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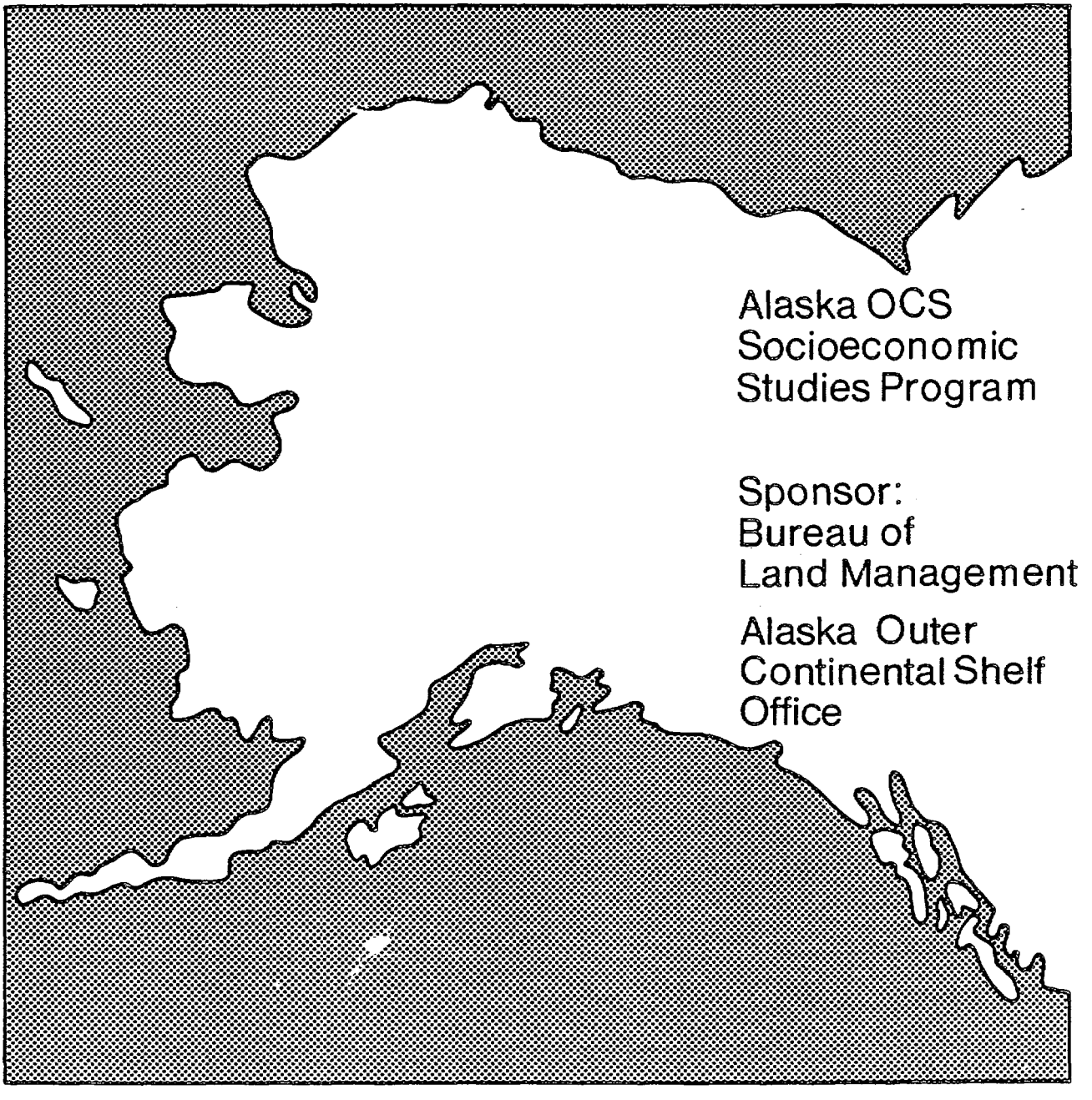

Gulf of Alaska and Lower Cook Inlet Petroleum Development Scenarios Anchorage Socioeconomic and Physical Baseline

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

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

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

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

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

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ALASKA OCS SOCIOECONOMIC STUDIES PROGRAM

GULF OF ALASKA AND LOWER COOK INLET

PETROLEUM DEVELOPMENT SCENARIOS

ANCHORAGE SOCIOECONOMIC AND PHYSICAL BASELINE

VOLUME I

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ALASKA OUTER CONTINENTAL SHELF OFFICE

January 1980

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Alaska OCS Socioeconomic Studies Program
Gulf of Alaska and Lower Cook Inlet Petroleum Development Scenarios
Anchorage Socioeconomic and Physical Baseline

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January, 1980

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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 Northern and Western Gulf of Alaska, Lower Cook Inlet, and Bering-Norton Sound lease sale area.

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, house. hold 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 OCS development will have a direct impact on the Anchorage community.

Inherent in future petroleum development in Alaska is the indirect impact on Anchorage. This means the employment, population and thus the service impacts due to growth in sectors of the economy outside of the direct mining and related facilities, and construction work. The direct employment generates increased demands in trade, services, government, other construction, etc. which is indirect to the actual OCS employment but a part of its overall effect on the community.

II. ANCHORAGE BASELINE DATA

Historical Background

This section is based on a two-year study program of the Anchorage Urban Observatory focusing on an historical documentation of the unification of the City of Anchorage and Greater Anchorage Area Borough. (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 at turnabout for Anchorage as the military began major

construction. Two thousand and twentythree 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 Uti 1 ity 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 building 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 construct-ion, 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 SeaLand 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 surge 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 69,321 people from 1970 to 1979.

The construction of the oil pipeline created unprecedented growth, strained services, and generally altered employment and service patterns in the community. The completion of pipeline construction in 1977 was ameliorated temporarily by the backlog of residential, commercial, and

governmental construction. The slowdown in the economy, however, could be felt by mid-1978, and by 1979 in- and out-migration were about the same and the economy was performing well below the pipeline construction period.

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 animal 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, animal 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 one). 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 one).

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, 1973, 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 one). 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.

The new unified Anchorage government is in its fourth year of operation. It is a strong mayor form of government with an eleven-member Municipal Assembly elected from multimember districts. A city manager handles the daily operational aspects of the government, though a recent change divided these duties between two positions. An Office of Management and Budget was established in the Office of the Mayor which acts as the focal point for budget decision-making. Though some friction between Mayor and Assembly is noticeable, recent attempts to alter the form of government have not been successful.

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. Most indications, however, suggest that the benefits have been erroded somewhat in the post-pipeline period.

BASELINE POPULATION ESTIMATE

As of July 1, 1979, the estimated population of the Municipality of Anchorage was 195,654. This represents 4.2 percent increase in population over July 1, 1978 (188,254). Table two represents mid-year populations by benchmark years, and figure one graphs the population curve over an historical event continuum. The, population estimates after 1970 are based on a 1979 reevaluation 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
1929	2,736
1939	4,229
1950	30,060
1960	82,736
1970	126,333
1975	161,243
1976	170,224
1977	176,003
1978	188,254
1979	195,654

Estimates from 1929 to 1970, Greater Anchorage Area Borough, 1974e; 1975 to 1979, Anchorage Urban Observatory. All are midyear estimates after 1970.

Analysis suggests that the housing stock in Anchorage has been consistently overestimated and the make-up of the stock has been inaccurately projected. This was the result of an inaccurate count and stock evaluation in the 1970 census, a flawed housing census conducted by the Borough Government in 1975, and the use of permit data to represent new units coming on the market. Poor data in the first two cases produced inaccurate baselines, while the use of building permits exaggerated the actual number of units built and occupied. Other factors which affect population estimates are household size, which has changed by structure type over time, and the vacancy rate. Household size has declined in both multifamily units and mobile homes throughout the 1970's, reflecting the declining number of school children especially in the higher density urban areas of Anchorage. Also having an effect are vacancy rates which fell substantially during the pipeline period. Vacancies have subsequently risen, especially in multifamily units, to critical levels in 1979. While fairly stable

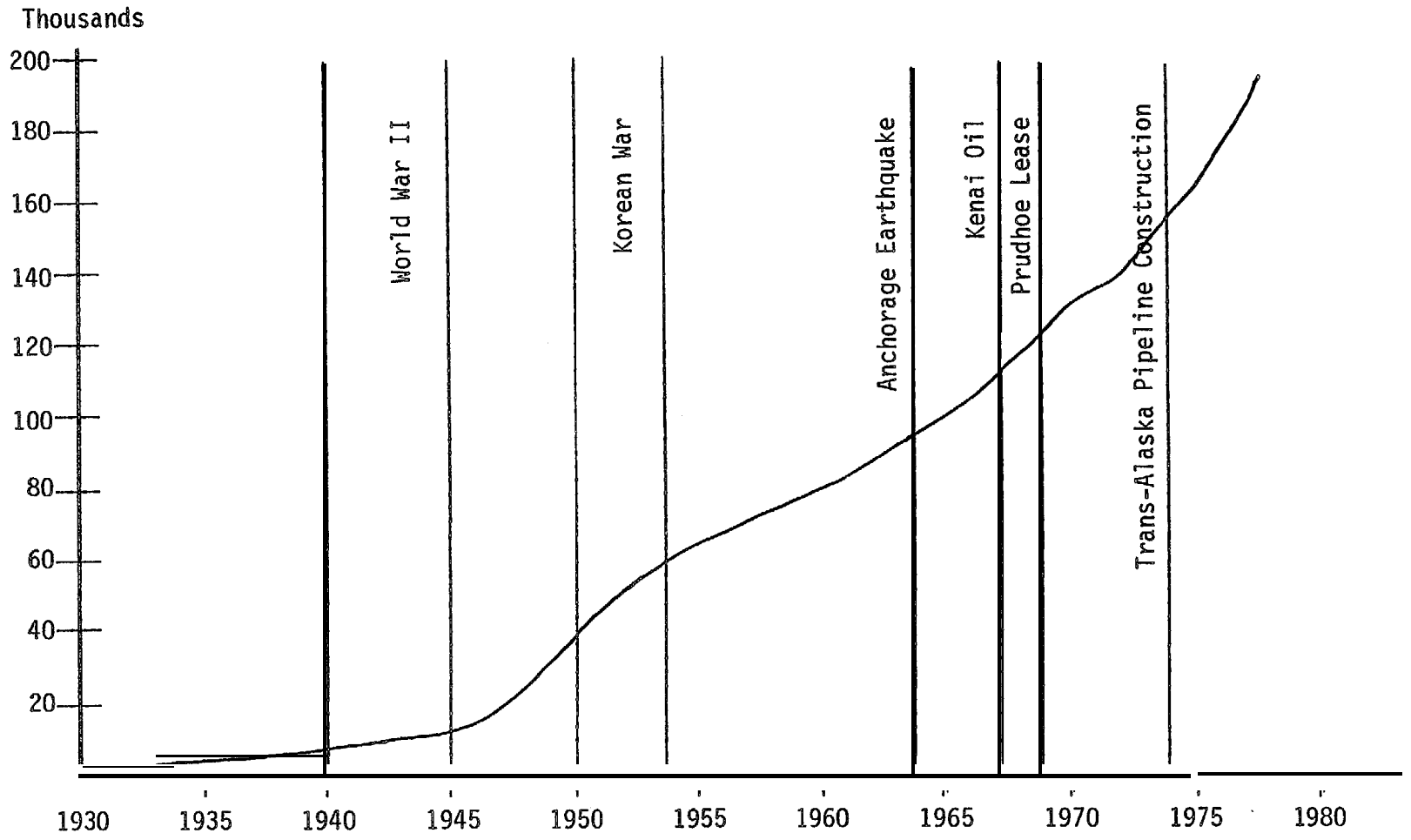


FIGURE 1

ANCHORAGE POPULATION GROWTH[a]

[a]Municipality of Anchorage, Economic Development Commission, Anchorage Overall Economic Development Program, September 1977, with update by Anchorage Urban Observatory

in the past decade, military populations have fluctuated by as much as 2,200 in one year. Military on-base population peaked in 1979 with 19,525 after reaching a low of 17,326 in 1978. While this approach yields a lower population estimate than those made by other agencies and groups, it should more accurately reflect the trends of recent years. Generally, the population grew rapidly in the late 1960's and early 1970's in anticipation of oil and gas development. This slowed from 1972 to 1974 as economic activity in this sector was improving, in anticipation of further economic activity which did not materialize. This delay in any additional large statewide projects and general slowing of the economy brought the 1979 growth rate to 3.9 percent. The estimated growth for 1980 is expected to be static, falling between a one percent loss and a two percent gain. There are a number of indications that population growth is slowing. Moving companies report more moves out of Anchorage than in; workforce growth has slowed; school enrollments continue to decline; and utility hookups have slowed, with disconnects exceeding connects during selected sampled months.

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 nonmilitary 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 composition of the population.

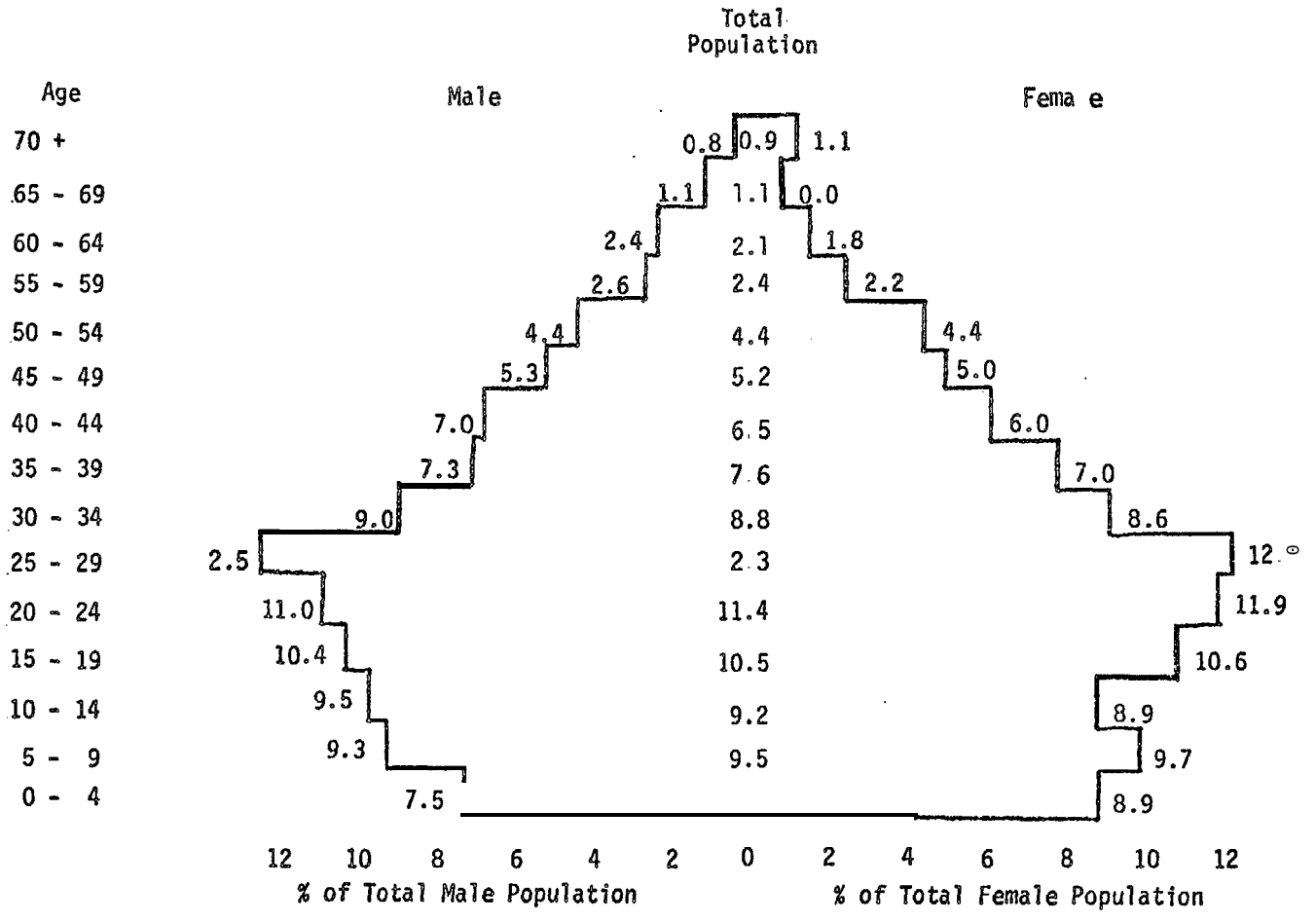
A computer weighting program produced community level census data used for this analysis. The research was conducted under a Department of Housing and Urban Development/National League of Cities contract in joint cooperation with the Municipality of Anchorage. (Ender, 1978) Additional updated household census data are based on the Anchorage health needs assessment survey using a random cluster housing of 853 individuals. (Ender, 1979b)

INDIVIDUAL CENSUS DATA

Age and Sex

The Anchorage population in 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 was 25.0 years and 33.4 percent of the population were 17 years or younger. Only two percent of the residents were 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 two presents a sex-age population pyramid which highlights the youthful 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.



Mean	= 27.0	= 26.2	= 26.2
Median	= 25.3	= 25.0	= 24.5
Standard Deviation	= 16.8	= 16.0	= 16.7
(n)	= (1,95)	= (3,713)	= (1,762

F GURE 2

AGE/SEX POPULATION PYRAMID[a]

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

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 three). The recent health needs assessment survey conducted in" November 1978 suggested the growing, but still small, proportion of the hispanic population in Anchorage.

While racial minorities comprise totally only about ten percent of the population, geographically located, they are 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 1977[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]Ender, Municipality of Anchorage 1978 Population Profile
[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 point increase in the proportion of adults going beyond high school since the 1970 census. While males have slightly more postsecondary education than females, race produces the greatest differences in attainment. The gap between whites and blacks is .56 years; and between natives, 1.73 years. This rate of educational attainment in Anchorage is possibly due to the high proportion of professional and management personnel found in the workforce, and the strong growth of governmental, service, and financial industries.

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 onehalf times more female heads of household than whites.

HOUSEHOLD CENSUS DATA

Household Composition

Anchorage has experienced a slight decline in household 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, by 1977 it was 3.18, and a survey in late 1978 measured a household size of 3.10. While a one-tenth of a person drop may not appear large, it adversely affects total population estimates by 5,000 people. The primary reason for the drop is a decline in the number of children per household.

While the public school population grew about 18 percent from 1970 to 1978, the whole population increased by 52 percent. Nonmilitary 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 1977 child per household average of 1.08. The health survey 16 months later found only 1.01 children per household. In 1970, 69.9 percent of the "families" in Anchorage had children under 18 years of age. In 1977 only about 61 percent had 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. Apartment dwellers 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 still 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 at all. Single member units make up 11.1 percent of all households.

In 1978 eight percent of all households in Anchorage were single-parent homes, while 44.2 percent were two-parent households. Forty-seven point eight percent of the households have no children present. Of the adult population, 65.1 percent were married, 17.8 percent-were single, 9.3 percent were divorced, 3.1 percent were widowed, and 2.2 percent were separated. In addition, 2.5 percent noted they were not married but living with a partner.

The demography of the population is reflected in the rate of multiple marriages. In 1978, eighteen percent had never been married, 63.7 percent had been married only once, 14.3 percent twice, and 3.9percent had been married three or more times. (Ender, 1979b)

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 in one place less than two years (a median of 2.9 years). Owner-occupied units have a median residency in Anchorage of eight years. In all, 69.9 percent of the households have moved at least once in the past three years. Every household has moved an average of 1.7 times in the past three years, and 26.3 percent have had three or more moves during this period.

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 patterns of origin 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 does not necessarily mean movement 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. Conservatively, 27,000 people migrated out of Anchorage from July 1978 to July 1979. For the first time in recent years, in-migration was below out-migration, and Anchorage grew as much or more from 1978 to 1979 because of the natural increase in the population than from migration.

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 mentioned were Turnagain and Inlet View/Downtown (15.3 percent). The shift of population to outlying areas is already apparent and is responsible for measurable changes in service demand and delivery. Extension of utility services, demands for police services, crowded suburban schools, and empty inner-city schools are all signs of the shifts that are expected to accelerate during the rest of this century. Anchorage is now faced with many of the problems experienced by other urban areas ten to 20years ago. The solutions applied to these problems will determine the degree to which this community can create a quality living environment.

INDIVIDUAL BASED ECONOMIC DATA

Employment Status

The size of the work force in Anchorage may vary depending on measurement techniques and assumptions used. However measured, the work force has shown substantial increases during the 1970's. The largest increases

took place in 1974 and 1975 during the height of pipeline construction, with an average annual increase of 15.7 and 18.7 percent respectively. In terms of employer-reported total nonagricultural wage and salary employees, the average annual number of employed increased from 41,995 in 1970 to 76,950 in 1978, which is an increase of 83.2 percent. For the first time in this decade employment rates dropped, declining 900 workers from 1977 to 1978 There were 1469 fewer employees in December 1978 compared to the December 1977 figure of 77,600. This consistent decline for 18 months was not checked until July of 1979, though 1979 is still expected to show an annual average lower than 1978. Despite the reduced growth in the post-pipeline period, Anchorage constitutes the dominant labor market in the state. Anchorage composed of 43.2 percent of the nonagricultural statewide employment in 1975, and 46.2 percent in August 1979.

Federal guidelines require labor force data to be adjusted for consistency with Current Population Survey (CPS) in formulas used to allocate federal funds. Comparisons between time periods are not as meaningful as examination of the non-agricultural wage and salary employment series. Changes in the formula and sensitivity to CPS sampling reduce the continuity of the data base. Table four displays the growth of the work force since 1975. The civilian labor force participation rate increased from 38.8 percent of the population in 1970 to 45.2 percent in 1975. The rapid acceleration of the economy during the pipeline construction drew more people than ever into the work force. With the economic slowdown in 1978-79, the participation rate declined to an estimated 43.5 percent in 1979. 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.

TABLE 4

ANCHORAGE NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT

AND CIVILIAN LABOR FORCE STATISTICS

Year	Nonag. Empl.	% Change	Civilian Labor Force[a]	Employment	Total Unemployed	Unempl. Rate
1970	42,000					6.7
1971	45,450	8.2				8.2
1972	48,250	6.2				8.9
1973	50,750	5.2				9.7
1974	58,700	15.7				6.8
1975	69,650	18.7	66,886	63,010	3,876	5.8
1976	73,750	5.9	70,733	65,877	4,856	6.9
1977	77,850	5.6	80,504	75,093	5,411	6.7
1978	77,111	- 0.9	81,627	74,888	6,739	8.2
Jan	74,100		77,419	70,901	6,518	8.4
Feb	74,450		77,290	71,013	6,277	8.1
Mar	74,900		79,506	71 ,927	7,579	9.5
Apr	75,850		79,895	72,645	7,250	9.1
May	77,950		82,865	75,400	7,465	9.0
Jun	79,500		85,803	78,448	7,355	8.6
Jul	76,818		85,759	78,993	6,766	7.9
Aug	78,163		86,802	80,283	6,519	7.5
Sep	80,897		84,186	77,903	6,283	7.5
Ott	79,022		81,723	75,651	6,072	7.4
Nov	77,306		79,766	73,482	6,284	7.9
Dec	76,381		78,508	72,004	6,504	8.3
1979	76,517[b]	- 0.8[b]				
Jan	73,050		79,316	72,387	6,929	8.7
Feb	72,300		79,712	7'2,676	7,036	8.8
Mar	72,750		78,848	72,354	6,494	8.2
Apr	73,800		82,842	76,387	6,455	7.8
May	75,900		85,432	79,390	6,042	7.1
Jun	78,700		87,863	81,514	6,349	7.2
Jul	79,100		86,332	80,722	5,610	6.5
Aug	80,200		86,012	80,878	5,134	6.0
Sep	79,800		85,129	80,428	4,701	5.5

[1]Alaska Department of Labor, Statistical Quarterly, Alaska Economic Trends, and Labor Force Highlights.

[a]Unemployment rates not seasonally adjusted and labor force data adjusted by Current Population Survey 1/74 to 12/78; benchmark date March 1979.

[b]Adjusted 10/78 - 9/79

Unemployment Analysis

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 failing to keep up with the increase in the work force, and the inability of the "system" to match skill needs in employment openings with the available labor pool. From 1970 to 1973, prior to the pipeline, the unemployment rate averaged 8.4 percent. This reached an all time high of 9.7 percent in 1973 in anticipation of pipeline construction. During construction years, the rate declined to a low of 5.0 percent in August 1975 and averaged 6.6 percent between 1974 and 1977. With the completion of the pipeline, the economy continued to expand (though more slowly) through 1977. Though unemployment rose above eight percent in the winters of 1976 and 1977, the serious affects of economic slowdown were not felt in the area of unemployment until 1978. The rate peaked in April 1978 at 9.1 percent and rose again in February 1979 to 8.8 percent. (U.S. Dept. of Labor, Bureau of Labor Statistics, 1979c) As 1979 progressed unemployment dropped dramatically without a corresponding increased in employment. By September 1979, the rate stood at only 5.5 percent. The reasons for this appear to be an increased number of unemployed workers leaving the area to seek opportunities elsewhere (many to the Seattle area), and the fact that more unemployed workers have reached their benefit limits and are falling out of the workforce statistics. Despite the higher post-pipeline unemployment, Anchorage's economy is in better condition than the rest of the state. The 1978 state unemployment rate was 11.1 percent. In addition, the seasonality of work is not nearly as pronounced in Anchorage

as it is throughout the state. It is estimated that 50 percent of the state's work force works six months or less out of each year. A sample of 1,126 Anchorage heads of household in 1977 found that only 13.9 percent were employed six months a year or less, and 69.8 percent were employed all 12 months out of the year. (Ender, 1977b) By offering more year-round employment, Anchorage's economic infrastructure has matured , which minimizes the employment fluctuations seen elswhere in the state. Anchorage's job market, though not strong, continues to offer employment opportunities and continues to attract job seekers from other parts of the state. (Dauel , 1979)

The unemployment index is tied to the CPS. The series changes slightly as new benchmarks are established and the concept is redefined. Presently, unemployment excludes workers who are not currently looking for employment and thus leaves out seasonal unemployment and also those unemployed, who are discouraged and not actively seeking a job. A survey in May and June of 1977 of 2,522 adults found an unemployment rate of 12.3 percent of the work force involving all types of unemployment. This is almost double the 6.3 percent average of those two months reported by the Bureau of Labor Statistics. A more thorough statistical analysis of 1978 unemployment was developed using sample information on 1,445 heads of household or spouses. A 7.0 percent unemployment rate was found using a more restrictive definition of unemployed. When adjusting for other adult members of the household who have a lower participation rate but higher unemployment rate, the figure is almost identical to the 7.4 percent Bureau of Labor Statitic's figure of October 1978. However, using a less restricted definition, including the seasonal work,

the discouraged applicants, and those temporarily out of work for other reasons, the rate becomes 12.7 percent similar to that found in 1977. Of those unemployed, the reasons given most often (in order) include unable to find suitable work, between jobs, seasonal layoff, and fired or laid off. Of those not in the work force, the most common reasons given (in order) include consider homemaker a full-time job, children at home, don't want full-time work, not looking for work, student, illness or injury, and other reasons. 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. 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 examining the profiles of people claiming unemployment insurance (lJ.I.) in Anchorage. This data series excludes ineligible unemployed including many youth entering the market for the first time, women reentering the market, and those exhausting their U.I. benefits.

The number of U.I. applicants for 1977 was well above that for 1976 and peaked in March 1977 with 5,539 weeks claimed. By August 1977 the number of U.I. claimants still was 35 percent greater than the year before. The 1978 rates followed a pattern and level very similar to 1977. The number of weeks claimed peaked in March 1978 at 5,645, dropped to a low of 2,968 in September, and climbed back to 4,096 in December (543 below the 1977 level). January 1979 recorded 4,595 weeks, which was just below levels for the previous two years. However, the succeeding three months failed to follow the normal pattern. The number of U.I. weeks claimed remained stagnant and stood at 4,494 by April 1979, 416 below April 1978, but fell sharply thereafter to only 3,053 by August 1979, and 2,567 the following month.

Net employment gains from 1976 to 1977 corresponded to small increases in unemployment and a more dramatic rise in U.I. claims. As tables five and six show, the completion of pipeline construction drove up U.I. claimants from the contract construction industry (34.1 to 56.0 percent of all claimant weeks) and from the structural work occupations (31.5 to 46.8 percent of a l claimant weeks), even though overall unemployment rose more slowly. In 1978-79, the employment base stagnated and even declined somewhat This was reflected in higher rates of unemployment.

Despite this, U. I. claimants plateaued as those in the construction industry, such as structural workers, ran out of benefits by the end of 1978. Apparently, few have returned to the roles as overall employment in construction remains well below 1975 highs. While blue collar construction claimants fell, trade and services' claimants rose in late 1978, into 1979. The ripple effect of economic slowdown was delayed somewhat as Anchorage continued to show strong economic performance. The effect of the slowdown is now producing greater numbers of new claimants in these two industrial sectors resulting in proportionately more unemployed managers, professionals, clerical, sales, and service workers.

TABLE 5

CHARACTERISTICS OF THE INSURED UNEMPLOYED IN ANCHORAGE

Vertical Distribution by Industry
(percent)

Industry	August 1976[a]	April 1977[a]	August 1977[a]	April 1978[b]	August 1978[c]	April 1979[d]	August 1979[e]
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mining	3.3	1.8	2.1	0.5	2.0	2.8	3.0
Contract Construction	34.1	56.0	50.6	50.0	30.4	33.1	19.5
Manufacturing	3.3	3.2	3.5	4.2	3.5	5.5	3.8
Transportation, Communication, and Utilities	10.8	7.2	8.8	6.8	10.7	9.3	8.4
Trade	21.4	12.3	14.7	13.0	18.0	20.1	22.2
Finance, Insurance, and Real Estate	3.3	2.7	2.6	3.4	3.4	3.8	5.7
Service and Miscellaneous	21.3	15.7	16.8	17.2	24.3	19.2	30.4
Other	2.2	0.6	0.9	1.2	2.7	5.6	6.7
INA	0.3	0.2	0.0	2.6	5.1	0.5	0.2

[a]Alaska Dept. of Labor, Anchorage Area Manpower Review, October 1977
[b]Alaska Economic Trends, July 1978
[c]Alaska Dept. of Labor, Anchorage Annual Planning Information, FY 1970
[d]Alaska Economic Trends, June 1979
[e]Alaska Economic Trends, November 1979

Males continue to dominate U.I. with 72.3 percent of all claimants in April 1979, up from 59.7 percent in August 1978. Males have historically had higher seasonal unemployment than females in Alaska, since they have dominated structural workers and other blue collar occupations. This trend continued as real numbers of construction workers rose in early 1979 though proportionately they remained about the same as in August 1978. As unemployment claimants rose in the trade and service industries, so did the proportion of female unemployment. In August 1979, 45.6 percent of the weeks claimed were by females. Interestingly, the proportion of younger workers on U.I., especially 25 to 34 year olds, dropped as it became more difficult for this group to remain eligible.

The U.I. data suggest some serious problems for the job market With more workers leaving the U. I. system due to expiration of benefits rather than finding employment, Anchorage is faced with chronic unemployment, similar to the pre-pipeline years, or the loss of skilled workers as they leave the area looking for jobs. The decline in population suggests that a large pool of skilled and semi-skilled workers are leaving Anchorage which may portend shortfalls in future labor demands.

Outside the salaried employment sector, there are three additional categories to be noted. The first is retired persons, who represent 3.4 percent of the adult population and 4.3 percent of the heads of households. To that add about 1.7 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.

TABLE 6

CHARACTERISTICS (IF THE INSURED UNEMPLOYED IN ANCHORAGE

Verticle Distribution by Occupation Group
(percent)

Occupation	August 1976[a]	April 1977a	August 1977[a]	April 1978[b]	August 1978[c]	April 1979[b]	August 1979[d]
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional and Managerial	11.4	7.1	7.0	5.8	11.6	10.0	14.9
Clerical and Sales	18.5	13.1	18.2	16.2	23.3	19.5	25.7
Service	15.3	8.7	9.6	9.7	13.3	11.2	16.4
Farming, Fishing and Forestry	0.5	0.4	0.2	0.4	0.2	0.8	0.4
Processing	0.7	0.5	0.7	0.6	0.7	0.9	0.8
Machine Trades	3.7	2.2	3.4	3.1	3.9	3.4	3.2
Bench Work	0.8	0.4	0.3	0.5	0.9	0.8	1.1
Structural Work	31.5	46.8	42.4	48.2	29.9	38.7	24.9
Miscellaneous	14.3	17.1	17.1	14.1	12.3	14.0	12.6
Unknown	3.3	3.5	1.1	1.4	3.8	0.6	0.1

[a]Alaska Dept. of Labor, Anchorage Area Manpower Review, October 1977
[b]Alaska Economic Trends, June 1979
[c]Alaska Dept. of Labor, Anchorage Annual Planning Information, FY-1980
[d]Alaska Economic Trends, November 1979

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 as employed 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. Table seven outlines industrial sector distribution of employment, while table eight graphically depicts trends of selected industries over a nine-year period.

Government Employment. Government employment produces the most pronounced change overtime with a drop from 34 percent of all employees in 1970 to 27.9 percent in 1978. This can be attributed to stablizing federal employment levels within a rapidly growing civilian work force. With a strong seasonality factor, federal employment levels remained steady for two and onehalf years and then grew strongly in 1974, peaking in mid-1975, when levels dropped back to about 10,000 employees. This was 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, relatively unaffected by swings of seasonality. The unification of Anchorage's city and borough government decreased municipal employment levels in 1976.

However, in 1977 and 1978 local government employment rose at a rate faster than the total work force. 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.

For the short term, federal employment can be expected to remain fairly stable with gains in the state and local sectors keeping the proportion of overall government employment from falling quickly. In periods of rapid growth, however, one would expect government employment to grow more slowly in relation to gains in the overall work force.

Services. The largest gain in the work force has ocurred in in services, which rose to 20.3 percent of civilian employment by 1978. After several years of strong performance related to pipeline activity, the industry slowed to a rate equal to the work force average after 1976. Expansion in hotel and restaurant inventory should keep the short-term prospects of the industry bright. A major tourist attraction effort by the state, and Visitors and Conventions Bureau appears to be working, and Anchorage should benefit from that. A newly passed proposal raised the hotel/motel tax for additional efforts to attract visitors and earn increased revenues from the tourist industry.

Anchorage's role as service provider to the rest of the state, supports a concentration of those services in Anchorage. Future growth and development throughout Alaska will yield benefits to this industry. An important factor is that services are not affected as strongly by seasonality as other major industries. While the tourist-related component is subject to seasonal savings, the overall trend in services is more stable growth. As this sector continues to grow, the strength of the year-round employment base will improve. The long-term prospects of the industry are tied very closely to external factors - development throughout Alaska, the health of the national economy, etc. Because Anchorage is expected to retain its role as a service metropolis, the future health of this industry is reasonably bright and should continue to grow at or above the rest of the economy.

TABLE 7

EMPLOYEE INFORMATION TRENDS[a]

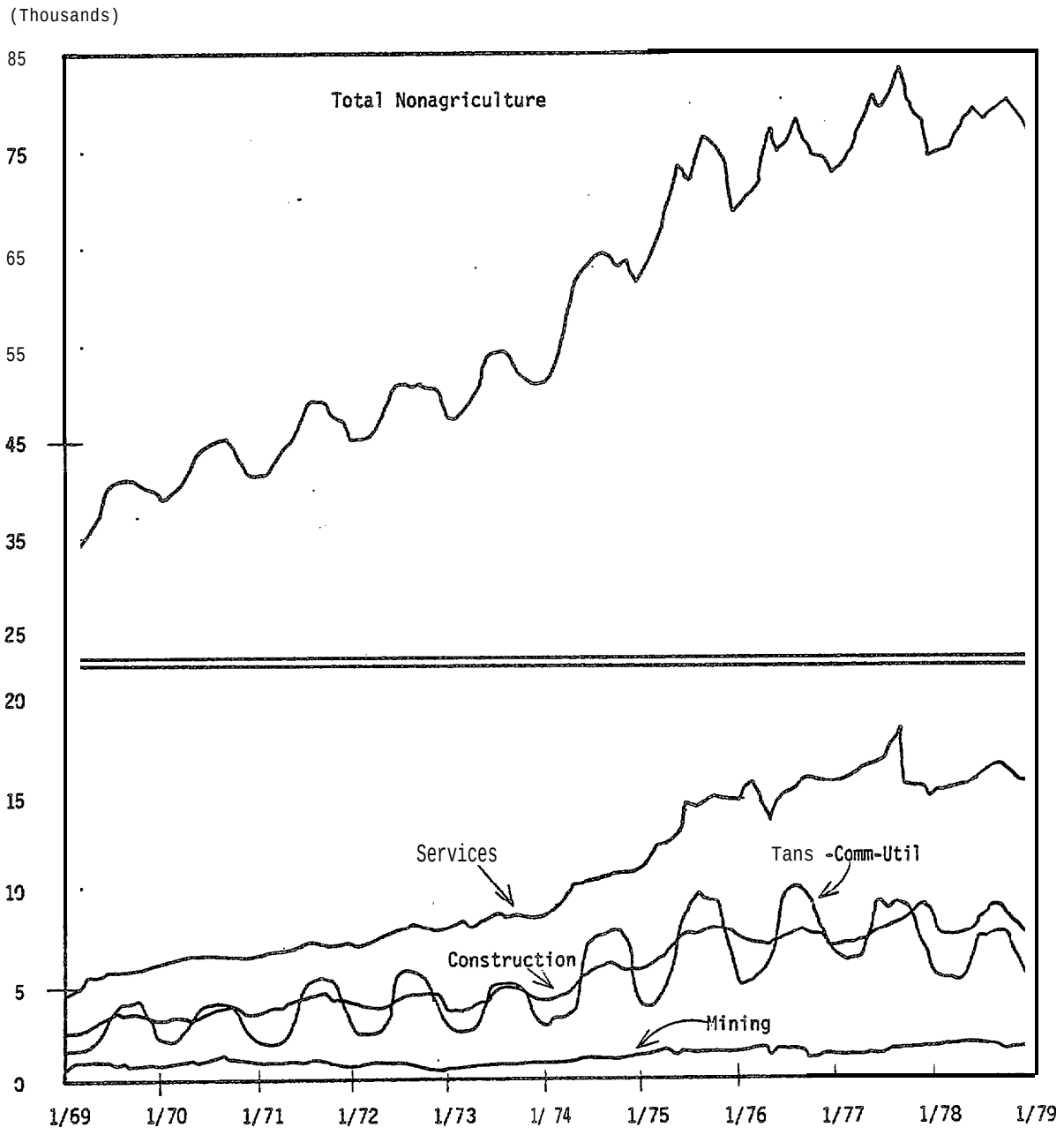
Industry	1970[a]	1975[a]	1976[a]	1977[b]	1978[b]
Mining	2.1%	1.9%	1.9%	2.3%	2.5%
Contract Construction	7.7	10.1	10.4	10.2	8.3
Manufacturing	2.2	2.3	2.2	2.2	2.2
Transportation, Communications and Utilities	8.5	10.5	10.1	9.9	10.5
Trade	18.8	21.4	21.8	21.7	21.9
Wholesale	(4.8)	(5.9)	(5.8)	(5,4)	(5.4)
Retail	(14.0)	(15.6)	(16.0)	(16.2)	(16.4)
Finance; Insurance, and Real Estate	4.3	5.2	5.8	6.2	6.4
Services	14.1	19.5	21.3	20.0	20.3
Government	34.0	29,1	26.4	27.6	27.9
Federa l	(10.8)	(14.7)	(13.4)	(13.1)	(12.9)
State	(5.3)	(5.8)	(5.5)	(5.7)	(5.9)
Local	(7.9)	(8.6)	(7.4)	(8.8)	(9.2)
Total Number of Employees	(45,757)	(69,647)	(73,096)	(76,600)	(77,000)

[a]Alaska Dept. of Labor, Anchorage Area Manpower Review, October 1977
[b]Alaska Economic Trends, March 1979

Contract Construction. Contract construction grew rapidly in 1975 and 1976, with work related to the pipeline and a secondary sector construction boom. With the completion of the pipeline, 1977 construction activity remained strong with a large number of major local projects underway. Residential housing construction remained at an all time high in 1977. This was still insufficient to offset the heavy impact of the completion of the pipeline. Construction employment was reduced to lower levels than existed in 1974. As the federal building, National Bank of Alaska building, Cook Inlet Building, hotel towers, and other projects were completed, construction activity dipped sharply. The softness in the industry was strongly felt in 1978, and the traditional industry August peak fell 2,300 workers below the 1976 high. The industry slipped to only 8.3 percent of the work force. With a larger

TA8LE 8

ANCHORAGE AVERAGE MONTHL' NUMBER OF EMPLOYEES BY INDUSTRY[a]



[a]Alaska Department of Labor, Statistical Quarterly

surplus of stock, residential housing starts tumbled in 1978 and 1979, and by 1979, only heavy construction in the transportation area (roads, highways, and the north-south runway) is keeping up with previous year totals. The industry is strongly tied to major statewide projects. Between projects, local project opportunities are not sufficient to cope with the number of people seeking employment in this sector. The completion of a large project, like the pipeline, effects the health of the rest of the economy; and after a lag, it slows investment in smaller, more local projects which only exacerbates the problem for the construction industry. The short-term prospects are poor for this sector but should show moderate recovery if even some of the major project proposals are implemented. However, project-to-project uncertainty and high seasonality are not likely to disappear. The question is whether the overall strength of industry will return to the levels found during the pipeline, thus reducing the structural unemployment which has appeared among workers in this industry since 1976. Though speculative, it is assumed that future construction activity though expected to be periodically substantial, will not achieve the same rates of growth found during the pipeline period. This should make it more difficult to solve the unemployment problems in this sector or retain a skilled workforce in this industry.

Mining Industry. 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

on the-general economy, since mining comprises only 2.5 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. The extraction of raw materials, whether oil and gas or hard rock minerals, is expected to remain a major factor in future state development. Future activity will likely be headquartered in Anchorage, though the work itself will be performed throughout the state. This should maintain or improve mining's position in the general employment mix over the long term.

Transportation, Communications, and Public Utilities. These industrial sectors 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 completion of the pipeline has been mitigated by increased outer continental shelf (OCS) activity. Trucking and warehousing employment are down 20.1 percent between the 1975 peak of 2,003 workers and the August 1978 high of 1,600. Other sectors have been fairly stable since 1975-76. Communication employment may show improvement with the sale of RCA'S holdings to Pacific Power and Light, and the eventual settlement of a rate dispute with the Alaska Public Utilities Commission. Employment during 1977-78 was adversely effected by strikes in the marine highway system and Wien Air Alaska. The ongoing battle over

the closure of the haul road could negatively effect employment by diverting transportation options to the North Slope outside of Alaska. While this is unlikely to occur, the industry is closely tied to state action and federal subsidy of transportation systems. Utility employment contributes a stable factor to this sector's employment base. Overall, despite strong seasonal swings for some subsectors, the stability and future growth of this industry group is positive.

Trade. 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 increased the number of employment openings at a fairly steady rate up to 1978. The future is bright in that Anchorage is reaching the critical market size necessary to support a diversity of businesses, including franchised firms. The short-term problems of economic slowdown and population decline has had a severe impact on trade levels. Smaller businesses have been especially hard hit. Despite these problems, there are one million square feet of retail space proposed to come on line in the early 1980's. If this occurs, a major shakeout of less productive locations and smaller centers should occur. The result would be continuing difficulty for the trade sector in the short-term. The long-term promise of

a medium urban market and a regional shopping market should support a large number and diversity of retail and wholesale outlets.

Manufacturing. Manufacturing is limited in Anchorage, constituting a steady 2.2 percent of the work force throughout the 1970's. The three major contributors to employment have been in food processing, building products fabrication (wood, metal, stone), ,and printing and publishing. All of these areas have performed well in the post-pipeline period and continue to be proportionately active employers. The small size of Alaska's homegrown market and the poor competitive aspects of most external markets should continue to limit expansion of' this industry to general employment. growth. Opportunity exists for the addition of a fourth contributor, i.e. the processing and refinement of raw materials. Anchorage's physical location would restrict much of this activity in the bowl. However, Anchorage would likely be the administrative center for processing in the region.

Finance, Insurance, and Real Estate. These sectors have seen a decade of strong growth, outperforming the employment average. New facilities in each of the subsectors, such as the new National Bank of Alaska headquarters, assure steady, if not dramatic, continued growth patterns. A short-term weakness is in the area of real estate. Real estate employment dropped significantly between 1977 and 1978. The general softness of the market and fewer housing starts contributed to this decline.

Military. Employment in the military sector has also been a major factor in Anchorage. Two large military installations, Elmendorf Air Force Base and Fort Richardson Army Post, contribute importantly to the economic stability of the south-central region. The impact of the military population on Anchorage employment has declined slightly, with increasing reductions in force. In 1960 uniformed military in Anchorage numbered 14,183 or 17.1 percent of the total work force. In 1976 it stood at 12,179 and composed 6.6 percent of the total.. In 1979 there were 11,539 uniformed personnel. Total government employment has decreased from 49.8 percent of the total civilian and noncivilian employment in 1970 to 42.7 percent in 1978. Despite this, the military payroll is a major economic force in the community. Fort Richardson in fiscal year 1978 had a uniformed personnel payroll of $64.48 million and civilian employee payroll of $30.8 million. (Gadberry, 1979) Elmendorf had a uniformed personnel payroll of $93.8 million and a civilian payroll of $36.8 million (Gorski, Community Contact, 1979i).

Occupational Patterns

Occupation distributions are shown in table nine. The first three columns display a consistent data series and represent fairly stable patterns. Note the increase in the proportion of service workers between

1970 and 1977. This corresponds to growth in this sector. While numbers of clerical and sales personnel declined compared to other occupations, they still constitute the largest occupational category. The fourth column constitutes a major redefinition of the occupational forecast model developed in 1978. This makes comparison over time difficult. Projected demand for specific occupational categories is shown in table ten. The number of projected annual job openings result both from the growth of the economy and from turnover in present positions. Projections are based on postpipeline rates of growth and reflects a major downward reestimated of occupational demand. Any major economic stimulus on the Anchorage economy could significantly alter the projections. It should be noted that the projection for 1984 is 8,337 workers below a 1982 estimate made just two years ago. Economic trend predictions have become more conservative in the realities of' the post-pipeline slowdown.

TABLE 9

OCCUPATION OF EMPLOYED CIVILIANS

Occupation	1970[a]	1977[b]	1978[c]	1979[d]
Professional, Technical	19.6%	19.1%	19.0%	77.3%
Managers, Officials	12.0	13.8	13.7	10.1
Clerical, Sales	28.4	24.6	24.3	32.6
Craftsmen, Foremen	15.1	13.0	13.9	26.2
Operatives	7.6	7.2	6.9	
Service Workers	12.3	16.5	16.6	13.8
Laborers	4.1	5.8	5.6	

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

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

[c]Ibid., 1979

'Ibid., 1980

TABLE 10

EMPLOYMENT FORECAST BY OCCUPATION, Anchorage

Occupation	1979 Estimated Employment	1980 Estimated Employment	1984 Estimated Employment	Avg. Annual Job Openings 1977-82
Total - All Occupations	76,700	81,060	105,363	7,756
Professional, Technical	13,306	13,995	17,871	1,127
Managers, Officials, Proprietors	7,715	8,182	10,784	838
Sales Workers	5,365	5,692	7,488	602
Clerical Workers	19,617	20,720	26,850	2,087
Service Workers	10,586	11,253	14,876	1,229
Crafts, Operatives, Laborers	20,111	21,218	27,494	1,873

anchorage Annual Planning Information, FY 1980

Group Employment and Occupation Differences

Studies have revealed that 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 (21.2 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 (8.1 percent) government, 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).

Most minorities tend to hold lower prestige occupations. This tends to mask a significant number of minority individuals in managerial and professional positions. About one-fifth to one-fourth of each minority group 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 Structure 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 1977 was estimated to be $11,430. (Alaska was $10,497.) Household incomes in Anchorage appear to have peaked in 1977 and to have fallen slightly in 1978-79,. An October 1978 sample found an Anchorage median income of $28,723. This appears to be due to an increase in the proportion of unemployed persons and an increase of those adults leaving the work force. The depressed economic conditions, especially in the higher paying industries such as construction, have forced down the earning potential of each household.

Table 11 compares the consumer price index with per capita income. Between 1974 and 1976 Anchorage incomes were rising at twice the rate of the cost of living. This occurred for a number of reasons. First, the average monthly" wage 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; 1977, 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 households having two or more employed adults, one can recognize the effect.

TABLE 11

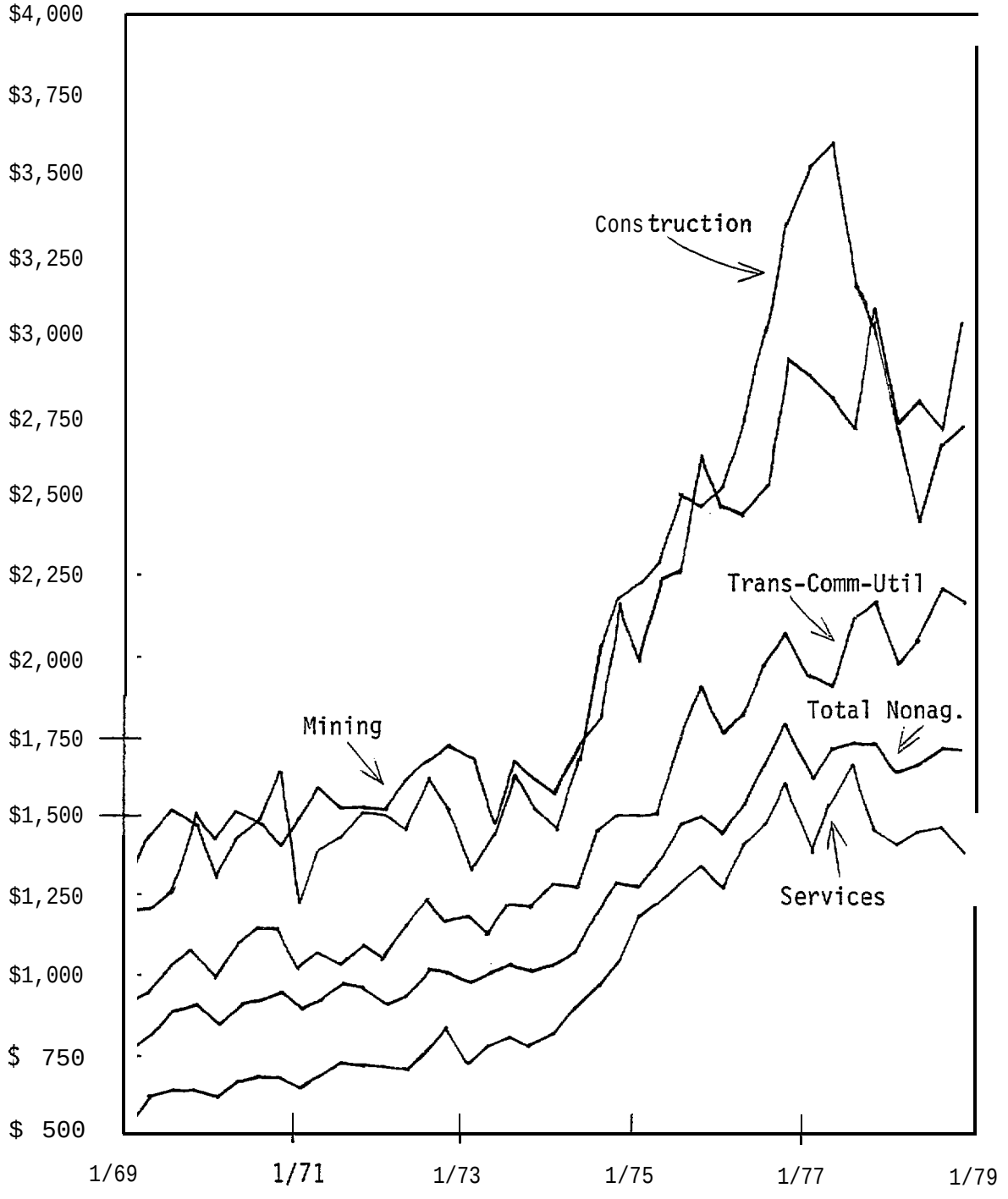
PER CAPITA INCOME AND CONSUMER PRICE INDEX

Year	Anchorage Per Capita Incomes	Anchorage Real Per Capita Income	Anchorage Yearly Avg. CPI[b]	U.S. Per Capita Income	U.S. Real Per Capita Income	U.S. Yearly Avg. CPI[b]	Anchorage Real Income % Difference	Difference in Relative Purchasing Power
1969	$4,196	$3,828	109.6	$3,119	$2,682	116.3	142.7	- $ 36
1972	5,632	4,859	115.9	4,493	3,586	125.3	135.5	- 212
1973	5,050	5,008	120.8	4,980	3,742	133.1	133.8	- 283
1974	7,383	5,514	133.9	5,428	3,675	147.7	150.0	+ 318
1975	10,006	6,570	152.3	5,861	3,636	161.2	180.7	+ 1,429
1976	10,466	6,378	164.1	6,397	3,752	170.5	170.0	+ 1,073
1977	11,430	6,561	174,2	7,026	3,893	180.5	168.5	+ 1,056
7978	12,152	6,523	186.3	7,810	4,022	194.2	162.2	+ 836

[a]Regional Economics Information System, Bureau of Economic Analysis
[b]The Alaska Economy, 1978

TABLE 12

ANCHORAGE AVERAGE MONTHLY WAGE BY INDUSTRY[a]



[a]Alaska Department of Labor, Statistical Quarterly

TABLE 13

MEDIAN INCOME Statistics

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
O w n	34,526
Rent	18,433
0 Employed Adult	9,989
1	26,515
2	32,307
3	38,172
4 or More	56,6-10
1 Person Household	15,697
2	27,861
3	31,747
4	33,867
5	36,062
6 or More	33,685

[a]Ender, 1978 Population Profile - Municipality of Anchorage

In analyzing the income patterns in Anchorage, two factors must be taken into account. The first is the effect of the consumer price index. With both indices beginning at an October 1967 base of 100, the U.S. CPI rose more rapidly in the early 1970's compared to that of the Anchorage area. The gap between the two began to narrow as growth in Anchorage continued, transportation systems improved, and market efficiencies increased. Beginning in 1974, however, local prices began to rise faster with the advent of the pipiline and the influence of increased consumer demand for goods and services. This trend slowed and reversed in 1976, until currently the U.S. and Anchorage

averages are moving closer together. In 1978, Anchorage's average annual CPI stood at 186.3 with the U. S. at 194.2. By May 1979, the Anchorage CPI was 203.5 and the U. S. was 214.1 (U. S. Dept. of Labor, Bureau of Labor Statistics, 1979b). It should be noted that the CPI index was redefined and, thus, altered the first quarter of 1978.

When comparing Anchorage per capita income which rose 172 percent in eight years to the CPI which gained only 59 percent, the improvement in relative income is evident. The U. S. experienced a gain of only 125 percent in income and 55 percent increase in the CPI. The CPI can be related to actual income to produce real income in 1969 base dollars. The difference between the two is shown in table 11 and reflects the income gains during the pipeline years, and subsequent narrowing of the difference.

A second factor in the analysis is the cost of living differential between the U. S. and Anchorage. Anchorage and the U. S. did not both begin 1967 with the same purchasing power. Anchorage's cost of living has been consistently higher. One indicator of this is the cost estimate for urban family budgets. In 1978 this difference varied from 40.1 percent for higher budget families to 64.8 percent for lower budget groups. This cost-of-living differential has altered slightly over time, commensurate with CPI differential changes. It has, however, stayed within two percent of the 1978 data. Using the intermediate budget difference of 41.4 percent as the income level affecting most of Anchorage households, an approximate purchasing power difference can be calculated. Table 11 takes both the CPI and cost-of-living

difference into considerate'on'to compare relative per capita purchasing power between the United States' urban average and Anchorage. In the early 1970's, Anchorage incomes were not performing as well as the country, as a whole, and reflected purchasing power below the national average. The pipeline boom coupled rising incomes and a fairly stable cost-of-living differential to produce a significant improvement in Anchorage incomes relative to the urban average. These gains began to errode in the post-pipeline period. With the severity of the economic slowdown affecting Anchorage in late 1977 and 1978, it is projected that Anchorage's gains have practically disappeared relative to the national average, with only a $76 relative purchasing power advantage in the 1978 local per capita income.

Another dimension of income can be seen by comparing the urban family budget with actual incomes. Using the 1977 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 estimated 1977 median income for a four-person household in Anchorage was $31,747. Within this household type, 89.5 percent are above the lower budget (which represents 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 represents 40.9 percent of all Anchorage households) (see table 14).

TABLE 14

COST ESTIMATE FOR URBAN FAMILY BUDGETS, AUTUMN" 1978

Urban Area	Lower Budget	Index Difference	Inter-mediate Budget	1 ndex Difference	Higher Budget	Index Difference
Anchorage	$19,030	164.8	$26,329	141.4	$38,406	140,1
Seattle-Everett	12,506	108.3	18,671	99.8	26,567	96.9
U.S. Urban Average	11,546	100.0	18,622	100.3	27,420	100,0

[a]Alaska Dept. of Labor, Alaska Economic Trends, June 1979

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 of having additional 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.

The income gap between whites and racial minorities is not as severe, but nonetheless significance, 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 natives (24. 1 percent) compared to whites I 9.5 percent), and 3) higher unemployment rates for Alaska natives.

The relative position of household income and the family budget estimate changed significantly in 1978. Among four-person households, 17.3 percent fell below the low budget (29.9 percent of all households). This is an increase of 6.8 percentage points. In addition, 34 percent fell below the intermediate budget (46.5 percent of all households), and only 34.7 percent are above the high budget (27.4 percent of all households). This reflects the relative decline in households and per capita income over the past 18 to 24 months.

OTHER ECONOMIC DATA

Payroll

The total quarterly payroll for the Anchorage metropolitan area is an 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 39-quarter period, as well as specific barometer industries related to future OCS development.

Total nonagricultural payroll demonstrated a slow but upward growth from 1969 to 1973 when the pipeline boom caused major gains in all industrial

sectors. The change from the third quarter 1969 to 1973 was 56.6 percent ($107.5 million to $168.3 million), a 14 percent annual increase. From third quarter 1973 to 1976, payroll rose another 127.7 percent or 42.6 percent annually. This rapid rise was due to pipeline related industries such as mining with a 189.6 percent increase; construction, 241.9 percent increase; services, 227.8 percent; trucking and warehousing, 225.4 percent; etc. Government, trade, finance, etc. performed well, but below average. From 1976 to 1977, growth slowed to 11.4 percent as both the average wage and nonagricultural employment reflected a lower level of growth. Third quarter 1977 to 1978 showed total payroll dropping for the first time in the series (4.5 percent). While complete data is not available, it is estimated that total payroll has shown a comparative drop for four consecutive quarters, between second quarter 1978 and second quarter 1979.

The mining industry payroll 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 1974, but declining sharply only in the last quarter of 1976. Mining continued growing, peaking with a $16.3 million payroll in the second quarter 1978 (a 407.8 percent increase since first quarter 1973).

The construction industry is the most susceptible to seasonal employment trends. It is also a major beneficiary of both direct and indirect oil and gas activities-induced growth. As the growth spiraled after 1973, seasonal swings in construction became extreme. Construction went from a $6.8 million payroll in the first quarter 1969 to an $88.0 million

payroll in the third quarter of 1976. Wide seasonal swings followed a generally downard trend with construction standing at $60.1 million in third quarter 1978 (a 31.7 percent decline),

Other sectors did not fair as poorly as construction though some have grown little or are essentially where they were in 1976. These include the trucking industry, services, wholesale,and some of the retail trade sectors, and federal government. The best performers in the post--pipeline period have been manufacturing (a 23 percent increase from third quarter 1976 to 1978), mining (27.9 percent), and state government (24.6 percent).

Business Activity

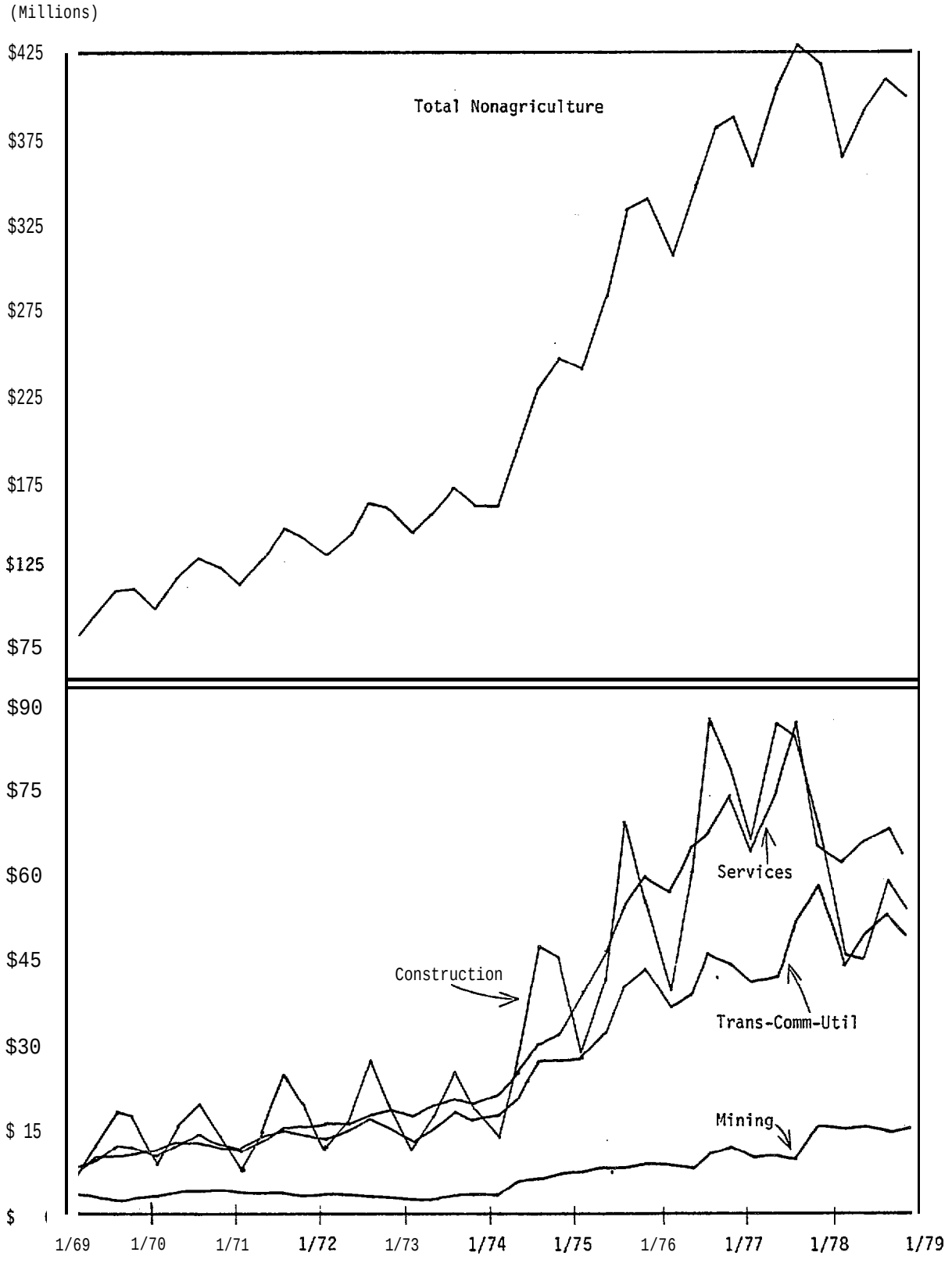
A supplemental indicator of the health of the economy is the amount of business activity in the metropolitan area. In 1971 the gross business receipts of Anchorage were $1.1 billion. A growth rate of 15.1 and 10.0 percent, followed in 1972 and 1973 respectively. In normal times, this could be seen as vigorous economic growth. However, gross business receipts climbed 62.5 percent in 1974 and 49.7 percent in 1975. By 1976 receipts totaled $3.8 billion (a more modest increase of 10.5 percent over 1975).

Economic Summary

The data presented would suggest that Anchorage has experienced five distinct periods of growth since 1970. The first was an anticipatory economic surge after the oil lease sales on the North Slope (1970-72).

TABLE 15

ANCHORAGE AVERAGE MONTHLY PAYROLL BY INDUSTRY



This modest surge of activity was speculative and hopeful of large scale economic benefits from the pipeline. When construction did not begin as expected, a mild downturn in the economy occurred (1973-74) with vacancies rising and business slowing. The subsequent onset of construction (1974-76) began a spiral of population and business growth. Incomes rose, activity increased exponentially, and benefits of the prosperity were relatively widespread. With pipeline completion in 1976-77, activity slowed somewhat, but the economy maintained its general strength based on a variety of local projects and in anticipation of continued good times. Weaknesses in the economy were predicted and became more apparent by the last quarter 1977. In 1978-79, business activity began to decline as a whole, though some sectors showed surprising health. April 1979 was the tenth month in a row where the nonagricultural employment index was below the previous year's level. Bank deposits were down statewide with local government deposits being the main positive factor. By early 1979, population growth slowed more noticeably, and housing vacancies reached an all time high with 25 percent or more empty spaces in larger rental complexes. When summer activity did not bring economic relief there occured a substantial net outmigration of workers and families. School enrollments dropped in the fall of 1979, and Anchorage population declined for the first time in years.

At the time of this writing, Anchorage is clearly experiencing a period of recession. The question is how long it will last. Projected economic activity suggests modest growth both in Anchorage and the state for the next 18 to 24 months. Additional state revenue and strength in the

mining and manufacturing sectors should stop any across-the-board downturn. It is unlikely that Anchorage will experience any periods of accelerated growth until 1981 or after, or at such time as initiation of major resource extraction and transportation projects occur. It would appear that short-term economic improvement will be slow or even nonexistent. However, a more growth-oriented economy should eventually emerge.

In the short term federal employment will remain fairly stable, with some gains in state and local sectors keeping the proportion of overall government employment from falling quickly. As the economy picks up and the general work force experiences improved growth rate, the rate of growth of the governmental sector will appear somewhat slower in comparison.

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 for current and future development activities. Since major decisions relating to development are so intertwined with governmental action, the impact of collective opinions can be destructive or supportive of 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 The Opinions of the Anchorage Citizen on Local Public Policy Issues (Ender, 1977b) and and 1979 Budget Priorities of the Anchorage Citizen (Ender, 1979c) with specialized analysis in Public Support for Local Government Bonding in Anchorage (Ender, 1977c) and Taxation and Tax Alternatives for Anchorage (Ender, 1977d).

PERCEIVED PROBLEMS IN ANCHORAGE

Anchorage citizens are very concerned about population growth and the resulting urban problems. When asked to name the most important problem facing Anchorage today, 57.4 percent responded with two general categories of answers (see table 16). Growth, overpopulation, and transiency issues were mentioned most often. 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 next most often mentioned topics were traffic and transportation issues. Complaints about roads, congestion, and maintenance of the transportation system constituted 27.7 percent of the total responses. Transportation problems are the most visible and frequently encountered consequence of rapid growth. With well over one-half of the responses clustering about 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 percent) are about equally divided between the unemployment/job issue and the cost of living. One should note that compared to Anchorage citizens' attitudes, Americans' on the whole list economics 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 strength of specific environmental concerns. However, this is misleading to the extent that general concern with growth is a measure of the concern of respondents for their community's environment.

TABLE 16

PROBLEMS IN Anchorage

Issues	Percent
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/Pri ces	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

[a]Ender, The Opinions of the Anchorage Citizen on Local Public Policy Issues, 1977

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 maintaining 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 about the 1977 population (Ender, 1977b).

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 remain at its present level or decrease. The median response for the expected population in 1990 was 350,390, and the mean was 401,430.

These expectations appear overly inflated, 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 reflected in their expressed values concerning their community. Table 17 illustrates responses given to questions of what one 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 highlighted 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.

While environmental reasons are most often mentioned as values for staying in Alaska, respondents were also asked why they moved to Anchorage, Fiftythree point eight percent said they came to Anchorage because of economic opportunity. Only 3.7 percent mentioned environmental factors associated with an “Alaskan” lifestyle as the reason for coming to Alaska.

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/Servi ces	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

[a]Ender, The Opinions of the Anchorage Citizen on Local Public Policy Issues, 1977

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 different 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.

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 petrochemical 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 dependent on oil) (Hitchins, et al., 1977).

TABLE 18

ECONOMIC AND DEVELOPMENT ACTIVITIES FOR Anchorage

Activities	Encourage	Discourage[b]
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]Ender, The Opinions of the Anchorage Citizen on Local Public Policy Issues, 1977

[b]Residual responses were no opinion.

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. (Ths 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 respective y). In terms of the oil and gas industry, blacks are clearly more supportive of its expansion than any other group (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 population and job expansion. Carried through to specific industries only, high income persons more than any other income group consistently support industrial development.

TABLE 19

GROWTH AND DEVELOPMENT ATTITUDES BY

SOCIOECONOMIC 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 - 14 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	% Favoring 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

[a]Ender, The Opinions of the Anchorage Citizen on Local Public Policy Issues, 1977

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 (four 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 electricity, 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 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.

TABLE 20

PERCEPTION OF PRESENT PERFORMANCE OF LOCAL SERVICES[a]

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
6	Public Libraries	2.707	Job
7	Community Schools and Centers	2.806	
8[b]	Parks	2.876	
8[b]	Health Services	20876	
10	The Water System	2.936	
11	Street Lighting	3.115	
12	Bus System	3.159	
13	Recreation Activities	3.188	Good JoI)
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
21	Service for Elderly	3.731	Reaction
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
32	Downtown Parking	4.652	Job
33	Road i'maintenance and Repair	5.382	Extremely Poor Job

[a]Ender, The Opinions of the Anchorage Citizen on Local Public Policy Issues, 1977

[b]Tie rank

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 20 percent felt nothing would change. It is possible that citizens over-estimated 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.

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One reason for this problem is people's perception of their neighborhood services compared to services provided in other areas of Anchorage. Thirty percent of the respondents felt their neighborhood services were not as 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 services may not have 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, Citizens' Attitudes Towards Anchorage Local Government arid Issues of Public Policy: A Collection of Reports, 197'6

[b]Ender, The Opinions of the Anchorage Citizen on Local Public Policy Issues, 1977

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 and 6,857 respondents in a mail-out survey through the municipal utility bills in 1979. The responses constitute the data for the analysis. See Ender's 1977 Budget Priorities of the Anchorage Citizen and 1979 Budget Priorities of the Anchorage Citizen for a discussion of the methodologies 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 for both years. The services were grouped into four levels of priorities. Individual rankings were 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 .

The table illustrates strong support and high priority for three service areas. The first was transportation. Within that service area road maintenance (first), road improvement (second), and bus system (third) dominated the list; but all transportation areas, except downtown parking, received only strong support. The improvement of bus system support is a dramatic shift in public support.

The second service priority area is public safety with animal control (sixth), and emergency medical service (EMS) ranked as highest priority areas. Police protection (12th) and fire protection (18th) also rank as strong, but building safety and civil defense fail to find strong public support.

TABLE 22

COMPARISON OF 1977 AND 1979 SERVICE SUPPORT LEVELS[a]

	1977 Priority Level		1979 Priority Level
HIGHEST	Maintaining and Repairing Present Roads and Streets	1	1 Maintaining and Repairing Present Roads and Streets
	Widening and Paving Present Roads	2	2 Widening and Paving Present Roads
	Police Protection	3	3 Bus System
	Traffic Control	4	4 Emergency Medical Services
	Drug Abuse	5	5 Home Health Care
	VD Clinics	6	6 Animal Control
	Animal Control	7	7 Snow Removal
	Alcohol Control	8	8 Building New Roads
	Emergency Medical Services	9	9 Parks
STRONG	Transportation Planning	10	10 Drug Abuse
	Downtown Parking	11	11 Traffic Control
	Recreation	12	12 Police Protection
	Mental Health Care Program	13	13 Zoning to Protect Neighborhoods
	Clinic for Babies to Get Checks and Shots	14	14 Libraries
	Manpower Training	15	15 Recreational Activities
	Fire Protection	16	16 Sanitation
	Social Services	17	17 Transportation Planning
	Home Health Care	18	18 Fire Protection
	Community Schools and Centers	19	
	Libraries	20	
MODERATE	Building New Roads	21	19 Social Services
	Bus System	22	20 Planning for Growth of Residential Areas
	Parks	23	21 Alcohol Control
	Sanitation	24	22 Air Pollution
	Planning for Residential Growth	25	23 Well Baby Clinics
	Snow Removal	26	24 Mental Health Clinics
	Building Safety	27	25 Planning for Commercial and Business Areas
	Family Planning	28	26 Downtown Parking
			27 Manpower Training
LOW	Zoning	29	28 VD Clinics
	Performing Arts	30	29 Community Schools and Centers
	Museum	31	30 Noise Control
	Planning for Commercial and Business Growth	32	31 Museums
	Port	33*	32 Performing Arts
	Equal Employment Opportunity	34	33 Building Safety
	Air Pollution	35	34 Family Planning
	Garbage Collection	36*	35 Equal Employment Opportunity
	Noise Control	37	36 Civil Defense
	Civil Defense	38	

*Not in the 1979 Survey

[a]Ender. The Opinions of the Anchorage Citizen on Local Public Policy Issues, Anchorage Urban Observatory, 1977

The areas of community development, public health, and leisure fall into a middle support category. Community development reflects increased support as land use issues have become more important especially to the 1979 sample weighted toward homeowners. Public health was a stronger priority in 1978 compared to 1979. This may be related to the 1979 sample but also suggest the difficulty of human resource services during weak economic periods. Leisure support varies from strong support for parks and recreation and weak support in community schools, museums, and performing arts.

The two areas which attract inconsistent or poor support are environmental protection and human development. Only sanitation of the environmental services and none of the human development services rank in the top half of the priorities. More respondents in the 1979 survey preferred to cut a specific service. In 1977, not one service had either a majority or even plurality willing to cut it, but in 1979 one case had a majority and four a plurality willing to cut the service. In addition, 24 of 36 services in 1979 had more than 25 percent of the sample willing to cut them. This reflects a significant shift of public support in recent years. These service rankings correspond to specific levels of support for capital mprovements. The 1979 sample was asked to rank seven project areas, and the results are shown in table 23. Transportation infrastructure improvements rank above human resource investments related to leisure. This ranking closely relates to past voting patterns in bond elections.

TABLE 23

RANKING OF CAPITAL IMPROVEMENT PROJECTS[a]

Capital Improvements Projects	Mean Score
Road Improvements	1.3
Drainage System Improvements	2.6
Bus System Expansion	3.4
Recreational Facility Expansion	4.4
Parks Expansion	4.5
Library Expansion	5.1
Museum Expansion	6.3

[a]Ender, 1979 Budget Priorites of the Anchorage Citizen, 1979

Local Government Revenues and Expenditures

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 (24 through 27) 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 synchronize its budgets with the city's. In 1978 the Municipality of Anchorage completed the first combined expenditure budget (see table 28). Despite these difficulties, local government in Anchorage has expanded rapidly in recent years. In five years, GAAB expenditures increased

TABLE 24

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	$133,053	$ 854,727	$1,924,254	$1,420,380	$116,695	$12,515,015
1970-71	7,076,804	311,829	740,573	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	1,988,196	241,[?64	1,273,286	4,223,549	686:098	240,181	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	1,702,200	660,349	27,237,928
1575-76	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 25

GENERAL GOVERNMENTAL EXPENDITURES BY FUNCTION[b]

City of Anchorage Service Area

Fiscal Year	General Government	Public Safety	Highway and Streets	Sanitation	Cm l ture Recreation	Ai rport	Debt Service	Payments To Special Assessment Fund	Other	Total
}969-70	$1,174,935	$ 4,075,441	$1,332,166	$298,897	$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	14,508,175
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	254,352	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]Effecti ve January 1, 1976, Debt Service on Port General Obligation Bonds is classified as Debt Service of the Fort of G.O. Bond Redemption Fund.
[b]Same as above.

TABLE 26

REVENUE BY SOURCES[f]
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 [illegible]3[illegible]	$ 40,666,586
1970-1971	11,677,267	25,605	1,599,793	1,373,812	38,626 [illegible]37	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	23,170,894	258,492	2,023,845	1,888,932	46,839 [illegible]37	271,301	887,614[b]	75,340,115
1973-1974	33,065,461	26,111	1,110,977	3,808,807	54,955,655		5[illegible]641 [illegible]59	98,608,370
1974-1975	30,619,257	33,347	1,427,128	3,100,149	68,106,518		5,016,643[c]	08,303,042
6 Mos Ended 12/31/75	[illegible]48 [illegible]3	36,929	1,374,619	990,105	5,936,436	97	499,591[d]	[illegible]85,8[illegible]8
6 Mos Ended 12/31/76	[illegible] ,54	[illegible]5 [illegible]30	,471,638	1, 12,536	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 - Municipal ty of Anchorage, 1976, 1977.

TABLE 27

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	$ 583,715	$ 583,699	$ 157,393	$30,285,306	4,897,497		$ 39,905,485
1970-1971	4,734,642	813,488	1,343,803	142 [illegible]97	41,369,487	6,102,168		54,505,685
1971-1972	6,998,311	,375,697	2,424,155	704 [illegible]24	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	[illegible],64[illegible],85[illegible]	3 [illegible]9[illegible],398	, 27,483		65,84	[illegible],836[b]	7,5 7,9[illegible]7
Mos Ended 12/31/76	[illegible].384,56[illegible]	[illegible] [illegible]88,642	,327,937	622,994		1,524,947	1,680,183[c]	22,629,272

[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.

263 percent and revenues went up 266 percent. The city's expenditures increased 223 percent, while revenue 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 1974-1975 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 approved, which was later revised to $93,522,730. Traditional services of police, fire, road maintenance, etc. made up the largest expenditure categories. Local property taxes made up the majority of revenues (56 percent), but state and federal sources are an increasingly important component (29 percent).

The 1979 budget was a small 3.6 percent expenditure increase to $108,361,720 while 1980 is projected to be $125,972,610 a 16.3 percent increase. This follows a more dramatic growth period in government expenditures which occurred after unification. Revenue sources have stayed stable except for a rise in the fund balance, reducing property tax needs for 1979. The relative service distribution of budgeted expenditures is shown in table 30. Things have not changed dramatically from past budgets. The greatest shift appears to be a major proportional increase in the public safety cost - the 1979 police budget represent almost 21 percent

of total expenditures compared to about 18 percent in 1978. This is in part due to the expansion of this service to a greater area of the community. Police expenses moderated in the 1980 budget. The Equal Rights Commission, administrative services, and transportation also saw gains in their 1979 budgets. Community development and transportation showed the greatest projected increase for 1980. Those that showed significant budget cutbacks included human support services, health and environmental protection, and public works. In summary, the 1979 and 1980 budgets reveal a shift toward tighter fiscal operations and a no or slow growth policy for government services. This trend becomes meaningful when contrasted with an approximate budget growth rate of 12 percent during the period from 1975 to 1978.

TABLE 28

ANCHORAGE MUNICIPAL REVENUES, 1978-1980[a]

Revenue Distribution by Source	1978 (Actual)		1979 (Revised)		1980 (Recommended)	
	Amount	%	Amount	%	Amount	%
Taxes	$50,175,350	56%	$50,464,700	53%	$60,405,550	53%
Local Sources Other than Taxation	11,077,590	13	11,896,750	12	17,679,840	15
State Revenues	19,782,620	22	19,869,030	21	21,447,430	19
Federal Revenues	6,539,340	7	7,831,850	8	8,232,850	7
Fund Balance	1,976,810	2	6,016,610	6	6,837,080	6
	$89,551,710	100%	$96,078,940	100%	$114,602,750	100%

[a]Municipality of Anchorage, 1979 Annual Operating Budget, Volume 4 (Approved), 1980 Annual Operating Budget, Volume 1 (Preliminary)

TABLE 29

ANCHORAGE MUNICIPAL BUDGET DISTRIBUTION OF EXPENDITURES[a]

Departments	1978 Revised		1979 Revised		1980 Recommended	
	Direct Cost	Full cost	Direct Cost	Full Cost	Direct Cost	Full Cost
Assembly	$ 1,012,440	$ 1,277,710	$ 920,630	$ 1,276,630	$ 828,190	$ 1,201,840
Equal Rights Commission	274,370	301,530	328,040	383,920	363,200	440,590
Office of the Mayor	2,936,110	2,927,360	1,512,440	2,127,190	1,927,360	2,618,060
Management and Budget (Under Mayor in 1978)	n.a.	n.a.	813,160	1,053,440	862,800	1,101,800
Employee Relations (Under Mayor in 1978)	n.a.	n.a.	947,730	293,710	1,019,870	294,590
Human Support Services (Social Services)	349,400	406,370	233,150	247,320	276,450	284,060
Finance	4,561,270	2,963,150	4,899,750	3,23B,810	5,605,730	3,730,940
Short-term Interest	400,000	-0-	-0-	-0-	-0-	-o-
Administrative Services	10,429,450	1,471,440	12,607,310	1,641,070	14,920,510	1,740,020
Planning	1,797,560	2,916,040	1,964,010	3,183,740	2,425,130	3,791,320
Law	1,884,110	279,760	1,820,980	470,010	2,080,670	538,100
Health & Environmental Protection	4,755,780	5,811,610	4,320,100	4,923,270	4,617,150	5,316,460
Transportation	10,106,230	8,438,430	10,938,250	9,298,940	12,311,290	10,894,910
Cultural & Recreational Services	9,043,960	10,807JWO	9,400,610	11,150,320	10,999,720	13,043,470
Fire	13,846,340	14,840,880	14,156,580	15,103,960	16,448,540	17,505,600
Police	14,206,390	16,502,610	16,416,870	18,799,820	20,396,070	22,938,340
Public Works	28,551,590	24,092,910	26,927,610	24,974,830	29,980,680	28,562,480
Non-Departmental	4B5,040	485,040	84,500	84,=	909,250	909,250
Departmental Subtotals	$104,640,040	$93,522,730	$108,361,720	$98,251,480	$125,972,610	$114,911,830
Add Contributions:[b]						
CETA Supplamentals	1,757,390	1,757,390	1,416,000	1,416,000	1,000,100	1,000,100
State Grants			1,506,510	1,506,510	1,620,560	1,620,560
Civil Defense Grant	1,381,320	1,381,320	101,750	101,750	108,000	108,000
Federal Grants			82,440	82,440	128,000	128,000
Air Resources			166,310	166,310	170,730	170,730
Capital Improvements Budgets	225,000	225,000	840,570	840,570	47,500	47,500
Parking Fund	321,400	321,400	251,370	251,370	735,000	735,000
Sewer Bowl (Excess Capacity)	2,416,090	2,416,090	2,500,000	2,500,000	2,500,000	2,500,000
Special Assessment (City)			1,591,840	1,591,840	1,858,820	1,858,820
Special Assessment (Roads & Drainage)			430,780	430,780	1,532,630	1,532,630
Salaries and Reserves	3,181,040	3,627,010	3,505,820	3,505,820	-o-	-0-
Intergovernmental Charges from Grants and Utilities	103,740		478,820	-0-	112,240	-0-
Deduct: Intragovernmental Charges						
Grant Budgets	542,710	-0-	1,541,220	-0-	1,153,490	-o-
Utility Budgets	4,889,510	-0-	4,403,090	-o-	5,256,630	-o-
Capital Budgets	5,342,860	-0-	4,644,750	-o-	4,762,900	-0-
Vehicles	-0-	-0-	96,490	96,490	241,440	241,440
Non-Departmental	-o-	-0-	37,500	37,500	-0-	-o-
TOTAL	$105,937,420	$105,937,420	$110,510,880	$110,510,880	$124,371,730	$124,371,730

[a]Municipality of Anchorage, 1979 Annual operating Budget, Volume 1 (Approved), 1980 Annual Operating Budget, Volume 1 (Preliminary)
[b]Also includes Port, $308,460: City Sewer Assessments, $124,680; Girdwood Water, $3,600 in 1979.

TABLE 30

EXPENDITURES BY SERVICE
1979 APPROVED AND 1980 RECOMMENDED

Program/Service	Amount 1979	Percent	Amount 1980	Percent
Community Development	$4,485,180	4.7	$ 6,074,330	5.3
Environmental Protection	7,500,470	7.8	8,105,310	7.1
Human Development	1,408,830	1.5	1,366,840	1.2
Leisure	11,464,650	11.9	13,020,420	11.4
Public Health	5,552,800	5.8	5,508,990	4.8
Public Safety	39,217,040	40.8	42,546,130	37.1
Police Protection	(20,024,840)	(20.8)	(21,765,420)	(19.0)
Fire Protection	(12,902,350)	(13.4)	(15,241,110)	(13.3)
Transportation	16,941,650	17.6	28,213,360	24.6
Transit	(4,372,000)	(4.6)	(5,634,440)	(4.9)
Street Maintenance	(11,779,440)	(12.3)	(21,153,370)	(18.5)
Other Services	9,508,320	9.9	9,767,370	8.5
General Government	(7,692,640)	(8.0)	(8,619,040)	(7.5)
TOTAL	$96,078,940	100.0	$114,602,750	100.0

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 and projected to be $6.54 billion in 1980. Using both the areawide and service area concept, the mill levy varies in relation to the services delivered. In 1979, Spenard, Sand Lake, and Muldoon had the highest levy (14.44 mills) with the old city following at 13.79 mills. Less densely populated areas which do not have services such as police, fire, road

maintenance, etc. have lower levies. Eagle River was 12.24 mills, Chugiak was 10.96 mills, and Hillside/Rabbit Creek was 10.03 mills. The millage rate has come closer together as more services are acquired in the outlying areas.

TABLE 31

APPROVED MILL LEVIES FOR 1979 AND 1980[a]

Taxing District		School District	Fire	Road	Police	Park & Recreation	Solid Waste	Debt	Sewer	1979 Total	Proposed 1980 Total
Anchorage	2.65	4.64	1.59	1.76	2.00	.50	.19		.46	13.79	14.34
Hillside/Rabbit Creek	2.65	4.64	1.59			.50	.19		.46	10.03	10.29
Spenard/Muldoon/Sand Lake/ Oceanview	2.66	4.64	1.59	1.76	2.00	.50	.19	.65	.46	14.44	14.92
Girdwood	2.65	4.64	1.67	.31		.35				9.62	9.91
Glen Alps	2.65	4.64		2.79					.46	10.54	9.78
Eagle River	2.65	4,64	2.28		2.00	.50	.17			12.24	11.66
Chugiak	2.65	4.64	1.00		2.00	.50	.17			10.96	11.57
Eagle River/Chugiak Valley	2.65	4.64			2.00	.50	.17			9.96	10.57
Outsi de Bowl, Other	2.65	4.64								7.29	7.58

[a]Municipality of Anchorage, Annual Operating Budget, 1980.

These differential rates produced approximately $48,357,690 in property taxes in 1978 and $51,242,580 in 1979 and a projected $60,405,550 in 1980. This excludes property tax revenues (4.64 mills) dedicated to public schools which consume about 38 cents of the property tax dollar. The highest mill rate ranged from 19.20 to 21.44 in the early 1970's but dropped between the 1976 high and 1980. The major reason was the inflationary and real rise of the assessed value of real and personal property which has been climbing faster than the expenditures. This is also due to a slowing in the rate of government growth, especially in the past two to three years.

The property tax derives most revenue from real property, but about one-eighth comes from a tax on personal property. The Municipality also has a five percent hotel/motel tax. A proposal to raise this tax to eight percent on the October 1979 ballot was passed. 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 the assessed value of real and personal property suggests a pattern of continued but more moderate growth over the next six years (see table 32). This comes from new infrastructure construction, adding to the overall value and the inflationary increase of property over time. The 1980 real property value is expected to be $5.818 billion and increase to $9.72 billion by 1985. Historically, assessed valuation improved 76.8 percent during the 1975-1977 pipeline period and slowed thereafter. Between 1980 and 1985, the annual increase is projected to be a weaker 8.2 percent. This is due to a rethinking of population projections which are more realistic though more conservative. A 1978 analysis of assessed value suggested non-military reservation population will grow 53,654 between 1979 and 1984. In their 1979 analysis the city projected a non-military growth of only 19,250 from 1980 to 1985 (a two percent annual change). A more realistic population growth lowers the estimated growth of the property values in Anchorage. However, slower growth also reduces expenditure levels. Despite this, slower growth in the local tax base could have a depressing effect on government's ability to raise local revenues, or conversely force increases in local taxes.

The 1980-1985 base case fisca' outlook of the city projects a two percent annual increase in population and 8.2 percent annual rise in assessed valuation. With a projected ·nflation rate of eight percent, expenditures climb by a 10.5 percent annual increase which is faster than most sources of income (non-property local increases seven percent annually; federal, 7.8 percent; and state revenues, 4.4 percent). This puts a requirement on property tax requirements leading to a 16.2 percent annual increase. This demand on property tax is twice as fast as assessed valuation. The result is that property tax is expected to go from 2.1 percent of household income to 2.5 percent for 1985 (if income rises optimistically), long-term debt will more than double from $102.8 million in 1979 to $346.2 million in 1985 with debt service increasing from 8.5 percent of tots" revenue in 1979 to 13.6 percent of total revenue in 1985. After mill levy decreases in recent years, it is expected to climb in every municipa' taxing district. For example, the former city would go from 9.15 mills in 1979 to 14.05 mills in 1985, and Spenard/Sand Lake/Muldoon would rise from 9.80 to 14.38. If the fiscal shortfalls were added in, the situation would look-even worse.

Projecting local capacity past 1984 is speculative. Outer Continental Shelf growth scenarios suggest a modest but upward trend through the 20 year study period. It would be reasonable to suggest that property valuation would follow this pattern. It is difficult to determine how high the tax can rise on residential property before the taxpayers react negatively. 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, albeit not as rapidly as during the pipeline period, 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 not likely be able to increase the tax base as rapidly as occurred in the 1970's.

TABLE 32

1965 AND 1984 ASSESSED VALUE OF ANCHORAGE

REAL AND PERSONAL PROPERTY

Year	Actual Amount[a]	% Annual Increase	Year	Estimated Amount[b]	% Annual Increase
1965	$ 624,800,000		1978	$4,881,663,000	12.0
1970	1,105,600,000	15.4	1979	5,818,000,000	19.2
1972	1,600,897,000	22.4	1980	6,542,000,000	12.4
1973	1,922,949,000	20.1	1981	7,094,000,000	8.4
1974	2,201,017,000	14.5	1982	7,665,000,000	8.0
1975	2,813,406,000	27.8	1983	8,305,000,000	8.3
1976	3,510,860,000	24.8	1984	8,985,000,000	8.2
1977	4,360,482,000	24.2	1985	9,720,000,000	8.2

[a]Department of Finance, Municipality of Anchorage

[b]Municipality of Anchorage Fiscal Outlook 1980-1985 Preliminary, 1979. (base case projection).

Local Tax Alternatives

If the present local tax mix becomes insufficient for meeting future revenue needs, other alternatives are available. The Municipality, the Mayor's ad hoc groups, 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 33. A three percent tax-in 1978 would generate $23,304,000 in revenues. This is about 46 percent of 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. The present anti-tax sentiment makes approval of a sales tax unlikely in the near term.

TABLE 33

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 1979 it is estimated that 29 percent of the budget will be paid by state and federal dollars. Federal dollars (eight 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 much faster than the total budget.

State revenues, on the other hand, have greater potent" al. With mass ve resource potential, the state will have a substantial capacity for revenue sharing in the coming years. The 1977 legislature did pass a state bill for relief of school construction debt service payments. Until now, categorical grants have been the approach for state revenue sharing. There are a number of proposals to alter the state's approach to a general grant formula. Municipal evaluation suggests that Anchorage will be hurt by this approach as it is weighted against Alaska's only urban area. In any case, it likely that the state will increase its revenue sharing to Anchorage, and this is likely to be at a pace above normal budget growth at least through the late 1980's.

Bonding

Bonding for capital outlays is an integral part of the Municipality's approach to financing. As of January 1, 1979, $359,457,000 of debt was carried by local government. This rose to an outstanding debt of

$416,552,009 as of January 1, 1980. Seventeen point nine percent are for roads and drainage projects, 5.3 percent for parks and recreation, 3.7 percent for port facilities, and 65.7 percent for utilities (with 48.9 percent of this being telephone). In 1979, $35,765,483 was paid out in principal and interests payments. Most is paid out of user fees or assessments, but about three percent of the general expenditures also go to debt services.

Presently, the major sources for bondable projects is the Municipality's Six-Year Capital Improvement Program (CIP). The program has developed roughly $60 million in bonding proposals over the six-year life and is revised on an annual basis. These include areas such as transportation, culture and recreation, public works, and sewer. Between 1976 and 1978, 43 bonds were placed on the ballot in four elections. Fifty-three percent were successful. In 1978, Operation Breakthrough, a private voluntary civic betterment group, 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.

The group asked for $126,000,000 in bonds to be placed on the 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 were drawn from the CIP and included a civic center, regional library, park acquisition, and municipal office building (Hunter 1978b).

The legislature failed to take up the issue, while the Municipality placed a combination CIP/Breakthrough bond package before the voters in October 1978.

While seven of twelve capital bonds passed in 1978, the "amenity" or leisure-oriented bonds for a civic center, bike trails, parks and recreation, and swimming pools failed. In the past four bond elections, 65.4 percent of the "basic infrastructure" bonds for roads, sewer, public safety, port and schools passed; while only 25 percent of the "amenity" bonds did. For the 1979 election, the Assembly was somewhat more selective with most bonding for roads and drainage, though a major library proposal is back on the ballot after failing in 1976. It appears that in the past the Municipality had not been sufficiently selective in which proposals go on the ballot, and then not sufficiently aggressive in informing the voters concerning implications of each bond and why it was selected for the ballot (Ender, 1977c). A change in approach in 1979 produced successful results with all bonds passed including a headquarters library, parks and recreation, roads, etc.

Changing Demand and the Rising Cost of Government

Demand is one of the most difficult issues to quantify, resulting in a dilemma for local government. Two phenomena must be considered. 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 those of long time residents. The demand for services, both in type and scope, has increased in recent years. While public safety, roads, schools, etc. have traditionally strong public preference, the majority of the voters support even nontraditional services. The public has expanded perception of the appropriate role for a local government in relation to services provided. There has, however, been limited public sentiment against increasing tax costs which would result from greater service delivery.

The second consideration is the rapid rise in service costs. General inflation, expanded services, and rapid unionization of most employees have tended to move costs steadily upward. (Municipality of Anchorage, Personnel Services, 1978). Since unification in 1976, the Municipality has implemented a variety of management systems and techniques to help control the cost of local government. Establishing a unified financial management system has provided the information necessary for good fiscal planning. Selected cost containment efforts have also been implemented, but it is too early to judge their effectiveness.

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 unsatisfactory.

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 absored 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 processs 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 and 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 location and statewide determined health needs. Therefore, a discussion of the status of health care delivery in Anchorage must reflect the dynamics of socioeconomic changes and impacts throughout the state. The information from the health services section is based on both the 1977 Anchorage Health Services Plan and data currently being gathered for the production of the 1980 Plan.

Major impacts on the local health care delivery system are: 1) the low median age of the population, 2) the unique needs of the Alaskan native population, and 3) the specific characteristics associated with the geographic isolation of the area from other metropolitan health care centers. Consequently, local services demonstrate a shift away from strictly curative modalities to health maintenance, rehabilitative, and preventive care.

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. A small but significant percentage of the Anchorage population go outside, usually to Seattle, for predominantly diagnostic work and for the uncommon specialities.

Organizational Context

The following discussion of the local health care system focuses on facilities, manpower, services, and referral.

Direct Delivery Facilities and Services.

- Facilities. Anchorage residents and residents of outlying areas have access to a broad spectrum of health care and medical facilities and 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 displayed in the table below:

Table 34 below illustrates local inpatient utilization data for acute and long-term facility categories mentioned above.

TABLE 34

1978 LOCAL INPATIENT UTILIZATION DATA (AS AVAILABLE)

Facility Category	Facility	Year	No. of Beds Licensed	No. of Beds Available	Admissions	Avg. Length of Stay	Occupancy Rate	Avg. Daily Census
Acute	Alaska Hospital	1970	85[b]	85	2,569	5.9	53.0	41.4
	• Civilian,	1976	154	202	6,157	4.3	72.1[c]	73.6
	Non-native	1978	154	197	7,485	4.5	70.4[d]	90.7
	Providence Hospital	1970	150	150	7,617	5.6	83.8	125.7
	• Civilian,	1976	232	268	11,679	4.5	77.7	145.4
	Non-native	1978	250	268	11,356	5.7	82.4[d]	178.9
	Alaska Native Medical	1970	295	295	4,560	16.2	61.6	202.7
	Center	1976	170	170	4,850	9.9	77.2	131.3
	• Public Health	1978	170	170	4,62??	9.7	72.3	122.9
	Elmendorf	1970	200	200	6,573	9.16	82.4	165
	• Military	1976	145	200	6,449	5.7	71.0	100
		1978	145	200	6,041	6.0	77.0	98
Long-Term	Nakoyia	1970	---	---	---	---	---	---
	• Skilled Nursing	1976	100	100	274	121.2	91.0	91
	• Intermediate Nursing	1978	216	216	216	210.9	61.2	116.6
	Careage House	1970	---	---	---	---	---	---
	• Intermediate	1976	102	102	87	411.0	93.1	95
	Nursing	1978	101	03	66	278.3	68.3	79.4
	Hope Cottages	1970	---	---	---	---	---	---
	• Rehabilitative	1976	---	---	---	---	---	---
	• Residential	1978	105	105	27	---	96.0	102.5
	Alaska Psychiatric	1970	224	224	419	115.4	79.2	175
	Institute	1976	230	200	765	38.0	60.5	121
	• Rehabilitative	1978	200	200	985	35.7	77.3	97
	Pioneer Homes	1970						
	• Residential	1976						
	- Anchorage	1978	133	133	---	---	100.0	100.0+
	- Palmer	1978	96	96	---	---	100.0	90.0+

[a]Municipality of Anchorage, Planning Dept., Update of Anchorage Health Services Plan, May 1'379
[b]Moved into new facility in October; prior had 85 beds
[c]January to October, based on 85 beds, was 77.9%
[d]Based on open (staffed) 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 145. Present usage rates in Anchorage reveal that approximately 560 inpatient days per year are generated per 1,000 population. This use rate does not reflect patient days accrued by residents seeking care outside of Anchorage and Alaska, nor does it differentiate between use of local facilities by Anchorage and non-Anchorage residents.

  The average length of stay is 5.1 days, and average cost per day ranges from $480 to over $600. 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 101 skilled nursing beds for 24-hour professional restorative care to the non-native civilian population. Inequities in categorical reimbursement practices have precluded full utilization of skilled beds.

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 217 intermediate care beds available in Anchorage.

3. 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). There are approximately 14 residential facilities for youth, drug, alcohol, and other rehabilitative clients. 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 through outpatient services, private clinics, practices, etc. is designated 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. The consumer portion of the 1978 Anchorage Health Needs Assessment Study revealed that 15.4 percent of Anchorage residents go "outside" for all or some portion for their health care. Of those that travel, most seek diagnostic (23 percent) and related services; others (14.9 percent) see general practitioners; and many (9.3 percent) go for selected surgery.

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 the lower 48 states.

In addition to standard medical facilities and services available, the local delivery system also provides the following specialty services and equipment:

Services

1. Full burn and debriding room
2. Hypothermia expertise
3. Comprehensive orthopedic surgical and therapy unit
4. Neurosurgery and neurology expertise
5. Two comprehensive critical care units
6. Two comprehensive neo-natal intensive care units
7. Open-heart I.C. surgical expertise
8. Renal dialysis
9. Cardiovascular catheterization
10. Nuclear medicine

Equipment

1. Two head and one full body computerized axial tomography scanners
2. Ultrasound
3. Mammography
4. Simulator (to be constructed 1979-1980)

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, such as phys cians assistants, nurse practitioners and other allied hea" th technicians, and ancillary service areas, such as 24 hour pharmacy, home health and support services care, genetic counseling programs, etc. Specialized practice shortages exist in certain physician and dental provider categories (obstetrics, pediatrics and general dental surgery).

Table 35 illustrates numbers of health care providers (physicians, dentists, registered nurses, and chiropractors) for Anchorage.

- Service Use Patterns. Anchorage residents use a variety of care institutions (Ender, 1979) as outlined in table 36.

TABLE 36

HEALTH CARE FACILITIES USE

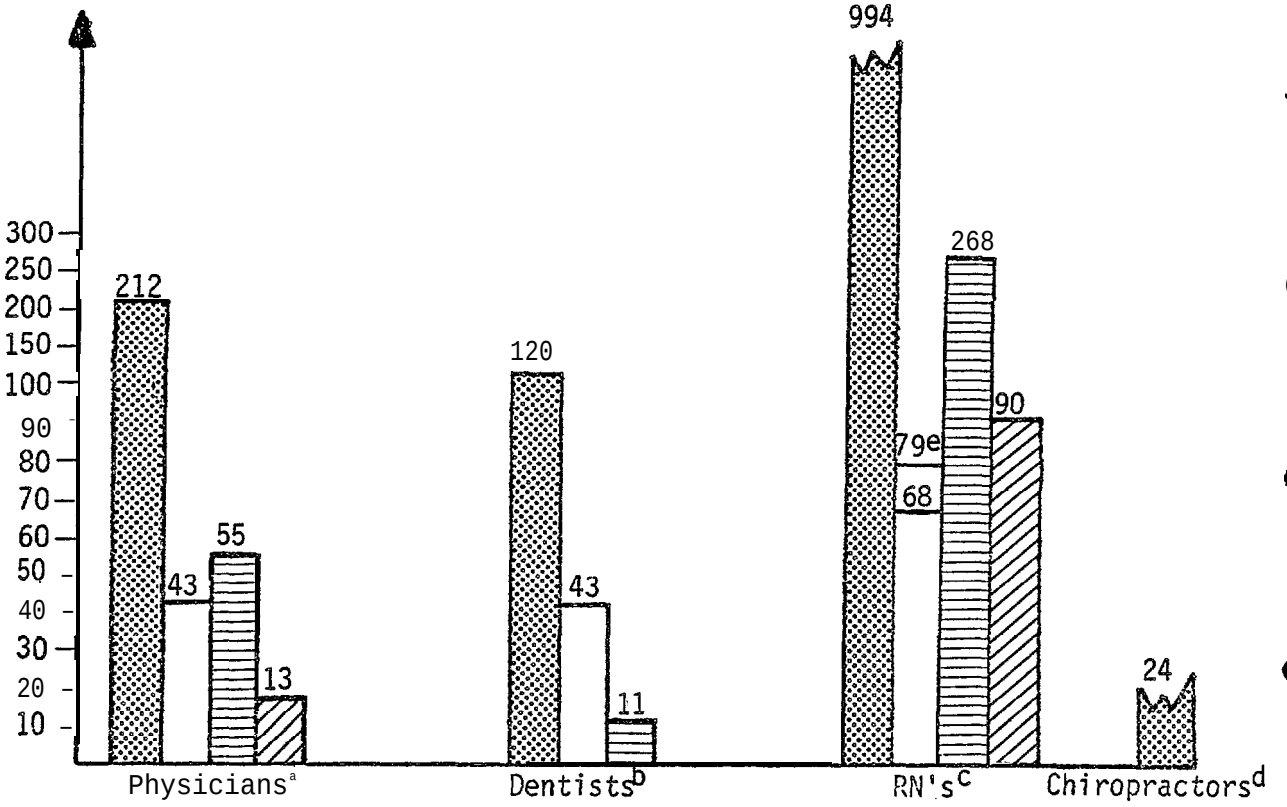
Facility	Percent of Respondents Using This Facility
Providence Hospital	61.4%
Alaska Hospital and Medical Center	34.5%
Alaska Native Medical Center	11.2%
Elmendorf Hospital	24.4%
Municipal Public Health Department	38.7%
Anchorage Neighborhood Health Center	11.6%
Nakoyia or Glenmore Nursing Home	4.8%
Alaska Psychiatric Institute	5.1%

Providence Hospital	Alaska Hospital
1. Doctor practices there (38.8%)	1. Doctor practices there (27.5%)
2. Convenience (11.7%)	2. Economic reasons (21.3%)
3. Self-preference (10.1%)	3. Convenience (15.9%)

Most of the time individuals, themselves, decide to use a particular facility, except for Providence Hospital and the nursing homes which are selected largely as a result of physician referral. The three leading reasons for use of either civilian hospital are noted in table 36.

TABLE 35

ANCHORAGE HEALTH PROVIDERS



Private Practice Anchorage 1979

Military 1979

Public Health Service 1979

Other, Federal and Municipal

[a]Alaska Medical Association, May 1979

[b]Alaska Dental Society, May 1979

[c]State Dept. of Commerce & Economic Development, Div. of Occupation Licensing, March 1979; U.S. Air Force Elmendorf Hospital, May 1979

'Adrian Barber, Chiropractor, May 1979

'Military Hospital employees 68 military RN's and 11 civilian RN's

Regarding public opinion about Alaska Hospital and Medical Center, 70 percent of the public believes they are eligible for service there, while ten percent feel they are not and 19 percent clearly don't know. There appears to be a significant amount of confusion concerning eligibility for Municipal Public Health Services (19 percent don't know), Anchorage Neighborhood Health Center (39 percent), and Nakoyia Health Care Center (45 percent).

Approximately 54 percent of the population have an annual physical exam, and 59 percent have an annual dental exam. Fifteen percent go outside Alaska for health care for 1) dental, 2) general exams, and 3) surgery. Respondents indicated that they would go outside for care immediately for 1) unspecified illnesses, 2) cancer care, 3) surgery, and 4) cardiac-related diagnoses and treatment.

- Referral. An important part of the health care system is the referral mechanism which helps match appropriate health (and often social) services to individual's respective needs. Documentation of interagency referral is sketchy and is generally initiated by the physician and/or the acute care facility. Records of the most frequently placed referrals for Alaska and Providence Hospitals are summarized in table 37.

TABLE 37

COMMUNITY RESOURCES/REFERRALS

% Referred	From Alaska Hospital	% Referred	From Providence Hospital
26.0	Financial Assistance	18.8	General Relief Medical Assistance
26.0	Public Health Nursing	11.2	Municipal Home Health Agency
22.0	Municipal Home Health Agency	8.8	Catastrophic Illness Program
8.9	Extended Care Services	7.2	Public Health Nursing
3.9	Handicapped Childrens' Program	6.6	Division of Vocational Rehabilitation
3.3	Cancer Society	47.4	Other Agencies and Services
9.9	Other Agencies and Services		

- Public Health Attitudes. Provided a list of public health programs and services, most citizens are aware of the services offered, such as family planning, Open Door Clinic, VD Clinic, Mental Health Clinic, Drug Abuse Center, Alcohol Abuse Center, immunizations and physical exams, housing inspections, and water and sewage control. Less familiar are well baby clinics, prenatal nutrition, and noise and air quality control. While most of the public is aware of services offered, few have used any during the past year. From their limited experience, most don't know enough to rate providers' performance of services listed. However, housing inspections and sewer and water

control were clearly rated as poor. Citizens generally did not support cutting any public health services.

A plurality of residents believe that the following health and social services are very much or somewhat needed:

Very Much Needed		Somewhat Needed	
Well Child Clinic	77.4%	Women's Health Service	86. 5%
VD Treatment	74.5	Nutrition Educ.	77.2
Child/Day Care	49.9	Home Care Nursing	65.3
Drug Abuse Services	48.9	Mental Health Services	56.8
Alcohol Abuse Services	46.5	Immunization	56.4
Adult Abuse Services	45.0	Child/Day Care	44.8
Homemaker Services	41.8	Child Abuse Services	44.1

Most residents believe that services listed above should be provided mostly by the public sector rather than privately.

Specialized Health Delivery Systems

Services are also available to selected specialized health care consumers, i.e. low income, native, handicapped, etc.

Low Income. Medical needs of the low income are recognized by several major factors: 1) a neighborhood health clinic using a sliding scale fee schedule, 2) a municipal health department providing free or low cost services, 3) an open door policy at both civilian hospitals, and 4) the high percentage of the population covered by health insurance. Only six percent of the local population is not covered and could, therefore, be classified as potentially medically indigent (i.e. unable, through income or insurance reimbursement, to pay for medical costs incurred as a result of illness or accident) (Ender, 1979b).

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 are as follows (Municipality of Anchorage, Municipal Health Commission, Home Health Task Force, 1979):

- Skilled nursing care	$120 per day for two beds $125 per day for private
- Intermediate care	$101 per day for two beds $106 per day for private
- Residential care	$45 per day for two beds
- Home care	$40 per visit

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, often promoting longer, costlier stays in acute care facilities. Consequently, reoccurring health needs and their resultant costs have been one cause 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 length of stay for this 170-bed facility is 9.7 days or almost twice 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 patients released to outlying areas. The average length of patient stay has been reduced, however, from 16.2 days in 1970 to 9.7 days in 1979. 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, he/she 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 are 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, Planning Department, 1977a) 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 38 illustrates the developmentally disabled population of Anchorage according to type of disability,

TABLE 38

DEVELOPMENTALLY DISABLED IN Anchorage

Disability	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, 217 intermediate, and 100 long-term residential beds. Plans for construction of 24 beds for the Alaska Treatment Center could provide much needed assistance to this

considerably underbedded portion of the local health care delivery system.

Current Health 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.

  Using data from the 1978 Anchorage Health Needs Assessment Study, the Department of Health and Environmental Protection, Behavioral Health Division, has estimated that for 1978 approximately 148,000 Anchorage residents (excludes those under 15 years of age) can be considered at risk of having alcohol related problems. Based upon the number of drinkers per population identified in 1975, a projection of numbers of local drinkers would be 14,900. A more conservative estimate using recall data from the health needs sample, projected 11,500 alcoholics.

  During 1978, 1,713 arrests were made by Anchorage Police which were directly related to alcohol representing approximately one percent of what the Department of Health and Environmental Protection has identified as the population at

risk, 147,735 (Municipality of Anchorage, Dept. of Health and Environmental Protection, Behvaioral Health Div., 1979). Based upon paramedics' reports, a projected 1,356 responses would be alcohol related, involving about point nine (.9) percent of the population at risk. Together, police and paramedics received nearly 3,000 alcohol related calls, representing two percent of the population.

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.

- Drug Abuse. The three most heavily used drugs in Anchorage are alcohol, marijuana, and cocaine. Data from the Anchorage Health Needs Assessment indicate the following rates and frequencies of use of selected drigs by Anchorage adults.

TABLE 39

PROJECTED POPULATION OF ADULT DRUG USE[a]

Use	Marijuana	Use	Stimulants	Depressants	Cocaine	Heroin, Etc.
Daily	8,093	Regular[b]	5,233	6,209	7,224	419
Weekly	10,205	Occasional	5,792	8,195	8,776	2,877
Monthly	10,401					
Yearly	9,661	TOTAL	11,025	14,404	16,000	3,296
TOTAL	38,360					

aEnder, Alcohol and Drug Abuse in Anchorage, Anchorage Urban Observatory, 1979

bRegular is once a month or more, and occasional is in the past year.

Finally, it is estimated that there are 35,800 significant adult drug abusers in Anchorage, with the greatest portion using marijuana at least weekly or monthly. If juveniles are added to the adults illustrated above, there are an estimated 42,700 significant abusers in Anchorage. Regardless of the political or legal justification for the use of marijuana, it is still described as a drug, for which any degree of regular usage can be considered drug abuse. Applying drug usage rates for the United States to the Anchorage population, the

Behavioral Health Division of the Department of Health and Environmental Protection indicates the following:

- Approximately 23,000 people, aged 12-25, experiment with hallucinogens.
- Approximately 1,300 high school seniors use alcohol on a daily basis.
- Approximately 2,000 high school seniors use marijuana on a daily basis.

As for victims of alcohol abuse, drug abusers must rely predominantly on outpatient care and treatment. Many facilities servicing alcohol abusers also provide services to drug abusers.

Major drug related programs are part of the Department of Health and Environmental Protection's Behavioral Health Treatment System. Services include:

- Residential Drug Treatment with 35 treatment slots
- Outpatient Methadone Treatment with 30 maintenance and detoxification slots
- Adult Outpatient Drug Free Treatment with 30 slots
- Juvenile Outpatient Drug Free Treatment with 28 slots

- Crisis Intervention Hotline, Outreach and Drug Education services, 24 hours, 7 days a week

- Primary Prevention Program with kindergarten through 12th grade curriculum

Local health officials estimate that supplies of heroin enter Anchorage in quantities sufficient to support 1,200 heroin addicts. In 1976 the Anchorage Drug Abuse Council estimated 700 to 1,000 addicts; local police estimates range from 1,200 to 2,000 addicts. While supplies of heroin have been diminishing, demand for pharmaceutically prescribed drugs has risen. The Anchorage Health Needs Assessment reveals that ,23.4 percent of the population take prescribed drugs on a weekly basis, 7.1 percent every week or two, and 7.1 percent every two to six weeks.

Abused Persons. Adequate data collection in this area is limited. In 1971 the Alaska Child Protection Statute (AS47. 17.01070 and AS46.1O. 142) encouraged the initiation of reporting of physical abuse data in 1972.

Because of failure of some areas to report, changes in program personnel, forms, reporting format, contractors, etc., efforts to collect accurate abuse reports have been relatively unsuccessful. Therefore, a clear picture of the true target population in need of services is difficult to obtain.

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. Capacity ranges from five to ten beds, depending on the type of care needed.

The Anchorage Child Abuse Board, a major local service provider, indicated that they received 50 to 70 calls per month in 1978 concerning abuse or neglect cases. Anchorage experiences 30 to 40 cases per 10,000 population compared to 12 cases per 10,000 in the Lower 48. During 1978 there were about 1,000 open cases at any given time compared to 250 cases in cities of comparable size and description.

- 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 (200 beds at Alaska Psychiatric Institute)

  - Outpatient therapy and counseling

  - Crisis lines

e

- 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 Planning Issues. The Municipal Health Commission has recently completed an analysis of existing local health care services according to the National Guidelines for Health Planning (CFR 42, Part 121: March 1978). The guidelines establish standards for levels of care most appropriate for an area's population and characteristic medical needs.

- 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 resource allocation phenomina. 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. An excess of acute care beds results in a lower general occupancy rate which ultimately yields higher cost to the consumer for each bed used. Table 40 illustrates Anchorage bed need projections through 2000.

TABLE 40

ANCHORAGE ACUTE CARE BED NEED PROJECTIONS

Year	Civilian Non-Native Populationa		Occupancy Rate[c]	Number of Beds Required[d] 560 Use Rate	580 Use Rate	600 Use Rate
1980	Low	167,390[b]	80%	320	332	344
	Moderate	167,582	80	321	333	344
1983	Low	178,461	80	342	354	367
	Moderate	181,986	80	349	361	374
1985	Low	185,508	80	356	368	381
	Moderate	191,256	80	367	380	393
1990	Low	219,038	80	420	435	450
	Moderate	233,408	80	448	464	480
1993	Low	247,031	80	473	491	508
	Moderate	266,861	80	512	530	548
1995	Low	265,693	80	509	528	546
	Moderate	289,164	80	554	574	594
2000	Low	328,442	80	630	652	675
	Moderate	376,150	80	721	747	773

[a]University of Alaska, Institute of Social and Economic Research, Southcentral Alaska Economy and Population 1965-2025. A report of the Economic Task Force using low and intermediate base case population projections, p. XXIX.

[b]Civilian, non-native population derived by deducting 4.2% native population, and a constant for active military and dependent population (1980 - 19,000; 1983 - 30,000; 1985 - 31,000; 1990 - 31,000; 1995 - 31,000)

[c]Recommended facility-wide average occupancy rate for facilities with 200 to 300 beds (Municipal Health Commission)

[d]Applying use rates of 560, 580, and 600 inpatient days per 1,000 population

A range of use rates have been used in calculating beds needed. A rate of 560 reflects the current use patterns for the year 1978. During this time, one hospital experienced a disproportionately low number of inpatient days. Health planners and hospital personnel anticipate forthcoming increases in patient days sufficient to raise the general use rate to between 580 and 600.

The March 1978 National Health Planning Guidelines recommend an optimum facility occupancy rate of 85 percent. In reviewing that standard, local health planners have determined that 80 percent is a more realistic rate due to lower rate standards applied in selected services, i.e. 75 percent OB-Gyn, 65 percent pediatrics, 65 percent ICC-ICU, etc.

The other major variable affecting use rates is the projected rate of population growth. For the purposes of this section a range of estimates from low to moderate population estimates have been used. Demand will not exceed supply of beds until at least 1990. Any increase in outpatient, ambulatory, and noninstitutional care alternatives may extend the need for beds beyond, 1990.

- Medical Manpower Shortages. 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, obstetricians, and family practitioners. The average lead time for scheduling non-emergency 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 (see health status section) . 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, home care and support services, 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 shortages and provide a less costly care alternative to the consumer.

- Childbirth Survey. In November 1978, the South Central Health Planning and Development, Inc. (the regional health systems agency) and the Municipal Office of Human Resources Planning conducted a community survey on childbirth. Interviews of physicians, nurses, family planning counselors, new mothers, etc. revealed a distinet shortage of obstetricians available to assist over 4,000 annual live births. Only 12 out of 16 practicing obstetricians are currently accepting new obstetrical cases, with an average waiting period of four to six weeks for the first physician appointment. Doctors require from $0 to $300 on the first visit and request $550 to $750 to be paid in full at, time of delivery. The survey indicated that only seven out of 56 physicians will accept Medicaid patients and most of those only on a limited basis due to

inadequate and lengthy reimbursement system. The Medicaid patient, who is typically young and in her third trimester, is an unwelcome and costly addition to an already overburdened practice.

- Alternatives to Institutional Care. In September 1978 a Home Health Task Force of consumers and providers of home health care and support services met to investigate issues and problems relative to home care. While their work program is not yet completed, interim recommendations include 1) use of comprehensive information and referral system for more effective client/provider match coupled with 2) an ongoing, interagency organization to plan, program, and review home health and support services delivery. The task force also produced a community resource book entitled A Guide to Home Health and Support Services.

Health Status Indicators

Health Demographics. Anchorage residents visit a physician 3.7 times per year compared to 5.0 times per year for the nation as a whole. (U.S. Dept. of Health, Education, and Welfare, Public Health Service, 1978). The crude death rate for local residents is approximately 3.1 (deaths per 1,000 population); the U.S. rate is 8.8. The Anchorage birth rate is 18.3 per 1,000 population; the U.S. rate is 15.8. The infant mortality rate is 14.0 per 1,000 live births. (U.S. Dept. of

Commerce, Bureau of Census, 1978) 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 41 illustrates rates for both compared to similar rates in the U.S. as a whole.

TABLE 41

GONORRHEA/SYPHILIS RATES PER 100,000 POPULATION

	Gonorrhea		Syphilis		
Year	Anchorage Rate[a]	U.S. Rate[b]	Southcentral Rate[c]	Alaska Rate[c]	U.S. Rate[b]
1976	1,248.4	470.5	13.7	12.8	23.0
1977	1,182.0	465.9	22.7	15.7	19.4
1978	1,205.3	N/A	6.4	4.6	N/A

[a]Alaska Dept. of Health and Social Services, Communicable Disease Control Section

[b]Communicable Disease Control Form 9.688, Dept. of Health, Education, and Welfare, Publis Health Service, Bureau of State Services, V.D. Control Div. (civilian cases only)

[c]Alaska Dept. of Health and Social Services, Div. of Public Health (total cases civilian and military)

While the incidence of tuberculosis is highest for Alaska natives, rates have been declining since 1954 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.

TABLE 42

TUBERCULOSIS RATES PER 100,000 POPULATION

Year	Anchorage Rate[a]	Southcentral Rate[b]	Alaska Rate[a]	U.S. Rate[c]
1976	14.6	20.5	21.3	15.0
1977	10.8	17.2	23.2	13.9
1978	8.9	18.2	22.9	N/A

[a]State of Alaska, Dept. of Health and Social Services, Div. of Public Health, Communicable Disease Control Section

[b]U.S. Dept. of Health, Education, and Welfare, Center for Disease Control, Morbidity and Mortality Annual Supplement, 1975

[c]Ibid., Morbidity and Mortality Annual Summary, 1977

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 43

SERUM/INFECTIOUS HEPATITUS RATES PER 100,000 POPULATION

Year	Serum Hepatitus Rates				Infectious Hepatitus Rates			
	Anch.[a]	SoCentral[a]	AK[a]	U.S.[b]	Anch.[a]	SoCentral[a]	AK[a]	U.S.[b]
1976	11.3	9.7	8.2	10.6	114.5	442.5	338.3	15.5
1977	10.3	10.5	9.1	11.6	83.6	167.4	139.5	14.4
1978	9.4	14.7	11.3	N/A	12.8	37.2	31.9	N/A

[a]Alaska Dept. of Health and Social Services, Div. of Public Health, Communicable Disease Control Section

[b]U.S.Dept. of Health, Education, and Welfare, Center for Disease Control, Reported Morbidity and Mortality, Annual Summary 1977

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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 body composed of consumers and providers of health services whose functions include:

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

The Comprehensive Health Service 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 impending problems in the delivery of an effective health care svstem in Anchorage and Southcentral Alaska.

SOCIAL SERVICES

Organizational Context

Social services delivery in the Anchorage area is provided predominantly by Alaska State Department of Health and Social Services, Division of Social Services. A limited scope of services is also provided by the local municipal government, as we'll as select private agencies and organizations.

As described in the Proposed Comprehensive Annual Social Services Plan: Plan Year 1980, 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

Information and referral and 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 are mandated by federal law and, therefore, 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.

Local Services Through the Division of Social Services

Currently the Alaska State Division of Social Services employs 15 social workers or one per 13,000 population, including one professional designated as a permanent planning caseworker. The level of staffing has not changed since 1970 when the division also maintained a staff of 15 social workers. The Anchorage office supports over half of the state's caseload of4,045 clients with one-quarter of the state's staff.

The division must accept all calls for assistance and, by law, must investigate each case within 48 hours of receipt of the call. Emergency calls are pursued immediately. The length of time from opening to closure of a case varies from one day to several years but averages six months. Referrals to the division come from the Division of Public Assistance, physicians, hospitals, community and home health nurses, crisis clinics, etc.

Current Alaska law limits the state's legal custody of a child to no more than two years at any one time. Therefore, within two years social workers must either place a child serviced through Child Protective Services back into the home or free him for adoption. The division arranges ten to 15 adoptions per year, representing service to about one-third of the 35 to 40

requests received. While no documentation exists, a large number of adoptive children are placed through physicians and lawyers, a legally sanctioned practice in this state.

Federal-State Coordination for Service Delivery

There is not always a clear differentiation between social and other human services. A comprehensive discussion of social services would necessitate a description of selected health (alcohol, drug, mental health, child/spouse abuse), judicial, and other public assistance programs. For that reason, 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. Division sponsored children's services with Criminal Justice Planning Commission, Department of Education, Department of Community and Regional Affairs as well as private children's - service providers to ensure that optimum benefits accrue to children in need;

c. Division of Public Assistance with Division of Vocational Rehabilitation, Department of Education, and Employment Security Division of the Department of Labor to ensure effective imple-

mentation of the Work Incentive Program (WIN);

d. Division of Social Services with the Divisions of Public Health and Public Assistance to coordinate delivery and ensure compliance with 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 Proposed Comprehensive Annual Social Services Plan: Plan Year 1980 is a 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 does not appear to be an acceptable alternative.

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 inefficiencies, 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 service 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, Division of Human Resources Planning, has identified the initiation of such a plan as a target activity for 1980. 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, clients are only exposed to such information after they have actually entered

the service system. The Anchorage Neighborhood Mental Health Center in conjunction with the Municipality of Anchorage, Division of Human Resources Planning, developed a portable inventory of those health, social, and recreational services provided by municipal and non-municipal agencies and organizations. The inventory is computer stored and could 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.

The Suicide Prevention and Crisis Center, a local provider, is currently using and updating the system. This group is planning expansion of the program to a more comprehensive service.

The Municipal Department of Health and Environmental Protection is developing a model for a comprehensive crisis center, serving a wide variety of I & R needs in the Anchorage area.

An advisory committee of the Municipal Health Commission is to begin examination of the feasibility of designing a mechanism for coordinating each of the existing I & R subsystems currently provided by public and private agencies, including:

- Suicide Prevention and Crisis Center

- Department of Health and Environmental Protection (Municipality of Anchorage)

- Department of Social Services, Senior Citizens I & R System (Municipality of Anchorage)

- Chamber of Commerce/Anchorage Community College Community Calendar

- 911

- S.T.A.R. (Standing Together Against Rape)

- Others

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

Children's Services. A majority of local services to children is provided by the Alaska State Division of Social Services. Approxi-

mately 70 percent of the division's caseload includes child and adult abuse and neglect cases (Gehler, Community Contact, 1979a). With an average ongoing caseload of 1,100 cases in 1978, fifteen Anchorage social workers assisted 1,451 children and 100 adults, providing individual and family counseling, community services' information, and agency referral as well as assistance in securing day care, homemaker, foster care, institutional care or group home and a variety of other public assistance services. During 1978, Anchorage Field Office, Department of Health and Social Services, served a total of 2,016 clients representing 26.1 percent of the state's total clients served.

The chief recipients of services from the division are white, females ranging in age equally from five to 64 years of age.

Table 44 displays levels of service for the period January 1 through June 30, 1978.

TABLE 44

LEVELS OF SERVICE - ANCHORAGE DIVISION OF SOCIAL SERVICES

FROM JANUARY 1 THROUGH JUNE 30, 1978

Number of Children Assisted	1,451
Number of Adults Assisted	100
Individual and Family Counseling	191
Information and Referral	61
Day Care Assistance	10
Homemaker Services	53
Foster Care	252
Institution and Group Home	90

Source: F. Guthry, Division of Social Services

The 1978 Anchorage Health Needs Assessment (Ender, 1979b) estimated that there are 4,500 single-parent households (eight percent of the population) with children 17 years and under. Of this number a projected 1,500 have the single parent employed full time with a child ten years and younger and no children over 13 years of age. In addition, there are 10,527 two-parent households with both parents working full time. Of this total, about 2,621 are two working parents with children under ten years of age and no other children over 13 years of age. It is assumed that the proportion of working parents would increase if the options for day care improved correspondingly. .

Limited economic assistance for day care and health care are available through a variety of local programs which offer cost deferment and/or reduction based upon-economic need. Services include:

- 42 licensed day care centers with spaces for 2,110 children (Alaska Dept. of Health and Social Services, Day Care Licensing Div.) including three latch string (before and after school care) programs

- 113 licensed day care homes with space for approximately 565 (Alaska Dept. of Health and Social Services, Day Care Licensing Div.) children

- 1,444 early periodic screening conferences (Dept. of Health

and Environmental Protection, Physical Health Div. , March 1979)

- o 481 well child conferences serving 4,447 children (Dept. of Health and Environmental Protection, Physical Health Div., January-October 1978)

The Department of Community and Regional Affairs subcontract the delivery of day care assistance payments to the Municipal Department of Social Services. Table 45 illustrates the service profile from the department for 1976, 1977, and 1978.

TABLE 45

DAY CARE ASSISTANCE: SERVICE PROFILE

DEPARTMENT OF SOCIAL SERVICES[a]

	FY 76	FY 77	FY 78
Total C.R.A. Grant	$533,000	$ 931,919	$851,997
Parents' Share	52,777	181,329	253,000
State Share	235,340	861,918	741,543
Supplemental	---	80,000	---
No. Families	402	1,586	1,370
No. Children	535	2,205	1,903
No. Providers	75	88	132
No. Licensed Slots	1,130	2, 028	2,456
No. Office Visits	3,670	5,116	5,269
No. Telephone Calls	4,960	8,275	6,829
% of Minorities Served	N/A	30%	27%

[a]T. Donnelly, Municipality of Anchorage, Dept. of Social Services

The department served 1,279 single-parent families in 1978. Only one family was rejected due to inavailability of licensed day care space, but 152 families were rejected due to insufficient program funds.

Psychiatric and family counseling services are provided by the Community Mental Health Clinic, many private mental health clinics and churches, as well as most of the public agencies listed above. Other local ancillary services are 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 the Anchorage area is deficient in three major areas relating to children's 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 developmental 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.

Acknowledging the importance of and need for services to children and families of children with special needs, the Municipal Health Commission is currently examining two related issues: 1) the phenomena of child abuse, its incidence, prevalence, available services, and pertinent local, state, and federal resources and regulations; and 2) the local and state child care codes, including recommended amendments and recommendations for guaranteeing improved services.

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	1,400± persons/year
Alaska Longevity Bonus	Economic aid $125/month	4,000± 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 - 7,400 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 a 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.

Recent efforts by the Anchorage Mayor's Commission on Aging have focused local and state and administrative and legislative attention on the need for increased financial support for home health and homemaker/support services to the elderly and, otherwise, disabled. Alaska State Division of Social Services, through a service delivery contract with Alaska Federation of Natives, monitored 3,500 hours of home services to 131 persons during the period from July 1, 1978,

through March 16, 1979. Funds ($1.5 million) to provide 4,500 hours have been appropriated for FY 79. Recipients must be eligible for child or adult protective services. Other major providers of home services are Salvation Army, averaging 100 visits per month; Friends In Service to Humanity, serving 23,000 meals in 1978; and Mabel T. Caverly Senior Center, serving 150 to 200 seniors per month.

The need for and provision of home support services clearly demonstrates the interrelationship existing between many health and social services. As seniors and other disabled persons have access to adequate services which support home based recuperation from illness and/or daily maintenance of existing lifestyles, their health care costs can be lowered, recoveries hastened, and their sense of well-being, satisfaction, and independence can be heightened. Increased attention to the need for home support services, as a comparison to home health care, together forming a less costly alternative to institutional care has been given by local and state health planners.

Employment Assistance. Employment training and job placement are provided primarily though the Alaska Department of Labor's Job Service Center and federal programs sponsored under the Comprehensive Employment Traing Act (CETA) of 1974. 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 (Alaska Dept. of Labor, 1979).

- CETA. The municipal government, through the Department of Social Services, 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 spend 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 (Municipal ity of Anchorage, 1979).

Service	Type of Service	Persons Served[a]
Title I	Classroom training; prevocational and vocational referral; job site training for adults and youth	734
Title II	Public Service Jobs	108
Title III	Youth Employment Training Program	64
Title III	Summer Employment for Economically Disadvantaged	433
Title IV	Job Corps Recruiting	117
Title VI	Public Service Jobs	850

[a]Municipality of Anchorage, Dept. of Social Services, March 1979

- WIN is designed to assist in placement of employable welfare

recipients. WIN registration is a criteria for receipt of Aid to Families with Dependent Children. The local WIN program placed approximately 400 persons during the period from October 1977 to September 1978.

- 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 Businessman is a cooperative effort between agencies of both the private and public sectors in an effort to help economically disadvantaged persons gain meaningful jobs. The Alliance has obtained voluntary job pledges for 299 disadvantaged, nine ex-offenders, 1,369 youth, 113 Vietnam era veterans, and eight disabled veterans.

- The Municipality of Anchorage, Department of Social Services 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 Mangement. 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 700 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 apprenticeships 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 nat· ves. 'Types and levels of services are indicated below:

Service	Type of Service	Level of Service
Alaska State Division of Public Assistance	Aid to Families with Dependent Children	3,000 cases per year
	Child Support	3,000 cases per year
	Food Stamps	3,600 cases per year
	General Relief	12,000 cases per year
	Medicaid	4,400 cases per year
	Unemployment	N/A (confidential)
CINA Social Services	Financial Assistance Counseling	7,200± cases per year

The Anchorage Health Needs Assessment indicated that approximately 7.8 percent of the Anchorage population receive some form of public assistance income; i.e., welfare, AFDC, etc. Approximately 4.4 percent receive food stamps. These figures represent a relatively low percentage of the number of residents actually eligible for public assistance. According to the needs assessment, approximately 11 percent of the Anchorage households earn less than $9,000, which is the maximum allowable income for a family of four. Approximately eight percent of the households earn less than $450 per month (family of four, two adults) and are, thereby, eligible for rental and medical assistance. About ten percent of the households earn less than $8,900 annually (no more than $750 per month), qualifying them as food stamp recipients.

Housing Assistance. State and federal assistance in the area of

housing focuses primarily on establishing rent schedules for low rent housing (through the Alaska State Housing Authority) and providing limited do" lars for rent subsid es (through Department of Housing and Urban Development). Local government serves as an information and hous ng referral unit, he" ping Anchorage residents with landlord/tenant problems, and with location of low rent housing.

Availability of low cost housing is becoming an increas ngly severe problem in Anchorage. There are currently approximately 420 units available at monthly rates from $50 to $450 (four bedrooms) depending on income. About 120 of those are newly constructed units for low income, elderly. The Alaska State Housing Authority (ASHA) Section 8 program has the potential to serve approximately 600 persons, awarding supplemental rent subsidies according to a sliding scale.

With the high cost of construction, it appears unlikely that local low cost housing needs will be adequately met unless through increased federal and state construction projects and/or rent payment subsidies.

Youth Services. 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
Alaska Superior Court	Premarital (minor) custody

Service	Type of Service
Alaska Youth Advocates	Crisis counseling Family counseling Legal counseling
CINA Youth Services	Educational counseling Career counseling Personal counseling Drop-in counseling
Family Connection	Runaway shelter Foster care Crisis counseling
Hilltop Group Home	Residential (delinquent) Career counseling
Youth Manpower Services (Municipality)	Emergency medical/dental payments CETA training Occupational counseling
Anchorage Community Mental Health Center	Youth/family counseling
Family Planning (Municipal ity)	Pregnancy and family planning counseling
Open Door Clinic	Medical care Crisis Counseling

The Municipal Department of Social Services currently staffs an 11-member Youth Advisory Commission. This group of nine youth and two adults advises administration and the Assembly on matters related to Anchorage youth. Recent accomplishments include publishing a Youth Services Directory, developing policy statement regarding young mothers, conducting a survey of secondary student needs, assisting with the development of a new Y.W.C.A. , and producing youth rights cards and information.

Plans

To date, there exists no unified functional 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 1980. 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 Anchrage 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 service 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 1,600 of K-12 grade students attend ten private education facilities that have enrollments that range from 52 to 533 pupils and total teaching staff of 94 instructors. About one-fourth are kindergarten students. Enrollments in private schools increased significantly from 1973 through 1977 and have presently stabilized. These schools are almost soley supported by student tuition fees and their enrollment is limited by their physical capacity (Ender, Community Contact, 1979) .

Student Population. Historical" y, Anchorage has been characterized by rapid growth as is reflected in its past school enrollment. Between 1940 and 1950 and again in 1950 and 1960, the enrollment quadrupled. From 1960 to 1970 the enrollment almost tripled (Anchorage, School District, 1978b) .

Between 1970 and 1976, enrollments increased by only 26.3 percent. This increase is negligible compared to previous years, and

approximately 36 percent of this increase is due to the addition of the military based schools to the civilian school district. Since the 1977 peak, the student population dropped 8.1 percent. This includes a decline of 1,989 students from 1978 to 1979. Currently, the district serves a student population of 36,907. This includes 19,821 pupils in elementary grades, 16,021 in secondary grades, and 1,065 in special services. Within the K-6 totals 234 students are attending modified primary.

TABLE 46

ANCHORAGE SCHOOL ENROLLMENT 1969-1979[a]

Year September 30 Enrollment	Elementary	Secondary	Special Services	Total
1969	17,137	12,571	667	30,375
1970	17,400	13,591	804	31,795
1971	17,895	14,593	902	33,390
1972	18,070	15,349	780	34,199
1973[b]	17,810	17,032	960	35,802
1974	17,726	17,532	963	36,221
1975C	21,201	17,811	1,129	40,141
1976	21,054	17,899	1,189	40,142
1977	21,001	17,747	858	39,606
1978	20,685	17,342	869	38,896
1979	19,821	16,021	1,065	36,907

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

By 1981-1982 the Anchorage School District in a mid-range estimate officially projects the student enrollment to decline to 35,739 and rise to 38,363 by 1985-1986. This is over 5,000 fewer students than projected in their 1978 six-year building program plan and represents a conservative view of system growth. Table 47 outlines three projections of student growth.

TABLE 47

PROJECTED SCHOOL ENROLLMENT 1978-1984[a]

Year	Scenario High[b]	Med i um[c]	Low[d]
1980-81	36,007	36,007	36,007
1981-82	36,251	35,739	35,332
1982-83	36,970	35,979	35,203
1983-84	38,091	36,651	35,534
1984-85	39,336	37,466	36,031
1985-86	40,643	38,363	36,633

[a] G. Markee, Statistician, Anchorage School District, January 1980.
[b] 2.6% annual increase.
[c] 1.15% annual increase.
[d] No significant growth.

A stable or slowly increasing enrollment is a realistic short-term projection from a planning standpoint. For long-term planning, there are a number of factors that should be taken into consideration. About 3.8 percent of the student population attend private schools. While this is a small percentage of the school age population, the economic and physical ability to expand should keep future growth to a relatively small portion of the total enrollment. It is likely that private

enrollments will grow and should gain a few more percent of the total enrollment in the coming decade.

Furthermore, looking at the Anchorage population in general, it is characterized as predominately young, transient, and single (1.008 children per household average) child families.

If the population stabilizes, those couples who are presently starting a family will have an effect on the enrollment by the late 1980's. 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 childbearing decision age (30 to 34) and may also affect school enrollments. While a no growth projection is appropriate for the short-term, it is not the long-term prognosis and long-term plans should not be based on it.

Personnel and Facilities. To meet the educational need 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). Stat' sties are available only with the combined primary and secondary s· udent/ teacher ratio (see table 48).

TABLE 48

AVERAGE PUPIL/TEACHER RATIO, 1967-1977[a]

Fiscal Year	Teaching Staff	Enrollment K-12 & Special Ed.[b]	Pupil/Teacher Rati o[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
972-1973	1 ,559.5	32,749	21.00
973-1974	1,630.0	34,554	21.20
974-1975	1,658.1	35,407	21.35
975-1976	1,675.0	35,957	21.47
976-1977	1,721.0	35,490	20.62
977-1978	1,725.0	35,310	20.47
978-1979	1,795.5	34,530	19.23

anchorage School District, Annual Financial Report for the Fiscal Year Ended June 30, 1979.

[b]Based on June enrollment.

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

Actually there has been a steady decline in the ratio since 1969. This is due to the dramatic increase in special programs within the district and not a decline in actual classroom size.

To accommodate the student enrollment, the school district maintains 65 school buildings. These include 52 elementary schools, four middle schools, four high schools, three junior and senior high school complexes, 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 saturation levels. Pup"il classroom 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 variables 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 are experiencing a decline in enrollments. As seen in Table 49 the four older areas have suffered a combined pupil loss of 27.7 percent since 1970, while the four outlying areas showed a 46.2 percent increase in enrollment.

TABLE 49

PERCENT OF CHANGE IN SCHOOL ENROLLMENTS, 1970-1978

Subcommunity	% Change 1970-78
Downtown/Government Hill/Inlet View/Fairview	-21%
Hillside/Abbott Loop/Oceanview/Rabbit Creek	+55%
Sand Lake	+80%
Spenard	-39%
North & South Mountain View/North Muldoon	-17%
College Gate/Baxter/Scenic Park/South Muldoon	+23%
University/Lake Otis	-26%
Chugiak/Eagle River	+17%

To meet the changing patterns within a stable pupil population, the school board voted to close two elementary schools (Northwood and Government Hill) for the 1979-80 year and is considering closing other elementary schools in 1980-81. In addition, for 1981 a 22-room junior high school will be built in Eagle River/Chugiak and for 1580 a replacement elementary school will be built in Girdwood. In addition, bonds have been sold for site acquisition for two elementary schools (one in Rabbit Creek and one in Bayshore/Oceanview), two junior high schools in south Anchorage, and one elementary school in Eagle River. Time tables for these facilities have been pushed back at present exacerbating the immediate need of overcrowded classrooms in south Anchorage and requiring increased use of temporary classroom space.

Present plans call for one south Anchorage junior high bond in 1980 with an opening date of 1983, if approved. Over the six-year period 107 classrooms will be eliminated at the elementary level and 55 classrooms added at the junior high level.

Cost Per Student. In the past ten years, the cost per student has tripled, as shown in table 50 below.

TABLE 50

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	2,003
1976-77	82,782,708	35,458	2,335
1977-78	88,675,162	34,920	2,539
1978-79	97,940,465	34,349	2,851

anchorage School District, Annual Financial Report for the Fiscal Year Ended June 30, 1979.

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. The fall 1979 teacher's strike and resultant settlement combined with falling enrollment to produce severe

budget problems in 1979-1980. 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 cost, 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, 1978a). 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, 1978a). 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 aid 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 1978-1979 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 Officer 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, 1978b).

Special Education Services and Needs

The Anchorage School District provides a special education program for students (age 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, 1978c). 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 actually decreased for 1978-1979 because a modified primary program was established which totaled 296 pupils, thus removing special education funding.

TABLE 51

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]
1978-79	1,165

[a]Anchorage School District, Preliminary Financial Plan, 1978-1979.
[b]Lois Wier, Budget Director, Anchorage School District, March 9, 1978.

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 programs is calculated by establishing the student/classroom ratio at nine students per elementary special education classroom and 13.5 students per secondary classroom [Anchorage School District, 1978e].)

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, (UAA), offers baccalaureate degrees in arts, business administration, education, fine arts, music, science, nursing, 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.

  Full-time equivalent student enrollment has shown a 239 percent increase between 1970 and 1979. The growth of the enrollment has been especially strong since UAA changed into a four year institutional model.

TABLE 52

UAA FTE STUDENT[a] ENROLLMENT, 1969-1979[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
1978	1,342.0
1979	1,476.3

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

[b]University of Alaska, Anchorage, Office of Institutional Studies 1979, 1980

As of fall 1979 semester, there were 117 full-time faculty employed at UAA, with one part-time permanent and 77 part-time temporary instructors.

Classrooms, faculty offices, and support staff are housed mainly in the College of Arts and Sciences complex and Health Occupations 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) has eased 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 in 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). In the fall 1979, an estimated 2,000 students were turned away at registration. The University requested 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). It is expected the building will be completed in 1981.

- 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 was on the rise until 1979 when a sharp drop occurred.

TABLE 53

ACC FTE STUDENT ENROLLMENT, 1969-1979[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	3,177.1
1977	3,060.0
1978	3,466.5
1979	2,808.0

[a]University of Alaska, Anchorage, Office of Institutional Studies, 1979

The college employs 137 full-time plus 5 part-time permanent and 174 part-time temporary 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 four years enrollment has kept pace with the Anchorage population growth rising to 4.6 percent of the population in 1978 for ACC and dropping back to 3.4 percent in 1979 (see table 54). UAA headcount climbed to 2.2 percent of

the population in 1977 and weakened to 1.9 percent in 1979. The latter drop appears to be due to a greater number of full-time students since the percent of FTE students in population has risen steadily throughout the period.

TABLE 54

ENROLLMENT AS PERCENT OF POPULATION

Year	Anchorage Population	ACC Headcount[a]	Headcount % of Pop	FTE % of Pop	UAA Headcount[b]	Headcount % of Pop	FTE % of Pop
1975	161,243	7,091	4.4	1.8	2,117	1.3	0.5
1976	170,224	7,346	4.3	1.9	2,266	1.3	0.5
1977	176,003	8,168	4.6	1.7	3,938	2.2	0.7
1978	188,254	8,729	4.6	1.8	3,805	2.0	0.7
1979	195,654	8,672	3.4	1.4	3,625	1.9	0.8

anchorage Urban Observatory

[b]University of Alaska, Office of Institutional Studies, 195'0.

Interestingly, future enrollments may not be dependent on graduating high school students. From a 1978 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 typical students attending UAA and ACC are about 30 years old and represent those returning to school after leaving the military,- 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 high cost of living and the development of a four year university in Anchorage also gives some indication of reversing the out-migration of students.

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. In order to meet the need of the growing institutions there presently is a request for new buildings above those already bonded. Currently, there is insufficient classroom and faculty office space. One effect of chronic maintenance level funding is possible cut backs or no growth despite demand. ACC recently announced class cut backs due to a funding crunch. While some were restored, ACC is more likely to follow a slower growth model of an established stable institution. The attainment of projected enrollment will be more difficult for UAA's growing model if the legislature fails to react to community demands for higher education options. ACC also could have short term enrollment problems if UAA'S program continues to strengthen thus affecting transfer programs.

Another problem in meeting demands involves the internal operation of the university system. High turnover among top administrators and fiscal accounting difficulties have in the past jeopardized dealings with the state legislature and produced incoherent system objectives. Recent improvements may have rectified major aspects of this problem.

The Board of Regents has not been successful in equitably balancing priorities between a stable or declining central campus, a high cost rural system, and an urban campus requiring high cost infrastructure investments. An added problem revolves around labor-management conflict within the community college system. There have been two strikes in four years. Another in 1979-1980 is a serious possibility. Neither side has yet been able to mediate differences without interfering the learning process.

Private, Nonprofit.

- Alaska Pacific University. Alaska Pacific University (APU) 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. There were 170 students enrolled for spring 1978 semester and 120 enrolled in the previous fall 1977 semester.

Fall 1978, 245 students were enrolled, and fall 1979 saw a substantial jump to 736 enrolled students.

These figures include both full-time and part-time students. APU employs eleven full-time faculty, eight administrators with teaching responsibilities, and 26 adjunct instructors.

It is difficult to compare the past enrollment figures of APU with the present ones. (The enrollment for fall 1975, the last semester before APU 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 APU requirements.

Future enrollment is also difficult to predict as the future of APU 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 due to the lack of demand in the work force for those specific skills. Unemployment statistics show an excess of already trained people in the job market. This is due to cutbacks in personnel required for North Slope pipeline work.

e 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 institutions 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 students that the institution can accommodate at one time. The size of the student body is based upon facility size.

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LAW ENFORCEMENT

Law enforcement activity within the Municipality of Anchorage is handled primarily through the Municipal Anchorage Police Department (APD). Those areas presently not within the APD jurisdiction are peripherally located within the boundaries of the Municipality. Law enforcement services for these areas are currently provided by the Alaska State Troopers. Baseline information will be developed for both of the service agencies with emphasis focusing on the Anchorage Police Department.

Anchorage Police Department

Introduction. The first law enforcement activity was sanctioned by the Anchorage city council in the early 1920's. On January 1, 1921, a town marshal was hired by the council to patrol the small community. As Anchorage grew, so did the need for increased law enforcement activity; 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).

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

subsequently remained in that capacity until 1973. Chief Flannigan was considered a positive asset to the department, especially in creating a feeling of professionalism and in boosting morale.

Since Flannigan's retirement in 1973, the department has had two different Chiefs: Earl Hibshun and the current Chief, Charles G. Anderson, a long time veteran of the department.

In 1970, the police department was contracted to expand their service territory outside the old corporate city limits to include the adjacent community of Spenard. Through the 1970's, the service area continued to expand and is now the primary law enforcement agency for the Municipality. Table 55 displays the increased manpower of the force since 1956 and its relation to the service population.

TABLE 55

POLICE MANPOWER

Manpower[a]	1956	FY 70-71	FY 71-72	FY 73-74	FY 75-76	1977[b]	1978[c]
Sworn Officers	44	111	112	159	156	163	247
Civilian Officers	7	57	56	57	54	58	81
Total	51	168	168	216	210	221	328
Estimated Population	30,000	72,000	78,000	84,000	100,520	107,000[d]	144,675[d]

[a]1956-1976 figures extracted from PCR Public Managment Service, Inc., "A Management and Operational Study of the Anchorage Police Department."

[b]Capt. Weaver, March 6, 1978

[c]Capt. Christianson, February 22, 1979

[d]Population estimates - Anchorage Urban Observatory, University of Alaska

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

State and Local Spending. The annual cost to field one sworn officer is approximately $60,480 per year (Office of Management and Budget, February and March 1979).

The 1976 annual expenditures for the department were $11,541,850.. This increased in 1977 to $15,188,070 (June 30th figure). The expenditures for 1978 total $14,845,000 with a revised budget of $18,799,820 for 1979. This last figure represents the increased cost of the newly acquired service areas. The proposed 1980 recommends $22,938,340 for local police services. Table 56 gives approximate state and miscellaneous revenues for 1976 through 1979.

TABLE 56

REVENUES OF THE ANCHORAGE POLICE Department

Year	Revenues
1976[a]	$4,387,910
1977[a]	$4,792,050
1978[b]	$5,657,400
1979(projected)[b]	$7,297,380

[a]Telephone conversation with the Municipal Office of Management and Budget, March 19, 1978

[b]Telephone conversation with the Municipal Office of Management and Budget, February 27, 1979

The balance between state and miscellaneous revenues and expenditures is met through local taxes. Police Chief Anderson recently asked for additional state support because state revenues were failing to keep up with the increased cost of services.

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 law and ordinances;
- Protect the lives and property of citizens; and
- 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 three divisions, it could well be considered the most important division in the community since it is generally the citizen's initial contact with 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 129 sworn officers and one civilian officer.

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

  1. A call is initiated by the complaint 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 determ nes the speed of response based on the seriousness of the complaint. These temporal ind· caters are clef" ned in table 57.

TABLE 57

PRIORITY SYSTEMS[a]

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

[a]PRC Public Managment Services, Inc., August 1976

Table 58 indicates response and travel time based on the priority system. This information was extracted from calls received during January through March 1976. Although no formal sampling has been done since 1976 to assess changes in this area, a review of the figures by the municipal police indicate little if any variation.

TABLE 58

RESPONSE TIME[a]

Priority	Number 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

[a]PRC Public Management Services, Inc., August 1976

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 14 patrol districts. Except during the overlap of the three

shifts, 19 patrol units are available. In addition, two supervisory units are on duty at all times.

The Uniformed Services Section is also responsible for maintaining a traffic bureau which handles hit-and-run accidents, traffic endorsement, and impounding vehicles. This department employs 22 personnel plus one clerk.

In addition, a reserve unit of 46 persons is available to assist the force as needed.

- Investigative Services. The Investigative Services are responsible for investigating violent crimes against persons property, buncos, frauds, and arson. In addition, fo' low-up investigations are handled on felony cases. Investigative Services are also responsible for vice control, narcotics and drug enforcement, juvenile delinquency, 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.

Investigative Services maintains four bureaus employing 60 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 juvenile 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 narcotics and drug dealers and in curbing the abuse of narcotics and drugs through enforcement of laws.

The Warrants Bureau also falls under the Investigative 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 five personnel.

- Technical Services Division. The third division in theAPD 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 59 illustrates the crime index statistics from 1974 through 1978 for Part I crimes.

TABLE 59

ACTUAL NUMBEROF REPORTED PART I CRIMES

Crime	1974[a]	1975[a]	1976[b]	1977[b]	1978[b]
Murder	14	13	17	15	16
Rape	60	77	69	85	91
Robbery	175	289	266	226	218
Aggravated Assault	333	330	315	227	203
Burglary	1,367	1,615	1,560	1,937	2,049
Larceny	4,141	4,951	6,185	6,263	6,702
Vehicular Theft	833	1,288	1,114	1,116	964
Total	6,923	8,563	9,526	9,869	10,243

[a]PCR Public Management Services, Inc., "Management and Operational Study of the Anchorage Police Department," August 1976.

[b]Capt. Christianson, February 22, 1979

Examination of the actual number of reported Part I crimes for 1978 reveals a ratio of 70.8 crimes per 1,000 people within the APD's service area.

Comparing 1974 and 1975, there was a 23.6 percent increase in the actual number of reported Part I crimes; and between 1975 and 1976, there was a smaller increase of 11.2 percent. A substantial decline is demonstrated between 1976 and 1977 at 3.6 percent with a slight increase between 1977 and 1978 at 3.8 percent.

There are several indicators which could account for the slowing increases 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 60 illustrates the clearance rates for 1974 through 1978 by the APD for Part I crimes.

TABLE 60

CRIME CLEARANCE RATES

Part I Crimes	1974	1975	1976[a]	1977[a]	1978[c]
Murder	100.0%	91.7%	41.1%[b]	66.7%[b]	81.3%
Rape	21.7	22.1	13.0	11.8	9.9
Robbery	17.7	12.9	19.2	15.9	12.8
Aggravated Assault	44.4	38.5	37.1	39.2	35.5
Burglary	10.2	8.8	10.4	8.0	10.2
Larceny	22.4	19.6	21.3	16.2	27.9
Vehicular Theft	7.4	7.1	4.8	5.1	7.9

[a]Capt. Weaver, March 6, 1978

[b]Low percentage due to low general frequency

[c]Capt. Christianson, February 22, 1978

Table 61 gives the loss and recovery rate of stolen property for 1974-1978.

TABLE 61

PROPERTY LOSS AND RECOVERY RATE EXCLUDING MOTOR VEHICLES

Loss/Recovery	1974	1975	1976[a]	1977[b]	1978[b]
Loss	$1,053,419	$1,957,346	$1,455,347	$2,743,907	$2,821,657
Recovered	60,369	79,284	122,444	229,154	320,314
% Recovered	5.7%	4.1%	8.4%	8.3%	11.4%

[a]Capt. Weaver, March 6, 1978

[b]Capt. Christianson, February 22, 1979

Current Issues.

- Areawide Police Service. On October 4, 1977, Proposition 8 was placed before the Anchorage voters for approval of area-wide police service. Areas which passed Proposition 8 included Muldoon, Sand Lake, Eagle River, and Oceanview (see figure 3) However, there are political problems developing with the annexation of the Eagle River/Chugiak area. Petitions have been circulated to withdraw the newly acquired community from the jurisdictional control of the APD, and it is becoming apparent that the service area will have an opportunity to revote on the issue in the October 1979 election. This presents tremendous complications for acquisition of new personnel. It also sets a somewhat poor precedent for the status of future annexations. The overriding implication is that after annexation the APD could plan and budget for additional workload and be ultimately faced with a withdrawal of a newly acquired service area. Until the population increases sufficiently to stabilize a somewhat shakey voting margin, the APD will continue to be plagued with uncertainty in the annexation process.

- Manpower. At a minimum, the APD would like to maintain the 1979 ratio of 1.79 sworn officers per 1,000 in the population (includes trainees and newly acquired areas through Proposition Eight). However, in 1978 the department received 68,822 calls for service which amounts to approximately 188 calls per day, creating somewhat of a strain on current manpower capabilities.

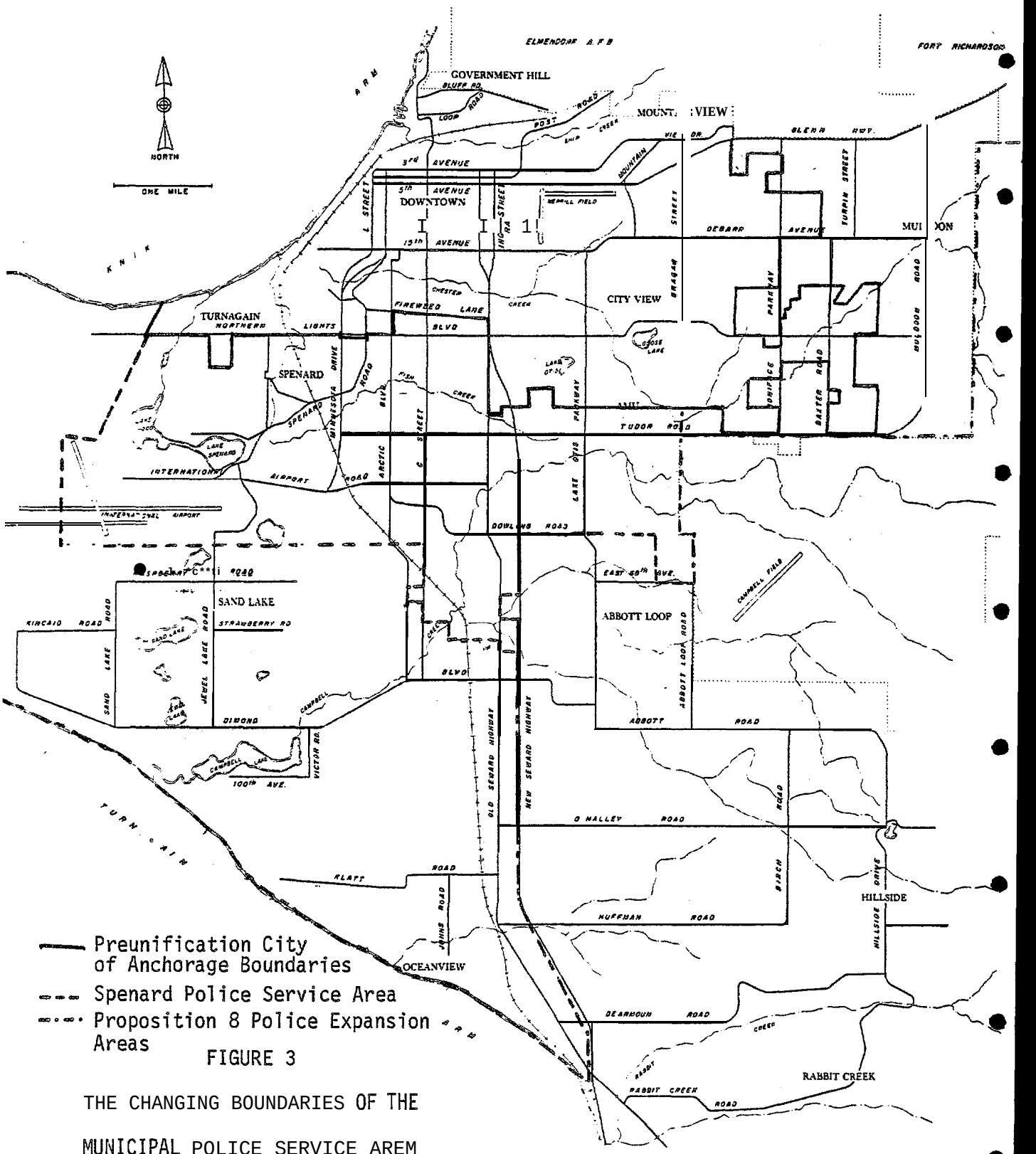

FIGURE 3

THE CHANGING BOUNDARIES OF THE

MUNICIPAL POLICE SERVICE AREM

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The department would like to see additional manpower to supplement the force. However, budget constraints make this a difficult goal to achieve.

- Clearance Rates - Part I Crimes. Comparing Anchorage to the national average, Anchorage clears less Part I crimes specifically 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. 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 accommodate those remaining areas voted into the municipal police jurisdiction by Proposition 8, an additional 33 officers will be trained and available by mid-June 1979. This includes 21 officers presently receiving training and an additional 12 officers planned for the academy beginning in mid-April. (Gorski, Community Contact, 1979e).

To house offenders, the Municipality presently utilizes the state jail system, reimbursing on the basis of each individual case. Presently, the state's holding facilities are characterized as overcrowded and inadequate. The downtown Sixth Avenue jail is presently held to 80 criminals by court order. However, in the fall 1978 election, the voters approved a $12.3 million bond issue for construction of a new facility. According to the State Correction Division, this facility will house 80 to 96 beds, thereby doubling the pretrial capacity.

There is definite need for the APD to obtain their own computer system. Currently, they are sharing computer time with other municipal agencies, and this present setup has proved inefficient for their needs. The department does plan to install a computerized phone system which will display the address of the party who calls in an emergency 911 network. This information can be cross-referenced to

determine the nature, if any, of prior visits to the address. The new system is designed to work regardless of whether the party's line becomes disconnected. Ultimately, the department would like to computerize high crime hours, time of year, frequency and location of crimes to better plan patrol procedures in the high crime risk areas (Gorski, Community Contact, 1979e).

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).

Alaska State Troopers

Introduction. Although the Anchorage Police Department has jurisdiction over most of the Municipality, the Alaska State Troopers continue to provide law enforcement services to the peripheral areas. C Detachment of the Alaska State Troopers presently patrols for approximately 18,942 people within the municipal boundaries (Population estimate, Anchorage Urban Observatory, May 1979).

The detachments actual jurisdictional boundaries extend from the Knik Bridges south to Portage. To serve this area, C Detachment employs 18 patrol personnel with a total of 26 commissioned troopers. The troopers operate with single man units engaging three to five units on duty per shift. In addition, C Detachment is a training center for the. State of Alaska and, as a result, fluctuates in the number of available patrol personnel (Gorski, Community Contact, 1979c) .

Presently, the ratio of patrol personnel is .10 per 1,000 in the population. In addition, the ratio of total commissioned officers to the population still receiving law enforcement services after the completion of annexation through Proposition 8 is 2.0 per 1,000 in the population.

Functions. The troopers' primary functions are oriented toward highway patrol and law enforcement within those areas not annexed into the APD's jurisdiction through the passage of Proposition 8.

Other duties include judicial services such as transporting criminals and criminal investigations.

Incidence of Crime. Using Part I crimes as an index of criminal activity, table 62 shows a breakdown of the frequency-of violent crimes in C Detachment jurisdiction.

TABLE 62

ACTUAL NUMBER OF OFFENCES[a]

Type of Offense	1975	1976	1977	1978[b]
Murder	7	6	4	5
Rape	13	19	32	31
Robbery	49	54	69	55
Aggravated Assault	148	111	146	90
Burglary	488	669	997	732
Larceny	1,278	1,371	1,426	1,193
Vehicular Theft	288	355	466	312
Total	2,271	2,585	3,140	2,418[c]

[a]Bill Brown, March 8, 1978

[b]Dorothy Swearinger, Data Control Clerk, State Trooper Headquarters, Juneau, Phone Conversation of February 26, 1979

[c]Low general frequency due to expansion of APD service territory through the passage of Proposition 8

The average response time, depending on the seriousness of the incident, can range from three to seven minutes depending on location. However, the response time can exceed seven minutes if the location of the call comes from some of the more isolated regions within the troopers' 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 in part is a function of the increase in population density within the troopers' service area (Gorski, Community Contact, 1978). The decrease experienced in the frequency of Part I crimes for 1978 can be primarily attributed to the acquisition of the State Troopers' territory by the APD due to the passage of Proposition 8.

A major function of the Alaska State Troopers is highway patrol. Table 63 indicates total number of responses to traffic accidents between 1976 and 1978.

TABLE 63

RESPONSE TO TRAFFIC ACCIDENTS

Year	No. of Responses
1976[a]	2,074
1977[a]	2,092
1978[b]	1,469

[a]Bill Brown, March 8, 1978

[b]Sgt. Pete Heddle, February 1979

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 through 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 period, such as holiday seasons, the Alaska State Troopers have utilized air patrol to increase the effectiveness of their traffic enforcement.

State Spending. Funding for the Alaska State Troopers is provided through state revenues. The 1979 preliminary budget for C Detachment is $1,970,000. Actual expenditures for 1978 were $1,918,239. To field one sworn officer, the cost to the state is $67,300 (includes training) (Gorski, Community Contact, 1979b).

Current Issues and Planning. With areawide police service becoming more predominate, law and local traffic enforcement activities will decrease and emphasis will be placed on highway patrol. Law and traffic enforcement will still be provided to those areas within the municipal boundaries not receiving APO protection.

There has been tentative discussion to increase the traffic patrol for the detachment, although no firm plans have been instigated. In actuality, the expansion of the municipal police force has had a positive impact on the troopers by lightening their workoad and, thereby, increasing their effectiveness in the areas mentioned above.

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], 1970).

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 Anchorage 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 Operations, 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 4 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 204 personnel including administration.

The Emergency Medical Services Division has five medic units with 36 personnel on staff including administration. The function of the division is to reduce injury and loss of life in emergency situations with on-site aid by trained medics.

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

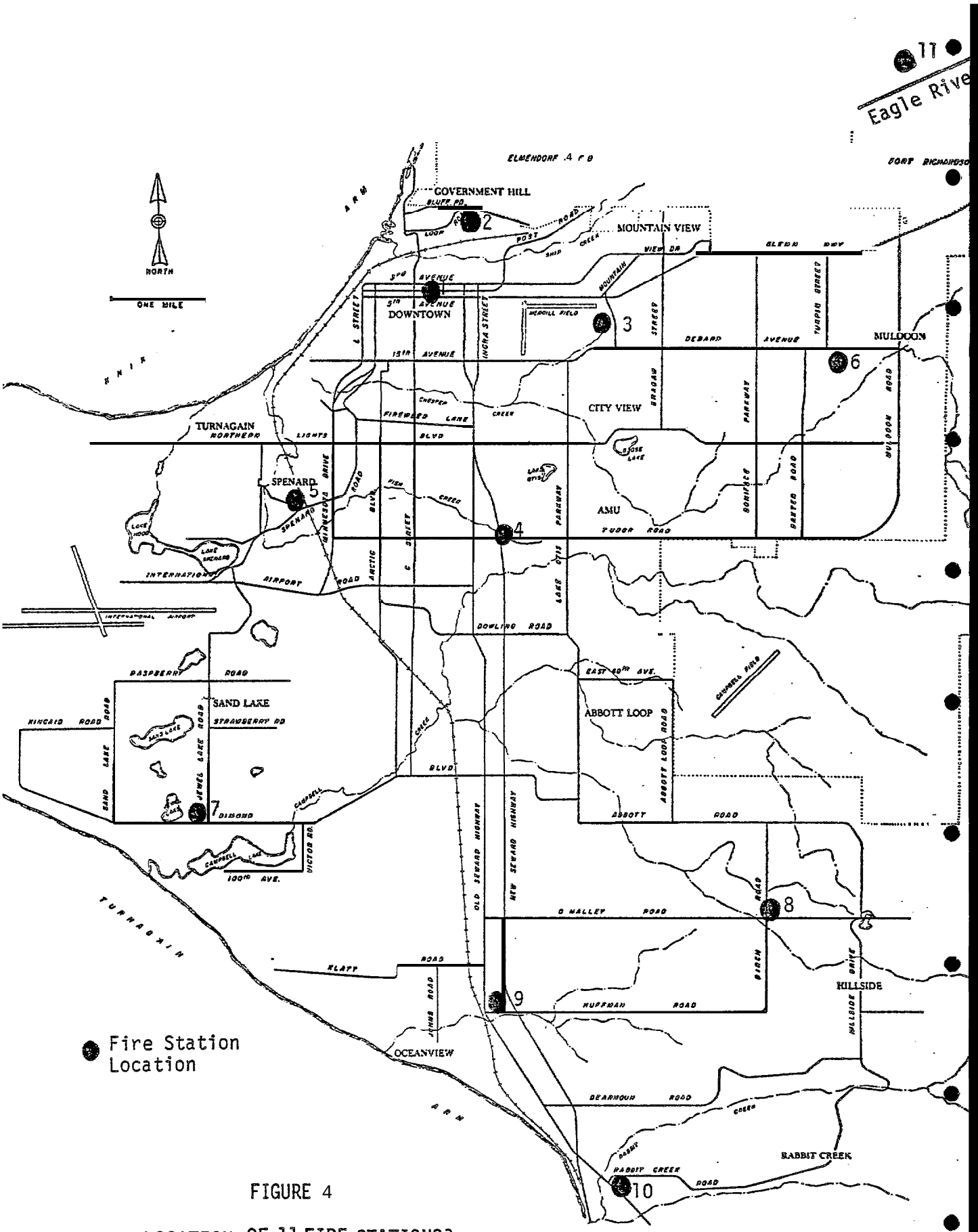

FIGURE 4

LOCATION OF 11 FIRE STATIONS[a]

[a]J. Franklin, Deputy Fire Chief, Anchorage Fire Dept., March 2, 19

which limited or permitted the spread of fire. Through media and local presentations, the division engages in public education on the subject of fire prevention (Hitchins, 1977). Fire Prevention staffs 12 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 10 personnel.

In addition, a clerical staff of five provides general support to the department.

"Fire and Emergency Services Profile

The statistical data and organizational information for the remaining sections were obtained from a personal interview with J. Franklin, 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 64 shows the frequency of fires and rescue responses from 1975 to 1978.

TABLE 64

FIRE AND RESCUE OPERATIONS Responses

Year	No. of Fires
1975	4,508
1976	4,634
1977	4,793
1978	4,305
1979	4,209

[a]Gorski, Community Contact, 1978d.

Between 1977 and 1978, there was a 10.2 percent decrease in the number of fires to which the department responded. This reduction was the result of a 48 percent decrease in the number of brush fires due to abnormally wet weather.

The leading causes of fire in 1978 were 1) careless smoking with 156 incidence; 2) children playing with matches and candles 104 incidences; 3) defective or overloaded electrical circuits 99 incidence; and 4) arson 98 incidence.

For 1977, the average response time within the service area was 4.48 minutes. This was reduced below a goal of 4.0 minutes in 1978 to 3.23 minutes.

Approximately five percent of the F-ire 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 65 illustrates the number of calls to which the Medic Division responded from 1975 to 1978.

TABLE 65

MEDIC Responses

Year	No. of Responses
1975	7,376
1976	8,346
1977	9,177
1978	9,314
1979	9,354

[a]Gorski, Community Contact, 1978d.

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 unit. The types of calls the medics responded to in 1978 are as follows: 1) illness (no accident involved), 3,234 incidence; 2) auto accidents, 740 incidence; 3) other accidents, 458 incidence;

4) gunshot wounds, stabbings, and assaults, 319 incidence; 5) home accidents, 193 incidence; and 6) indication of suicide, 141 incidences. Of the 9,314 responses by medic units, 5,585 or 60 percent were actually transported to a medical facility.

Funding

The 1979 budget for the Anchorage Fire Department is $16.5 million. Funds are provided through state revenue sharing, local taxes, and miscellaneous revenue sources (Gorski, Community Contact, 1979d).

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 major 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 $9,600 loss per capita versus the national figure of $4,500. Even considering the cost of living differential, Anchorage was above the national average. The goal for 1978 was a 15 percent reduction in the amount of suspicious arson, and this goal has been achieved.

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 Plan 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 current ratio of the total force to the population is 1.61 personnel per 1,000 (excludes the communities of Girdwood, Chugiak, and the military bases). 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, Planning Dept., 1977c)

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 facilities, programs, and activities are provided by the Municipality's Department of Cultural and Recreational Services. That department maintains facilities and coordinates services involving libraries, the museum, local parks and trails, community schools, and community centers. 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 comes largely in the form of grants to the Municipality (for libraries, museum, community education, etc.) and as grants and endowments to private nonprofit 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,. the Heritage Conservation and Recreation Service 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

Leisure activities can be divided into categories, i.e. parks and recreation, libraries, museum, the arts, and youth programs.

Parks. The Parks and Recreation Division of the Municipality of Anchorage includes four sections: Park Operations, responsible for parkland and facilities maintenance; Recreation, coordinating activities at the school swimming pools and municipal beaches and activities for the handicapped, etc.; Community Schools/Programs, directing the community schools and community centers' activities; and Park Capital Programs, in charge of parkland acquisition and parkland facilities/development.

The Eagle River/Chugiak Recreation Service Area policies are established by the Eagle River/Chugiak Recreation Board of Supervisors under a recreational powers agreement. The Girdwood Park Operations Service Area is advised and assisted by the Girdwood Board of Supervisors regarding park-related efforts.

- State Parks. The State of Alaska, Division of Parks, serves recreational needs through the provision of state parklands and outdoor recreation services. The 200,405 hectare (495,000 acre) Chugach State Park is one of Anchorage area's primary recreational assets. Grant awards for parkland acquisition and development and community education are made through the

state to supplement local government financing. Major federal funding for local parkland acquisition and development is the Land and Water Conservation Fund of the Heritage Conservation and Recreation Service, Department of the Interior.

- Local Parks. The Chugach National Forest, maintained through the U.S. Forest Service, contains 2,020 square kilometers (780 square miles) located within the Municipality. Although not easily accessible, Lake George National Monument is also located within the Municipality.

Within the Anchorage Bowl area there are over 1,563.96 hectares (3,862.98 acres) of parkland. Outside the metropolitan area there are 1,776.5 hectares (4,388 acres) of parks. The total accessible parkland equals 3,340.48 hectares (8,250 98 acres) in 101 parks and areas (Municipality of Anchorage, Dept. of Cultural & Recreational Services, 1979). The size, type, and proprietary status are described in table 66 below:

TABLE 66

PARKLAND Inventory

	# 0-F Parks	Type of Park	# of Hectares	# of Acres
Municipal	39	Vest Pocket	20.48	48.91
	14	Neighborhood	49.87	123.88
	12	Community	224.16	553.68
	2	Large Urban	79.82	197.15
	5	Regional	715,61	1,767.55
	9	Special	245.04	605.24
	6	Conservation Areas	106.89	264.01
	14	Open Spaces	130.87	323.26
	3	Regional (Outside Metropolitan Areas)	1,776.52	4,388.00
State	1	Accessible Wilderness	200,404.86	495,000.00

[a]Don Shiesl, Dept. of Cultural and Recreational Services, Municipality of Anchorage

- Paths and Trails. A trail plan, including bike, hiking, skiing, dog sledding, and other trails has been adopted by the municipal government. There are currently approximately 322 kilometers (200 miles) of ski/bike paths within the Anchorage Bowl area (municipal - bikeways, 67 kilometers [73 miles]; ski trails, 105 kilometers [65 miles]; snow mobile, eight 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 government by 1982. Trails are of great importance to Anchorage residences, supporting both winter and summer activities.

Recreation. Major recreational programs offered by the Municipality of Anchorage are as listed below:

- Community schools
- Summer elementary playground programs
- Special recreational events for handicapped
- Swimming programs at school pools
- Intramural athletics
- 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 major indoor ice rink facility and two roller skating rinks, five health spa/handball court facilities, one curling gym, and many tennis courts, outdoor basketball courts, picnic areas, etc. The Ben Boeke Ice Arena currently houses two rinks but has a design capacity of four rinks. Residents also have access to two major downhill ski areas and four smaller ski hills.

  Additional recreational facilities available within the Municipality include those mentioned in table 67, below:

.TABLE 67

MUNICIPAL RECREATION FACILITIES[a]

Type of Facility	Number of Facilities
Hockey Rinks	5
Public Rinks[b]	92
Ski Hills	3
Sledding Hills	2
Snow Machine Areas	1
Tennis Courts	60
Bowling Green	1
Baseball Diamonds	14
Outdoor Basketball Court	3
Golf Course	1
Softball Fields	16
Outdoor Volleyball Courts	2
Camper Parks	2
Football Fields[b]	9
Swim Beach	3
Swim Pools	3
Soccer Fields	4
Boating Lagoon	1
Day Camp	1
Tracksb	9

[a]D. Shiesl, Dept. of Cultural & Recreational Services, Municipality of Anchorage

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

- Recreational Events. Of the many communitywide recreational events held locally, the following five are most popular and well attended:

  - Fur Rendezvous

    Anchorage Symphony Orchestra

  - Alaska Repertory Theatre

  - Festival of Music

  - Open Aire Pleasure Faire

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

  - Girl and Boy Scouts
  - Campfire Girls
  - Little League
  - Boys and Girls' Clubs
  - Y.M.C.A.
  - Church Groups

Mus eum. The Anchorage Historical and Fine Arts Museum provides a comprehensive program of exhibits on Alaskan history, Alaskan native arts, Alaska native culture, paintings and other artwork by Alaskans "and worldwide artists, and other contemporary American art. Public support and sentiment for the museum is evidenced by a consistent rise in numbers of guests through the facility. There were 108,000 visitors in 1977 and 126,000 in 1978. Tourists constitute approximately 40 percent of the museum's guests (Municipality of Anchorage, Planning Dept., 1977c) .

Libraries. The Municipality's Library Division coordinates services at the Loussac Library and six branch libraries. Libraries are also well attended and supported by the local public. Most heavily used are the Loussac Library (39 percent of public use) and the University Consortium Library (11 percent).

Cultural Activities. Art shows and exhibits, theaters and plays, and music concerts are strongly used in Anchorage. Local residents support major adult and youth symphonies, chamber ensembles, community chorus and madrigal groups, male and female barbershop quartets, classical and modern performing dance companies, and many other civic art and theater groups. The visual arts and crafts are a customary part of most Alaskan's leisure time. Anchorage supports over 31 art galleries and artifact shops, and its 12 different artists groups provide shopping mall exhibits on almost a weekly basis. These forma? and fairly popular organizations are supplemented by a large number of smaller, independent clubs and groups, which focus on the enjoyment and enhancement of cultural activities.

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 divisional work programs for implementation action.

Capital Improvement Program (CIP)

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

Library. Approximately $17 million will be spent through 1984 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 $125 per 92.90 decimeters (square foot). The library is to be funded by a combination of general obligation bonds and state funds based on an October 1979 vote approval.

Bike Trails. Approximately $7.5 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 $16.8 million in general obligation bonds and match 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 $14.1 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, proposes 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;
- implementation of 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; and
- construction of a new headquarters library.

Many of the proposed acquisition and development activities are currently included in the Department of Cultural and Recreational Services Capital

Improvements Program 1979-1986. Adoption of any of the proposed projects 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 examination 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.

As part of a general upgrading of municipal recreational facilities, the Mayor of Anchorage in December 1979 proposes a multi-million dollar plan called “Project 80’s”. Projects in the proposal include a down-town civic center, performing arts complex, centrally located sports facility, small boat harbor, and “old town” tourist site. The work on this package is a coming together of the local government, Breakthrough, Chamber of Commerce, and Convention Bureau.

The financing of these projects would come from state revenues, private financing and local bonding. A $55 million request will be made to the state legislative in the 1980 session to finance the performing arts, civic, and sports facilities. All of these projects and others in the “Project 80’s” would substantially alter the leisure infrastructure of the community.

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, Planning Dept., Physical Planning Div., 1977).

Figure 5 delineates the boundaries of the Municipality. Those areas suitable for urban development are 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 no developmental value or should not be developed for 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 of the Anchorage International Airport. Still other areas are in public ownership for recreational use or for future expansion of other public facilities.

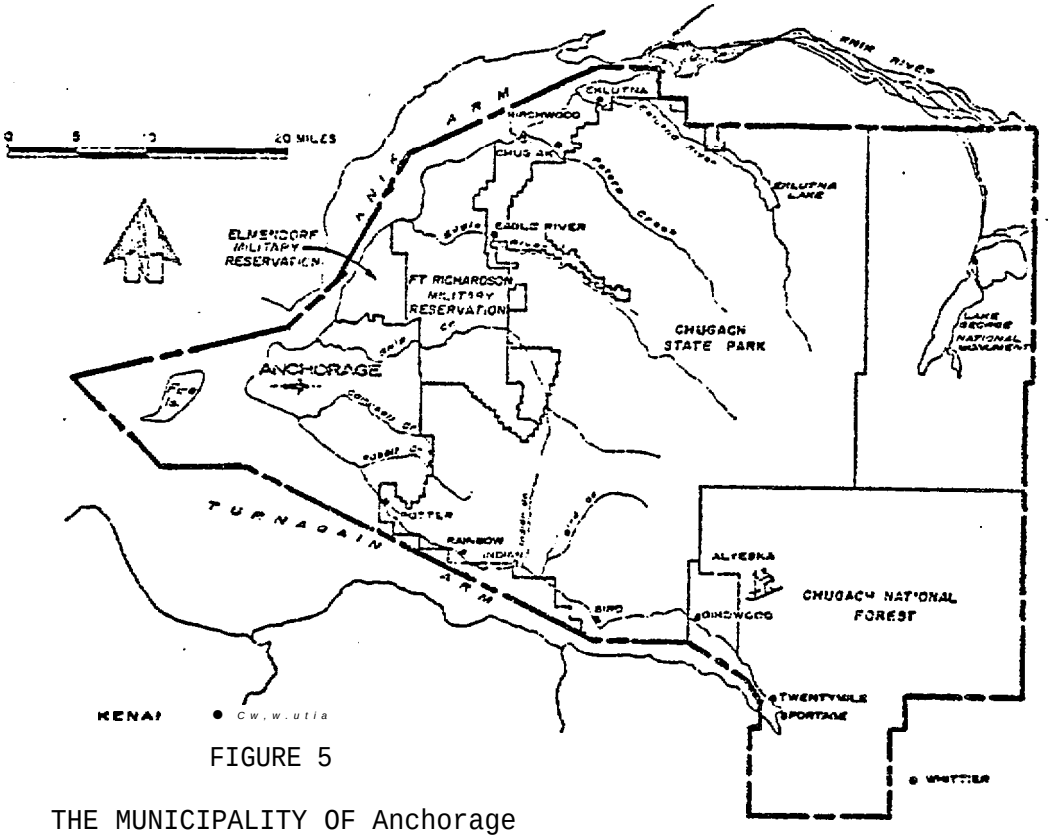

FIGURE 5

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, Planning Dept., 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 contributedto 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, and an 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 Transporation 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 Transpiration Studies (1963, 1968-1969) (Greater Anchorage Area Borough Comprehensive Pl arming and Technical Services Division ,1974).

A Comprehensive Development Plan was passed as an ordinance on July 20, 1976 (Municipality of Anchorage, 1976 b). Comprehensive plans were also drawn up for the outlying areas of Eagle River - Eklutna (Municipality of Anchorage, 1976a) and Girdwood. Also special plans for Merrill Field and other activity centers were developed (Municipality of Anchorage, 1979). By the mid-1970's, urban sprawl had 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, Comprehensive Planning and Technical Services Division, 1974).

Figure 6 presents the present land use classifications, and figure 7 indicates the intensity of residential development.

Table 68 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 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.

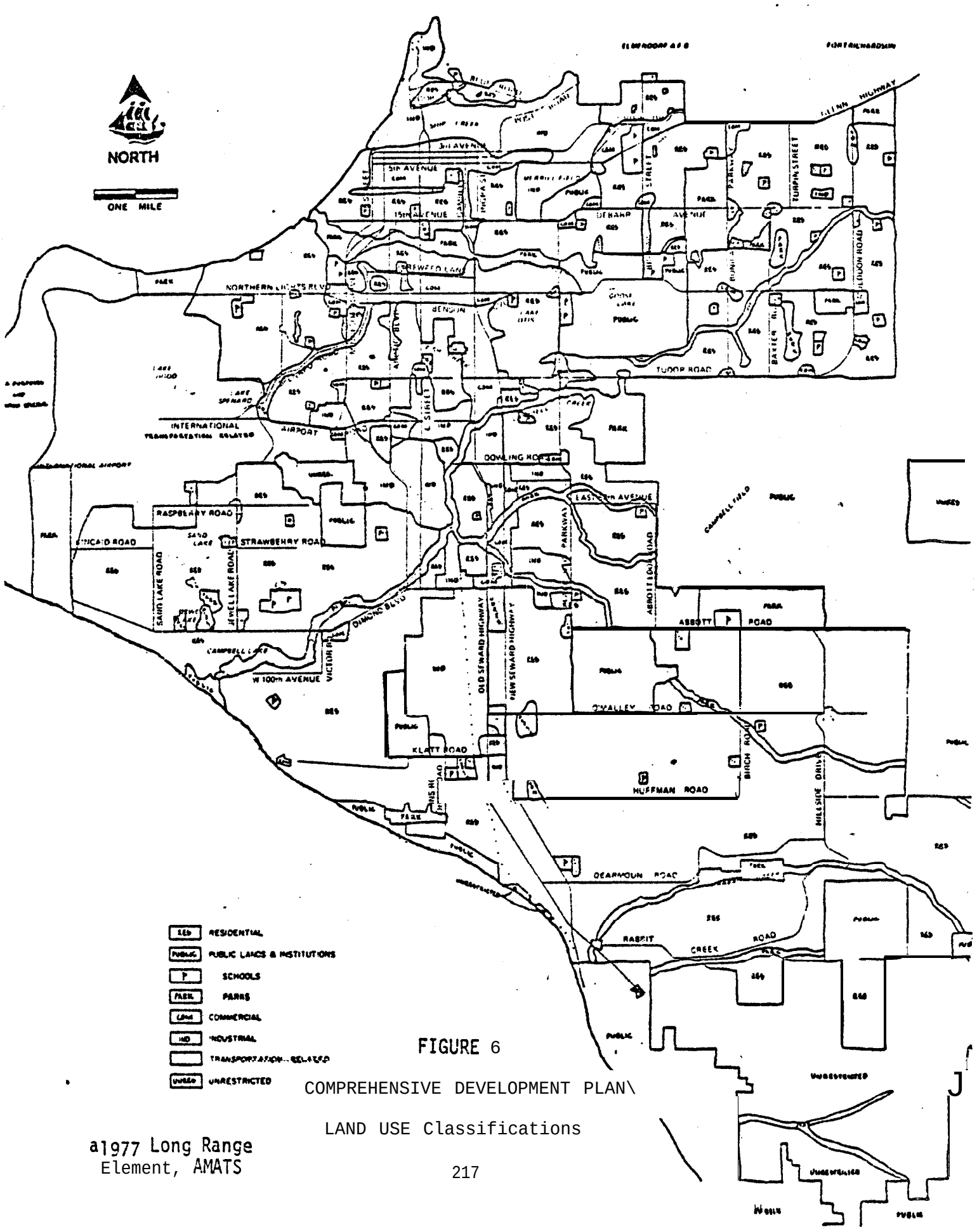

FIGURE 6

COMPREHENSIVE DEVELOPMENT PLAN\

LAND USE Classifications

a1977 Long Range
Element, AMATS

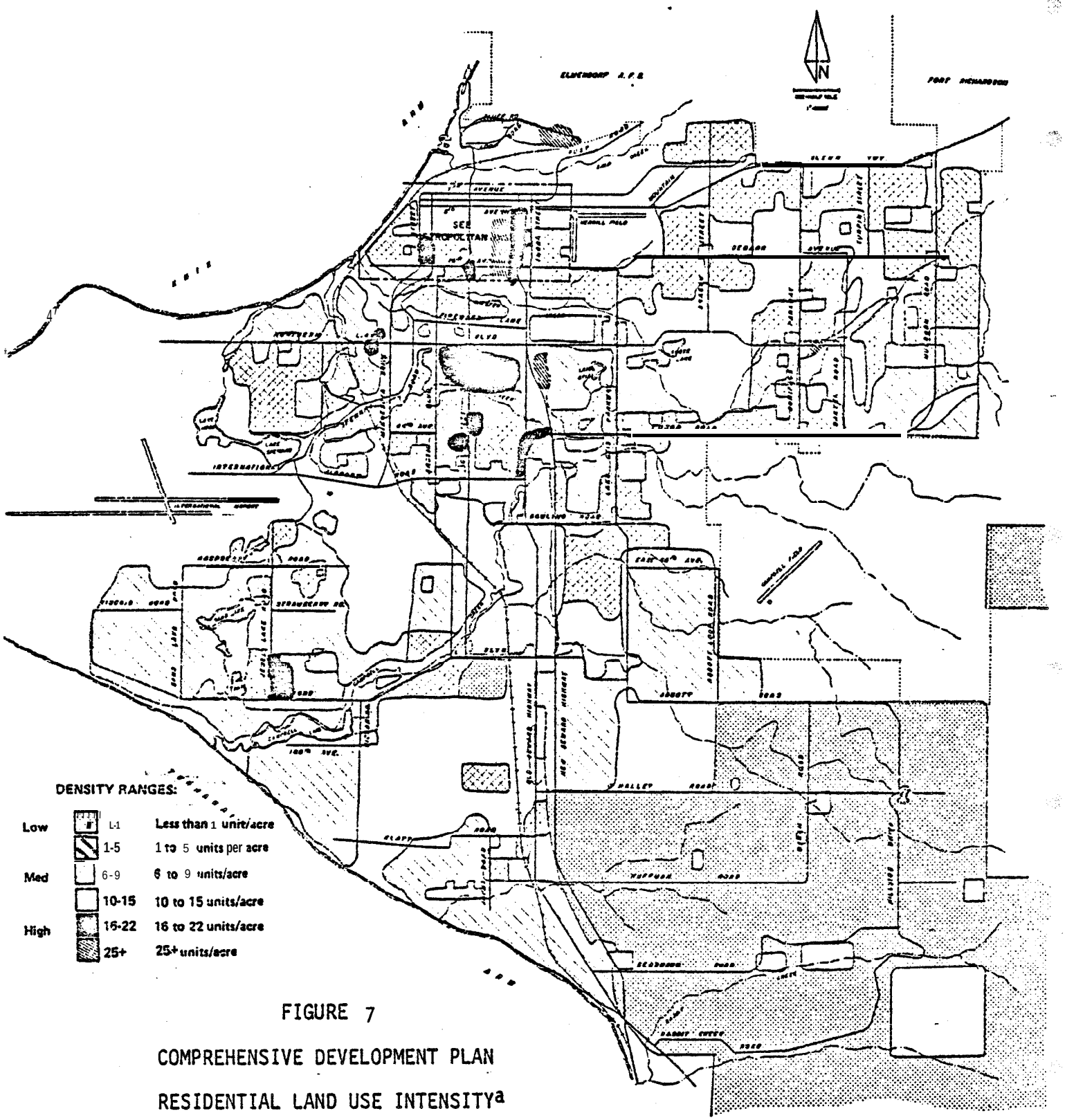

FIGURE 7

COMPREHENSIVE DEVELOPMENT PLAN

RESIDENTIAL LAND USE INTENSITY[a]

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

TABLE 68

SUMMARY OF 1970, 1975 AND 1995 LAND USE

Land Use Category	1970[a] Hectares (Acreage)	1970[a] Percent of Developed Land (Not Inc.Mil.)	1975b Hectares (Acreage)	1975b Percent of Developed Land (Not Inc. Mil.)	1995b Hectares (Acreage)	1995b Percent of Developed Land (Not Inc.Mil.)
Residential	2,187 (5,404)	28.0	4,705 (11,627)	38.1	6,178 (15,266)	30.2
Commercial	564 (1,393)	7.2	781 (1,930)	6.3	3,054 (7,546)	14.9
Industrial	204 (504)	2.6	229 (, 567)	1.9	399 (, 986)	2.0
Public/Semi-public	804 (1,987)	10.3	.,021 (2,523)	8.3	.,182 (2,920)	5.8
Water & Recreation	792 (1,956)	10.1	990 (2,446)	8.0	3,049 (7,535)	14.9
Highways	1,672 (4,131)	21.4	2,674" (6,608)	21.7	4,713 (11,645)	23.1
Transportation, Communication, Utilities	1,591 (3,932)	20.4	1,943 (4,800)	15.7	1,853 (4,578)	9.1
Military	35,253 (87,110)	---	35,253 (87,110)	---	35,253 (87,110)	---
Vacant	22,213 (54,888)	---	17,683 (43,694)	---	9,599 (23,719)	---
TOTAL AREA	'65,279 (161,305)	---	65,279 (161,305)	---	65,279 (161,305)	---
TOTAL DEVELOPED	7,813 (19 ,307)	100.0	12,344 (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 30.5 percent from April 1970 to July 1975, while the population rose 27.6 percent. Housing shortages began in the summer of 1974 and a severe level in 1975 when the overall housing vacancy fell to one percent. While population pressure began to ease in 1977, residential building remained active, especially in multiunit structures (a 33.7 percent increase between July 1975 and July 1979). The single family unit stock has grown at a slower rate (an 18.5 percent increase between 1976 and 1979) which has resulted in an over supply of apartments and condominiums. It was not until late 1978 and 1979 that housing construction slowed dramatically under the weight of excess units.

Overview of Housing in the 1970's[1]

During much of its history, Anchorage's housing stock has been characterized as poor and in short supply. Anchorage acquired housing stock slowly with a major source of new units coming from the military. The devastating earthquake of 1964 was both a disaster as well as an economic benefit. Federal dollars generally increased business and contractor activity and supported rebuilding a sizable part of the housing stock (Wangsness, 1977).

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[1] This section is largely based on Ender, et. al Housing & Resource Development: An Analysis.

By 1970, new construction was largely keeping up with demand with 33 percent of the civilian stock under five years old, and less than five percent more than 20 years old. Vacancy rates for multi-family housing were at acceptable levels of five to six percent, and single family and mobile homes (largely owner-occupied) reflected a lower two percent vacancy rate.

The 1969 oil lease sale triggered a short-lived boom. Land prices soared and many businesses changed hands without much actual commercial expansion. In response to this activity, housing construction increased between 1970 and 1972 adding an average of 3,000 units a year to the housing stock (see table 69). This construction occurred despite the fact that the speculative boom of the 1960's deflated in late 1970 and early 1971, forcing a number of businesses into receivership and bankruptcy.

The delay in exploration and pipeline construction began affecting population growth. Anticipatory in-migration swelled the population rapidly from 1970 to 1972 keeping up with the boom in housing construction. Vacancies stayed low as population growth averaged 6.9 percent. It was not until 1972-73 that in-migration decreased thereby slowing population growth dramatically (3.6 percent). The substantial residential construction boom from 1970 to 1972 finally caught and surpassed demand in the multifamily market. Apartment vacancy rates which stood at 6.6 percent in April 1971 reached 10.6 percent by April 1972 and soared to 14.3 percent in January 1974. (See tables 70 and 71) The rental market was clearly suffering from the lack of oil activity which had been anticipated. The in-migration

TABLE 69[c]

HOUSING UNITS AUTHORIZED BY BUILDING PERMITS

Locality Anchorage Area (Municipality of Anchorage)
Annually, 1970-1978; Monthly, 1979

Year	Number of Units					
	Single Family	2 t 0 4 Family	5 or More Family	Mobile Homes[a]	Total Units	Coversions & Demolitions[b]
1970	1,400	1,6490		N/A	3,000	-59
1971	1,385	1,665		N/A	3,050	-39
1972	1,445	1,506		N/A	2,951	-63
1973	1,402	684		N/A	2,086	-54
1974	1,798	1,024		N/A	2,822	-41
1975	1,827	2,183		N/A	4,010	-12
1976	1,269	2,216		453	3,938	-46
1977	1,955	1,070	1,432	420	4,877	-22
1978	1,492	751	675	371	3,289	-12
1979	588	270	369	232	1,469	+10
Jan	7	3	41	25	77	+ 1
Feb	10	0	0	4	14	0
Mar	31	8	132	10	181	0
Apr	60	31	27	29	148	+ 1
May	134	48	100	21	303	0
Jun	129	70	27	16	242	0
Jul	62	52[c]	0[e]	22	137	+ 1
Aug	66	20	14	20	122	+ 2
Sep	25	18	0	25		+ 3
Ott	50	16	28	36	1:;	+ 2
Nov	14	4	0	12	30	0
Dec	0	0	0	12	12	0

[a] This is suppose to be net additions to mobile home inventory [new or used), but appears it is just a new utility connects number without subtracting out the disconnects. N/A = Not Available.

[b] Conversations may be plus or minus; if plus, these are included in total units beginning in 1979.

[c] Economist, Dept. of Housing and Urban Development.

Note: Effective January 1, 1976, all building permits were issued by the Municipality of Anchorage as a result of the merger of the City of Anchorage and the Greater Anchorage Area Borough on September 15, 1975.

All land use permits issued for 'Eagle River, Chugiak, Girdwood, and Portage areas (where building permits are not required) are included in single family type from July 1976 through April 1976; beginning in May 1976, they are reported by number of units of each type (single family, multifamily, and mobile homes).

TABLE 70

VACANCY RATE FOR ANCHORAGE AREA

Type of Residence	April 1970[a]	April 1972[a]	Nov 1974[a]	May 1975[a]	Ott 1975[a]	May 1976[b]	July 1977	May 1978[c]	May 1979[d]
Total Residence	2.9	4.5	3.9	1.0	2.3	1.8	3.6	4.9	9.1
Single Family	2.0	2.6	2.3	0.5	2.0	0.8	1.1	1.3	2.9
Multifamily	4.8	7.6	6.4	2.0	2.9	2.5	6.3	3.3	16.2
Mobile Homes	1.4	2.5	3.0	0.5	1.7	3.3	3.2	2.5	6.3

[a] HUD Postal Vacancy Surveys, Director's Release, October 14, 1975
[b] Anchorage Housing Survey, July 1977
[c] Anchorage Housing Survey, May 1978
[d] Unpublished Postal Survey

TABLE 71

CIVILIAN RENTAL HOUSING VACANCY RATE[a]

Month	1974	1975	1976	1977	1978	1979
March	NA	0.6%	1.5%	6 .9%	13.4%	21.8
June	NA	0.4	1.2	5.0	13.8	22.2
September	NA	0.7	2.4	5.6	14.4	NA
December	3.4%	1.4	6.3	9.0	21.8	32.2

		Low Rental	Medium Rental	High Rental
December	1978	26.8%	16.1%	22.2%
December	1979	45*1%	25.1%	18.1%

[a] Joint Military Housing Referral Office

Data based on sample or rental stock with four or more units

of the transient, temporary population slowed, leaving a surplus of rental units. However, the effect on single-family residences was not the same. Demand was sufficient to keep vacancies in single-faintly housing below three percent. This was true despite the fact that 45 to 50 percent of all newly constructed units were single family.

A partial reason for the jump in multifamily vacancy is that in-migration was divided into unskilled or semi-skilled workers seeking pipeline jobs. The arrival of this segment of the employment force slowed in 1972-73 which culminated in a surplus of multifamily units. On the other hand, professional managerial groups who came to staff the expansion of the growing services, finance, and government sectors were able to maintain a fairly firm single family ownership market.

In 1973 and 1974, the residential construction industry responded to the oversupply of multifamily housing by reducing the number of apartment unit permits taken out from 1,506 in 1972 to 684 in 1973. Multifamily construction in 1974 continued to stay low (1,024 units) while single family construction reached an all time high. The slowdown in multi-family construction came as a response to market conditions seen as early as April 1972. While using hindsight to predict demand, little fore-sight was used in perceiving the consequences of rapid growth due to pipeline construction, As the oil companies increased their exploration beginning in late 1972 and the onset of pipeline activity in April 1974, the housing stock eventually went from a moderate surplus in primarily rental stock to a very tight market among all categories

of housing. Apartment vacancies dropped from 14.3 percent in January 1974 to 7.4 percent in November of that year. By May 1975, apartment vacancies stood at 3.4 percent: about one-half what is considered normal. Things remained at this low level throughout 1975 and 1976. In response to this demand, building activities reached new highs in all types of housing, particularly multifamily, for three succeeding years. From 1975 to 1977 permits were taken out to build 6,901 multifamily units. For the second time in this decade the industry responded in hindsight and built for pre-existing, not future demand. It took until late 1976 for a large number of the newly constructed units to reach the market. However, by this time the crunch of in-migration and pipeline activity had peaked and subsequently begun to slow.

This does not mean a housing crisis did not exist. Local newspaper headlines included such items as "Housing Crisis Grows" and "Area Rent Board Looms." The Alaska Legislature passed "The Emergency Rent Regulation and Control Act" in 1974. This was originally seen as protection for Fairbanks, and Valdez, which were more directly affected by pipeline construction. However, as the market tightened in 1975, rent increases became common. The cost of a one bedroom apartment jumped from $250 per month in 1973 to $350 by January 1976. Two bedroom apartments moved from $300 to $400 during this period.. These" increases occurred due to rent increases in existing stock (especially during the last two quarters of 1974 and first quarter of 1976) and higher rents charged for new units coming into the market for the first time.

The growing shortage of housing to meet the swelling population triggered a number of actions to deal with the problem. In May 1975, the Governor declared a housing emergency in Anchorage. This came on the heels of an urban housing conference sponsored by State Department of Community and Regional Affairs. (Alaska Department of Community & Regional Affairs, 1975). The Governor's action established a rent review board to hear complaints of rent-gouging and excessive rent increases above cost increases. During the first four months of operation the board received 124 complaints. Eighty-nine were dismissed for technical reasons, 35 were actually heard, Of 35 rentals, the full increase was allowed in 26 cases, partially allowed in six cases, and denied in three cases.

Local government action involved the establishment ofa Municipal Housing and Health Referral and Information Office which opened in mid-1975. The office was popular especially among new arrivals in Anchorage seeking housing. During the first six months of operation, the office received 2,678 calls of which 87 percent related to housing. Of the 1,873 calls asking for housing referrals, 35 percent could not be placed due to the shortage of lower cost rental units. It is estimated that the office handled about one-quarter of the rental referral work.

The Municipality also contracted for a housing study in September 1975 to outline the problems, make recommendations, and develop a Housing Assistance Plan (Hitchins, 1976). The study revealed a significant number of people who were having considerable difficulty in acquiring and retaining satisfactory, decent housing. It found that among the

poor, 73 percent were paying more than 25 percent of their income on housing, were twice as likely to live in overcrowded housing, and occupied more than half of the substandard units.

Among the consumers in Anchorage, a number of citizen's groups emerged to address the housing problems. The Alaska Public Interest Research Group (AKPIRG) focused a great deal of its time and resources on the housing issues. AKPIRG was instrumental in setting up the Citizen's Housing Action Coalition (CHAC). CHAC was a coordinating committee of a dozen local groups representing senior citizens, minority groups, the poor, etc. In November 1975, the Anchorage Tenants Union was formed to respond to rent review regulations written by the State Department of Commerce. They charged that state regulation favored the landlord, but their actions were ineffective; and in less than a year, they disappeared.

While the multifamily rental market received a disproportionate share of attention, both the single family and mobile home market suffered from the influx of new residents. Prices within the single family market rose at one and one-half percent per month in the last half of 1975. Because the oil companies used Anchorage as a headquarters location and the community rapidly expanded its service industry and governmental capacity, the demand for owner housing for professional and managerial workers was very high. There was no surplus of single family housing prior to the onset of pipeline construction which only compounded the problem in 1975-76. The topographical/geological and legal constraints limited the community's ability to respond. Anchorage, which

is surrounded by mountains and water, has one-half of its land in the hands of the military leaving only 43,700 acres of vacant land in 1975. Of the 43,700 acres, 79 percent was classified marginal or unbuildable. The competition for land, target for all types of development, drove lot prices up 100 percent in four years, The average sales price ofa single family home in 1973 was just under $50,000. This rose to $58,965 in 1975 and increased by an average of 10.6 percent per annum from 1975 through 1978.

Tine mobile home-market had some of the most serious problems. While mobile homes constituted only about 11 percent of' the stock in Anchorage, they provided ownership opportunities to a large portion of the lower middle class. Since all but 750 units were located in mobile home parks, the flexibility for expansion was limited. Two barriers stood in the way: the first was the restraints on location of parks due to zoning restrictions. The community was very reluctant to allow rapid and unrestrained opportunities for mobile home expansion. Despite the demand, mobile homes were considered an undesirable housing alternative, detracting from the surrounding aesthetics of a community. The second barrier focused on collusion of the biggest dealers who tied in park access and mobile home sales which effectively restrained trade and produced a monopoly in both sales of units and space rental. Space rents also doubled during this period and some tenants charged that services deteriorated especially in older, smaller parks.

Housing was one area that was particular affected by the economic slow-

down. Unprecedented levels of construction continued well after the consequences of pipeline completion were perceived. In 1977, permits for both single family and multifamily units were larger than any other year in history. Construction of single family units increased approximately 54 percent over 1976, and multifamily construction increased 12.9 percent. It was not until 1978 that new starts declined. Multifamily starts fell 35.6 percent, and single family, 23.7 percent. While seemingly severe, this decline merely returned residential building activity to prepipeline level. The supply was still rapidly exceeding demand. Fortunately for the housing market, anticipatory in-migration continued through 1977. That, tied to strength in the economy, was able to temporarily mitigate the overbuilding that had occurred from 1975 to 1977. However, it soon became apparent that the multifamily market was in difficulty. By July 1977, vacancies climbed to 10.7 percent, and jumped to 19 percent by December 1978. By the end of the first quarter 1979 25 percent of the multifamily stock was lying empty. Reduction in total gross income began jeopardizing financing calculated at a seven percent vacancy. Rents began falling $25 to $100, and advertising in the larger complexes talked of a free month with every 12, free moving, and other enticements. A significant development was the large number of landlords who began converting apartments to condominiums. While not large, the competition in the already soft condominium market became fierce. By the end of 1978, 65 percent of the condominiums built or converted in 1978 remained unsold. The single family market has done somewhat better; vacancy rates still are three percent or less but the increases in the average sales price have moderated. In addition, the unsold in-

ventory of new construction for single family and two to three unit structures rose to 44 percent in 1978. The number of sellers tripled from 1977 to 1978 while buyers declined as in--migration slowed. Trading up among existing residents constituted a greater share of the single family market activity in each succeeding year after the pipeline.

In 1978, the rising interest rates, high inflation rates, cost of housing, and a slowdown of income increases made the single family market more difficult to maintain at its previous strength. In 1978, the household income actually declined for the first time. With inflation, this resulted in a real income loss of approximately 15 percent. To alleviate this problem, two actions occurred. First, the number of subsidized interest rate loans increased. Alaska Housing Finance Corporation loans, which run about three percent below FHLMC and FNMA money, rose from 25 percent of all outstanding loans in 1976 to 40 percent in 1978. In addition, the Municipality, in March 1979, sold a $50 million bond package to subsidize home mortgage loans at 8.5 percent. These strategies have succeeded in bolstering the ownership market and maintaining sales primarily at the expense of the rental market. However, the long-term difficulty of rising housing prices remains. It is not uncommon for households to spend 33 to 40 percent of their disposable income on housing. The slowing of the economy and reduced buying power of the average household produces significant future problems. At the end of the first quarter of 1979, 32.4 percent of the single family units on the market had an asking price above $100,000, and 61.4 percent were above $80,000.

The situation in 1979 appears to have deteriorated even further. Vacancies in rentals were sharply up in the low to medium price range with only high priced rentals remaining 18.1 percent. Permits on housing data in 1979 reflect a decline of 58 percent compared to 1978. Most evidence suggests that the housing market continued to worsen in 1979.

To summarize the Anchorage housing market during the 1970's Figure 8 compares supply and demand. These two factors were reasonably balanced until 1973 when the rapid building from 1970-72 exceeded the decreased demand resulting from a slowdown in population growth. The start-up of pipeline construction changed a housing surplus in early 1974 to a housing shortage in late 1974. This shortage continued to early 1977. The rapid increase in housing stock continued well past the pipeline's completion. As an oversupply appeared in early 1978, residential construction was at an all time high. By 1979, the market softened creating a severe rebalance of supply over demand.

The distribution of the housing stock by area is shown on figure g and 10. This can be correlated to the residential intensity map to understand the residential land use patterns.

Figure 11 notes the compound annual growth of residential housing stock between 1975 and 1979. Overall the Anchorage bowl area (excluding Eagle River/Chugiak and Girdwood) experienced a 6.66 percent annual rate of growth and an overall increase of 29.45 percent between 1975 and 1979. The map in figure 11 gives some understanding to the pace and pattern of new construction in the past four years. The most consistent growth occured in southeast and southwest Anchorage.

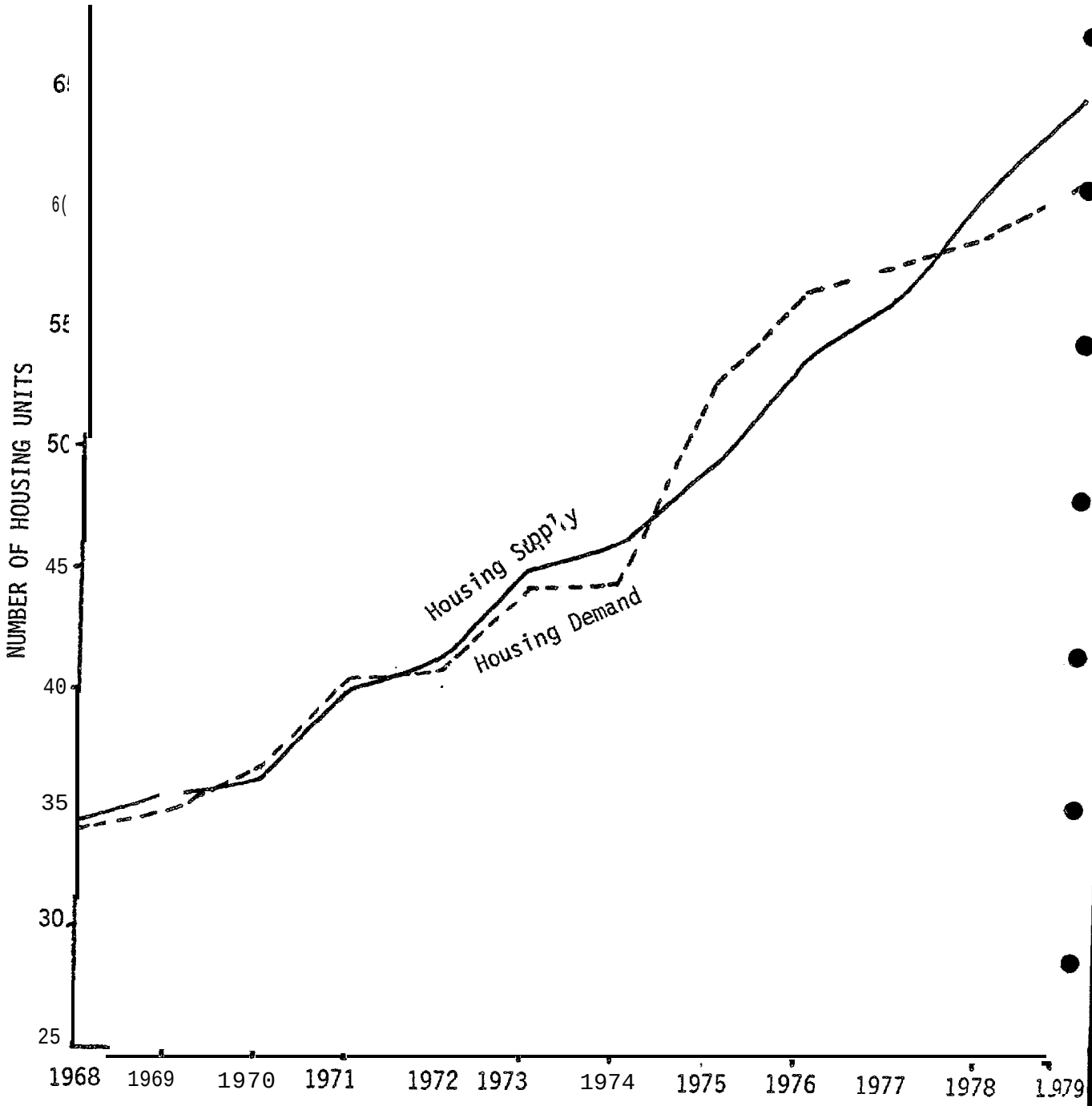


FIGURE 8

HOUSING SUPPLY AND DEMAND ANCHORAGE AREA, 1968-1979

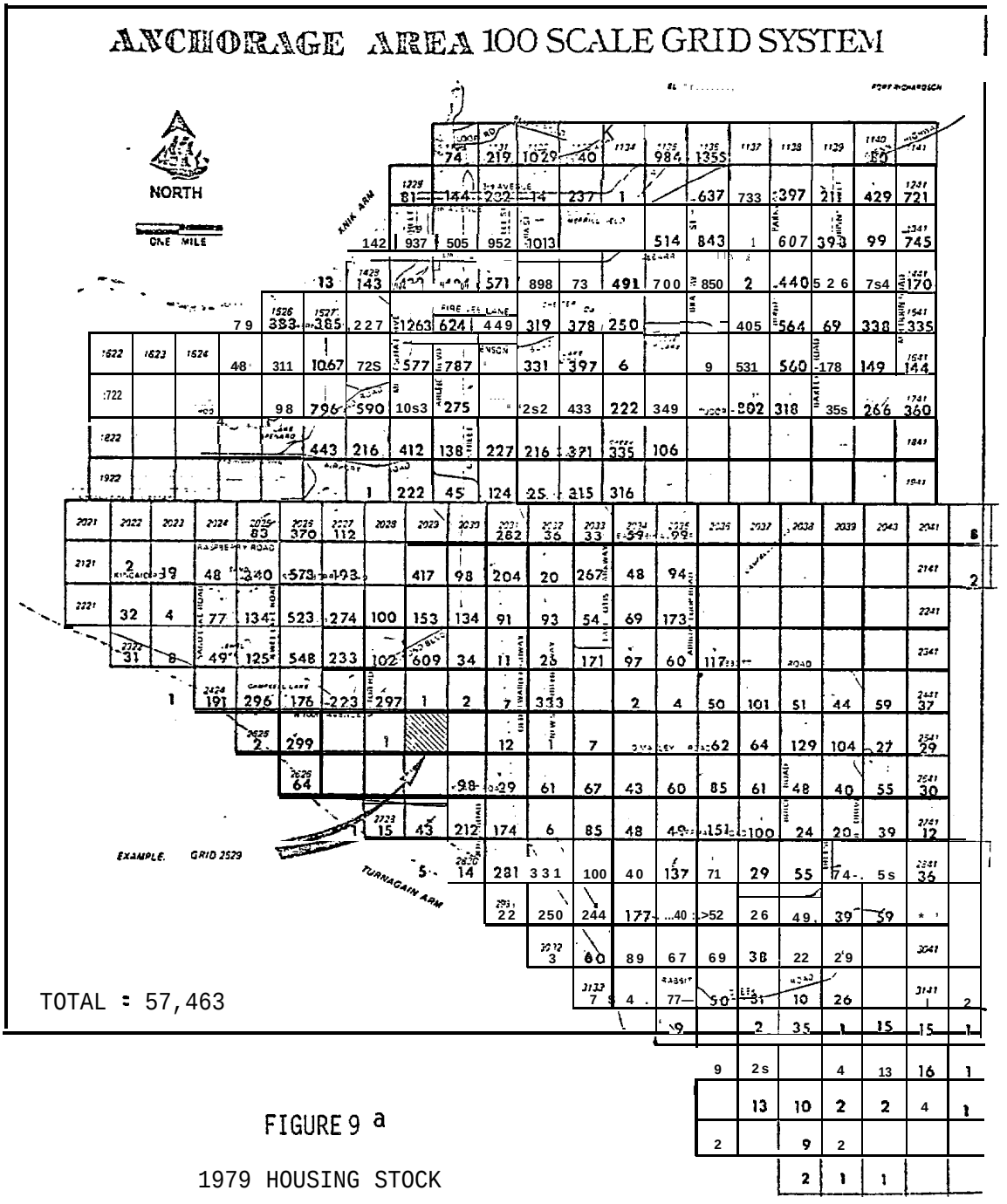


FIGURE 9 [a]

1979 HOUSING STOCK

[a]Municipality of Anchorage, Planning Dept. , Research Section

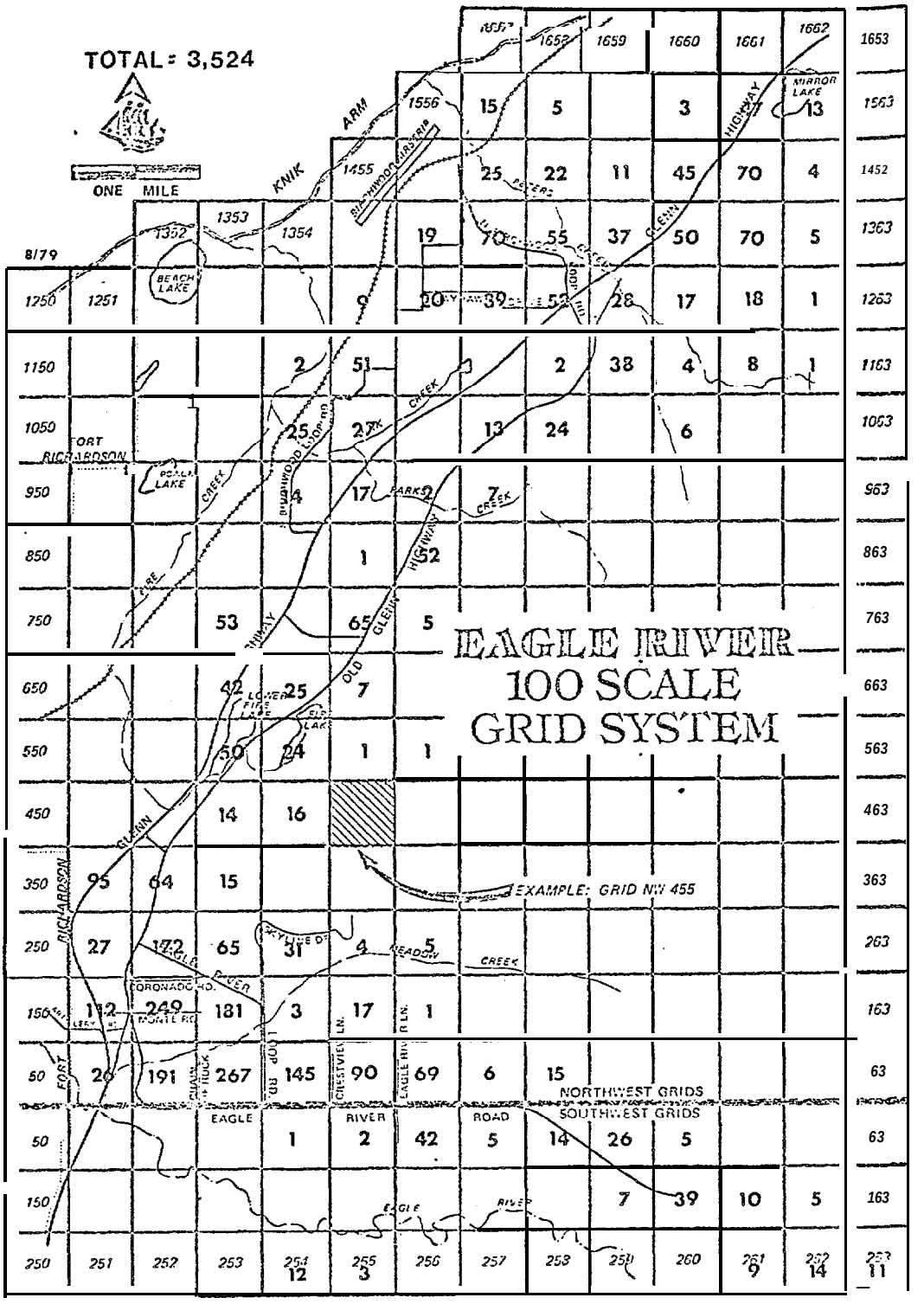


FIGURE 10[a]

1978 HOUSING STOCK

[a]Municipality of Anchorage, planning Dept. , Research Section

HOUSING STOCK

COMPOUND ANNUAL GROWTH

1975-1979

ANCHORAGE AREA 100 SCALE GRID SYSTEM

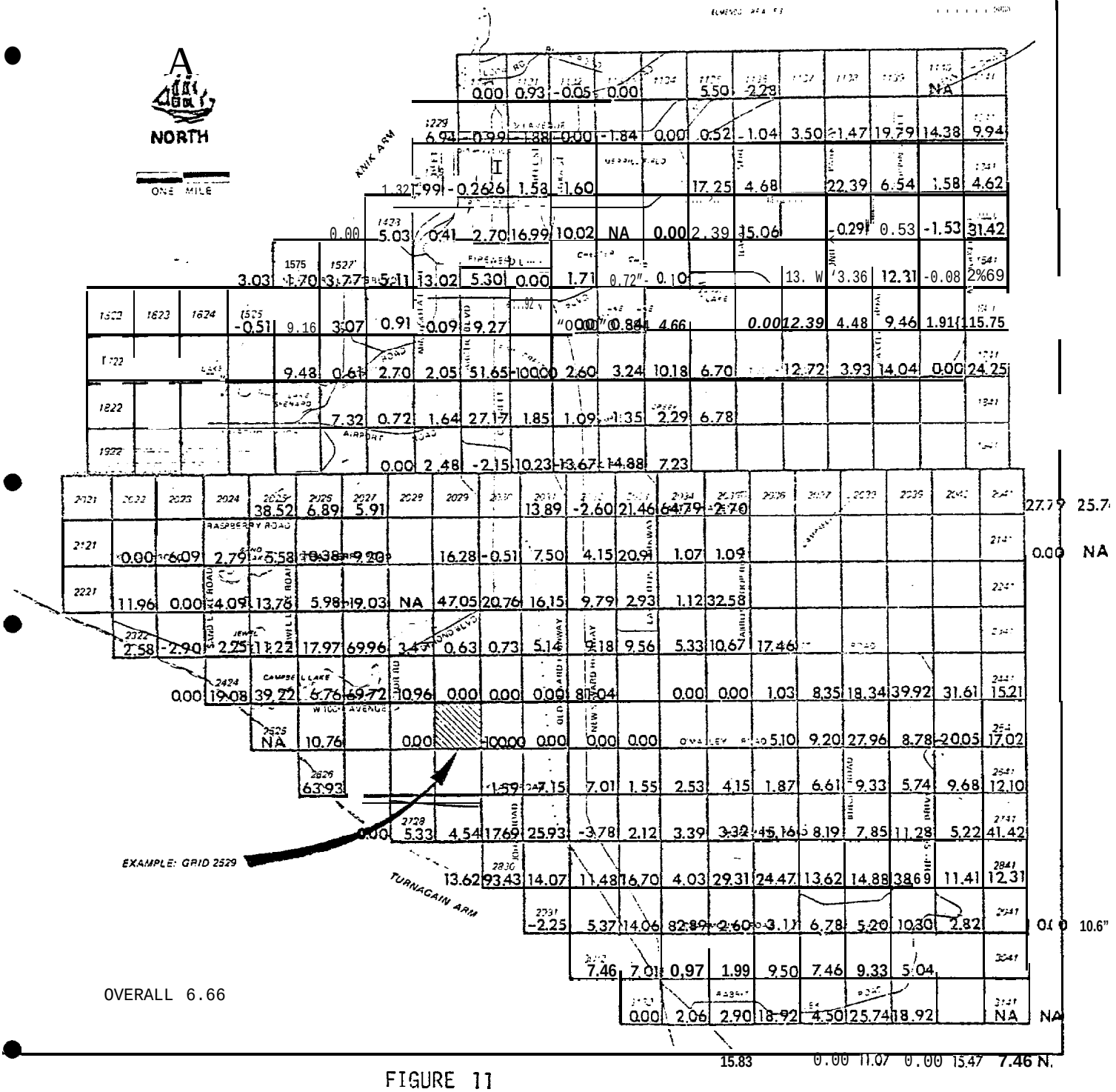


FIGURE 11

HOUSING STOCK, COMPOUND ANNUAL GROWTH

1975-1979[a]

[a]Municipality of Anchorage, ,Planning Department, Research Sect.

In the area south of Dowling Road and east of the Old Seward Highway, about 55 percent of the residential grids showed an increase above the community average. For that area south of Dowling Road and west of the Old Seward Highway, 53 percent of the residential grids increased at a rate above the average. In all areas north of Dowling Road only 26 percent of the residential grids had an increase above the bowl average. Of the increases in the northern half of the city about one-half were largely concentrated east of Bragaw, and in scattered sites, filling in open space or redeveloping sites of higher density.

Housing Type

About 40 percent of the developed land in Anchorage is devoted to residential uses. Table 72 shows the distribution of housing stock. Some questions have previously existed on the actual distribution by housing type. For several years evidence suggested that the housing stock has been over estimated due to flaws in the 1970 census and the 1975 Municipal Land Use Inventory System (LUIS). Use of housing permit data also inflated housing estimates, since not all permits resulted in complexed units. A recently completed mapping of the housing stock identified the discrepancies and produced the most accurate evaluation yet of the existing stock with new counts 3,000 below previous estimates. In 1979, 47.9 percent of the civilian housing stock were single family units, 40.1 percent multifamily, and 12 percent mobile homes. Of the multifamily units, about 20.1 percent (4,954) were duplex units and 79.9 percent (19,695) were in structures of three or more units. All but 34 of the military units are multifamily.

TABLE 72

DISTRIBUTION OF ANCHORAGE HOUSING STOCK

Housing Stock	Apri 1 1 970[a]	July 1975[c]	July 1976C	July 1977C	July 1978C	July 1979[b]
Single Family	15,538	22,949	24,822	26,098	27,950	29,414
Multifamily	13,059	16,165	18,431	20,750	23,281	24,649
Mobile Home	4,364	5,811	6,111	6,580	7,032	7,341
Military	4,154	4,154	4,154	4,154	4,154	4,154
Total Civilian Stock	33,461	44,916	49,364	53,428	58,363	61,404
Total Housing Stock	37,615	49,070	53,518	47,582	62,517	65,558

[a] U.S. Census, 1973
[b] Housing Counts carried out by Municipality of Anchorage, Planning Dept. Research Section
c Estimates based on 1979 counts

The major trend in the housing stock suggests two points. In the early 1970's single family units were constructed at a rate faster than other types. In 1970, single family represented 46.4 percent of the stock. This was estimated to have increased to 51.1 percent by 1975. The pipeline period altered this as the cost of land and building rose rapidly and the demand for other types of housing appeared to increase. By 1979, single family dwellings had fallen to 47.9 percent of the civilian stock and the multifamily growth was 15 percentage points less than single family.

Housing Demand

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 factors were length of residence and income. For 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 1977 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.

The long-term building that occurred from 1975 to 1977 to meet short term demand has created a serious oversupply problem already discussed. One consequence of this problem is the conversion of rental units to owner-condominium units. In the past year, 546 rental units have been converted; 270 are scheduled for conversion; and 100 were attempted but reconverted to rentals. The problem is that the owner-occupied multifamily is also soft, leaving much of the condominium inventory unsold. The success of condominiums is critical to the industry as a major move into this style o-F building is underway. Whether the buyer, wetted to the single family home, will be converted is an open question. The cost of the single family home may assist in altering demand patterns, but resistance is still high at the present time.

Housing Ownership and Housing Payments

About 55.7 percent of the housing in Anchorage is owned and 44.3 percent is rented. The ratio of owner-occupied units to all units increases to 59.5 percent for civilian housing (see table 73). The 1977 median mortgage payment was $400 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 1979 monthly mortgage payment of about $600 to $625. The most inexpensive housing is the mobile home which had a median combined unit and space payment of $287 in 1977. About 26 percent do not have a unit payment (the median for those who only 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 $75,000 and $120,000. Accoring to the U.S. Department of Commerce, the standard intermediate budget for an Anchorage family of four place 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.

TABLE 73

ANCHORAGE HOUSING STOCK - JULY 1, 1979

Housing Stock	Single Family	Duplex	Multi-Family	Mobile Home	Military	Total
Owner-Occupied	24,767	2,304	3,250	6,196	---	39,517
Renter-Occupied	4,647	2,650	16,445	1,145	4,154	29,041
TOTAL STOCK	29,414	4,954	19,695	7,341	4,154	65,558
Vacancy Rate	2.9%	9.0%	18. 3%	6.3%	---	8.6% (civilian)
TOTAL VACANT	835	396	3,597	462	---	5,308
TOTAL OCCUPIED	28,561	4,558	16,098	6,879	4,154	60,250
ESTIMATED SUBSTANDARD UNITS	511	1,114		778	---	2,403

a Anchorage Urban Observatory

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 in refurbishing 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.

In 1978, a pilot program in housing rehabilitation was begun by the Municipality under the Community Development Block Grant Program. This suggests an interest in stimulating neighborhood upgrading before these units begin leaving the market. (Municipality of Anchorage, Housing & Community Services, 1977).

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 long 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 accommodate 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 site 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 recently released earthquake assessment report commissioned by the Municipality was interesting not so much for what it revealed but because official reaction was to request that policy-makers ignore the findings, fearing that resultant actions might damage the economic base of the community (Heikes, 1979d).

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 44,916 units occupying 28,719 hectares (11,627 acres) of land which reduced the density to 3.9 units per .40 hectares (one acre). This constituted a 34.2 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 64,6 percent of the units during this period were single family dwellings which effectively reduced the density of housing in Anchorage by 37.1 percent. The result was that new housing added during this period averaged only 2.3 units per .40 hectares (one acre).

From 1975 to 1979 it is estimated that an additional 16,488 units have been built with 39.3 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 " 995 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 858 hectares (2,120 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 58.3 percent of the projected amount for the entire 20 years. To even come close to the " 995 estimates would result in a massive restructure na of the housing patterns in Anchorage. Most 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 fugure land use will be 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 prob ems to government (see transportation section. Older commercial str ps include Spenard Road and the Old Seward Highway. This same process is now threatening Gambell Street

East Fifth Avenue, Mountain View Drive, Muldoon Road, Dimond Boulevard 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 Center 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.

Another problem is the present oversupply of commercial space, both retail and office. With retail sales plateaued, marginal locations are showing signs of difficulty. Even the larger centers are not attracting sufficient business especially for the smaller speciality shops. Over one million square feet of additional retail space is already planned in the next two or three years including a large regional center in the Northern Lights area and a major center on the Glen Highway. This situation has led to raiding existing centers for clients, jeopardizing existing locations. The International Marketplace even failed to open and is in bankruptcy.

Office space has had its problems. The Chamber of Commerce noted in a study that only 300,000 square feet of high quality office space existed prior to 1973. A recently completed study by the Alaskan Center for Real Estate Education Research identified five million square feet of privately owned space of which only 3.5 million square feet were higher quality class A and 1.5 million square feet of lower quality class B. (see table 74 and figure 12).

Most office space is found in the downtown area (39 percent) and Northern Lights/C Street areas (32 percent). Two other significant concentrations are the University/Lake Otis (district 35, 11 percent) and West Tudor/Dimond areas (15 percent). In terms of competition between the downtown and Northern Lights districts, the downtown faces at least one serious problem. Forty percent of downtown's office space is class B space. This compares to only 22 percent for district 10.

Overbuilding of private office space in the mid-1970's and the completion of Federal Building in 1978 had a severe impact on the office space market. Several buildings emptied completely and there were suggestions of a long-term surplus. A December 1979 analysis of office vacancies shows that there is a half million square feet of surplus space on the market but this constitutes 10.67 percent of what is available. While this suggests that extra space does exist it may also reflect an improving market compared to even higher vacancies in late 1978 to mid-1979.

TABLE 74

ANCHORAGE OFFICE SPACE VACANCY RATES

DECEMBER 1, 1979[a]

District	Class A Net Leasable Area (SF)	Class A % Vacant	Class B Net Leasable Area (SF)	Class B % Vacant	Total Net Leasable Area (SF)	Total % Vacant
5	1,183,187	12.84	798,573	15.67	1,981,760	13.98
10	1,255,555	6.83	349,036	16.28	1,604,091	8.88
15	459,259	12.91	289,850	11.26	749,109	12.27
20	*	*	2,115	.0	2,115	.0
25	20,200	4.95	*	*	20,200	4.95
30	*	*	*	*	*	*
35	522,455	1.91	46,335	15.86	568,790	3.95
40	97,550	6.15	*	*	97,550	6.15
TOTAL	3,537,706	3.87	1,485,909	14.94	5,023,615	10.67

[a]Alaskan Center for Real Estate Education and Research, University of Alaska, Anchorage

*No non-government owned office complexes with more than 1,000 square feet were surveyed in this district.

NOTE: See figure 12 defining the districts. Class A and B space is traditional quality measures used in the industry with class A considered the higher quality commercial space. Only buildings with at least 1,000 square feet of net space were surveyed.

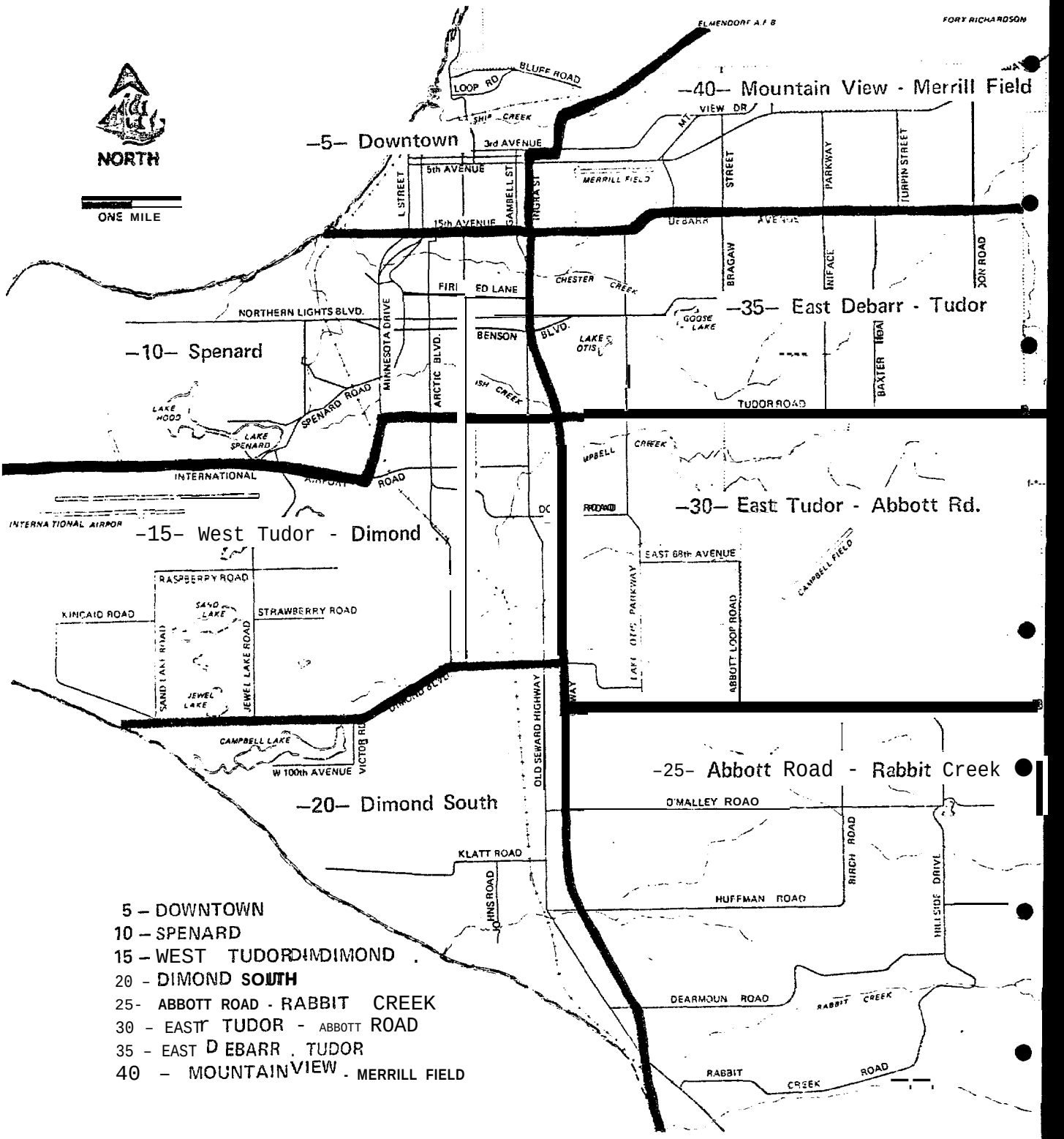


FIGURE 12

MULTIPLE LISTING SERVICE DISTRICTS

source: Real Estate Research Report, Volume I I I

Class B space has the more serious problems with a 15 percent average vacancy compared to just under nine percent for class A space. This is the same pattern as shown in the residential rental market with the lower priced/lower quality units having the highest vacancies. In any event, it appears that Anchorage has yet to utilize all of the excess office capacity in the city which manifested itself in the post-pipeline period.

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 nonindustrial uses in areas zoned industrial increases the price of industrial land. Second, since nonindustrial uses increases 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 the time period during which Outer Continental Shelf related activites are expected to occur will extend over several decades, Planning Department staff expect no direct impact from these activities on the demand for industrial land use. To the extent that Outer Continental Shelf 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 1,96S hectares (4,360 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 arid 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 1,02'1 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 Pacific University, the Anchorage 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 most 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 had 1,021 hectares (2,523 acres) of developed land in 1975, not including 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 now 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 required a very costly and slow process. (See the recreation section for a more complete discussion of these lands.)

Land for transportation, communication, and utilities occupied 1,943 hectares (4,800 acres) in 1975 and is actually expected to decrease 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 increase 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 has not been 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 im-

mediate issues caused by that growth. The 1975 Pipeline 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 the municipal departments on the short-term disequalibrium 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." (Municipal ity of Anchorage, 1976b, P. 12)

The most significant example of advanced 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 municipal space requirements demonstrate a cognizance of the planning requirements of the community.

Optimistic estimates by the Planning Department of population growth suggest that development will fill the Anchorage Bowl by the end of the century. Sewer, water, and electrical extension will make that growth possible. If present development patterns persist, the growth will be characterized by inefficient use of resources and incompatible 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 75 summarizes the land for development by class.

TABLE 75

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	3,478.9	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

Only one-fifth of the vacant land in 1970 was considered prime or good, while the majority was 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 even 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.

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 (see table 76).

TABLE 76

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 sufficient liquid content to be free flowing." (Greater Anchorage Area Borough, 1975e, p. III-1)

The Municipality of Anchorage currently employs sanitary landfills as the method of solid waste management. Sanitary landfill is defined in the Preliminary Sol· d Waste Management Master P" an (Nay 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, 1975e, 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 163,000. The military bases, Fort Richardson and Elmendorf Air Force Base, are the second area with a population of approximately 17,326. 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 11,000. The last geographic area is located along Turnagain Arm and takes in the resort community of 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. (Population estimates, Anchorage Urban Observatory, May 1979)

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 adjacent to Merrill Field General Aviation Airport (see figure 13 for sanitary fill locations). The City of Anchorage prior to unification with the Greater Anchorage Area Borough maintained this landfill since 1952. The projected life expectancy of the Merrill Field site is 1986. The current facility covers approximately 72.84 hectares (180 acres) and is zoned light industrial. At saturation, the fill is targeted for primarily recreational use, such as bike and ski trails, athletic fields, tennis courts, and ski hills (Gorski, Community Contact, 1978p). However, Merrill Field Aviation Airport is presently in need of expansion, and the land will most probably be dedicated for that purpose .

Refuse collection is accomplished by municipally owned vehicles we 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 limits 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

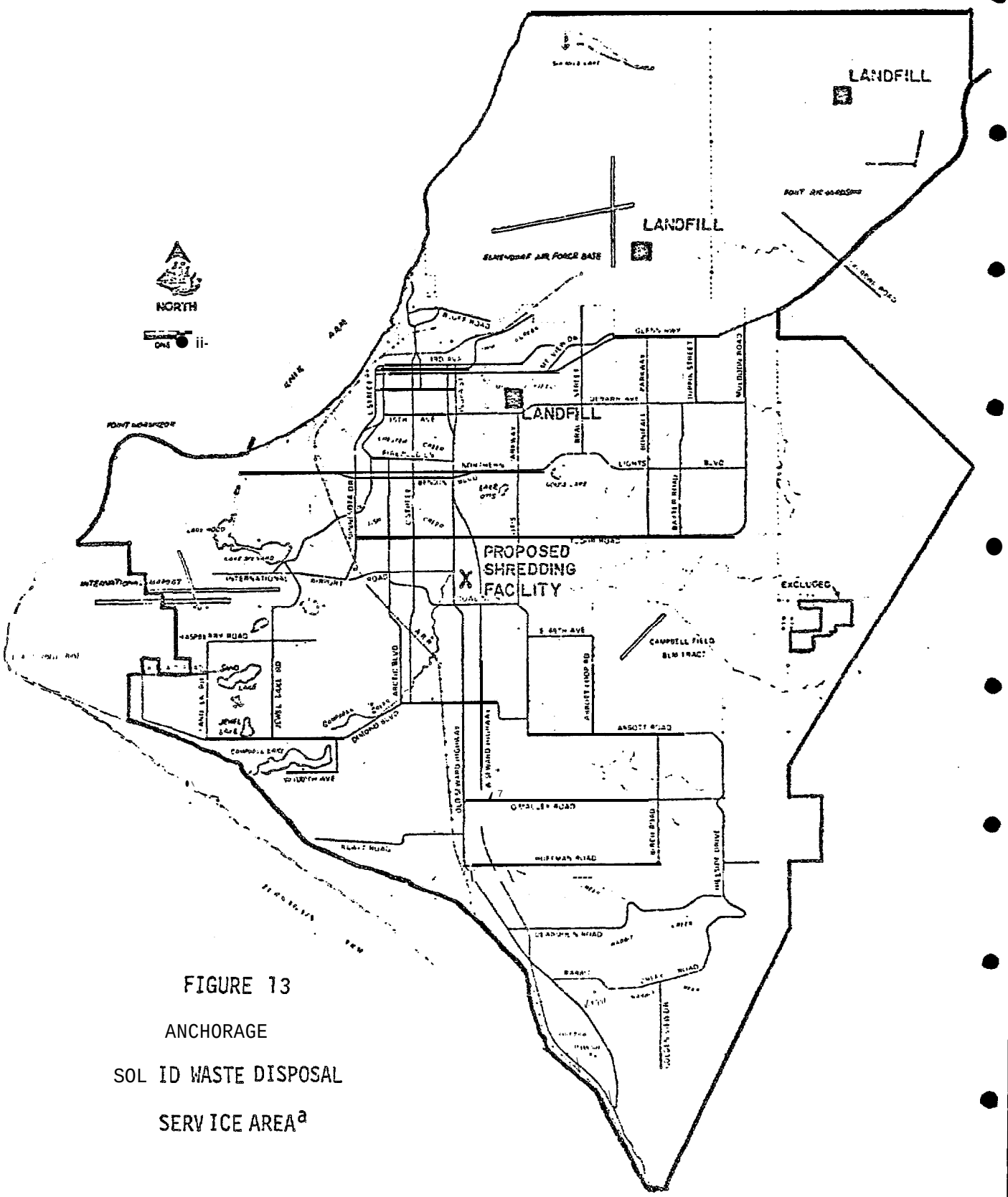


FIGURE 13

ANCHORAGE

SOL ID WASTE DISPOSAL

SERV ICE AREA[a]

[a]Request for Proposal Milling Operation, 1977

within the Base Civil Engineering Section. Elmendorf has maintained an 8.09 hectares (20 acres) sanitary landfill on base since 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, 1975 e)

Eagle River-Chugiak. These communities are located north of the Anchorage Bowl. Subscription collection. of solid waste is through 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 has 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 is through 1980 but has recently been closed down due to more rapid filling than anticipated (Greater Anchorage Area Borough, 1975 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 community of 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 by Merrill Field or at 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

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 1986. 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).

e

Milling. Under the Capital Improvements Plan, the Department of Public Works is constructing a milling operation to be located between the Old and New Seward Highway, one block south of International Airport 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 lands consumed by 30 percent due to increased density substantially extending 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 the fall of 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 combustible milled wastes as a possible fuel source for power generation. A preliminary study indicates that this procedure would become feasible after 1983. Not only is this procedure providing an additional source of fuel for power generation, but it could potentially reduce the volume entering the sanitary landfills by 60 to 65 percent.

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

A portion of land in the Eagle River area for the Eklutna Indians has been targeted for a new transfer station to serve the Chugach/ Eagle River area. After the patent has been issued to the Eklutnas, plans are to lease the parcel and to develop the transfer station in Spring 1980.

In addition, the community of Girdwood will receive "mini-transfer" sights consisting of two 40 to 50 cubic yard containers which have the capacity to handle large refuse from construction.

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. 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 and is being recycled to some extent on a private basis through a local steel company. 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 precipitation 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, 1977a).

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 and Sewer Utility (AWSU), under the Department of Enterprise Activities within the municipal government, is the largest of the providers of public water supply for the former City of Anchorage and much of the surrounding urbanized area's. AWSU has a full 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 AWSU 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 their the water is pumped to separate treatment plants. The dam and military treatment plant were constructed and placed into service in 1950. (U.S. Army Corps of Engineers, 1977a) The municipal treatment plant was completed in 1962.

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

AWSU or the 'military distribution systems, temporary connections in the distribution system with AWSU have been made in times of water shortage. The following table shows a breakdown of each of the providers as well as their respective water sources for 1977.

TABLE 77

1977 POPULATION/PRODUCTION[a]

	AWSU	CAU	Military	Private Wel 1s	Total
Consumers	98,000	32,500	20,000	24,000	183,500
Production					
Wells	28.0 mld[b] 7.4 mgd[c]	15.5 mld 4.1 mgd	2.3 mld 0.6 mgd	9.1 mld 2.4mgd	54.9 mld 14.5 mgd
Ship Creek	27.3mld 7.2 mgd	-	17.0 mld 4.5 mgd	-	44.3 mld 11.7 mgd
Total	55.3 mld 14.6 mgd	15.5 mld 4.1 mgd	19.3 mld 5.1 mgd	9.1 mld 2.4mgd	99.2 mld 26.2mgd
Production Capacity	65.1 mld 17.2 mgd	18.9 mld 5.0 mgd	19.3 mld 5.1 mgd	9.4 mld 2.4mgd	112.4 mld 29.7mgd

[a]U.S. Army Corps of Engineers, Metropolitan Anchorage Urban Study, Volume 2, Water Supply, August 1979.

[b]mld = million liters per day

[c]mgd = million gallons per day

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. In fact, the status of Anchorage's 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. The summer peak shortage is the most critical time, but a major increase in storage facilities by AWSU has supplemented the need for increased production during the peak period.

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 14 gives a breakdown of estimated consumptive water usage.

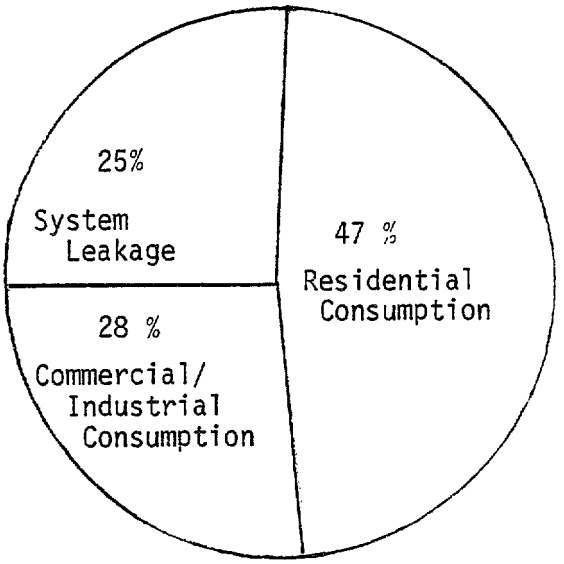


FIGURE 14

ESTIMATED CONSUMPTIVE USE FOR AWSU[a]

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

There maybe a 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, AWSU 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, 1977a and Gorski, Community Contact, 978k) .

Planning

Before proceeding with any major plans, the utilities are reviewing the recently completed Metropolitan Anchorage Urban Study (MAUS) Water Supply prepared by the U. S. Army Corps of Engineers. The final volume of the report, August 1979, Volume 2, Water Supply, projects water demand increases through the year 2025 and alternatives to meet this demand. Table 78 indicates those population projections, total demand for water, and increased demand for the period under study.

TABLE 78

WATER DEMAND INCREASE[a]

Year	POPULATION PROJECTION: Anch Bowl (Incl Military)	Chugiak Eagle River	Increase to Be Supplied	DEMAND: Total Demand		Increased Demand Over 1977	
				ml d	mgd	ml d	mgd
1977	184,005			112.4[b]	29.7[c]	-	
1980	204,775	15,854	21,775	127.9	33.8	15.5	4.1
1985	267,610	26,317	83,610	163.5	43.2	51.5	13.5
1990	317,934	38,160	145,777	212.3	56.1	88.6	23.4
1995	376,652	57,662	223,957	254.7	67.3	131.0	34.6
2000	431,000	76,000	296,683	295.6	78.1	171.8	45.4
2005	481 ,000	94,000	264,683	341.8	90.3	218,0	57.6
2010	524,000	108,000	421,683	375.5	99.2	251.7	66.5
2015	558,000	118,000	465,683	401.6	106.1	277.8	73.4
2020	587,000	127,000	503,683	424.3	112.1	300.5	79.4
2925	596,000	130,000	515,683	431.9	114.1	308.5	81.5

[a]U.S. Army Corps of Engineers, Metropolitan Anchorage Urban Study, Volume 2 Water Supply, August, 1979.

[b]mld = million liters per day

[c]mgd = million gallons per day

Over the 50-year span of the MAUS projections, the average per capita water consumption is calculated at 594 liters per capita per day (lpcpd) (157 gallons per capita per day).

The MAUS study examines six potential water sources and derived ten possible alternatives for development. They are as follows:

e

TABLE 79

WATER SOURCES AND THEIR DEVELOPMENT ALTERNATIVES[a]

	Source #1 Ship Creek	Source #2 Eagle River	Source #3 Ground Hater - Anchorage Bowl	Source #5 Ground Water - Eagle River Valley	Source #6 Campbel 1 Creek	Source #7 Eklutna
Alt. # 1	Increased diversion at the present !Ti1 i-tary dam					
Alt. # 2	Diversion near the mouth of the creek					
Alt. # 3	Off-stream storage					
Alt. # 4	Ship Creek darn and reservoir					
Alt. # 5		E/R winter diversion				
Alt. # 6		E/R dam and reservoir				
Alt. # 7			Ground water - Anchorage bowl			
Alt. # 8				Ground Water - E/R valley		
Alt. # 9					Campbel 1 Creek diversion	
Alt. #10						Eklutna diversion

[a]MAUS, Water Supply, Volume 5

Source numbers two and six, Eagle River and Eklutna, are both glacier rivers. Because of the lack of research in the removal of glacial silt, suppliers have avoided the development of such sources. However, as noted in the MAUS report, "Two promising methods for treating glacial melt water were studied and evaluated as part of MAUS. The hydrocyclone process proved impractical because it did not remove particles as small as occur in either Eagle River or Eklutna. I owever, a jar test of the coagulation/flocculation process followed by filtration proved an effective treatment for both sources of glac· al water. This treatment may be feasible in the future." (U. S. Army Corps of Engineers, 1979)

"Construct on costs for a plant to treat glacial waters should be no

higher than costs for a clear water treatment plant. The major difference would be in operating cost, since glacial streams require substantially more chemicals."

No single alternative could provide sufficient water to meet the growing population over the study period, and so combinations of the ten alternatives were developed.

The combination of alternatives resulted in nine plans. Each plan was evaluated according to environmental, social, and economic considerations. The top two ranked plans, Plan Four and Plan Six, were selected as the most viable means of development.

Plan Four. This proposal ranks second in cost effectiveness and first in impact. Table 80 depicts the alternatives and proposed schedule of development.

TABLE 80

PLAN IV

Year		Water Required MLD (MGD)		Plan	Water Produced - MLD (MD) Pre-1984		Post-1984		Cost Per Alternative
Start	Finish	Total Demand	Increased Demand	(Combination of' Different Alternatives)	Summer	Winter	Summer	Winter	
1978	1981	135.1 (35.7)	22.7 (6.0}	#7 INCREASE ANCHORAGE GROUND WATER Construct large capacity wells Construct small capacity wells	30.3 (8)	30.3 (8)	30.3 (9)	30.3 (8)	$ 6,400,000
1978	1982	142.7 (37.7)	30.3 (8.0)	#1 INCREASE DIVERSION AT PRESENT MILITARY DAM Construct a 91.4 cm (36-inch) water supply line Construct storage tanks Expand AWSU treatment plant (75.7 mid) [20 mgd]	75.7 (20)	-	75.7 (20)	-	$ 2,750,000 $ 2,532,900
1979 1986	1984 1990	217.6 (57.5)	105.2 (27.8)	#10 EKLUTNA DIVERSION Construct 1 line tap Construct water supply pipeline Construct new water treatment plant (283.9 mid) [75 mgd] Construct off-stream storage site		·	202.5 (53.5)	278.2 (73.5)	$ 67,908,000
2025		432.2 (114.2)	308.5 (81.5)	TOTAL			308.5 (81.5)	308.5 (81.5)	$123,090,000

This plan would serve the Anchorage 80W1 and Eagle River communities to the year 2025.

Source, MAUS, 'dater Supply, Volume 2

Figure 15 depicts Plan Four and its relation to other water sources in the area.

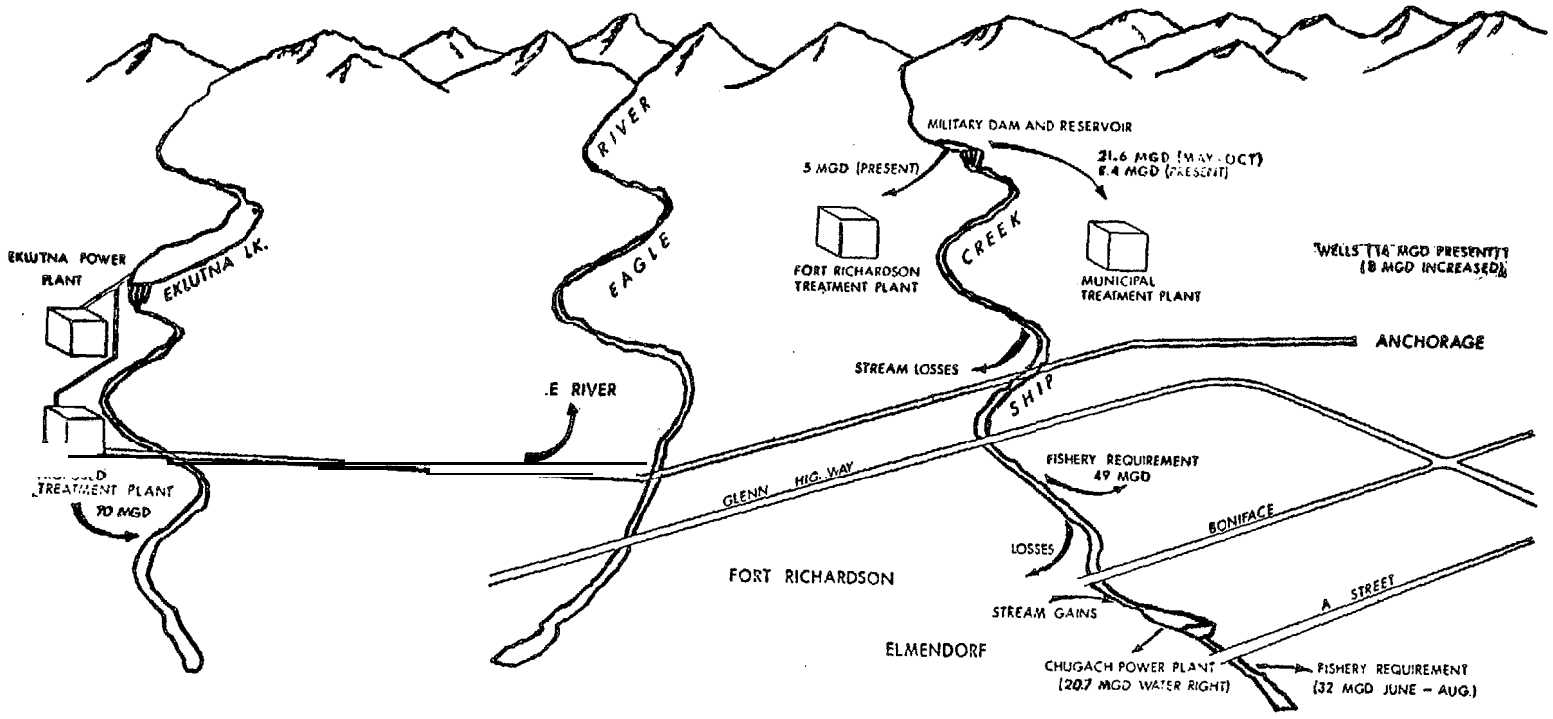


FIGURE 15

PLAN IV

[a]Source: U.S. Army Corps of Engineers, MAUS Reports, Volume 5, Water Supply, January 1979

Plan Six. The Plan Six alternatives are presented in table 81.

TABLE 81

PLAN VI

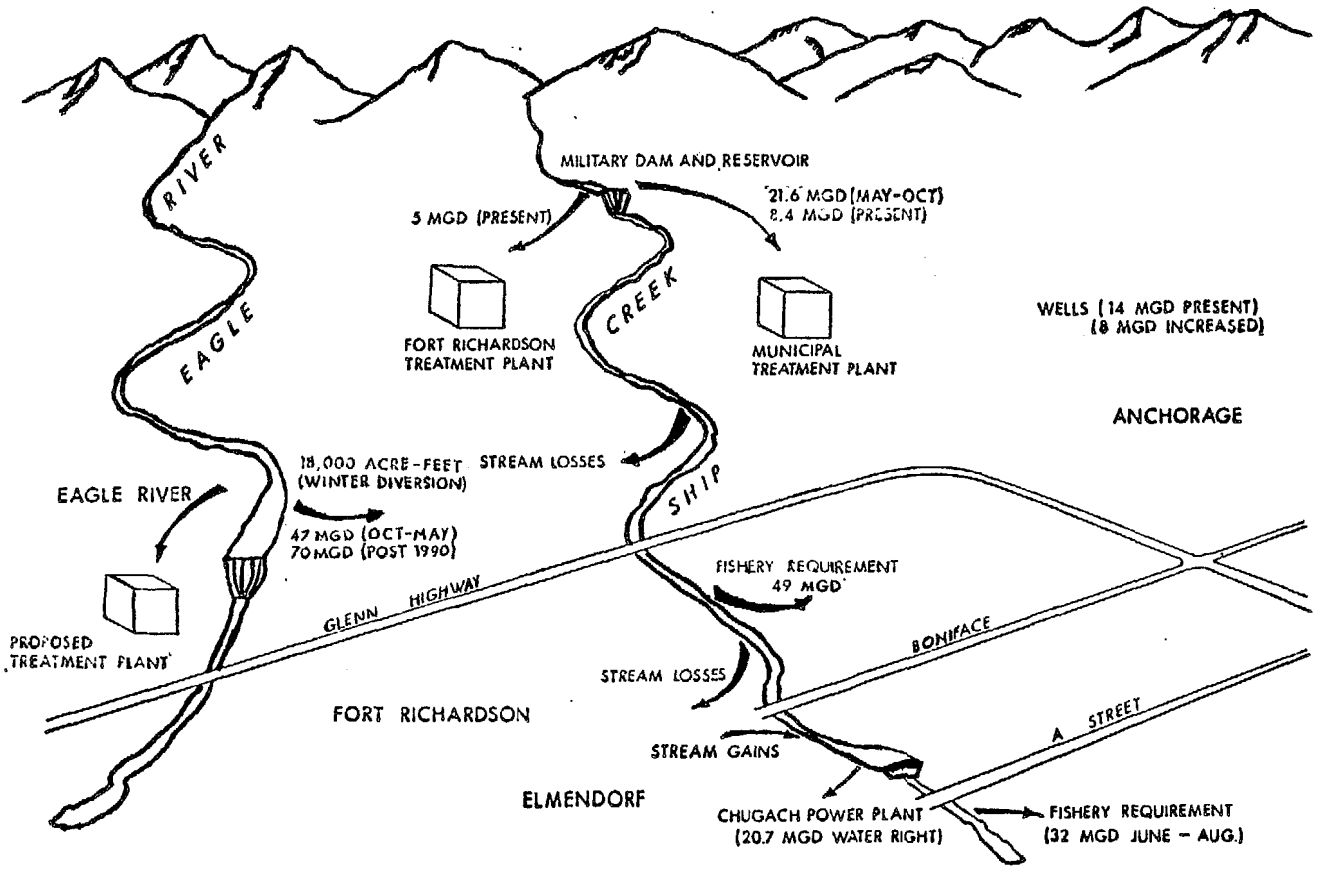
Year Start	Year Finish	Water Required MLD (MGD) Total Demand	Water Required MLD (MGD) Increased Demand		(Combinations of Different Alternatives)	Water Produced - MLD (MGD) Pre-1984 Summer	Pre-1984 Winter	Post-1984 Summer	Post-1984 Winter	Cost Per Alternative
1978	1981	135.1 (35.7)	22.7 (6.0)	#7	INCREASE ANCHORAGE GROUND WATER Construct large capacity wells Construct small capacity wells	30.3 (8)	30.3 (8)	30.3 (8)	30.3 (8)	$ 6,400,000
1978	1982	142.7 (37.7)	30.3 (8.0)	#1	INCREASE OIVERS1ON AT PRESENT MILITARY DAM Construct a 91.4 cm (36-inch) water supply line Construct storage tanks Expand present AWSU treatment plant (75.7 mid) [20 mgd]	75.7 (20)	-	X5. (20)	? -	$ 2.750,000
1978	1982			#8	EXPLORATION EAGLE RIVER VALLEY GROUND WATER					$ 600.000
1979	1983	148.4 (39.2)	36.0 (9.5)	#5a	EAGLE RIVER WINTER OIVERS1ON Construct dam and reservoir Construct transmission line to AWSU		170.3 (45)	-	-	$ 38,472,000
1986	1990				Construct pump house Construct new water treatment plant (283.9 mld) [75 mgd]					$ 43.500,000
	1990	212.3	88.6	#5b	REVISE WINTER DIVERSION DAM TO FULL-TIME OPERATION			280.0	280.0	
2025		432.2 (114.7)	308.5 (81.5)		TOTAL			386.1 (102)	310.4 (82)	s 94,254,000

This plan would serve the Anchorage Bowl and Eagle River communities to the year 2025.

Source, MAUS, Water Supply, Volume 2

Plan Six is the most cost effective and is ranked third highest in impact triter a. Figure 16 depicts the relative design of Plan Six.

Both Plan Four and Plan Six are not without their drawbacks. For examp" e, land acquisition is a problem with Plan Six since there are legal questions associated with the Eklutna Indians and the use of Eag e River. As noted in the MAUS report, it may be most expedient to purch se water from the Eklutnas once the land is patented to them.



GURE 16

PLAN VI

[a]Source: U.S. Army Corps of Engineers, MAUS Reports, Volume 5, Water Supply, January 1979

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

Both Plan Four and Plan Six will provide sufficient water to supply the growing population of Anchorage through the year 2025. The utilities are not bound to the plans, as proposed, but will be encouraged to examine each in detail as to its long-run feasibility. Such capital intensive projects require thorough analysis; however, delays of more than two to three years in implementation will continue the present character of the Anchorage water supply as inadequate and undependable.

SEWER

Introduction

A generally accepted estimate of per capita wastewater generation is calculated by taking 80 percent of the known per capita water consumption for a particular area. The Metropolitan Anchorage Urban Study (MAUS), authorized by the U. S. Army Corps of Engineers, has generated a figure for water consumption in the Anchorage area of 594 liters per capita per day (lpcpd) (157 gallons per capita per day [gpcpd]). Eighty percent of this per capita figure is 475.2 lpcpd (125.6 gpcpd). This latter figure is assumed as the per capita wastewater generation and will be used to assess planned expansions of sewage treatment facilities for the Municipality as discussed below.

Organizational Context

Wastewater disposal in Anchorage is primarily handled in one of two ways -- either by on-site septic disposal or through an extensive sewer system network under the jurisdiction of the AWSU within the municipal government of Anchorage. For topographical purposes, wastewater collection and treatment are divided into three mutually exclusive areas.

The Girdwood Alyeska Service Area, GASSA, formerly Service Area 60, located 56 kilometers (35 miles) south of Anchorage, is comprised of the resort community of Alyeska/Girdwood. This area is particularly unique because of a seasonal fluctuation in population of as much as 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 this community was exclusively on-site. A new secondary sewage treatment plant became operational in 1978 with a capacity of approximately 3.2 million liters per day (mId) (850,000 gallons per day [mgd]). (Gorski, Community Contact, 1979g). It is important to note that Girdwood's water source is ground water (wells) and consumption under these circumstances is generally lower than that of utility consumers. This fact results in a lower per capita wastewater generation figure than that noted in the introduction. However, at a minimum, the existing facility in Girdwood could accommodate a population of approximately 7,'337 people allowing for substantial growth and expansion of sewer mains before the treatment facilities would require upgrading.

Eagle River Sewer Service Area (ERSSA) formerly Service Area 50 is located north of the Anchorage Bowl and includes the community of Eagle River. This region's population density is relatively 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. Only a portion of Eagle River has a sewage system. The surrounding areas use one-site wastewater disposal but will have systems introduced on a localized basis as the need and demand requires. (U.S. Army Corps of Engineers, 1976).

Eagle River's treatment facility is a secondary sewage treatment plant operating at capacity in 1977. Construction of additional facilities is to begin in late 1979 with completion slated for the end of 1980. The additional capacity for secondary wastewater treatment will be approximately 7.1 mld (1.9 mgd). The facility is designed for expansion and the planned addition could accommodate approximately 23,750 people (Gorski, Community Contact, 1979g).

The Anchorage Bowl Sewer Service Area, ABSSA, formerly Service Area 40, hosts the majority of the population in the Municipality. Its borders are delineated on the north by Fort Richardson And Elmendorf Airforce Base and on the south by Oceanview residential area. East and west boundaries are physically defined by the Chugach Mountains to an elevation of 610 meters (2000 feet) and Cook Inlet, respectively. The 644 kilometers (400 miles) of sewer lines in the Anchorage Bowl deposit wastewaters into two pr mary lift stations located at the mouth of Campbell Creek and the mouth of

Chester Creek. The wastewaters are pumped to the west inceptor which flows to the Pt. Woronzof wastewater treatment facility. The facility discharges through an outfall into Cook Inlet. (U.S Army Corps of Engineers, 1977). The average discharge from Pt. Woronzof p' ant after primary treatment is currently 86.3 mld (22.8 mgd). The plant was sized for 128.7 mld (23 mgd) but wi 1 handle peak flows in excess of this amount. However, during spring breakup the plant currently experiences an excess of wastewater which s handled by bypassing the plant and dumping directly into Cook Inlet (Gorski, Community Contact, 1978h). 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, 1977a).

Current Issues in ABSSA

Infiltration/Inflow Problem. The AWSU is currently evaluating the sanitary sewer system to define the 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 non runoff 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 most recent data supports the conclusion that total infiltration and inflow is approximately 22 percent. This is reasonable when compared with national averages.

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 Extension. 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 occurring along a low density line. This corresponds to the land

use expected for the area . n the Comprehensive Plan for Anchorage. For planning purposes, the sizing of sewer line extensions and their recommended locations w 11 definitely affect the profile of development in the more sparse' y populated regions. Recommendations for a low density design in the sewer extensions for the southern bowl and hillside could, on ‹ ne 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. Public Law 92-500 mandates the installation of secondary sewage treatment fac' lities throughout the United States; however, amendments to the law n 1977 permit waivers to be granted. The amendment provides "for a waiver from the secondary treatment req u i red for any conventional pollutant in a discharge into marine waters from existing municipal sources if it can be shown that the modification will

not interfere 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 temporary waiver which is automatically reviewed every few years by the EPA. Installation of secondary treatment facilities at Pt. Woronzof is capital intensive 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 occasionally functions at its full capacity of 128.7 mld (34 mgd). Under the Capital Improvement Program, upgrading at Pt. Woronzof is planned for 1979 and 1980 (Gorski, Community Contact, 1978i). By 1985, depend ng on the development in the bowl, further expansion of Pt Woronzof to its ultimate design capacity of 227 mld (60 mgd) would be necessary. There are a number of other alternatives currently being examined by the Corps of Engineers.

The Army Corps of Engineers is in the process of conducting the Metropolitan Anchorage Urban Study (MAUS) on wastewater treatment. The final report will recommend the best practical waste treatment for the Anchorage area and is due for completion in late 1979. In

order to qualify for federal monies for expansion of the Pt. Woronzof plant, the above mentioned MAUS report, the infiltration and inflow study, and the master plan, discussed below, must be completed, These are the components of the 201 Facilities Plan which must be approved by EPA prior to the ABSSA to obtain grant eligibility. It will be necessary for long-term facilities planning that EPA grant the Municipality a secondary waiver under PL95-217.

Expansion. Bomhoff & Associates and the URS Corporation are in the process of completing 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 353,184. The final product will recommend a capital improvements plan and is due for completion in late 1979 (Gorski, Community Contact, 1978i).

Infiltration/Inflow. To help offset the infiltration/inflow problem as discussed above, a sewer system evaluation study/infiltration and inflow study is being conducted. The contract should be completed in late 1979.

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 January 1, 197'3, Chugach serves approximately 50,000 (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, 19780).

The cooperative is responsible for both distribution and generation facilities. Functioning as the largest utility in Alaska, Chugach maintains 56 kilometers (35 miles) of subtransmission lines, 494 kilometers (307 miles) of transmission lines, 1,825 kilometers (1,134 miles) of distribution lines, and operates five generation plants. The largest plant is

the Beluga Station with seven gas turbines producing a total of 298.21 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 49.23 mw. International Station has three turbines with a total peak production of 48.65 mw. Cooper Lake Power Plant is a hydrogeneration facility with two 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 megawatts to Chugach Electric Association's electrical capacity. Total generation capabilities for Chugach Electric Associat· on is 431.59 mw. Surplus power is sold to other utilities intertied with the Chugach distribution system.

Municipal Light and Power is a municipally operated utility. In 1977 this utility served approximately 15,737 customers, residential and commercial; and as of January 1979, it presently serves in excess of 16,210 consumers (Municipality of Anchorage, 1977 and Gorski, Community Contact, 1979k). The utility operates two power plants. Plant I has a combined capac· ty of 74.5 mw at 57° F and 14.7 PSIA (called Base ISO). All four units are simple cycle gas turbines. Plant II (now named the George M. Sun" van Power Plant) has Units 5 and 6 currently on-line. Unit 5 is a gas turbine with a waste heat boiler. It has a capacity of 32.3 mw at Base 1S0. Unit 6 became operational in August 1979. It is a steam turbine designed to utilize the waste heat from Units 5 and 7. It has a 12 mw capacity when used in conduction with Unit 5. Unit 7 will

become operational in October 1979. It is a gas turbine with a waste heat boiler having a capacity of 73.6 mw when used in conjunction with Units 5 and 7 and 31 mw when used with Unit 7 only.

The Sullivan Power Plant currently has 44.3 mw capacity. ML&P's total combined capacity is 134.8, including the Eklutna allocation. The addition of Unit 7 will increase this to 208.4 mw.

Natural gas for ML&P 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).

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 the 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 upon the operation of the corresponding fossil fuel unit(s). If, for example, unit 7 gas turbine drops off line, unit 6 output drops to 12 mw. If unit 5 drops off line, unit 7 can maintain a full 33 mw of steam generation from unit 6. This loss of generators is factored into firm capacity calculations but could have negative implications in times of potential power shortages, such as during the winter months when utilities face a higher demand for power.

The following table is a breakdown of usage for residential and commercial customers within both utilities distribution systems.

TABLE 82

RESIDENTIAL - COMMERCIAL [ab]

HISTORICAL USAGE - KWH

Year	Residential	Commercial
1974	392,575	438,244
1975	465,147	500,038
1976	517,248	581,236
1977	550,055	631,315
1978	587,681	677,602

[a]Quarterly Economic Indicators

[b]KWH sales in 000's

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,

A major step toward this goal began in 1978 with the passage of the Power Plant and industrial Fuel Use Act. This act has a potentially devastating effect on future generation development for the State of Alaska. In essence, the act bans the use of natural gas, presently the most cost effective fuel source for new base load. (peaking pl ants are exempt.) This act is a mandatory conversion of existing facilities using oil or gas to coal. However, Alaska did obtain an exemption for existing facilities.

Both utilities are currently facing potential power shortages during the peak demand months of December and January. Fortunately, for the past four 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, 19781). This should not be considered as a bad reflection on either utilities' ability to provide service to customers but rather as a ~e.suit 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

In light of current legislation, tenuous fuel supplies and prohibitive costs, planning for growth becomes a very complex phenomenon,

Municipal Light-and Power engages in planning through the Capital Improvements Plan (CIP). This is a six-year plan updated annually as the utility assesses current and future needs. In addition to the units planned for Plant II, Municipal Light and Power has incorporated into the CIP an eighth unit, a natural gas turbine, for peak load, Unit eight should be on line by 1982. In addition, Municipal Light and Power i's investigating both coal and hydroelectric alternatives which will be needed on-line sometime in the 1987 - 1989 period. A request for further exemptions from the Power Plant and Industrial Fuel Use Act to install additional base load gas turbines is also under consideration.

Chugach Electric is planning to install another turbine at their Beluga Plant in the next year adding an additional 68 mw to their present load, Chugach is also exploring a number of long-range projects. Proposals include a 400 mw coal fired plant constructed in two phases, or a combination gas and coal fired plant, If natural gas is used, an administrative exemption from the Power Plant and Industrial Fuel Use Act of 1978 will have to be obtained. As yet, guidelines -For exemptions have not been established.

Outside the scope of both utilities' development is the Susitna Hydroelectric project. The Alaska Power Authority, an agency whose purpose is

to provide a means of financing, constructing, and operating hydroelectric projects at a reasonable cost and the U.S. Army Corps of Engineers are proceeding with the Phase I studies associated with the project. This is a two dam project with Watana Dam having a capacity of 795 mw and Devils Canyon with a 788 mw capacity for a project total of 1,573 mw. The project is estimated to cost $3,335 million in 1978 dollars according to the Alaska Power Authority's latest power market analysis. Federal funding will probably not be available to offset costs on the Susitna project, and the state would have to assume the burden of financing. However, the project has the potential to benefit not only Anchorage but could supplement the Fairbanks' power supply as well. In addition to financing a project of this magnitude, there are potential environmental and social impact problems that would have to be addressed prior to construction. Presently, if all obstacles can be overcome, the Susitna Project could be on-line by the mid-1990's.

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 communications 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 initial equipment for telephone installation for the township of Anchorage. However, during Anchorage's early history, utilities were controlled by the Alaska Engineering Commission, and because of this preestablished

jurisdiction, Mr. Emard sold his equipment to the Commission for installation. From 1916 to 1921, utility control was transferred from the 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 1932 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 was city owned and has beena municipally 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.

Service to the resort community of Girdwood, south and east of the Anchorage Bowl have recently been acquired from GAB Telecommunications by the Anchorage Telephone 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 (Municipal ity of Anchorage, Anchorage Economic Development Commission, 1977)."

Issues

To keep abreast of area growth, the telephone utility has a multi-year planning process under the Capital Improvement Plan, The number of telephones in 1970 was 56,607 and in 1978 there were 130,729, which is a 131 percent change. Table 83 displays the projected growth statistics pertinent to communications over the next four years,

TABLE 83

TELEPHONE PROJECTIONS, 1979-1982[a]

Year	Average No. of Customers	Average Telephones in Service
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 over the next several years and the desire to upgrade service quality, the Anchorage Telephone Utility conducted a survey of switching equipment in 1977. The trend of highest priority was a move toward solid state switching equipment (Municipality of Anchorage, Anchorage Economic Development Commission, 1977), and the utility has 'worked this change into their Capital Improvement Program.

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 lower maintenance costs and faster time in getting telephone calls through (Gorski, Community Contact, 1978j).

Pending federal legislation could have a tremendous impact on telephone rates for the State. Alaska telephone utilities presently receive a subsidy from other states due to the high cost of conducting this service in Alaska. A subsidy reduction or cutoff is presently being considered and its implementation could mean "'a doubling of in-state long-distance rates and a tripling, at least, in small areas (Scott, 1979).'" No final decision has yet been reached; however, its impact, if implemented, would be far reaching.

Planning

The criteria used in planning is multivariate. As a base, historical trends, demand for service, and current population forecasts are used to

determine future needs for equipment and manpower. Various facilities require different planning intervals. Generally, the ten-year planning period dictates the sequence of implementation, while a five-year program dictates the time frames. Many major items of a telephone plant require a normal lead time of 30 months for acquisition.

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 Anchorage including 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 w· th 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, 1972 b). The latest replacement is for Muldoon and Tudor Road with the proposal to add a parallel arterial to the East and South of the existing network.

A third issue of continued concern is the problem of auto emission and air quality control. Fifteen areas within the Anchorage Bowl will potentially exceed the National Ambient Air Quality Standards. (See figure 17). Streets characterized by high traffic volume and low speeds are resulting in high carbon monoxide levels (Municipality of Anchorage, 1977j). Figure 18 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 the standards set by the Clean Air Act.

Short Range - Transportation Improvement Program, FY 1980 - FY 1985

The short-range plan proposes both expansion and widening and improving the road network in Anchorage for fiscal years 1980 - 1985 and is noted as the six-year Transportation Improvements Program (TIP). The plan is updated annually.

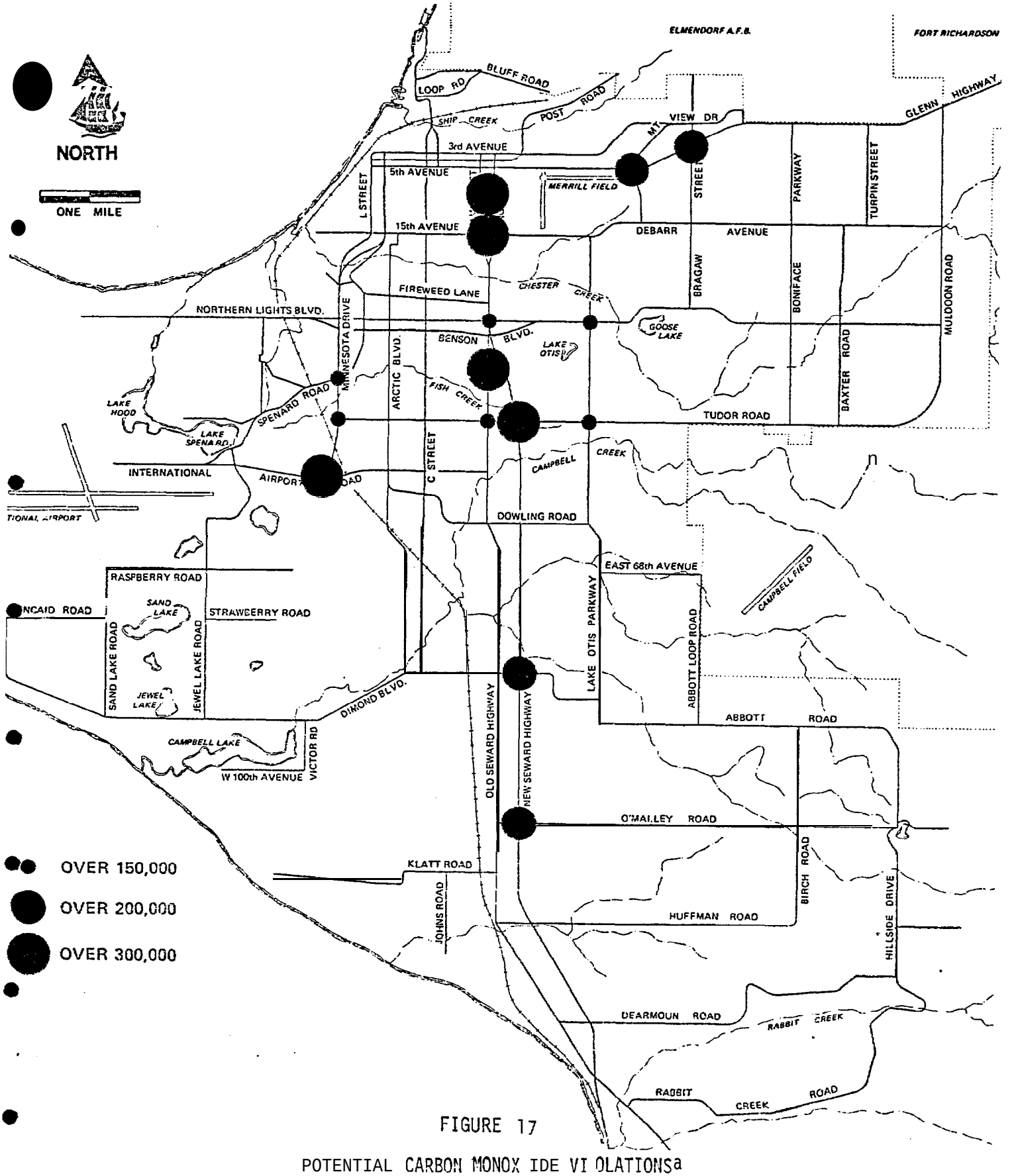


FIGURE 17

POTENTIAL CARBON MONOX IDE VI OLATIONSa

al 977 Long Range
Element, AMATS

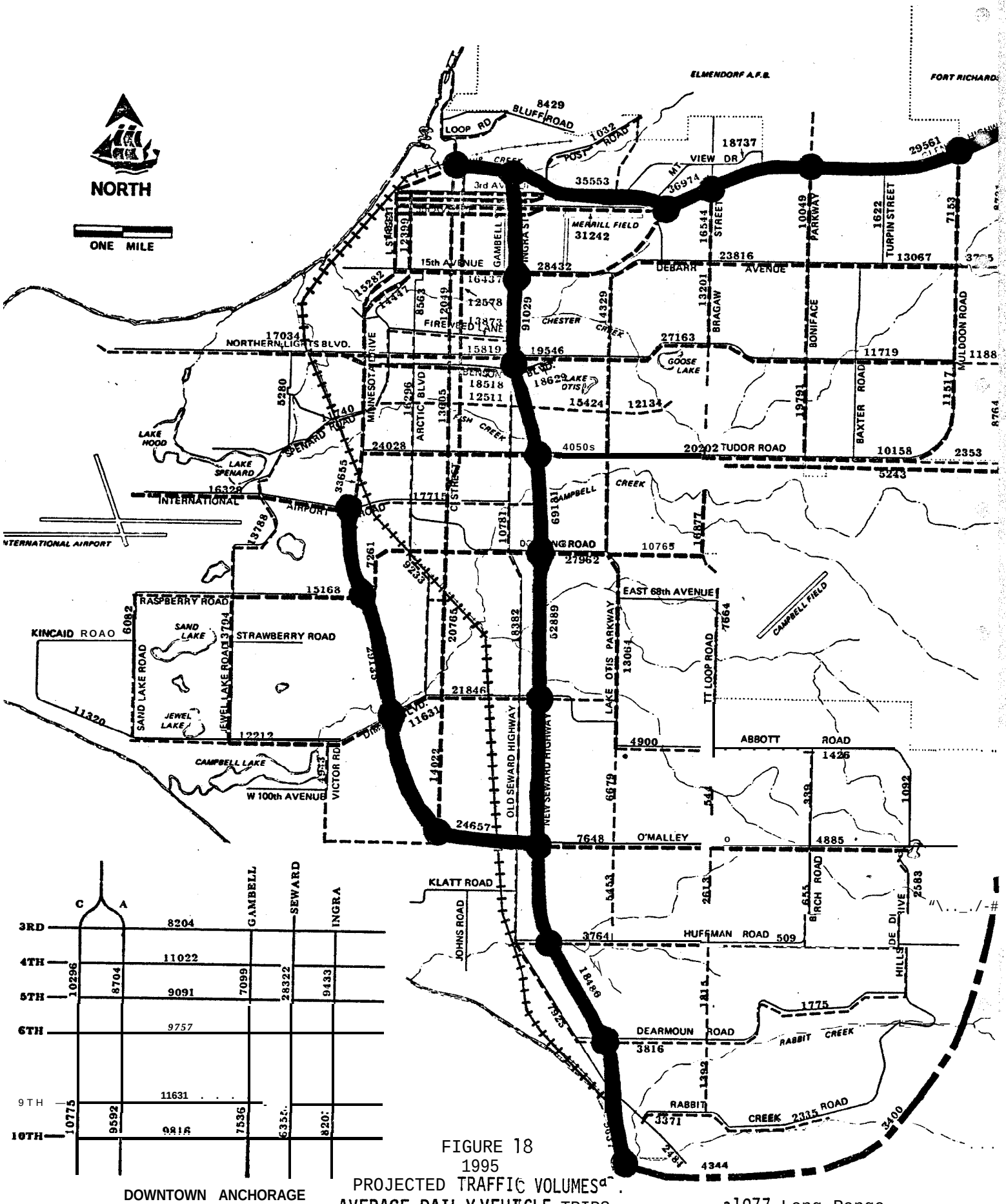


FIGURE 18
1995
PROJECTED TRAFFIC VOLUMES[a]
AVERAGE DAILY VEHICLE TRIPS

[a]1977 Long Range Element, AMATS

A review of the older TIP's show some slippage of the timetable, but many projects noted in earlier plans have been completed. (ie., Lake Otis, Tudor, Muldoon, Boniface North of DeBarr and DeBarr).

Future construction projects include an upgrading Dimond Boulevard from the New Seward to Jewel Lake Road, extending Minnesota Drive South to Dimond and eventually over to O'Malley Road, construction of the north-south A-C coup" et, upgrading East Northern Lights and Boniface south of DeBarr, and construct" on of new arterials paralleling Muldoon and Tudor, and a Ship Creek bypass (see figure 19).

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, 1979).

In addition, more specific studies are carried out to address particular problems. A recently revised Central Business District Parking and Circulation Study proposed $11 million in improvement for downtown Anchorage. Items include a 3rd and 4th Avenue couplet, more garage parking, increasing the pedestrian orientation along 4th Avenue and D Street. This is coupled with a new parking plan recently instituted. The criticisms of the efforts are usually directed at the lack of imagination

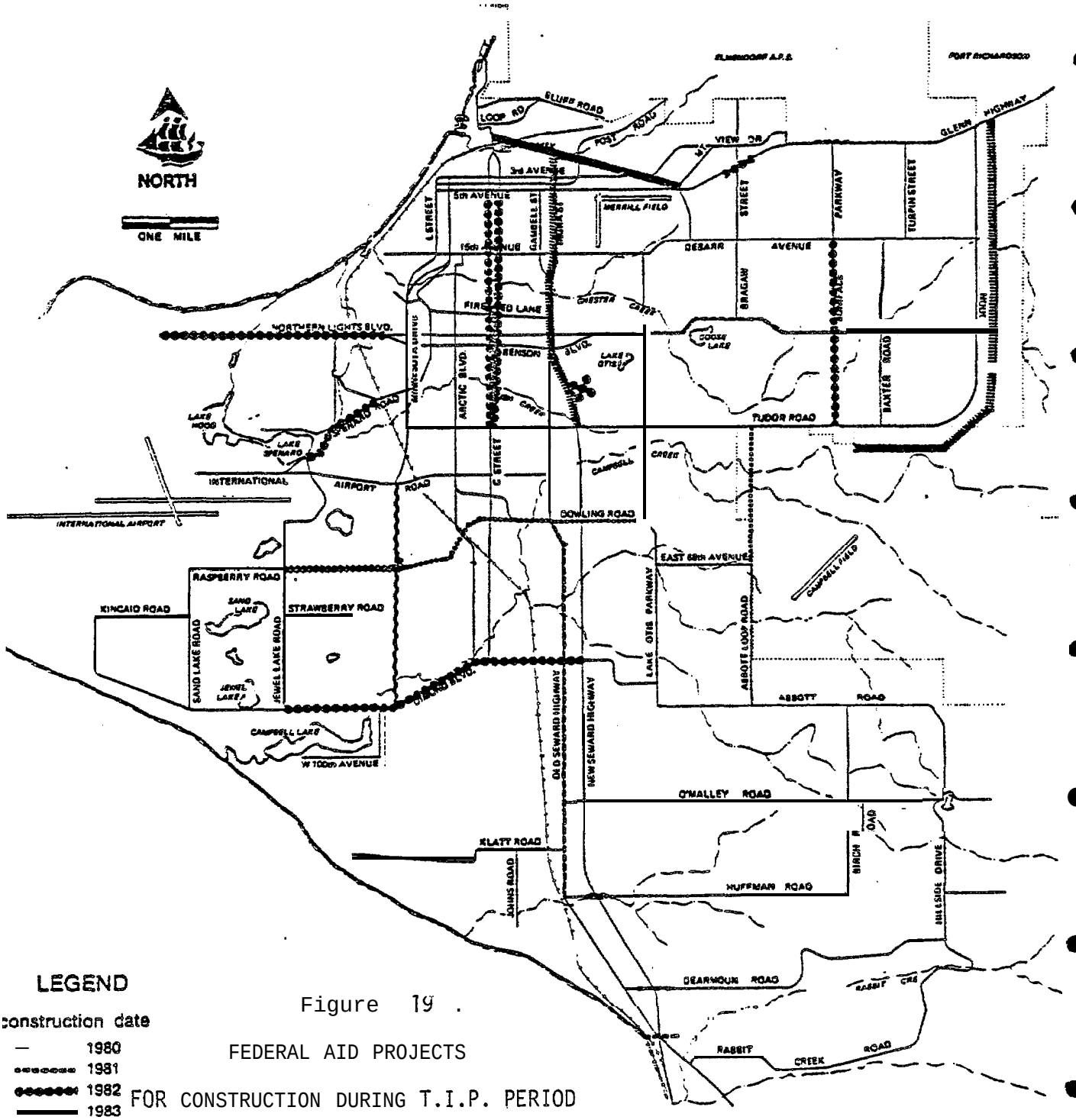


Figure 19 .

FEDERAL AID PROJECTS

FOR CONSTRUCTION DURING T.I.P. PERIOD

1977 AMATS T. I.P.

for not being bold enough to offer significant changes which will reverse the declining appeal of the downtown. The most common suggestion includes a full scale pedestrian mall (Anchorage Daily News, 1979).

TABLE 84

SIX YEAR CAPITAL IMPROVEMENTS PROGRAM

ANCHORAGE ROAD SYSTEM[a]
COSTS ($000)

Road System	Federal	State	Local	Total
Principal Arterials	78,545.6	3,902.9	---	82,448.5
Minor Arterials	46,711.4	2,870.1	17,118.0	66,699s5
Collector & Other Streets	---	---	28,667.0	28,667.0
Rural Primary	12,941.7	544.8	---	13,486.5
State Bond & Free Conference	---	14,304.4	---	14,304.4
Misc. Areawide Projects	1,936.0	2,121.0	35,120.0	39,177.0
Traffic	---	---	5,090.0	5,090.0
Safety	1,459.8	162.2	---	1,622.0
Total				

[a]Municipality of Anchorage, AMATS Fiscal Year 1980 Transportation Improvement Program, 1979.

The TIP plans call for road improvements and expansion for seven principal arterials, 23 minor arterials, 1 rural primary new construction, 15 collectors and other streets, and 8 miscellaneous roadway projects over the next six years.

Long Range Plans - Long Range Element, 1977-1995

The recommended Long Range 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 20).

The process of updating the long-range plan resulted in the addition of a minor arterial connecting International Airport Road and Northern Lights Boulevard on the west side of Lake Hood, and adding Mountain View Drive as a minor arterial. The Long Range Plan also calls for three corridor studies - Seward and Northside Corridor, East City Bypass Corridor, and Foothills Scenic Parkway corridor. These are planned because of the conflict over the value of these major projects.

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.

Problems with Roadway Plans

On the surface, the roadway plans in Anchorage appear to be a constant compromise producing incremental goal seeking. The pro-road, anti-road

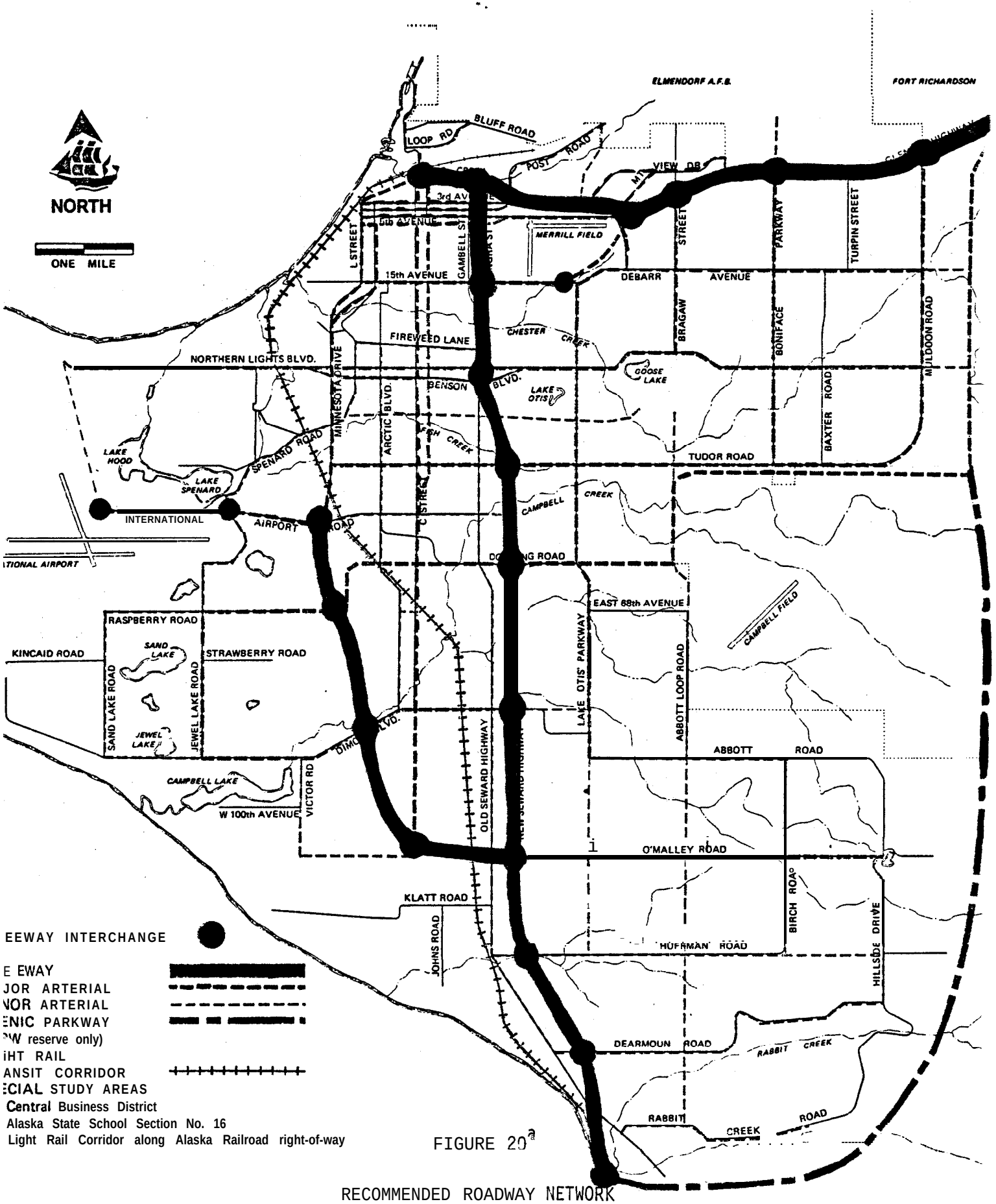


FIGURE 20[a]

RECOMMENDED ROADWAY NETWORK

[a]1979 Long Range Element, AMATS

forces have battled hard in Anchorage and the result is a long-term victory of the road forces but at the expense of coherent purpose and questionable objectives. Some of the problems include:

- The long-term goal to make the CBD totally accessible to the car leads to several consequences. These include the destruction of neighborhoods near the CBD as major arterials converge on the downtown. A quality inner-urban environment is critical to the success of residential life in a downtown area. The road plan makes outer areas more accessible and also degrades the approaches to the downtown reducing their desirability for residential living. Many cities have come to realize that a viable commercial downtown inextrably ties to a viable residential downtown.

- The planning process seems to be overly concerned with need for a city bypass. This appears to be a carry over from transportation planning in other parts of the country where interurban traffic flow is a critical factor. As the only urban area, virtually all traffic is intraurban and a substantial investment in an interurban bypass would never be cost effective when balanced with the intraurban needs.

- Planners seem to take an incremental approach to transportation improvements which erodes or bypasses public objectives (whether self-" serving or valid public concern). This has a tendency to undermine the participating process and impose planner goals rather than community goals on the future of Anchorage. The Tidewater freeway continues to surface almost annually. Despite a lack of success,

the present long-range element now includes an airport to Northern Lights connection which is the logical first step to a Tidewater Corridor. The Scenic Foothills Parkway is another route with substantial opposition. Originally, a bypass, then a parkway, now a corridor study, it stays on the long-range map despite massive cost and low projected use.

- A serious problem for implementing local transportation plans is the role of the state in the funding process. Federal funding is allocated by the state through a prioritization process inconsistent with measures of traffic congestion, volume, population, etc. Anchorage's share of these funds has been ridiculously small relative to the problems. The uncertain support from the state, the problems of funding projects consistent with local priorities can be expected to plague the process. Further funding problems are discussed in the transit section.

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. During 1979 and 1980, the system has and will provide scheduled mass transit service to the Anchorage public covering 39,100 system miles per week. This includes 16 hours per day of bus transportation over 14 scheduled routes between 6 a.m. and 10 p.m., Monday through Friday and 10 hours on Saturday between 9 a.m. and 7 p.m. over 13 scheduled routes. (Municipality of Anchorage, 1979)

Issues

Currently there is 1.3 percent ridership for the existing transit system, the People Mover. This is an increase over the .6 percent ridership in 1977-78. Achieving a larger ridership depends on a variety of factors. Current economic conditions, the cost of gasoline, parking availability, scattered residential development, climatic conditions, government action, personal values, all play a role in determining ridership.

The current data on the People Mover System indicate that most people utilizing the buses are those that are young and elderly who, in fact, have no other means of transportation. This has begun changing somewhat with an increase in employment related destinations.

It should be noted, however, that the average daily ridership has increased substantially since 1975 as noted in table 85. In 1978, the number of unlinked passenger trips was 1.73 million. The numbers of buses in use during peak service is presently 28. The transit system appears to have gone through the phases of organization, development, and marketing to the public. In a few short years, it has become a major enterprise with significant management challenges. Much of the increase in ridership to date is due to latent demand with only the beginnings of quality service and marketing producing large jumps in passengers.

TABLE 85

AVERAGE DAILY RIDERSHIP, 1975-1979[a]

Average Daily Use	Daily Totals[c]	% Change Over Previous Year
1975	1,433	
1976	2,960	+106.6%
1977	4,020	+ 35.8
1978	7,000[b]	+ 74.1
1979	9,000[b]	+ 28.6

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

[b]Estimates only, Stan Green, Transportation Planning, October, 1979.

[c]Daily totals vary considerably. These numbers reflect weekday averages and 1975-77 was for the month of January.

Short-Range Transit Plan

The five-year Transit Development Plan (1980-1984) calls for the number of passengers to increase on an annual basis by 31.2 percent through 1984. The system will acquire about 75 new buses (in addition to 12 received in July 1977[three older vehicles were retired with the purchase]) and retire some six buses. The fleet should number 48 in 1980, 68 in 1981, 81 in 1982, 94 in 1983 and 103 in 1984 (Stan Green, October 1979). The new buses will enable improved headway times on present routes, new routes and expansion of service and development of the park and ride concept with the first efforts planned for the Eagle River and Dimond/Seward Highway locations (Municipality of Anchorage, 1979). The plan also calls for a continued funding via contract with outside operation of a demand-responsive system for the elderly and handicapped. Seven light equipped vans will be purchased by the Municipality with a $100,000 grant from the State Office of Aging. Presently five vehicles (including one van with lift) are operated by four private

organizations. The 16(b)2 projects for local elderly service are expected to expand set-vice to all e" derly and handicapped who may require supplemental service (Municipality of Anchorage, 1979).

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, could ultimately provide transportation from Wasilla to Portage. Recent drafts of the study go further by looking at a variety of light rail corridors and alternative plans, The establishment of C Street and Northern Lights as transit corridors is a first step in looking at complementing transit modes.

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 1.3 percent). This will be done by increasing service on existing routes and expanding service to encompass outlying residential and commercial areas (Municipality of Anchorage, 1977b).

Expansion of the system and marketing it to the consumer has been hampered to date by Federal inconsistencies in this area. Federal matching for capital equipment is critical in this area, so local government is very dependent on a coherent transit policy from the federal level. Even if this situation improves there is little hope that long range transit goals can be achieved. Growth in transit can be expected to continue in the short

term since so little ridership is presently served. Once latent demand and those attracted through marketing are brought into the transit system, efforts to improve the ridership will be much more difficult. It is unlikely that the 14.4 percent is obtainable without a fundamental rethinking of what it would take to achieve the goal.

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 86). This is due to the strong Federal support in capital acquisition but little or no assistance in operation and maintenance costs. In 1978, transit fees constituted 13 percent of revenues, while local taxes covered 22.8 percent of the cost. In 1979, this is projected to be 14.4 percent and 23.2 percent respectively.

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 87, indicate that plans are centered in a dynamic increase in the population with a 76.4 percent increase between 1980 and 1995 (inclusive).

TABLE 86

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.

TABLE 87

POPULATION Projections

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 suppose to be geared toward future anticipated land use.

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 and proposed increases in the transit system.

PORT 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 273.5 meters (900 feet) long with a moving dolphin adding another 42 meters (100 feet) for roll on-roll off containers. In total, the port has 186.5 meters (612 feet) of petroleum dock and 642.3 meters (2,110 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 availablein the Port area. An enclosed concrete and steel cargo shed is located in the general cargo 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 of 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. Recent improvements are better able to accommodate the roll-on/roll-off system.

The tonnage handled by the Port of Anchorage, shown in table 88, 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 has improved with the expansion of the third terminal.

TABLE

PORT OF ANCHORAGE TONNAGE 1967-1978[a]

Commodity	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978
Frt. N.O.S.	17,046	1,258	11,283	1,805	1,845	8,005	3,546	6,147	3,073	5,783
Cement-Bulk	---	24,352	---	7,459	14,994	18,225	44,384	40,360	37,943	2,879
Cement Drill Mud	569	158	14,995	---	---	---	---	---	---	---
Insulation	---	---	---	---	---	---	39	1,273	---	---
Iron or Steel	10,816	3,459	3,730	6,828	3,336	14,787	8,823	7,421	13,680	14,183
Lumber	9,532	197	427	393	539	13,921	8,315	266	2,748	272
Oil Well Equipment	228	2,279	---	---	---	---	---	---	---	---
Petroleum Bulk	675,052	1320,960	440,803	150,184	507,994	595,667	1230,065	1650,000	1130,986	937,599
Petroleum N.O.S.	865	2,169	746	639	,008	2,220	2,084	1,395	851	603
Van, Flats, Containers	192,777	478,234	357,321	462,546	476,883	590,474	838,676	978,610	978,584	1013,426
Vehicles	15,323	4,543	9,247	4,271	5,739	11,846	21,518	36,677	40,360	39,745
TOTAL CARGO	922,208	1837,609	839,093	1985,125	2012,338	2255,[illegible]5	285,820	2760,143	2208,225	2073,490

[a]Port of Anchorage

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 occupied one and one-half berths until the recent dock three expansion. (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 recently completed construction of an extension of Terminal No. 3 from its present length of 219 meters to 273 meters (7J8 feet to 897 feet). TOTE is the direct beneficiary of this project because elongation of Terminal No. 3 is more suitable for its roll-on/roll-off cargo handling. The move of TOTE from its past 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 built an additional maintenance shed to be used for storing dock equipment.

Funding of $4,2 million project came from two sources: a grant from the U. S. Economic Development Administration of $1.9 million and the balance from a genera? obligation bond approved by the voters in 1976.

Other recent improvements have included paving of transit areas B and C using Port revenues.

The Port's 1979-1980 Capital Improvements Program had called for the development of a new staging area, Transit Area D, but this was put off until long-term plans for the Port were better defined (Port of Anchorage, 1976).

Long-Term Expansion of Port Facilities. While the development of Transit Area D and a fourth terminal are possibilities for the future, expansion is contingent on an upcoming Port Marketing and Development Study.

The Port is presently preparing to select a consultant to carry out the study with completion targeted for November or December 1980, though the scope of the project has yet to be fully defined. The study is expected to include:

- a concise statement of existing traffic;
- possible and probable resource development that would effect the Port such as the Susitna Dam, foreign trade, fishing and mining;
- projections in increases in present cargo;
- facilities required to meet future demand;
- interface of surface and air transportation systems.

Another study possibility is the concept of a foreign trade zone linked to the Port. One problem is that with one additional terminal 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 (W. MeKinney, Jr., 1979).

As part of its FY 1977-1978 budget, the Port 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 (Id. 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 w ll absorb some demand, it is likely a new port will have to be deve oped. A site somewhere across the Kni k Arm in Matanuska-Susitna (Mat-Su) Borough is a location which has received frequent mention (W. McKinney, Jr., 1976). The most recent proposal is to upgrade the Port of Whittier and annex the port into the Municipality as part of general improvement of Southcentral Alaska's port facilities (1979 Anchorage Overall Economic Development Plan).

A number of factors would affect the timing of the deve opment 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. McKinley, ,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 Gulf of Alaska and Lower Cook Inlet. 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, and at least 13 uncontrolled airstrips on lakes.

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 al 1 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 with about 5.00 planes tied down and 800 on the waterfront slip list, but also 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. Major problems are storage of aircraft and the fact that Hood is expected to reach capacity of 88,000 annua op rations within three years.

Merri" l 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.

TABLE 89

OPERATIONS OF CONTROLLED AIRFIELDS

	1977		1978	
Airfields	Itinerants[b]	Local Operations	Itinerants[b]	Local Operations
Anchorage International[a]	187,396	71,960	187,919	36,445
Elmendorf Air Force Base[c]	Total 121,57$		Total 104,133FY	
Bryant Field (Ft. Richardson)[d]	---	---		---
Merrill Field[a]	163,466	185,679	120j666	208 ,705
Lake Hood[a]	63,519	11,045	69,624	11,.718
Total Operations	804,640		748,210	

[a]Source, Federal Aviation Administration, Marion Figley, May 2, 1978, October 24, 1979

[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, Sgt. Edmiston, Public Information Office, November 16, 1979 (FY is October to October, however annual operations are assumed to be close)

[d]unavailable

Figure 21 indicates the location of the five controlled airports and their respective relation to each other in terms of air space.

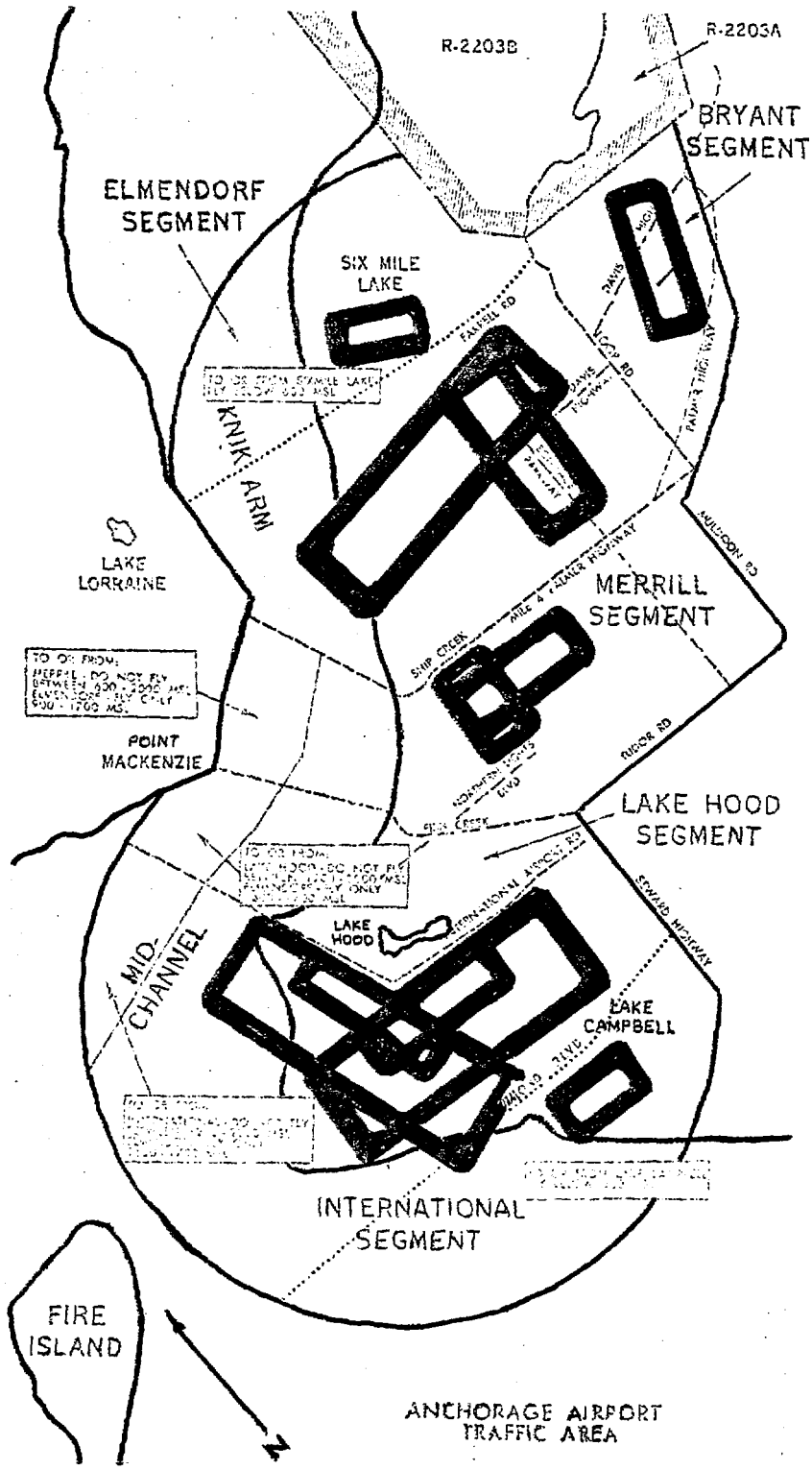


FIGURE 21

ANCHORAGE AREA AIRPORT Locations

[a]Obtained from G. Whiteman, Anchorage International Airport

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 89 illustrates the total operations for the five major airfields in the Anchorage area. Total operations for 1978 were 748,210 (excludes activity for Bryant Field).

Issues

At this point, it becomes necessary to briefly discuss the topographical characteristics of the Anhcorage 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 22 illustrates the topographical characteristics of the southcentral region of Alaska.

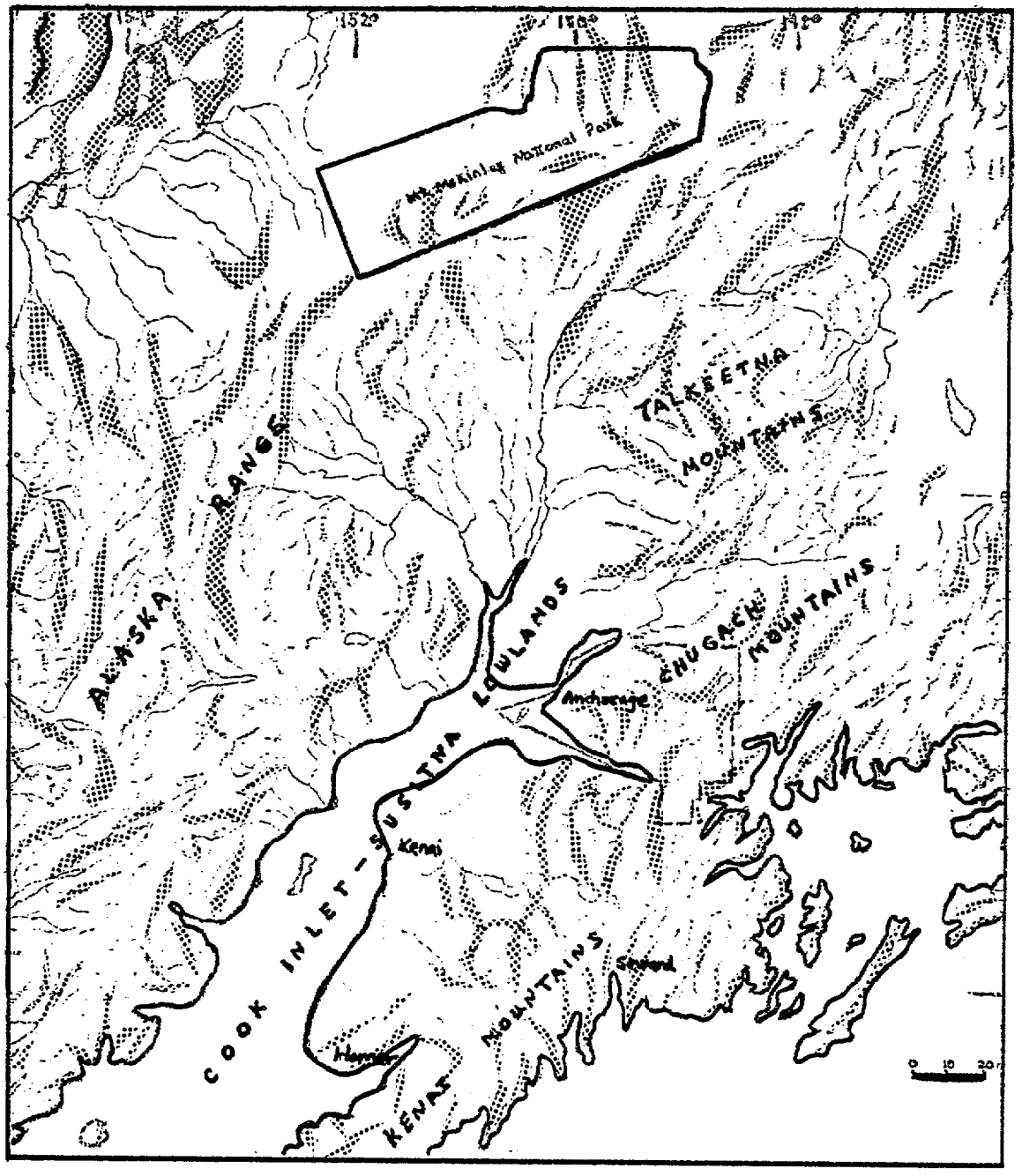


FIGURE 22

TOPOGRAPHICAL CHARACTERISTICS OF THE

SOUTHCENTRAL REGION OF ALASKAa

[a]L. Selkregg and E. H. Buck, Environmental Atlas of the Greater Anchorage Area Borough, University of Alaska, Anchorage, AK.

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 19 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 to exceed the FAA saturation point of 825,000. In addition to the airfields previously mentioned, there are a number of other airstrips which exist within or close by the municipal boundaries. Most of these airstrips are uncontrolled and include: Six Nile 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 sland. Birchwood alone is estimated to have as many as 40,000 operations per year. Adding operations from th s list to the five main control fie ds puts the total air traffic operat ons 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 90 indicates the approximate number of operations per day during peak periods for the nonmilitary controlled airfields in the Anchorage basin.

TABLE 90

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 21 for location). Many aircraft 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 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 has adopted a master plan calling for a number of improvements to the facilities. The airport is adjacent to the municipal landfill which will also reach saturation by the mid 1980's. 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). One of the major recommendations is to reduce the number of local operations at Merrill Field by shifting this activity to other facilities providing for increases in itinerant operations.

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 congestion.

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-wouth 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 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). The project is about 25 percent complete with a target opening data of August 1981. The future of the International Airport is charted by a newly completed long range master plan.

According to the airport expansion plan, Anchorage International Airport will have to undergo $243 million in improvements over the next 17 years if it is to handle a projected three fold increase in air travel. Plans call for doubling the terminal area, triple auto parking and almost double private airplane tiedowns. The report estimates that commercial boardings will increase from 1.02 million to 3.65 million by 1996. This will increase passenger carrier landings from 45,177 to 133,642 in 1996. It is estimated that cargo will grow 5-fold from its current 256,000 pounds, and cargo plane landings will rise from 8,000 in 1979 to 35,000 in 1996 (Anchorage Times, 1979) .

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 congestion in the Anchorage Bowl area with relocation of the airport on the other side of Knik Arm (Quinton-Budlong, Engineering Consul tant, 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. Also present expans on plans are likely to preclude this development.

111. CONCLUSIONS AND SUMMARY

Through the construction of the trans-Alaska oil pipeline, Anchorage has evolved as a major metropolitan center and functions as the crossroads for the distribution of goods and services for the State of Alaska.

Generally, the past five years have found Anchorage gaining impressively from the pipeline construction. Incomes are up and private industrial sectors have shown increases in the number of businesses in the field, number of employees, and the total payroll. However, in the past three years, with the completion of the oil pipeline as well as the general state of the economy, Anchorage has begun an economic decline. Unemployment rates are at an all time high, the construction and real estate markets have slowed dramatically, and many small businesses are showing the strain of a depressed market. Anticipation of the construction of a gas pipeline is perhaps the only impetus for economic growth in the near future. In any event, without a major development project(s), there is strong potential for the development of a long-term structural unemployment problem.

With a population that is approaching 200,000 in 1979, 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 1978, expenditures increased more than $15 million.

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; and

- 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.

COMMUNITY CONTACTS

CCC/HOK. No date. W. D. McKinney Jr., Port Director, Port of Anchorage, Anchorage, AK.

Ender, R. L. 1978a. Anchorage Metropolitan Area Transportation System. Personal interview with A. Reed Gibby, Transportation Study Director, Planning Dept., Transportation Planning, Municipality of Anchorage, Anchorage, AK, March 1978.

_____. 1978b. Anchorage Municipal Office of Management and Budget. Personal interview with L. Crawford, Director, Office of Management and Budget, Municipality of Anchorage, Anchorage, AK, March 24, 1978.

. 1978c. Anchorage Revenue and Expenditures Projections. Personal 'interview with T. Masters, Senior Bond Analyst, Dept. of Finance, Municipality of Anchorage, Anchorage, AK, March 23, 1978.

_____. 1979. Anchorage School District Enrollment Statistics. Telephone conversation with G. Markee, Statistician, Anchorage School District, Anchorage, AK, March 1979.

_____. 1980. Anchorage School District Enrollment Statistics. Telephone conversation with G. Markee, Statistician, Anchorage School District, Anchorage, AK, January, 1980.

_____. 1980. Housing Data. Telephone conversation with B. Withers, Economist, Planning Department, Municipality of Anchorage, Anchorage, AK, January, 1980.

Gehler, J. 1978a. Anchorage Community Programs. Telephone conversation with J. Waters, Superintendent, Community Programs, Anchorage, AK, May 1978.

_____. 1978b. Anchorage Human Resources Planning. Personal interview with N. Petrick, Manager, Human Resources Planning Div., Planning Dept., Municipality of Anchorage, Anchorage, AK, April 1978.

_____. 1978c. Anchorage Parks and Recreation Dept. Telephone conversation with L. Penna, Park Planning and Design, Municipality of Anchorage, Anchorage, AK, May 1978.

_____. 1978d. Anchorage Parks and Recreation Facilities. Telephone conversation with R. Robertson, Division Manager, Parks and Recreation Div., Municipality of Anchorage, Anchorage, AK, March 1978.

_____. 1978e. Anchorage Planning Dept. Telephone conversation with P. Martin, Planner, Physical Planning Div., Planning Dept., Municipality of Anchorage, Anchorage, AK, May 1978.

_____. 1979a. Anchorage Children's Services. Personal interview with Faye Guthry, Regional Supervisor, Div. of Social Services, Anchorage Regional Office, Anchorage, AK, February 1979.

_____. 1979b. Anchorage Social Services. Telephone conversation with T. Donnelly, Municipal Dept. of Social Services, Anchorage, AK, no date.

Gorski, S. E. 1978a. Alaska State Troopers. Personal interview with Capt. A. English, C Detachment, Alaska State Troopers, Anchorage, AK, March 6, 1978.

_____. 1978b. Alaska State Troopers' Budget. Telephone conversation with T. Hermann, Alaska State Troopers, Juneau, AK, March 10, 1978.

_____. 1978c. Alaska State Troopers Statistical Data. Telephone conversation with B. Brown, Alaska State Troopers, Juneau, AK, March 8, 1978.

_____. 1978d. Anchorage Fire Dept. Personal interview with Capt. J. Franklin, Anchorage Fire Dept., Anchorage, AK, March 2, 1978.

_____. 1978e. Anchorage International Airport and Merrill Field. Personal interview with G. Whiteman, Air Traffic Control Specialist, April 1978.

_____. 1978f. Anchorage Police Dept. Personal interview with Capt. G. Weaver, Anchorage Police Dept., Anchorage, AK, March 6, 1978.

_____. 1978g. Anchorage Police Dept. Budget Information. Telephone conversation with Municipal Office of Managment and Budget, Anchorage, AK, March 10, 1978.

_____. 1978h. Anchorage Sewer System. Telephone conversation with Sandra Cooke, Bomhoff & Associates, Anchorage, AK, March 14, 1978.

_____. 1978i. Anchorage Sewer Utility. Personal interview with C. Eggner, Chief of Operations, Anchorage Sewer Utility, Anchorage, AK, March 7, 1978.

_____. 1978j. Anchorage Telephone Utility. Personal interview with A. C. Pistorius, Manager, Anchorage Telephone Utility, Anchorage, AK, March 13, 1978.

_____. 1978k. Anchorage Water Utility. Personal 'interview with John Harshman, Chief of Operations, Anchorage Water Utility, Anchorage, AK, March 6, 1978.

_____. 19781. Chugach Electric Association. Personal interview with L. Markley, Manager, Environmental Systems, Chugach Electric Association, Anchorage, AK, March 2, 1978.

_____. 1978m. Elmendorf Air Force Base. Telephone conversation with Capt. Hodges, Elemendorf Information Office, Anchorage, AK, May 2, 1978.

_____. 1978n. Federal Aviation Administration. Telephone conversation with M. Figley, FAA, May 2, 1978.

_____. 19780. Municipal Light and Power. Personal interview with H. Purcell, Engineer, Municipal Light and Power, Anchorage, AK, March 3, 1978.

_____. 1978P. Solid Waste in Anchorage. Personal interview with J. Grunwaldt, Manager, Solid Waste Div., Dept. of Public Works, Anchorage, AK, March 8, 1978.

_____. 1979a. Alaska State Troopers. Telephone conversation with D. Swearingen, Data Control Clerk, Alaska State Troopers Juneau Headquarters, Juneau, Alaska, February 1979.

_____. 1979b. Alaska State Troopers. Telephone conversation with J. Mapranath, Budget Office, Alaska State Troopers Juneau Headquarters, Juneau, AK, February 1979.

_____. 1979c. Alaska State Troopers. Telephone conversation with Sgt. P. Heddle, C.Detachment, Anchorage, AK, February 1979.

_____. 1979d. Anchorage Fire Department. Telephone conversation with Capt. J. Franklin, Anchorage, AK, February 1979.

_____. 1979e. Anchorage Police Dept. Personal interview with Capt. Christianson, Technical Services Div., Anchorage Police Dept., Anchorage, AK, February 1979.

_____. 1979f. Anchorage Telephone Utility. Telephone conversation with general managers office, Anchorage Telephone Utility, Anchorage, AK, March 1979.

_____. 1979g. Anchorage Water and Sewer Utility. Personal interview with J. Harshmann, Manager, Anchorage Water and Sewer Utility, Anchorage, AK, February 1979.

_____. 1979h. Chugach Electric Association. Telephone conversation with L. Markley, Manager, Environmental Systems, Chugah Electric Assoc., Anchorage, AK, February 1979.

_____. 1979i. Elmendorf Air Force Base Payroll Figures. Telephone conversation with Sgt. Edmiston, Elmendorf Air Force Base, Public Information Office, July 31, 1979.

_____. 1979j. Metropolitan Anchorage Urban Studies. Personal interview with T. Murdock, Civil Engineer, U. S. Army Corps of Engineers, Anchorage, AK, February 1979.

_____. 1979k. Municipal Light and Power. Personal interview with C. Holstrom, Municipal Light and Power, Anchorage, AK, February 1979.

_____. 19791. Municipal Planning Dept. Telephone conversation with S. Barto, Municipal Planning Dept. Anchorage, AK February 1979.

_____. 1979m. Office of Management and Budget, Municipality of Anchorage. Telephone conversation with L. Pearson, Office of Management and Budget, Anchorage, AK, February and March 1979.

_____ 1979n. Solid Waste Div., Dept. of Public Works, Municipality of Anchorage. Telephone conversation with J. Grunwaldt, Manager, Solid Waste Div., Anchorage, AK, February 1979.

Harper, S. K. 1978a. Anchorage School Distric Six-Year Facilities Planning and Construction. Telephone conversation with R. Haines, Asst. Superintendent, Anchorage School District, Anchorage, AK, March 28, 1978.

_____. 1978b. Anchorage School District Special Education Programs. Telephone conversation with Dr. S. Dashner, Director of Pupil Personnel Services, Anchorage School District, Anchorage, AK, March 27, 1978.

BIBLIOGRAPHY

The following bibliography was designed to serve two purposes. The first was as a reference for the citations noted in the text of the Anchorage Baseline Report. The second was to provide a comprehensive listing of the existing literature related to the socioeconomic and physical characteristics of Anchorage. This fulfills a need for other scholars and researchers beyond the requirements of the report. An attempt is made to include not only the current literature cited but also the historical studies on which these were based. The subcontractor felt this type of bibliography was appropriate both in terms of the contract, as well as the gap of an existing literature listing on the subject.

Abbott, J. 1979. "Breakthrough Why It Failed," Anchorage Daily News, Anchorage, AK, April 4, 1979.

ACLW and M & E, Inc. Consulting Engineers. 1973. Study of On-Site Storage, Collection and Bulk Transportation of Solid Waste. Anchorage, AK.

Air Quality Technical Committee. 1979. Anchorage Air Quality Plan, 1979 SIP Revisions, Executive Summary, Draft Report. Municipality of Anchorage, Planning Dept., Anchorage, AK.

Alaska Dept. of Commerce & Economic Development. 1976. The Alaska Economy. Juneau, AK.

_____. 1977. The Alaska Economy. Juneau, AK.

_____. 1978. The Alaska Economy Year-End Performance Report. Juneau, AK.

_____, Census Bureau. 1970. General Social and Economic Characteristics. Juneau, AK.

_____, Division of Economic Enterprise. 1978. The Alaska Economy, Year-End Performance Report 1978. Juneau, AK.

_____. 1978. Numbers - Basic Economic Statistics of Alaska Census Divisions. Juneau, AK.

_____, Div. of Tourism. 1960. The Incorporated Town & Cities of Alaska Financial Data. Juneau, AK.

Alaska Dept. of Community & Regional Affairs. 1973. Alaska Taxable-Municipal Property Assessments and Full Value Determinations, Juneau, AK.

_____. 1975. Report of the Urban Housing Conference, May 1975. Anchorage, AK.

_____. 1977. Alaska Taxable-Municipal Property Assessments and Equalized Full Value Determinations. Juneau, AK.

_____. 1978. Alaska Taxable 1977, Municipal Property Assessment and Equalized Full Value Determinations, Vol. XVII, No. 1. Div. of Local Government Assistant. Juneau, AK.

_____. 1979. Alaska Taxable 1978. January, 1979. Juneau, AK.

Alaska Dept. of Education, Div. of Career Development & Vocational Training. No date. Career Development Education, Including the Fourth R. Juneau, AK.

Alaska Dept. of Health & Social Services, Div. of Public Health. 1975. Alaska Vital Statistics 1975. Anchorage, AK.

_____. Div. of Social Services. 1978. Proposed Social Services Plan for Program Year 1979. Juneau, AK.

_____ 1979. Proposed Comprehensive Annual Social Service Plan: Plan Year 1980. Juneau, AK.

Alaska Dept. of Highways. 1973. Anchorage Metropolitan Area Transportation Study. Juneau, AK.

_____. 1976. Five-Year Highway Construction Program. Juneau, AK.

Alaska Dept. of Labor, Employment Security Div. 1975. Alaska Labor Force Estimates by Industry and Area, 1974. Juneau, AK.

_____. 1977. Anchorage Area Manpower Review. Juneau, AK.

_____. 1979. Anchorage Area Manpower Review. Juneau, AK.

Alaska Dept. of Labor, Employment Security Div., Research & Analysis Section. 1969-1979. Statistical Quarterly. Juneau, AK.

_____. 1976. Alaska Economic Trends - November 1976. Juneau, AK.

_____. 1977a. Alaska Economic Trends - April 1977. Juneau, AK.

_____. 1977b. Anchorage Annual Planning Report for 1978 (Fiscal Year). Anchorage, AK.

_____. 1977c. Labor Force Highlights - November 1977. Juneau, AK.

_____. 1978a. Alaska Economic Trends - January 1978. Juneau, AK.

_____. 1978b. Anchorage Annual Planning Information, FY 1979. Juneau, AK.

_____. 1978c. Labor Force Highlights - February thru April 1978. Juneau, AK.

_____. 1979. Alaska Economic Trends. Juneau, AK.

Alaska Dept. of Law. 1971. Comments on the Proposed Trans-Alaska Pipeline. Juneau, AK.

Alaska Dept. of Public Works, Div. of Aviation, Anchorage Airport. 1973. Preliminary Environmental Impact Statement Proposed North-South Runway. Anchorage, AK.

Alaska Dept. of Transportation. 1977. AMATS - Unified Work Program, Fiscal Year 1978. Anchorage, AK.

Alaska, University of. 1977a. Capital Budget Proposed Justification. Anchorage, AK.

_____. 1977b. Capital Budget Proposed Six-Year Capital Program. Anchorage, AK.

_____. 1977c. Capital Budget Summary. Anchorage, AK.

_____, Center for Alcohol and Addiction Studies and Altam and Associates. 1978. A descriptive Analysis of the Downtown Anchorage Skid Row. Anchorage, AK.

_____, Arctic Environmental Information & Data Center, Resource & Science Services. 1972. Environmental Atlas of the Greater Anchorage Area Borough, Alaska. Edited by Lidia Selkregg, et al. Anchorage, AK.

Alaska, University of, Center for Northern Educational Research. 1977 Alaska Interregional Cost Differentials. Fairbanks, AK.

Alaska, University of, Human Resources Planning Institute. No date. Trans-Alaska Gas Pipeline Project: An Analysis of Its Impact on Alaska's Workforce and Population. Juneau, AK.

_____. 1974. A Forecast of Industrial & Occupational Employment in Alaska. Seattle, WA.

Alaska, University of, Institute of Social, Economic & Government Research. No date. Alaska Review of Business & Economic Conditions. Anchorage, AK.

_____. 1970. "Alaska's Economy in the 1960's," Review of Business & Economic Conditions. Fairbanks, AK.

_____. 1972. Man in the Arctic Program - Research Plan. Anchorage, AK.

_____. 1975. Outline of 1990 Projections Using MAP Statewide & Regional Economics Models. Fairbanks, AK.

Alaska, University of, Institute of Social & Economic Research. 1978a. "Alaska's Revenue Forecasts and Expenditure Options," Alaska Review of Social and Economic Change, Vol. XV, No. 2. Fairbanks, AK.

_____ 1978b. Beaufort Sea Petroleum Development Scenario, Economic and demographic Impacts, Technical Report 18. Bureau of Land Management, Alaska Outer Continental Shelf Office. Anchorage, AK.

_____. 1979a. The Alaskan Economy in the Base Case. Draft Report. Anchorage, AK.

_____. 1979b. Southcentral Alaska Economy and Population 1965-2025. (A Report of the Economic Task Force). Anchorage, AK.

Alaska, University of. Institutional Studies. 1978. Untitled (Full-Time Equivalency by Semester Statistics). Unpublished. Anchorage, AK.

Alaska Gas & Service Co. 1979. Letter dated May 31, 1979 to Customers, regarding waste heat steam turbine power plant. Anchorage, AK.

Alaska Geological Society. 1973. Road Log and Guide: Geology and Hydrology for Planning Anchorage Area. Anchorage, AK.

Alaska Housing Finance Corp. 1978. "Helping to Build Alaska's Future," 1977 Annual Report. Anchorage, AK.

Alaska Pacific Bank. 1979. Alaska Business Trends, 1979 Economic Forecast. Anchorage, AK.

Alaska State Medical Association. 1977. 1977 Medical Directory. Anchorage, AK.

Alaska State Legislature. 1978. Senate Bill "No. 450 - Capital Improvements for the University of Alaska. Juneau, AK.

Alaska Water Study Committee, Electric Power Work Plan Committee. 1979. Southcentral Alaska Water Resources Study, "Level B," Phase I Electric Power Needs Assessment. Anchorage, AK.

_____, Recreation Task Force. 1979. Southcentral Alaska Water Resources Study, "Level B," Phase I Needs Assessment. Statewide Recreation Services, Alaska Div. of Parks, Anchorage, AK.

AMATS Policy Committee. 1972. Anchorage Area Transportation Study - Revised Transportation Plan. Anchorage, AK.

Anchorage, City of. 1969-1975. Annual Financial Reports. Anchorage, AK.

_____. 1973. Trans-Alaska Oil Pipeline Impact Statement. Anchorage, AK.

_____. 1974a. Anchorage Police Dept. Review, 1974. Anchorage, AK.

_____. 1974b. City Park Plan Preliminary (Draft Copy). Anchorage, AK.

Anchorage, Municipality of. 1976a. Comprehensive Development Plan, Ordinance No. 40-18-75. Anchorage, AK.

_____. 1976b. Zoning Ordinance of the Greater Anchorage Area Borough, Anchorage, AK.

_____. 1977a. Anchorage Metropolitan Area Transportation Study (AMATS): 1977-1995 Long Range Element. Anchorage, AK.

_____. 1977b. AMATS: Transit Development Program, 1978-1982. Anchorage, AK.

_____. 1977c. AMATS: 1977 Transportation Improvement Program. Anchorage, AK.

_____. 1977d. AMATS: Unified Work Program. Anchorage, AK.

_____. 1977e. Annual Financial Report of the Municipality of Anchorage, City of Anchorage Service Area 1976. Anchorage, AK.

_____. 1977d. 1978 Annual Operating Budget, Vol 1 & 2. Anchorage, AK.

_____. 1977e. Community Planning News. Anchorage, AK.

_____. 1977f. Financial Report - Municipality of Anchorage, 1976. Anchorage, AK.

_____. 1977g. Library Plan. Anchorage, AK.

_____. 1977h. Municipal Light & Power 1978-1983 CIP. Anchorage, AK.

_____. 1977i. Municipal Zoning Ordinance. Anchorage, AK.

_____. 1977j. Water Planning and Anchorage Metropolitan Anchorage Urban Study. Anchorage, AK.

_____. 1977k. 1978 Work Program Statements. Anchorage, AK.

_____. 1978a. 1979 Annual Operating Budget, Vol. 1 & 2. Office of the Mayor, Anchorage, AK.

_____. 1978b. "The 1979 Budget in Brief," Supplement to the Chugiak-Eagle River Star. Eagle River, AK.

_____. 1978c. 1978 - 1983 Capital Improvements Plan. Anchorage, AK.

_____. 1978d. Fiscal Outlook 1979-1984, Preliminary Report (revised). Office of the Mayor, Anchorage, AK.

_____. 1978e. Program Budget for Fiscal Period of January 1 - December 31,, 1977. Anchorage, AK.

_____. 1978f. 1979 Work Program Statements. Office of the Mayor, Anchorage, AK.

_____. 1979a. Annual Operating Budget, Vol. I, II, III. Office of the Mayor. Anchorage, AK. *

_____. 1979b. **Fiscal Outlook 1980 - 1985.** Office of the Mayor. Anchorage, AK.

_____. 1979c. Merrill Field Master Plan. Anchorage, AK. *

_____, Anchorage Action Council. 1976. Anchorage Blue Book. Anchorage, AK.

Anchorage, Municipality of, Anchorage Economic Development Commission. 1976. Anchorage Economic Report. Anchorage, AK.

_____. 1977. Anchorage Overall Economic Development Program. Anchorage, AK.

_____. 1978. Annual OEDP Report and Program Projection 1978. Anchorage, AK.

_____. 1979. 1979 Anchorage Overall Economic Development Plan. Anchorage, AK. *

Anchorage, Municipality of, Dept. of Enterprise Activities, Anchorage Telephone Utility. 1977. Capital Improvements Plan, 1978-1983. Anchorage, AK.

Anchorage, Municipality of, Housing & Community Services. Project Rehab. Anchorage, AK.

Anchorage, Municipality of, Municipal Health Commission, Home Health Task Force. 1979. Interim Report. Anchorage, AK.

Anchorage, Municipality of, Municipal Light and Power. No date. Anchorage Area Power Requirement Fact Sheet. Anchorage, AK.

_____. 1977a. Annual Operating Revenue Relationships. Anchorage, AK.

_____. 1977b. Municipal Light and Power 1978 Budget Review. Anchorage, AK.

_____. 1979. Minutes from Meeting of January 24, 1979. Anchorage, AK.

Anchorage, Municipality of, Personnel Services. 1978. Municipality of Anchorage, Alaska, Survey of Salaries & Benefits for the Anchorage Metropolitan Area. Anchorage, AK.

Anchorage, Municipality of, Planning Dept. 1976. Planning Dept. Memorandum, April 29, 1976. Unpublished. Anchorage, AK.

_____. 1977a. Health Services Plan. Anchorage, AK.

_____. 1977b. Human Resources Study. Anchorage, AK.

_____. 1977c. Leisure Inventory. Unpublished. Anchorage, AK.

_____. 1978a. No Title (Neighborhood Block Grant Agenda and Associated Information. Unpublished. Anchorage, AK.

_____. 1978b. Anchorage Metropolitan Area Transportation Study Citizen Participation Workshop. Anchorage, AK.

_____ 1978c. Subdivision, Street Name, and Trailer Court Index. Anchorage, AK.

_____. 1979a. Anchorage Air Quality Plan 1979 SIP Revisions, February 22, 1979, Executive Summary. Anchorage, AK.

_____ 1979b. Anchorage Health Services Plan Update. Unpublished. Anchorage, AK.

_____. 1979c. Quarterly Economic Indicators. Anchorage, AK.

Anchorage, Municipality of, Planning Dept., Human Resources Planning Div. 1978. A Guide to Finding Specialty Housing, Anchorage Health Services Plan, Supplement B. Anchorage, AK.

Anchorage, Municipality of, Planning Dept., Physical Planning Div. 1977. Anchorage District Coastal Management Program. Anchorage, AK.

_____. 1979. Eagle River-Eklutna Comprehensive Plan, Draft Report. Anchorage, AK.

Anchorage, Municipality of, Dept. of Public Works. 1977a. Request for Proposal - Milling Operation. Anchorage, AK.

_____. 1977b. Request for Proposal for a Study to Determine the Feasibility of Resource Recovery in Anchorage, AK. Anchorage, AK.

Anchorage Area Overall Economic Development Program Committee. 1974. Overall Economic Development Program: Progress Report, January 1, 1973-February 19, 1974. Anchorage, AK.

Anchorage Charter Commission. 1959. City of Anchorage, Alaska, Municipal Charter. Anchorag, AK.

Anchorage Community Mental Health Center. 1977. Human Resource Study - Human Services Service File. Anchorage, AK.

Anchorage Daily News. Daily Newspaper. Anchorage, AK.

Anchorage Daily News. 1975. "Group Seeks Housing Aid," November 7, 1975. Anchorage, AK.

_____. 1979a. "Lessons Learned in Anchorage," (editorial), April 5, 1979. Anchorage, AK.

_____. 1979b. "Reaction to School Closures Mixed," March 9, 1979. Anchorage, AK.

Anchorage Medical Society Auxiliary. 1975. Anchorage Volunteer Directory 1975. Anchorage, AK.

Anchorage-Planning Commission. 1965. A Neighborhood Planning Program for Anchorage. City of Anchorage, Anchorage, AK.

_____. 1974. Anchorage Central Business District - Urban Design Amenities. City of Anchorage, Anchorage, AK.

Anchorage Port. 1976. Preapplication and environmental impact assessment submitted to the U. S. Dept. of Commerce, Economic Development Administration for proposed wharf extension, construction of maintenance shed, and improvements to staging and storage areas. Anchorage, AK.

Anchorage Port Commission, No date. Port of Anchorage. Anchorage, AK.

Anchorage Real Estate Research Committee. 1979a. Anchorage Real Estate Research Report, Vol. II, No. 1 - Spring 1979. Anchorage, AK.

_____. 1979a. Anchorage Real Estate Research Report, Vol. III - Fall 1979. Anchorage, AK.

Anchorage School District. No date. Secondary Programs. Anchorage, AK.

_____. 1975a. Elementary and Special Education Recap. Unpublished. Anchorage, AK.

_____. 1975b. Monthly Enrollment Report and Summary. Unpublished. Anchorage, AK.

_____. 1976. Monthly Enrollment Report Summary. Unpublished. Anchorage, AK.

_____. 1977a. Annual Financial Report for the Fiscal Year Ended June 30, 1977. Finance Dept., Anchorage, AK.

_____. 1977b. Elementary School Parent Handbook 1977-1978. Anchorage, AK.

_____. 1978a. Anchorage School District Financial Recap 1977-78 for the Period Ending December 31, 1977. Unpublished. Anchorage, AK.

_____. 1978b. Annual Financial Report 1977-1978. Anchorage, AK.

_____. 1978c. Facts and Figures, 1977-78. Anchorage, AK.

_____. 1978d. Preliminary Financial Plan, 1978-79. Anchorage, AK.

_____. 1978e. Six-Year School Building and Sites Program 1977-1983. Anchorage, AK.

_____. 1979. Annual Financial Report, 1978 - 1979. Anchorage, AK.

Anchorage Telephone Utility. No date. History and Development of Telephony in the City of Anchorage. Unpublished document. Anchorage, AK.

Anchorage Times (Daily Newspaper). Anchorage, AK.

_____. 1977a. Recreation in Anchorage, Municipality of Anchorage - Div. of Parks and Recreation, Summer '77, Catalogue Community Schools, et al. Section A-a, May 28, 1977, Anchorage, AK.

_____. 1977b. "Today/Tomorrow - Transportation," January 24, 1977. Anchorage, AK.

_____. 1978a. "AMU: Miles to Go Before It Sleeps," Section C, February 5, 1978. Anchorage, AK.

_____. 1978b. "Arson Fires Down, But Cost IsUp," October 19, 1978. Anchorage, AK.

_____. 1978c. "Assembly to Consider Turnagain Rules," April 9, 1978. Anchorage, AK.

_____. 1978d. "Fairview: The Old Bows to the News," January 22, 1978. Anchorage, AK.

_____. 1978e. "Local Banker Says Economic Signals are Mixed," April 4, 1978. Anchorage, AK.

_____. 1978f. "Merrill Field: It Keeps Growing," Section B, April 23, 1978. Anchorage, AK.

_____. 1978g. "Municipality Analyzes Tax Increases on Proposals," April 7, 1978. Anchorage, AK.

_____. 1978h. "New Regulations on Grants May Influence City Funding," February 26, 1978. Anchorage, AK.

_____. 1978i. "Prices Rise 1.1 Percent Here," February 28, 1978. Anchorage, AK.

_____. 1978j. "Turnagain Slide Area Construction Raises More Debate," April 12, 1978. Anchorage, AK.

_____. 1979a. "Alaska Incomes High, But So Are Expenses," January 9, 1979. Anchorage, AK.

_____. 1979b. "Carrs-Gottstein Corporation Campaigns to Get Tenants," August 2, 1979. Anchorage, AK.

_____. 1979c. "Eagle River Utility Asks 338 Percent Rate Hike," June 20, 1979. Anchorage, AK.

_____. 1979d. "Move Will Produce a Counter-Move," February 4, 1979. Anchorage, AK.

_____. 1979e. "On a Clear Day, You Can See. . .," Section C, May 13, 1979. Anchorage, AK.

_____. 1979f. "Overworked Planners Call for Changes," March 30, 1979. Anchorage, AK.

_____. 1979g. "From Skeletons to Skyscrapers: in 64 Years," July 15, 1979. Anchorage, AK.

Andrews, S. 1978. "Consumer Prices," Anchorage Times, October 19, 1978. Anchorage, AK.

Baring-Gould, M. and R. Mosher. 1975. An Evaluation of the Anchorage Home Care Program. University of Alaska, Anchorage, AK.

Beebee, J. 1976. The Analysis of Social Overhead Costs of Rapid Community Expansion and Contraction. State of Alaska, Anchorage, AK.

Behlke, J. H. 1975. Preliminary Survey of Postsecondary Education Programs in Alaska. University of Alaska, Fairbanks, AK.

Bennett, J. P. 1976. The Developing Economy of Anchorage. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

Bivens and Associates. 1972. Public Transportation Feasibility Study. Anchorage, AK.

Brown, K. 1976. "As Population Winds Down: Population Boom May Be on the Wane," Anchorage Times, June 6, 1976. Anchorage, AK.

Bryson, G. 1979. "Anchorage's 'Bloody Intersections' Produce Steady Stream of Accidents," Anchorage Daily News, July 11, 1979. Anchorage, AK.

Buffler, P. A. 1974. Program Evaluation/Review and Analysis of the Collection and Presentation of Statistical Data for Program Activities of the GAAB Health Dept.: Final Report. No information on publishing. Anchorage, AK.

Burke, J. 1973. A descriptive Bibliography of Historical Research Material in the Anchorage Area. University of Alaska, Anchorage, AK.

Carter, M. 1978. Survey on High School Students. (Press Release). University of Alaska, Office of Public Affairs, Anchorage, AK.

CCC/HOK. 1977. Physical Characteristics of Anchorage, OCS Baseline Study on Anchorage. Unpublished. Anchorage, AK.

CCC/HOK and John Graham & Co. 1973. Site Evaluation Study for a Government Center. Anchorage, AK.

Chugach Electric. 1978. Fact Sheet. Anchorage, AK.

Citizens Task Force Committee. 1977. Operation Breathrough. Unpublished. Anchorage, AK.

Coon, E. D., A. E. Just, and J. N. Waddell. 1976. An Overview of Current Issues, Sources and Distribution of Funds for Public Elementary and Secondary Education. University of Alaska, Fairbanks, AK.

Dauel. C. and N. Fried. 1979. Anchorage Annual Planning Information 1980 (Fiscal Year). Alaska Dept. of Labor, Research & Analysis Section, Anchorage, AK.

Davel, C. and C. Hunson, 1977. Anchorage Area Manpower Review. Alaska Dept. of Labor, Juneau, AK.

Dittman, D. 1974. Survey of Public Opinion Concerning Unifying the Governments of the City of Anchorage and the Greater Anchorage Borough. Dittman Research Associates, Anchorage, AK.

_____. 1975. Summarized Results of a Survey of Public Opinion Controlled Access Corridors, Streets and Arterials, Traffic Congestion, Carpooling, Public Transit System. Greater Anchorage Area Borough, Anchorage, AK.

Dittman Research Associates. 1977. Public Opinions About Crime and Criminal Justice. Unpublished. Criminal Justice Planning Agency, Anchorage, AK.

Dolezal, P. L. and R. L. Ender. 1976. 1976 Population Profile, Municipality of Anchorage. Municipality of Anchorage, Planning Dept., Anchorage, AK.

Donohue, B. 1977. Wage Rates for Selected Occupations. State of Alaska, Juneau, AK.

Dowd, M. E. 1978. "Bureau's Statistics Show Bite of Inflation in Family Budget," Anchorage Times, January 1978. Anchorage, AK.

Ender R. L. 1976. Citizen's Attitudes Towards Anchorage Local Government and Issues of Public Policy: A Collecton of Reports. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1977a. 1977 Budget Priorities of the Anchorage Citizen. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1977b. The Opinions of the Anchorage Citizen on Local Public Policy Issues. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1977c. Public Support for Local Government Bonding in Anchorage. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1977d. Taxation and Tax Alternatives for Anchorage. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1978. 1978 Population Profile, Municipality of Anchorage. Municipality of Anchorage, Planning Dept., Anchorage, AK.

_____. 1979a. Alcohol and Drug Abuse in Anchorage, Anchorage Health Needs Assessment Study. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1979b. Anchorage Health Needs Assessment Study: The Consumer's Health Survey. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1979c. 1979 Budget Priorities of the Anchorage Citizen. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1979d. Civic Center Bonding Study. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

Ender, R. L, S. E. Aufrecht, S. E. Gorski. 1979. Citizen Participation in Anchorage: Boards and Commissions. Anchorage Urban Observatory, Anchorage, AK.

Ender, R. L., J. Gehler, and S. E. Gorski. 1978. Beaufort Sea Petroleum Development Scenarios Impacts on Anchorage, Alaska, Technical Report 13. Bureau of Land Management, Alaska Outer Continental Shelf Office, Anchorage, AK.

_____. 1979. Anchorage Impacts Analysis, Northern Gulf of Alaska Lease Sale No. 55, Technical Memorandum No. 43. Bureau of Land Management, Alaska Outer Continental Shelf Office, Anchorage, AK.

Ender, R. L., et al. 1978. Anchorage Socioeconomic and Physical Baseline. Technical Report No. 12. Alaska OCS Socioeconomic Studies Program. Bureau of Land Management, Alaska Outer Continental Shelf Office, Anchorage, AK.

Ender. R. L., et al. 1979. Gulf of Alaska and Lower Cook Inlet Petroleum Development Scenarios Anchorage Impact Analysis, Volume II. Standards and Impacts Analysis. Bureau of Land Management, Alaska Outer Continental Shelf Office. Anchorage, AK.

Ender. R. L., G. H. Green, and D. R. M. Hitchins. 1979. Housing and Resource Development: An Analysis of the Alaska Pipeline Impact on Housing Conditions and Policy Formulation. (Unpublished - Paper presented for delivery at 1979 Annual Meeting of the Western Economic Association, June 17-21, 1979). University of Alaska, School of Business & Public Administration, Anchorage, AK.

Eschenbach, T. G. and G. A. Geistauts. 1976. Mass Transit in Anchorage. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

Faletto, A. 1979. "New, Former City Residents Achieve Population Balance," Anchorage Time, June 30, 1979. Anchorage, AK.

Federal Home Loan Bank of Seattle. 1978. Anchorage Housing Vacancy Survey. Seattle, WA.

Federal-State Land Use Planning Commission. 1977. The Urban Fringe: Methods of Land Use Direction (Draft Report). Anchorage, AK.

Fisher, V. 1976. Regional Effects of Anchorage Metropolitan Growth. (Review Draft). University of Alaska, Institute of Social & Economic Government Research, Fairbanks, AK.

Fowler, J. 1976. Economic Forecasts 1976, 1978. State of Alaska, Juneau, AK.

Gadberry, G. 1979. "A Changing Army in a Growing Town," Anchorage Daily News, July 26, 1979. Anchorage, AK.

Gale, D, et al. 1975. Pipeline Impact Brief of the "Manpower and Employment Impact of the Trans-Alaska Pipeline by Human Resources Planning Institute with Urban and Rural Systems Associates." State of Alaska, Dept. of Labor, Employment, Juneau, AK.

Geistauts, G. A. 1977. University of Alaska, parking Policy and Management Plan. University of Alaska, Anchorage, AK.

Gillette, H. 1979. "Anchorage Becomes Important Processing Town," Anchorage Times, May 20, 1979. Anchorage, AK.

Graham, John and Company. 1972a. Central Business District Plan. Anchorage, AK.

_____. 1972b. Economic Base Study - Greater Anchorage Area Borough. Larry Smith & Company, San Francisco, CA.

Greater Anchorage Area Borough. 1968 Tax Base Study Final Report. Anchorage, AK.

_____. 1969. Site Location Study, Local Space (Government Office). Anchorage, AK.

_____. 1969-1975. Financial Reports. Anchorage, AK.

_____. 1973a. Anchorage, Alaska Central Business District Plan. Anchorage, AK.

_____. 1973b. Anticipated Impact of the Trans-Alaska Pipeline on Public Services and Housing in the Greater Anchorage Area. Anchorage, AK.

_____. 1973c. Comprehensive Plan Inventory Analysis. Anchorage, AK.

_____. 1973d. A Neighborhood Study of North Mountain View. Anchorage, AK.

_____. 1974a. The Citizen Speaks Out. Anchorage, AK.

_____. 1974b. Inlet Fairview Neighborhood Survey. Anchorage, AK.

_____. 1974c. Zoning Ordinance of the Greater Anchorage Area Borough. Anchorage, AK.

_____. 1975a. Community Planning News, March 1975, Vol. 4, No. 2. Anchorage, AK.

_____. 1975b. Community Planning News, July 1975. Anchorage, AK.

_____. 1975c. Housing Assistance Plan. Anchorage, AK.

_____. 1975d. Overall Economic Development Program. Anchorage, AK.

_____. 1975e. Preliminary Solid Waste Management Master Plan. Anchorage, AK.

_____. 1975f. State Shared Revenue Analysis. Unpublished. Anchorage, AK.

_____. 1975g. Summary of Comprehensive Plan (Draft and Revised Draft). Anchorage, AK.

Greater Anchorage Area Borough, Dept. of Environmental Quality. 1972. Preliminary Acquisition and Development Plan for Campbell Creek Park System. Anchorage, AK.

_____. 1973a. Muldoon Park System. Anchorage, AK.

_____. 1973b. Sand Lake Park System. Anchorage, AK.

Greater Anchorage Area Borough, Planning Commission. 1970a. Fire Protection Services Plan. Anchorage, AK.

_____. 1970b. Law Enforcement Services Plan. Anchorage, AK.

Greater Anchorage Area Borough, Planning Dept. 1970. 1969-1970 Housing Study. Anchorage, AK.

_____. 1971a. Community Facilities Study. Anchorage, AK.

_____. 1971b. Comprehensive Library Services and Facilities Plan. Anchorage, AK.

_____. 1971c. Parks, Recreation and Open Space Land. Anchorage, AK.

_____. 1971d. Solid Waste Management Study. Anchorage, AK.

_____. 1971e. Upper Campbell Creek Land Use Plan. Anchorage, AK.

_____. 1972a. Community Attitude Survey, Anchorage. Anchorage, AK.

_____. 1972b. Land Use Inventory. Anchorage, AK.

_____. 1972c. Population Projections: 1970-1990. Anchorage, AK.

_____. 1973a. Bikeways Plan & Related Trails. Anchorage, AK.

_____. 1973b. Official Streets & Highways Plan. Anchorage, AK.

_____. 1973c. Preliminary-Comprehensive Development Plan: Greater Anchorage Area Development Plan, Anchorage, AK.

_____. 1973d. Preliminary Goals and Objectives for the Greater Anchorage Area Borough, Alaska, An Element of the Comprehensive Plan. Anchorage, AK.

_____. 1973e. Proposed Anchorage Metropolitan Clearing House Procedures Manual. Anchorage, AK.

_____. 1974a. Anchorage Central Business District Urban Design Amenities. Anchorage, AK.

_____. 1974b. Chester Creek Greenbelt Park Plan. Anchorage, AK.

_____. 1974c. Explanation of Zoning Cases Z1104 & Z1105. Anchorage, AK.

_____. 1974d. Population Projections: 1970-1995. Anchorage, AK.

_____, Comprehensive Planning & Technical Services Div. 1972. People in Anchorage. Anchorage, AK.

_____. 1974. People in Anchorage. Anchorage, AK.

_____. 1975. Pipeline Impact. Anchorage, AK.

Greater Anchorage Chamber of Commerce. 1974. Statistical Profile. Anchorage, AK.

Green, S. 1974. An Analysis of the Alcoholism Problem in Alaska. Unpublished. Anchorage, AK.

Haberman, E. 1979. "Searching for Anchorage's Air," Anchorage Time, April 5, 1979. Anchorage, AK.

Hannan, L. 1973. Cross-Country Ski Trails, Anchorage Bowl Area. Anchorage, AK.

Hannigan, S. T. 1979. "UI Cost Equalization and Reinsurance," Issues and Commentary. Alaska Dept. of Labor, Research & Analysis Section, Juneau, AK.

Hansen, S. 1979. "Assembly Overwhelmingly Approves Executive Branch Reorganization Plan," Anchorage Times, April 11, 1979. Anchorage, AK.

Heikes, D. 1978. "Enrollment Up at Anchorage Private Schools," Anchorage Times, July 28, 1978. Anchorage, AK.

_____. 1979a. "City Planning Officials Say Hillside May Have Sewers," Anchorage Times, July 31, 1979. Anchorage, AK.

_____. 1979b. "Commission Rejects Earthquake Report," Anchorage Times, July 24, 1979. Anchorage, AK.

_____. 1979c. "Developers Go After Big Stores as Mall Competition Gets Keener," 'Anchorage Times, July 8, 1979. Anchorage, AK.

_____. 1979d. "Earthquake Hazard Report Generates More Controversy," Anchorage Times, April 26, 1979. Anchorage, AK.

_____. 1979e. "Old Zoning Decision Haunts Officials," Anchorage Times, May 19, 1979. Anchorage, AK.

_____. 1979f. "Quake Hazard Report Shakes Planning Commission," Anchorage Times, April 24, 1979.

Hitchins, D. R. M. 1976. Anchorage Municipal Housing Study. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1977. Data Base Study of Municipal Department Information Needs. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____, et al. 1977. Profile of Five Kenai Peninsula Towns. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

Homan-McDowell and Associates. 1975. Tourism in Alaska's Coastal Zone An Economic Study. State of Alaska, Juneau, AK.

Hunter, D. 1977. "Bond Election Could Set Record," Anchorage Times, April 2, 1977. Anchorage, AK.

_____. 1978a. "Assembly OK's Shredding Plant Contract," Anchorage Times, Anchorage, AK.

_____. 1978b. "Bond Proposed Would Triple Size of People Mover System," Anchorage Times, April 4, 1978. Anchorage, AK.

_____. 1978c. "Breakthrough to Ask Nine Bond Proposals," Anchorage Times, March 24, 1978. Anchorage, AK.

_____. 1978d. "Breakthrough Group Suggests Convention and Sports Center," Anchorage Times, April 6, 1978. Anchorage, AK.

_____. 1978e. "Breakthrough Recommends $45 Million Park Package," Anchorage Times, April 5, 1978. Anchorage, AK.

_____. 1978f. "Group Proposes Downtown Facelift," Anchorage Times, April 7, 1978. Anchorage, AK.

_____. 1978g. "Group Suggest $35 Million for Streets," Anchorage Times, April 3, 1978. Anchorage, AK.

_____. 1979. "Population Uncertain," Anchorage Daily News, July 12, 1979. Anchorage, AK.

Huntley, B. "Threat to Home Loans," Anchorage Daily News, May 31, 1979. Anchorage, AK.

Huskey, L. and W. Nebesky. 1979a. Northern Gulf of Alaska Statewide and Regional Population and Economic Projections, Tehcnical Memorandum No. 12. Bureau of Land Management, Alaska Outer Continental Shelf Office, Anchorage, AK.

_____. 1979b. Western Gulf of Alaska Statewide and Regional Population and Economic Projections, Technical Memorandum No. 14. Bureau of Land Management, Outer Continental Shelf Office, Anchorage, AK.

Jenkins, S. 1979. "High-Income Misleading," Anchorage Daily News, April 3, 1979. Anchorage, AK.

Johansen, S. No Date. Health Information System for Alaska. State of Alaska, Juneau, AK.

Johnson, D. 1977. "Rental Vacancy Climbing," Anchorage Times, July 22, 1977. Anchorage, AK.

Jones, D. M. 1974. The Urban Native Encounters the Social Service Sys tern. University of Alaska, Fairbanks, AK.

Jones, F. W. 1978. Survey of Salaries & Benefits for the Anchorage Metropolitan Area. Municipality of Anchorage, Personnel Services, Anchorage, AK.

Jones, G. N. 1976. Ad Hoc Governmental Review Committee. University of Alaska, Anchorage, AK.

_____. 1977a. Resource Allocation in the Municipality of Anchorage, An Overview of the Program Budgeting Approach. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1977b. Resource Allocation in the Municipality of Anchorage, Introduction of Program Budgeting and Environmental Protection. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____. 1977c. Resource Allocation in the Municipality of Anchorage, Some Comments on the New Operating Budget Manual and Proposals for Future Innovations. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

_____ and P. H. Wangness. 1977. Office of Budget Management in the Municipality. University of Alaska, Anchorage Urban Observatory, Anchorage, AK.

Knox, R. G. 1974. Special Report: Anchorage - Crossroads of the Air World. Greater Anchorage Chabmer of Commerce. Anchorage, AK.

Kresge, D. T. 1974. Alaska's Growth to 1990: Policies and Projections. University of Alaska, Institute of Social, Economic & Government Research, Fairbanks, AK.

Kupiszewski, D. 1975. Wage Rates for Selected Occupations, Alaska 1975. State of Alaska, Juneau, AK.

Litalien, R. No date. Population Growth in Anchorage - A Regression Model. Unpublished document for PS 689. University of Alaska, Anchorage, AK.

Lloyd, W. D. No date. Metropolitan Anchorage Urban Study - Regional Harbors and Waterways. U. S. Army Corps of Engineers, Anchorage, AK.

Local Financial Resources Subcommittee. 1977. Report on Local Financial Resources. Memorandum dated December 19, 1977 to Max Hodel, General Breakthrough Chairman.

Lowther, J. 1978. "Planners Tackle Chugach State Park Proposals," Anchorage Times, February 26, 1978, Section E. Anchorage, AK.

Markee, G. 1978a. Anchorage Private Schools 1977-1978. Unpublished table. Anchorage School District, Anchorage, AK.

_____. 1978b. (School Enrollment) Projections to 1985, Forecast II 1. Unpublished. Anchorage School District, Anchorage, AK.

Marshall and Meyer. 1977. $9,000,000 Electric Uti l i ty Revenue Bonds, 1977A. $10,000,000 Telephone Utility Revenue Bonds, 1977A. Greater Anchorage Area Borough, Seattle, WA.

Mason. J. 1974. Placing Area-Wide Poljcv Power Dispute in Historical Perspective. Unpublished (master's thesis). Anchorage, AK.

McKee, G. M. 1978. Statistics of Anchorage Assessed Value of Rea and Personal Property. Unpublished. Municipal Dept. of Finance, Anchorage, AK.

Merrill Field Control Tower. 1978. Daily Operations Log. Unpubl shed. Anchorage, AK.

Merrill Field Handbook. 1978. Municipality of Anchorage, Anchorage, AK.

Millsap, P. 1975. "Decent Housing Out of Reach for Many, Survery Here Shows," Anchorage Daily News, November 10, 1975. Anchorage, AK.

Moerlins, B. G. Lt., Denning J. G. and A. Motle. 1975. Anchorage Police Department Review Year Ending 1974, Anchorage, AK. Anchorage Police Dept., Anchorage, AK.

Naramore, B., Brady & Johnson. 1974. Economic Impact Analysis of Proposed Central Business District Zoning Changes. Greater Anchorage Area Borough, Anchorage, AK.

National Research Center of the Arts. 1975. Anchorage, Alaska: Public Perspective on the Arts and Culture. Anchorage, AK.

Olson, D. F. 1977. "The First Five Years" - Some General Comments on ANCSA Corporate Affairs. Unpublished. University of Alaska, Anchorage, AK.

Organization for the Management of Alaska's Resources, Anchorage Resource Information Service. 1978. Anchorage Quarterly A Review of Socio-economic Data. Anchorage, AK.

Patterson, J. K. No date. Unified Financial Management System - Municipality of Anchorage. Municipality of Anchorage, Anchorage, AK.

Peat, Marwickm Mitchell & Co. 1975. Financial Management Study. Anchorage, AK.

Player, C. and W. White. 1972. Anchorage Altogether. Publisher Unspecified. Anchorage, AK.

PRC Public Management Services, Inc. 1976. A Management and Operational Study of the Anchorage Police Department. publisher Unspecified. San Francisco, CA.

Quinton-Budlong Engineering Consultants. 1972. PRECIS, Airport Systems Study: Upper Cook Inlet. Greater Anchorage Area Borough, Anchorage, AK.

Ranspot, K. 1978. "Local Bonds Could Ease Home Buying," Anchorage Times, December 12, 1978. Anchorage, AK.

Rinehart, C. 1978. "New Housing Market Slows As Line Ends," Anchorage Times, May 16, 1978. Anchorage, AK.

_____. 1979. "Board to Name Two Elementary School Closures," Anchorage Times, February 27, 1979. Anchorage, AK.

Robinson, L. No date. Annual Dept. of Education Statistical Report. State of Alaska, Juneau, AK.

Rogers, B. 1979. "Arbitrator Chooses City's Proposal," Anchorage Times, July 12, 1979. Anchorage, AK.

Rogers, G. W. Alaska Native Population Trends and Vital Statistics 1950-1985. University of Alaska, Fairbanks, AK.

Rogers, P. 1976. "Housing Info Queries Up 22%," Anchorage Times, March 9, 1976. Anchorage, AK.

Roguszka, E. G. 1970. Breakthrough to Tomorrow, Anchorage Alaska. Operation Breakthrough, Anchorage, AK.

Rowan, G. P., Inc. 1974a. A Survey on the Health Needs of the Anchorage Area Community as Communicated by that Community. Prepared for the Health Council. Greater Anchorage Area Borough, Anchorage, AK.

_____. 1974b. A Survey on the Health Needs of the Low-Income People of the Anchorage Area Community. Publisher Unspecified. Anchorage, AK.

_____. 1974c. Old People Talke. Rowan People Report. Anchorage, AK.

Rowan Group, Inc. 1979. Alaskans Talk About the Alaskan Gasline. Anchorage, AK.

Scott, M. J. 1979. "Phone Rates Could Triple," Anchorage Daily News, July 23, 1979. Anchorage, AK.

Scott, J. J. and University of Alaska, Institute of Social & Economic Research. 1979. Southcentral Alaska's Economy & Population, 1965-2025: A Base Study and Projections. Report of the Economics Task Force, Southcentral Alaska Water Resources Study (Level B) to the Alaska Water Study Committee. Anchorage AK.

Selkregg, L. 1970. Comprehensive Planning as a Guide to Land Resource Utilization - The Anchorage Case. Unpublished. Presented at the 21st Alaska Science Conference, Fairbanks, August 1970.

_____ and E. H. Buck. 1972. Environmental Atlas of the Greater Anchorage Area Borough. University of Alaska, Anchorage, AK.

Smith, W. and Associates. 1970. Inventory of Current Travel Demands and Facilities, Vol 1, AMATS. New Haven, CN.

Sourdough (Newspaper). 1978. "High Schoolers Seek Higher Education," February 1978. University of Alaska, Anchorage, AK.

Spence, J. M. 1974. Campground Needs in 1980 for the Chugach National Forest. Publisher Unspecified. Anchorage, AK.

Tadlock Associates, Inc. 1977. Anchorage Community College Planning. Anchorage Community College, Anchorage, AK.

_____. 1978. Master Plan 78, Education to March Our Mountains and Our People - Anchorage Community College, First Draft. Anchorage, Community College, Anchorage, AK.

Taylor, M. P. 1975. Alaska Unemployment Insurance Financial Handbook. State of Alaska, Juneau, AK.

Tennel, I. and E. S. Lynn. 1960. Municipal and Governmental Accounting, p. 101. Englewood Cliffs, N.J.

Tryck, Nyman and Hayes. 1973. Anchorage Water Sources. Anchorage, AK.

Tussing, A.R. No date. Alaska Electric Power Supply. Alaska Legislative Committee, Juneau, AK.

Urban and Rural Systems Associates. 1974. An Analysis of the Socioeconomic Impact in Alaska of the Alaskan Arctic Gas Pipeline Company. Alaskan Arctic Gas Pipeline Company, San Francisco, CA.

U. S. Army Corps of Engineers. 1976. Metropolitan Anchorage Urban Study. Alaska District, Anchorage, AK.

_____. 1977a. Metropolitan Anchorage Urban Study, State Two Report, Part IV Wastewater Treatment Facility Plan. Unpublished. Anchorage, AK.

_____. 1977b. Metropolitan Anchorage Urban Study, State Two Report, Part V Water Supply. Unpublished. Anchorage, AK.

_____. 1979a. Metropolitan Anchorage Urban Study, Volume II Water Supply. Anchorage, AK.

_____. 1979b. Metropolitan Anchorage Urban Study Final Draft, Volume 5, Water Supply. Anchorage, AK.

_____. 1979c. Metropolitan Anchorage Urban Study, Volume 10, Background Information Appendix. Anchorage, AK.

U. S. Dept. of Commerce, Bureau of the Census. 1971a. 1970 Census of Housing, Block Statistics, Selected Areas in Alaska. U. S. Government Printing Office, Washington, D. C.

_____. 1971b. 1970 Census of Housing, Detailed Housing Characteristics, Alaska, Final Report, HC(1)-B3. U. S. Government Printing Office, Washington D. C.

_____. 1971c. 1970 Census of Housing, General Housing Characteristics, Alaska, Final Report, HC(1)-A3. U. S. Government Printing Office. Washington, D. C.

_____. 1971d. 1970 Census of Population, General Population Characteristics, Alaska, Final Report PC(1)B-3. U. S. Government Printing Office, Washington, D. C.

_____. 1971e. General Social and Economic Characteristics, Alaska. U. S. Government Printing Office, Washington D. C.

_____. 1972. Detailed Characteristics, Alaska, 1970 Census. Washington, D. C.

_____. 1973. Computer Generated Profile for the Anchorage SMSA and Mid-Decade Population Statistics Program. Washington, D. C.

_____. 1975. "Estimates of the Population of Alaska Census Divisions and Metropolitan Areas: July 1, 1973 and 1974," Current Population Reports. U. S. Government Printing Office, Washington, D. C.

_____. 1977. Statistical Abstract of the United States. 98th Edition. Washington, D. C.

_____. 1978a. Statistical Abstract 1978. Washington, D. C.

U. S. Dept. of Commerce, Regional Economic Analysis Div., Bureau of Economic Analysis. 1978. State Quarterly Economic Development, Alaska. U.S. Government Printing Office, Washington, D. C.

_____. 1979. State Quarterly Developments. U. S. Government printing Office, Washington, D. C.

U. S. Federal Aviation Administration. 1975. Ten Year Plan, Alaska Region, 1977-1986. U. S. Government, No Location Specified.

U. S. Geological Survey. 1974. Geology and Water Resources of the Girdwood-Alyeska Area, Alaska. Anchorage, AK.

_____. 1975. Hydrology for Land Use Planning: The Hillside Area, Anchorage, Alaska. Anchorage, AK.

_____, Water Resources Div. 1975. A Summary, Greater Anchorage Area Water Resources Study Program. Anchorage, AK.

U. S. Dept. of Health, Education & Welfare, Center for Disease Control. 1975. Morbidity & Mortality Annual Supplement. Washington, D. C.

U. S. Dept. of Housing & Urban Development. 1970. Analysis of the Anchorage, Alaska, Housing Market. Anchorage, AK.

_____. 1978. "1977 Alaska Homebuilding Sets New Records," (Press Release). Anchorage, AK.

_____, Federal Housing Administration. 1973. The Current Housing Market Situation - Anchorage, Alaska. Economic & Market Analysis Div., Seattle Area Office, Seattle, WA.

U. S. Dept. of the Interior. 1977. Draft, Environmental Impact Statement - North Gulf of Alaska. Bureau of Land Management, Outer Continental Shelf Office, Anchorage, AK.

_____, U. S. Geological Survey, Water Resources Div., Alaska Dist. 1970. A Summary of Water in the Anchorage Area. Anchorage, AK.

U. S. Dept. of Labor, Bureau of Labor Statistics. 1971. Table of Consumer Price Indexes - Anchorage, Alaska. San Francisco, CA.

_____. 1979a. "Autumn 1978 Urban Family Budgets & Comparative Indexes for Selected Urban Areas," NEWS. Washington, D. C.

_____. 1979b. "Consumer Price Index for All Urban Consumers (CPI-U), All Items for U. S. & Selected West Coast Cities and Annual Rates of Change," p. 3, CPI-U.

_____. 1979c. "Historical Report on Labor Force and Employment," (Printout, April 18, 1979). Anchorage, AK.

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

Water & Wastes Engineers (Periodical). 1978. Publishers and Place Unavailable.

Wilson, B. 1979a. "Assembly Passes Roads Plan," Anchorage Daily News, August 1, 1979. Anchorage, AK.

_____. 1979b. "Moderate Economic Growth Predicted," Anchorage Daily News, July 17, 1979. Anchorage, AK.

_____. 1979c. "Taxes - Mayor Says Most Rates Will Fall," Anchorage Daily News, April 1979. Anchorage, AK.

_____. 1979d. "Valley Jobless Rate Hits 20.7 Percent," Anchorage Daily News, April 20, 1979. Anchorage, AK.

Withers, B. 1979. Lower Cook Inlet Statewide and Regional Population and Economic Systems Impact Analysis: Baseline Conditions and Forecast of Conditions Without the Planned Lease Sale. Bureau of Land Management Alaska Outer Continental Shelf Office. Anchorage, AK.