Access, and Bragaw Street extended from Alaska Methodist University to Abbott Road (see figure 13).

Road improvement projects included in the six-year program have been divided according to the street classification (principal arterial, minor arterial, collector, primary extension, and rural primary) designated as the "Urban System Functional Classification." Road construction on most of the major and minor arterials in the Anchorage area is under the jurisdiction of the State Department of Transportation and Public Facilities; however, some streets will be improved by the Municipality of Anchorage Public Works Department (Municipality of Anchorage, 1977j).

Table 65 outlines the six year CIP for the road transportation system. Local government is slated to pay 31.6 percent of the costs, though 38 percent of the local government's funding results from anticipated new road improvements districts paid through assessments.

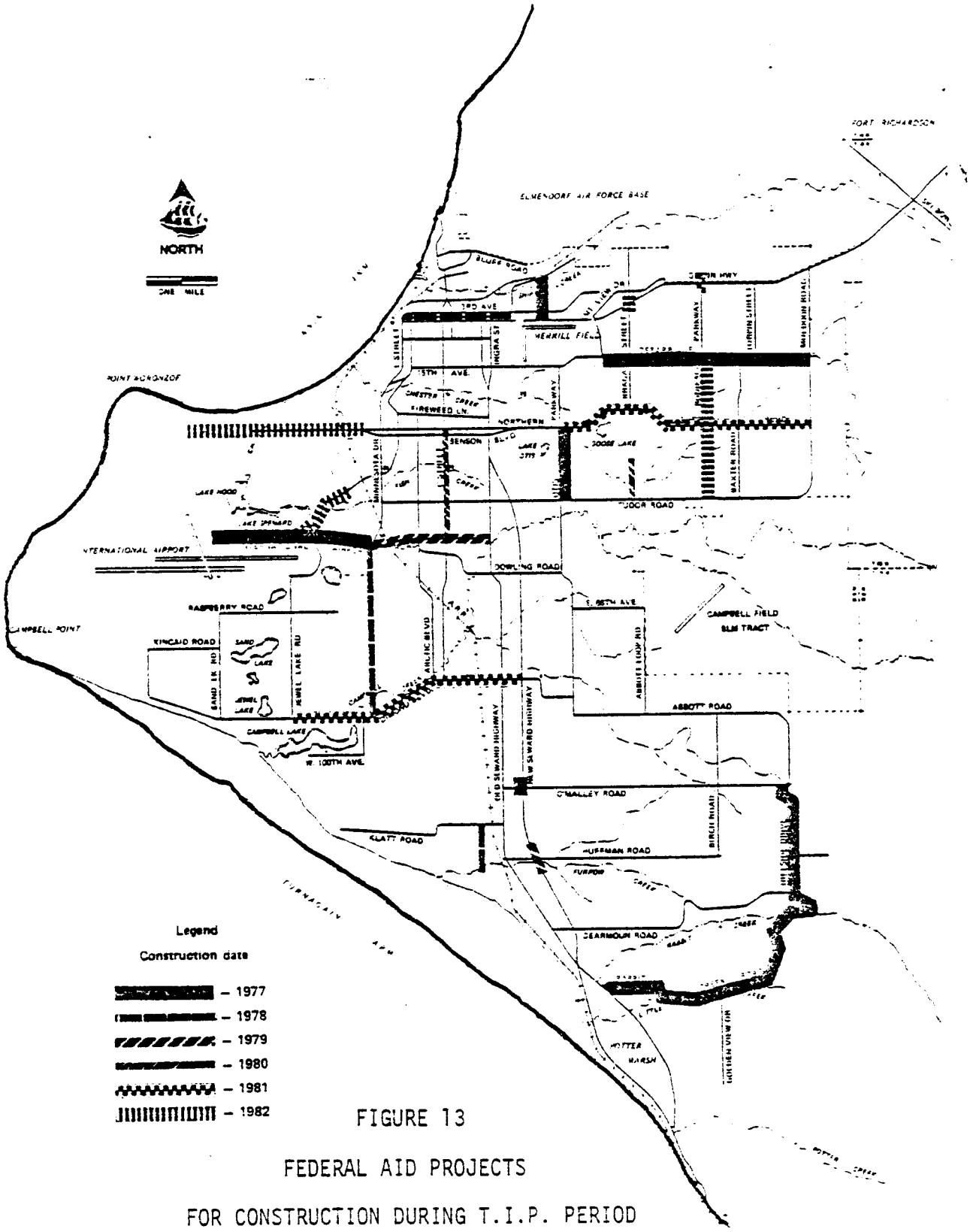


FIGURE 13

FEDERAL AID PROJECTS

FOR CONSTRUCTION DURING T.I.P. PERIOD

1977 AMATS T.I.P.

TABLE 65

SIX YEAR CAPITAL IMPROVEMENTS PROGRAM

ANCHORAGE ROAD SYSTEM[a]

Road System	Local Funding	Total Funding
Principal Arterials	$ -0-	$ 55,881,000
Minor Arterials	9,090,000	52,359,000
Collector & Other Streets	11,345,000	17,415,000
Rural Primary	-0-	22,015,000
Other, including Road Improvement Districts	39,029,200	40,423,800
Total	$ 59,464,200	$188,093,800

[a]Municipality of Anchorage, AMATS 1977 Transportation Improvement Program, 1977

The TIP plans call for road improvements and expansion for eight principal arterials, 19 minor arterials, 12 collectors and other streets, and one rural primary over the next six years.

Long Range Plans - Long Range Element, 1977-1995. The recommended Long Range AMATS plan proposes facilities to improve the overall roadway network, extend existing streets into newly developing areas, and link primary employment centers to residential areas. There is a minimal amount of new roadway construction under this plan.

Per the proposal, the following will be needed by 1995: four freeways to include the Glenn Highway, Northside Corridor, Seward Highway, and the Minnesota Extension; 20 major arterials; and 25 minor arterials. There is a possibility of the construction of a Foothills Parkway beyond 1995 extending from the East City Bypass to

the Seward Highway south of Rabbit Creek. This is designated as a scenic route for recreational use (see figure 14).

It should be noted that projects such as road construction are conducive to time slippage. If the plan faces no obstacles in implementation and incurs relatively few delays, the future of Anchorage's road network should function smoothly. However, if time delays are continually encountered, Anchorage with its current condition could be playing catchup in the transportation arena for the remainder of the century.

MASS TRANSIT - AMATS TRANSIT DEVELOPMENT PROGRAM

One method to deal with both traffic congestion and air quality standards is through the use of mass transit. A transit program has been incorporated into the short and long range AMATS plans. The transit goal is to accommodate public needs, reduce dependency on the automobile, and develop a multimodal transportation system.

Issues

Currently there is only a .6 percent ridership for the current transit system, the People Mover. In addition, there is going to be a difficult problem in achieving a larger ridership. Current economic conditions, relatively inexpensive gasoline, parking spaces, and scattered residential development put a damper on increasing the ridership of the bus system.

The current data on the People Mover System indicate that the only people

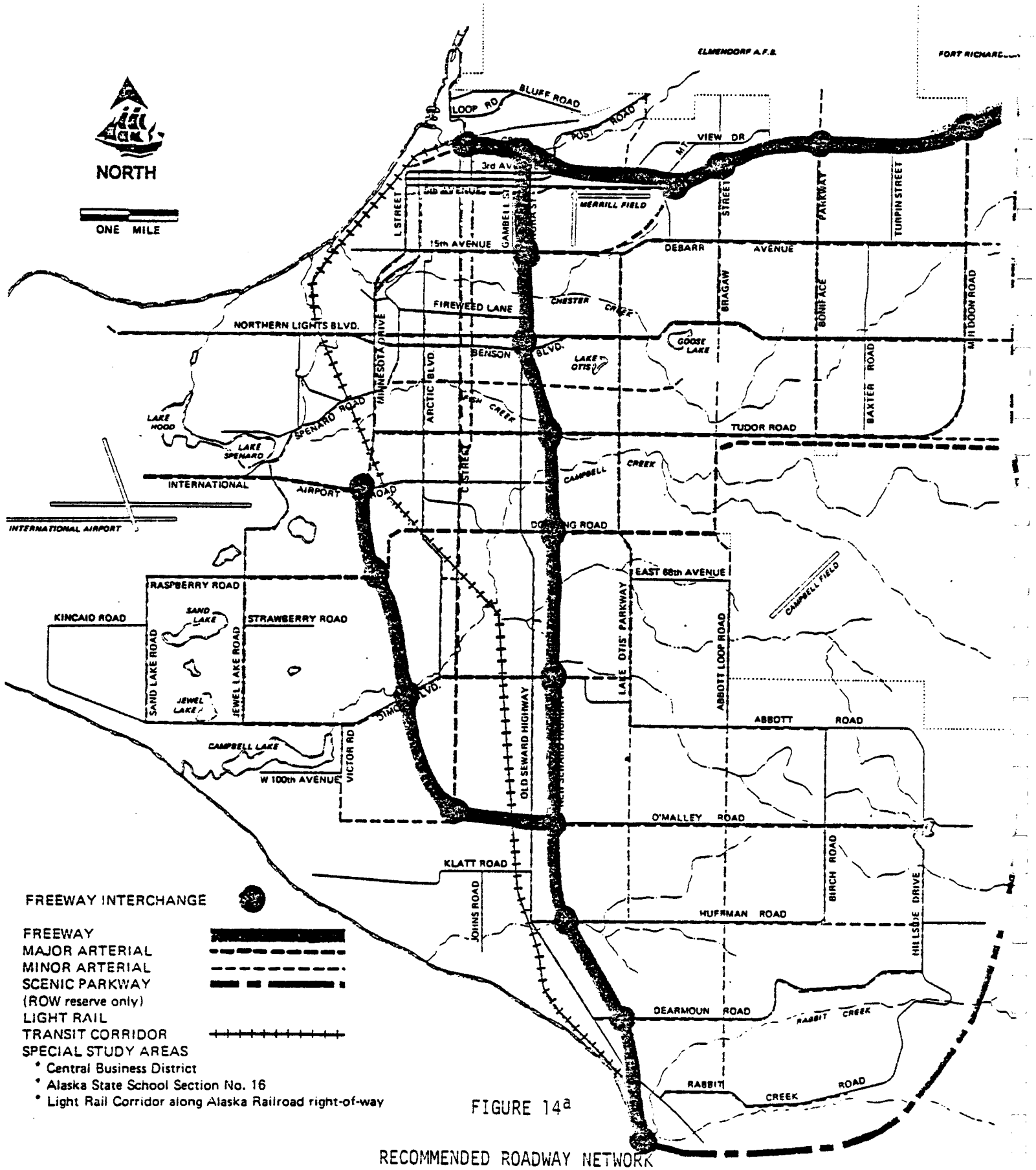


FIGURE 14[a]

RECOMMENDED ROADWAY NETWORK

[a]1977 Long Range Element, AMATS

utilizing the buses are those that are young and elderly who, in fact, have no other means of transportation.

It should be noted, however, that the average daily ridership has increased substantially since 1975 as noted in table 66.

TABLE 66

AVERAGE DAILY RIDERSHIP, 1975-1977[a]

Average January Daily Use	Daily Totals	% Change Over Previous Year
1975	1,433	
1976	2,960	+106.6%
1977	4,020	+ 35.8

[a]AMATS Transit Development Program-1978-1982, 1977

The projected ridership for fiscal year 1977 was 1,206,000.

Short-Range Transit Plan

The five-year Transit Development Plan (1978-1982) calls for daily patronage to increase from 4,200 daily person trips to 10,400 daily person trips in 1982. Operating mileage will increase from approximately 1.8 million kilometers (1.1 million miles) to 4.8 million kilometers (3.0 million miles) in 1982. The system will acquire 62 new buses (including 12 just received in July 1977). During this period nine buses will be retired. (Municipality of Anchorage, 1977r).

The plan also calls for a continued funding via contract with outside

operation of curb to curb dial-a-ride system for the elderly and handicapped. The present three-bus system will be replaced in the fall of 1977 with an expanded system calling for five lift-equipped buses (Municipality of Anchorage, 1977r).

Transit Long Range Plan

To reduce auto dependency and accommodate a variety of public needs including energy conservation, air quality, etc., two primary mass transit modes are addressed. The feasibility of light rail system along the Alaska Railroad is now under study and any commitment to this mode could occur in the near future. The light rail system, if implemented, will ultimately provide transportation from Wasilla to Portage.

The present transit system utilizes the bus, and a fleet of 540 buses is planned for 1995. Ridership is expected to increase to 14.4 percent of all person trips (it is presently .6 percent). This will be done by increasing service on existing routes and expand service to encompass outlying residential and commercial areas (Municipality of Anchorage, 1977j).

Financial Picture - Road Network and Transit System

Implementation of the highway system as recommended within the Long-Range Plan will require nearly $40 million per year between 1982 and 1997 which exceeds the present level of funds by about $14 million per year. The transit capital costs are significantly less but operating deficits, for which there is limited federal assistance at the present time, will reach $20 million per year by 1995 (Municipality of Anchorage, 1977j).

(See table 67.)

TABLE 67

ESTIMATED COSTS & REVENUES 1978-1995[a]

(in 1977 million dollars)

Costs	Total
Roadway Improvements:	
Freeways	$ 310.1
Arterials	268.9
Collectors & Other Streets	110.0
Maintenance[b]	76.4
Subtotal	$ 765.4
Transit:	
Bus Acquisitions	$ 57.4
Park and Ride, Passenger and Maintenance Facilities	22.0
Light Rail Transit	104.0
Operating Expenses[c]	408.9
Subtotal	$ 592.3
Total Capital Cost	$1,357.7
Revenues	
Sources:	
Federal:	
Highway Construction Funds	$ 400.0
UMTA Section 3	146.7
UMTA Section 5	14.4
Local:	
Transit Fares	235.8
Property Tax	44.2
Total Revenues	$ 841.1

[a]Municipality of Anchorage, Long Range Element, October 1977

[b]Assumed a two percent increase in roadway miles maintained per year.

[c]Assumed eight percent increase in number of operating miles per year. Does not include light rail operating costs assuming that, if construction is initiated in 1990-1995, full scale operations will be in effect 1995-2000.

Conclusion (Road Network and Transit System)

It is evident that the Anchorage Metropolitan Area Transportation Plan is incorporating both transit and road expansion with plans geared to a long-range calendar. Population forecasts, as designated in table 68, indicate that plans are centered in a dynamic increase in the population with a 76.4 percent increase between 1980 and 1995 (inclusive).

TABLE 68

POPULATION PROJECTIONS[a]

Year	Population
1980	210,976
1985	256,003
1990	308,245
1995	372,081

[a]1977 Long Range Element, AMATS

As noted earlier in the report, the recommended plan calls for a minimal amount of new roadway construction. This is one factor that should complement the transit system in attaining a higher ridership. In addition, new construction and road expansion plans are geared toward future anticipated land use. This, above all else, indicates that planning is being handled in a ubiquitous nature.

It is evident, however, that deficit spending will be a problem with implementation of the recommended plan. Alternative sources of revenue will have to be examined to offset the cost of the roadway expansion proposed increases in the transit system.

PORT OF ANCHORAGE

(The following information on the Port of Anchorage has been extracted from CCC/HOK's unpublished documents on physical characteristics of Anchorage.)

Anchorage began as a base of operations for the Alaska Railroad in 1914. The city's first dock was built at the mouth of Ship Creek under Army command for the purpose of refueling ships with coal from the nearby Matanuska Mine. The original "Army Coal" dock was later abandoned and was replaced in 1927 by a new Ship Creek dock, built by the city at a cost of $1,000. The modern Port of Anchorage came into being in 1961 when the newly completed general cargo berth received its first vessel (Anchorage Port Commission).

The Port of Anchorage emerged from the 1964 earthquake as the only major operable shipping facility in the state. Although the Port of Anchorage received extensive damage as a consequence of the earthquake, the marine facilities at Valdez, Whittier, and Seward were virtually destroyed. Petroleum companies whose facilities were destroyed elsewhere rebuilt in the Anchorage harbor area. Late in 1964, Sea-Land Service began weekly, year-round service to Anchorage from Seattle (Anchorage Port Commission).

Current Port Conditions

The Port of Anchorage is located between Elmendorf Air Force Base and the

Knik Arm of Cook Inlet, north of the Anchorage central business district. The Port is owned and operated by the Municipality of Anchorage. The Corps of Engineers has responsibility for maintaining navigable waterways. In addition, the U. S. Coast Guard installs and maintains navigational aids and sets safety standards for maintaining waterways and for ship operations (U. S. Army Corps of Engineers, March 1976).

Cook Inlet is a body of water which is subject to some of the highest tides recorded, with a maximum tidal range of approximately 12.2 meters (40 feet). Consequently, the Port's wharf deck was built about 22.9 meters (75 feet) above harbor bottom to allow a minimum of 10.7 meters (35 feet) of water alongside for berthing fully laden ships at low tide. The high tides and concomitant currents help break up winter ice flows to allow year-round traffic at the Port (Anchorage Port Commission).

Knik Arm is subject to a high level of siltation which necessitates maintenance dredging on an annual basis by the Corps of Engineers. The Port of Anchorage is the only marine facility which the Corps dredges up to the dock. It is necessary to maintain a depth of 10.7 meters (35 feet) at low tide a distance of about seven feet from the dock (Anchorage Port Commission).

Description of Port Facilities

The Port of Anchorage dock area consists of a petroleum-oil-lubricant (POL) terminal and three general cargo terminals. The POL terminal is 186.5 meters (612 feet) long, general cargo Terminal No. 1 is 182.9 meters (600 feet) long, Terminal No. 2 is 185.9 meters (610 feet) long, and Terminal No. 3 is 218.9

meters (718 feet) long. In total, the Port has 186.5 meters (612 feet) of petroleum dock and 587.7 meters (1,928 feet) of general cargo dock (Port of Anchorage, 1976).

The general cargo area is served by two 27.5-ton container cranes and four high-speed level luffing gantry cranes. Mobile crawler cranes with 100-ton capacity are also available in the Port area. An enclosed concrete and steel cargo shed is located in the general caro area. The shed has 6.7-meter (22-foot) ceilings and provides 1,203.1 square meter (12,950 square feet) of heated storage space.

A 22.9-meter (75-foot) wide rail and truck apron is located adjacent to the transit shed. Railroad spurs on the dock and the transit shed apron connect the Port area with the Alaska Railroad.

Immediately adjacent to the Port is an industrial district with 20.6 hectares (51 acres) of open staging and bonded storage areas.

Port Activities

The two largest carriers using the Port of Anchorage are Sea-Land Service, Inc. and Totem Ocean Trailer Express, Inc. (TOTE). Sea-Land offloads cargo by using a lift-on/lift-off container operation. A container off-loaded from a vessel either is placed on a truck for distribution by truck or is placed on a truck driven to the rail and truck apron and is then placed on a railroad car for shipment by rail (W. D. McKinney, Jr., Port Director, Port of Anchorage; B. Woodman, April 1976).

TOTE uses a roll-on/roll-off method of cargo handling which is speedier and, in many ways, more flexible than the lift-on/lift-off system. The Port's plan to better accommodate the roll-on/roll-off system is discussed in Port of Anchorage Issues below (W. McKinney, Jr.; B. Woodman, 1976).

The tonnage handled by the Port of Anchorage, shown in table 69, grew steadily between 1967-1975. The growth in tonnage handled is especially marked in 1974-1975, the years of peak pipeline activity. Although the Port of Anchorage handled a portion of goods directly associated with the pipeline, much of the increased demand was for the typical array of goods shipped to Alaska by boat. Statistics for 1976 show a decrease in tonnage handled by the Port, a decline attributed to the slowdown of pipeline activity (Port of Anchorage).

Limitations of the Port

The ability of the Port of Anchorage to accommodate several large vessels simultaneously is limited by the available general cargo dock area. TOTE introduced two new vessels, the Great Land in September 1975 and the Westward Venture in May 1977 in the Alaska market. These 241-meter (792-foot) trailerships are the world's largest roll-on/roll-off trailer vessels, and each occupies one and one-half berths when docked at the Port. Consequently, it is difficult to offload other vessels at the same time (Port of Anchorage).

Port of Anchorage Issues

Short-Term Expansion of Existing Port Facilities. To accommodate the increasing number of vessels whose length exceeds the 183-213 meter (600-700 foot) limit of the existing berths, the Port of Anchorage

TABLE 69

PORT OF ANCHORAGE TONNAGE 1967-1976[a]

Commodity	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Frt. N.O.S.	5,624	1,475	2,239	1,258	11,283	1,805	1,845	8,005	7,546	6,147
Cement-Bulk	--	--	5,839	24,352	--	7,459	14,994	18,225	44,384	40,360
Cement Drill Mud	73	70	12	158	14,995	--	--	--	--	--
Insulation	--	--	--	--	--	--	--	--	391	1,273
Iron or Steel	6,052	4,904	1,571	3,459	3,777	6,828	3,336	14,787	8,823	7,421
Lumber	19	25	89	197	427	393	539	13,921	8,315	266
Oil Well Equipment	1,277	1,924	6,412	2,279	--	--	--	--	--	--
Petroleum N.O.S.	807	2,740	3,705	2,169	746	639	1,008	2,220	2,084	1,395
Van, Flats, Containers	249,826	279,544	383,430	478,234	357,321	462,546	476,883	590,474	838,676	978,610
Vehicles	1,446	63	2,187	4,543	9,247	4,271	5,739	11,846	21,518	36,677
TOTAL GENERAL CARGO	265,124	290,746	405,484	516,649	398,296	483,941	504,344	659,508	931,755	1,072,149
Petroleum Bulk	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

(1) 7,787,756 Bbls.
(2) 6,512,510 Bbls.
(3) 8,566,073 Bbls.
(4) 9,530,733 Bbls.
(5) 10,395,396 Bbls.
(6) 10,831,051 Bbls.
(7) 10,880,189 Bbls.
(8) 11,512,752 Bbls.
(9) 13,853,287 Bbls.
(10) 12,229,433 Bbls.

[a]Port of Anchorage

has begun construction of an extension of Terminal No. 3 from its present length of 219 meters to 273 meters (718 feet to 897 feet). TOTE will be the direct beneficiary of this project because elongation of Terminal No. 3 will be more suitable for its roll-on/roll-off cargo handling. The move of TOTE from its present location to Terminal No. 3 will free the other two terminals for the simultaneous offloading of smaller vessels. As part of the same construction program, the Port is building an additional maintenance shed to be used for storing dock equipment. Estimated completion of the dock extension is fall 1978.

Funding of $4.2 million project would come from two sources: a grant from the U.S. Economic Development Administration for $1.9 million and the balance from a general obligation bond approved by the voters in 1976.

The Port's 1979-1980 Capital Improvements Program calls for the development of a new staging area, Transit Area D. Completion of this project would enable the Port to meet anticipated demand through 1990 (Port of Anchorage, 1976).

Long-Term Expansion of Port Facilities. Once Transit Area D is developed and a fourth terminal is constructed at a future date, the Port of Anchorage will have effectively exhausted the supply of available land within its boundaries. Expansion of the Port is impossible: adjacent to the Port to the east and north is Elmendorf Air Force Base; to the south is Ship Creek; and to the west is the

Knik Arm. As part of its FY 1977-1978 budget, the Port has proposed a study which would include a traffic survey, an estimate of how long the Port will be able to meet demand and how the Port can best meet future demand (W. McKinney, Jr., 1976).

Once the Port of Anchorage has reached capacity, new port space will need to be created. Although the Ports of Seward and Whittier will absorb some demand, it is likely a new port will have to be developed. A site somewhere across the Knik Arm in Matanuska-Susitna (Mat-Su) Borough is a location which has received frequent mention (W. McKinney, Jr., 1976).

A number of factors would affect the timing of the development of a new port and its location. Until recently, the pattern of shipping has been such that Alaska has been an importer of goods. That is, transport vehicles, whether truck, train, or boat, have been laden with goods to be consumed in Alaska. A great majority of these goods have been shipped by marine transport. In 1975, 72 percent of the freight handled in Anchorage was handled by the Port of Anchorage; about nine percent arrived by air transport; 12 percent by rail; and 6.5 percent by trucks over the Alcan Highway to Anchorage. Once offloaded, these vehicles have returned to the Lower 48 without cargo (W. McKinney, Jr., 1976).

To the extent that Alaska develops commodities - such as minerals, coal, timber or other products - that it can export, it can more efficiently use the existing cargo distribution system. If the new

port handles general cargo, then existing ship capacity could be used for the return leg of the round trip. If the port were built to handle only a certain kind of cargo, then the inverse of the present situation would occur: vessels would arrive empty and return laden. In sum, the location of a new port will depend in part on whether it handles general cargo or specialized goods. If it handles specialized goods, the port will be located as close to the source of these goods as is economically feasible (W. McKinney, 1976).

The timing of the development of a new port will be influenced by the realization of a number of proposed construction projects, including the new state capital and the construction of the proposed hydroelectric complex on the Susitna River.

Effect of OCS-Related Activities on the Port. It is probable that the Port of Seward will experience the most direct effects from OCS activities in the North Gulf. The Port of Seward is closer to the proposed lease sale areas and, in conjunction with the Port of Whittier, can handle the offloading of OCS-related supplies (Port of Anchorage).

The effect on the Port of Anchorage will be more indirect. As occurred during the construction of the pipeline, the Port will experience an increase in the normal array of goods shipped to Anchorage. Because OCS-related activities will occur over a period of time greater than it took to construct the pipeline, the impact on the Port will be subtle; OCS activities will be one of many factors contributing to the overall growth of the Port (W. McKinney, 1976).

AIRPORTS

Introduction

Anchorage is frequently sloganed as the crossroads of the air world. Within 12 air miles, there are five controlled airfields: Bryant on Fort Richardson Army Base, Elmendorf Air Force Base, Merrill Field (general aviation), Lake Hood (float plane base), and Anchorage International Airport.

Overview of Existing Facilities

With Anchorage being the primary metropolitan region in the State of Alaska, aviation is of considerable importance as an economic distribution center as well as in a social and cultural perspective. Anchorage International Airport is the largest civilian airport facility in the state and is capable of handling the largest passenger jet aircraft in use today, specifically the Boeing 747, DC10, and Lockheed's 1011.

Much of the distribution of goods for the State of Alaska is funneled through Anchorage International Airport. The airport facilities are modern and up-to-date including a new 52 meter (172 foot) air traffic control tower. The airport accommodates approximately five domestic U.S. air carriers, 12 foreign carriers, 16 national charter airlines, and five local charters (Alaska Dept. of Public Works, 1973). The field consists of two parallel east-west runways, over 3.05 kilometers (10,000 feet) in length capable of handling all types of aircraft. In addition to the above, Anchorage International Airport has a smaller

north-south runway, approximately 1.52 kilometers (5,000 feet) in length which can accommodate planes up to and including Boeing 737 and 727 in size.

Lake Hood is separated from the Anchorage International runway by less than .76 kilometers (2,500 feet). Lake Hood is primarily a float plane base but has a small landing strip approximately .67 kilometers (2,200 feet) in length). The lake itself is subdivided into three separate waterways - the corollary to runways. The waterways run east-west, north-south, and southeast-northwest. Due to the close proximity of Anchorage International and Lake Hood, both airports' operations are handled through the one control tower located at Anchorage International.

Merrill Field could easily be the small airplane capital of the world. There are approximately 2,500 planes parked in the area with about 850 tied down and about 200 planes being added annually (Anchorage Times, 1978d). Merrill Field is classified as the twentieth busiest airport in the United States and is ranked ninth in general aviation. Much of the reason for the high traffic volume at Merrill stems from the fact that the airport is used heavily as a training base in general aviation. Approximately 58 percent of the total operations (takeoffs and landings) are the result of trainee activities (Merrill Field Handbook, 1978). Merrill Field has two runways - one east-west 1.22 kilometers (4,000 foot) runway and one north south .82 kilometers (2,700 foot) runway.

Fort Richardson Army Base houses Bryant Field whose air traffic is light compared to the airports discussed above. Much of the activity is by helicopter.

Elmendorf Air Force Base also has low traffic volume when compared to Anchorage International, Lake Hood, and Merrill Field.

Table 70 illustrates the total operations for the five major airfields in the Anchorage area. Total operations for 1977 were 804,640 (excludes activity for Bryant Field).

TABLE 70

OPERATIONS OF CONTROLLED AIRFIELDS FOR 1977

Airfields	Itinerants[b]	Local Operations
Anchorage International[a]	187,396	71,960
Elmendorf Air Force Base[c]	Total 121,575	
Bryant Field (Ft. Richardson)[d]	--	--
Merrill Field[a]	163,466	185,679
Lake Hood[b]	63,519	11,045
Total Operations	804,640	

[a]Source, Federal Aviation Administration, Marion Figley, May 2, 1978

[b]Itinerant is defined as aircraft leaving the area or landing from another origin. Local operations is defined as those aircraft practicing (touch and goes) or relocating an aircraft from one location of the airport to another.

[c]Source, Capt. Hodges, Elmendorf Information Office, May 2, 1978

[d]Unavailable

Figure 15 indicates the location of the five controlled airports and their respective relation to each other in terms of air space.

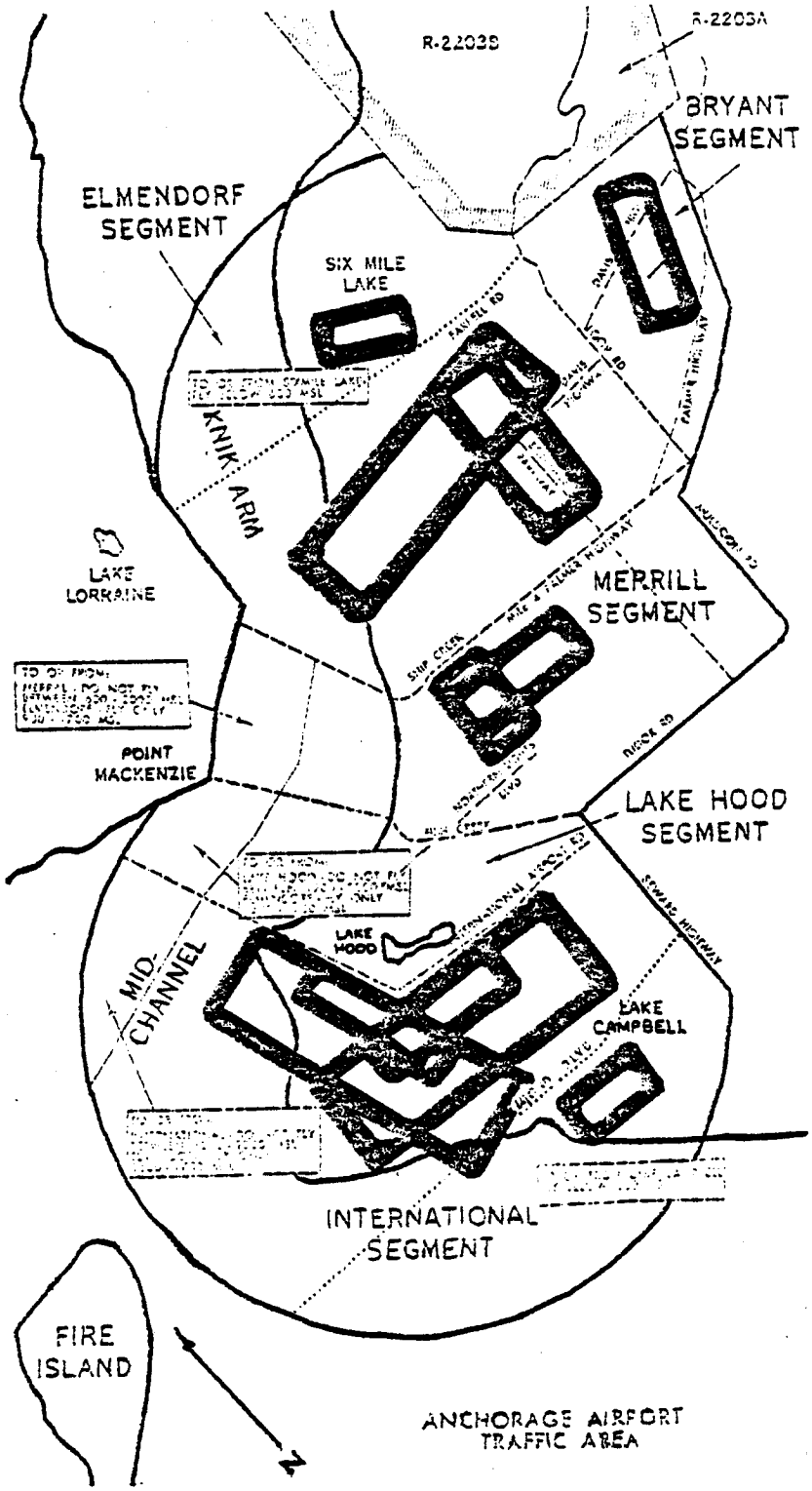


FIGURE 15

ANCHORAGE AREA AIRPORT LOCATIONS[a]

[a]Obtained from G. Whiteman, Anchorage International Airport

Issues

At this point, it becomes necessary to briefly discuss the topographical characteristics of the Anchorage area. The Anchorage basin, an alluvial plain, is bordered on the east by the Chugach Mountains with peaks ranging from 1.52 kilometers (5,000 feet) to 2.44 kilometers (8,000 feet) in altitude. To the south, east, and northeast the basin is delineated by Cook Inlet, specifically Turnagain Arm and Knik Arm. The Municipality is approximately 4,403 square kilometers (1,700 square miles), most of which is uninhabitable due to the mountainous and glaciated regions within the boundaries. About 15 percent of the entire Municipality is lowland (621.6 square kilometers [240 square miles]) and capable of supporting urban development (Selkregg, 1972). Less than 15 percent has actually been developed. Figure 16 illustrates the topographical characteristics of the southcentral region of Alaska.

There is one obvious issue regarding the aviation conditions for Anchorage. This, simply stated, is an extremely critical air space problem brought on by several variables. The first variable is the topography of the area. With the mountains and water that surround Anchorage, landing space becomes more limited as well as the air space designated for each controlled airfield (see figure 15 for the airport traffice boundaries). Secondly, the volume of traffic is extremely high. The Federal Aviation Administration recommends that the Anchorage area can safely handle 825,000 operations per year. The total count of controlled airfields is currently handling over 800,000 operations excluding Bryant Field. Adding the activity at Bryant Field would undoubtedly increase total operations

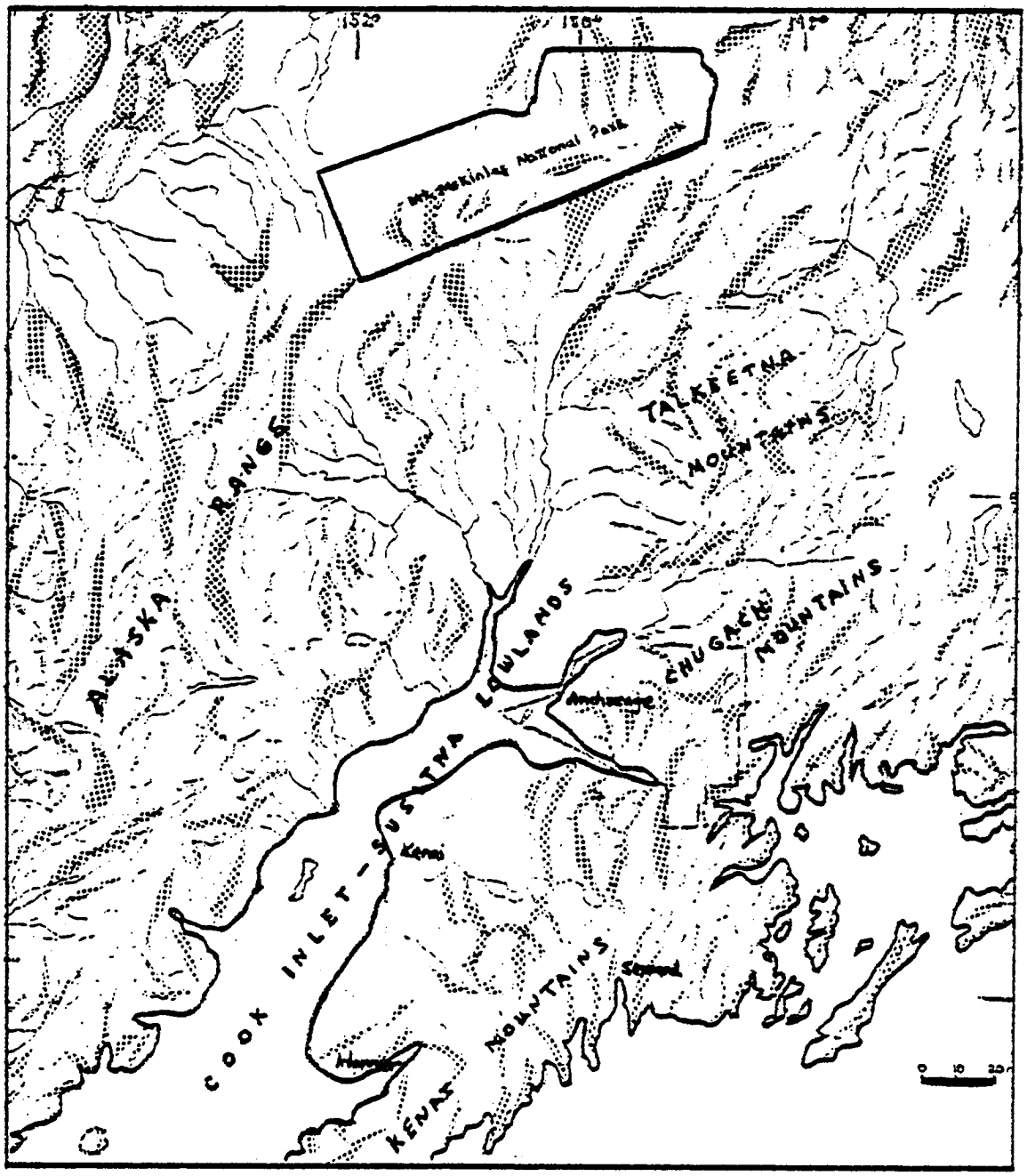


FIGURE 16

TOPOGRAPHICAL CHARACTERISTICS OF THE

SOUTHCENTRAL REGION OF ALASKA[a]

[a]L. Selkregg and E. H. Buck, Environmental Atlas of the Greater Anchorage Area Borough, University of Alaska, Anchorage, AK.

to exceed the FAA saturation point of 825,000. In addition to the airfields previously mentioned, there is the number of other airstrips which exist within or close by the municipal boundaries. Most of these airstrips are uncontrolled and include: Six Mile Lake on Elmendorf Air Force Base, Campbell Lake, DeLong Lake, Sand Lake, O'Malley, Rabbit Creek (Flying Crown), Campbell Airstrip (Bureau of Land Management), Birchwood, Goose Bay, Sleeper's Strip (Pt. McKenzie), and Fire Island. Adding operations from this list to the five main control fields puts the total air traffic operations at well over 1,000,000 per year. O'Malley airstrip, for example, is a private airfield with over 100 planes tied down. In essence, all of these airfields are essentially competing for the same air space.

Summer is by far the busiest season. Table 71 indicates the approximate number of operations per day during peak periods for the nonmilitary controlled airfields in the Anchorage basin.

TABLE 71

SUMMER PEAK OPERATIONS

Airfield	Operations
Lake Hood[a]	500
Anchorage International[a]	900
Merrill Field[b]	1,200+

[a]G. Whiteman, Air Traffic Control Specialist, April 1978

[b]Daily Operations Log, Merrill Field Control Tower, April 1978

Another problem in the air traffic arena is a specific area of approach in the vicinity of Pt. McKenzie (see figure 15 for location). Many air-

craft use Pt. McKenzie as part of their flight path to one of the following airports: Elmendorf Air Force Base, Merrill Field, Lake Hood, and Anchorage International. This poses somewhat of a bottleneck in this area during peak periods of heavy air traffic.

With the lack of available roads for access into Alaska's vast interior, small plane aviation is a big business. As the population in the Anchorage area continues to increase, there is an ever increasing propensity to own and operate ones own aircraft. This already has resulted in lack of available tie down space and skyrocketing monthly rates at key tie down locations, such as Merrill Field. Lake Hood currently has about a two-year waiting list.

With current conditions as described, any population increase which could result in an elevation of aircraft usage, specifically in general aviation, will impact the area of aircraft operation safety negatively.

Planning

With current facilities, Merrill Field is expected to hit saturation within two years. The Municipality currently has an ongoing master plan with a preliminary alternative which calls for the building of a second east-west runway. The airport is adjacent to the municipal landfill which will also reach saturation by 1980. Acquisition of additional acreage would undoubtedly come from here. The landfill, at saturation, was to be converted into a park. However, sufficient land is available to move the proposed park several thousand feet to the south. The park

could then function in a two-fold manner - first as a recreation area and second as a nice green barrier between the airport and residential sectors of the community (Anchorage Times, 1978d).

Work is currently being done to upgrade Birchwood Airport, located north of Bryant Field, and develop this general aviation airport to its fullest potential. This, hopefully, would direct some traffic from Merrill Field thereby easing traffic conjestion.

Anchorage International Airport has completed Phase I of a three-phase project for a new north-south runway. There are four primary reasons for the addition of this 3.05 kilometer (10,000+ foot) runway. First, there are occasionally severe crosswinds that aircraft must deal with on the east-west runways. The addition of the proposed north-south runway would alleviate this problem. A 1973 cost analysis indicated that the loss of one jumbo jet (747, DC10, L1011) would equal or exceed the total cost of the construction of the north-south runway. The second reason for installation is the reduction of the present number of aircraft operations over populated areas and thus decrease present adverse noise impact upon the community. Third, the proposed runway would facilitate in the handling of the growing number of operations. Fourth, the runway would improve the expansion possibilities of the existing terminal areas (Alaska Dept. of Public Works, 1973). Currently, all construction is at a halt due to court injunctions over the future impact of the runway. However, the runway will undoubtedly be completed at some point in the future.

Reference has been made to relocating Anchorage International Airport across

Knik Arm if the Knik Arm road crossing is ever constructed. This would definitely relieve air traffic conjestion in the Anchorage Bowl area with relocation of the airport on the other side of Knik Arm (Quinton-Budlong, Engineering Consultant, 1972). However, no formal plan of study has yet been implemented.

If such a move were to occur, it is conceivable that Merrill Field, currently located in the heart of downtown Anchorage, could relocate at Anchorage International Airport. All of this is highly speculative but would have definite advantages with reference to air space and ultimately air safety. However, the cost of a Knik Arm crossing and relocation of two major airports would definitely pose questions of economic feasibility.

III. CONCLUSIONS AND SUMMARY

The boom and bust history of Anchorage can be graphically portrayed by a series of ever higher plateaus. Anchorage has evolved into a major metropolitan crossroads, with many of the resultant benefits and problems.

Economically, Anchorage appears to be riding the crest of prosperity generated primarily by the development of oil and gas in the state. As the service center for the entire state, Anchorage gained impressively from the pipeline's construction. Incomes are up and employment is at an all time high. All private industrial sectors have shown dramatic increases in the number of businesses in the field, the number of employees, and the total payroll. Residential and commercial construction as well as other economic indicators continue to reflect positive economic growth, despite the completion of the oil pipeline.

The pipeline related boom has begun to plateau. The impressive, but more normal economic growth experienced in late 1976 and 1977 was sufficient to cope with unemployment caused by the completion of the pipeline. The jobless rate in January, 1978, however, was the highest recorded in nine years. The abundance of both commercial and residential real estate will impact the construction industry by late 1978. Anticipation of the construction of a gas pipeline may be a major factor in the continued rate of growth in the Anchorage population. Without a major development project(s) in the near future, there is strong potential for the development of a long-term structural unemployment problem.

With a population that is expected to exceed 200,000 in 1978, local government is now called upon to deliver an increasing number of services. Problems are increasingly complex and service costs are escalating rapidly. The increase in unions in the public sector and the expansion of local government programs have produced major financial impacts. School costs are just one example of this problem. Although enrollments actually declined between 1976 and 1977, expenditures increased more than ten million dollars.

A major capital improvement plan being sponsored by Operation Breakthrough, a private citizen's committee for community betterment, proposes development of a variety of new urban amenities such as a civic center, parkland, new recreation facilities, government office building, headquarters library, etc., and upgrading existing selected services. Implementation of Breakthrough's programs would have a significant impact on the community's tax base. Tax payers would be responsible for both development and maintenance of adopted facilities and programs.

One may conclude that continuing population growth and any major expansion due to OCS development is going to impact municipal services in the following manner:

- Increasing diversity of service demands.
- Increasing extension of urban services to the less populated areas of the basin.
- Increasing demand for major capital expenditures for facilities usually found in large urban centers.

- Increasing incidence of public safety, social services, transportation, health, and other service problems generally endemic to large urban areas.

Factors (including OCS development) which increase the rapidity of the growth tendency will have at least some indirect impact on the community service sectors.

It is difficult to determine whether the increased fiscal benefits of growth and development will compensate for the increased costs to the community. It appears that the cost of government will rise faster than the corresponding increase in the tax base. If this is true, then even the indirect impacts of development would have a deleterious and expansive effect on government.

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