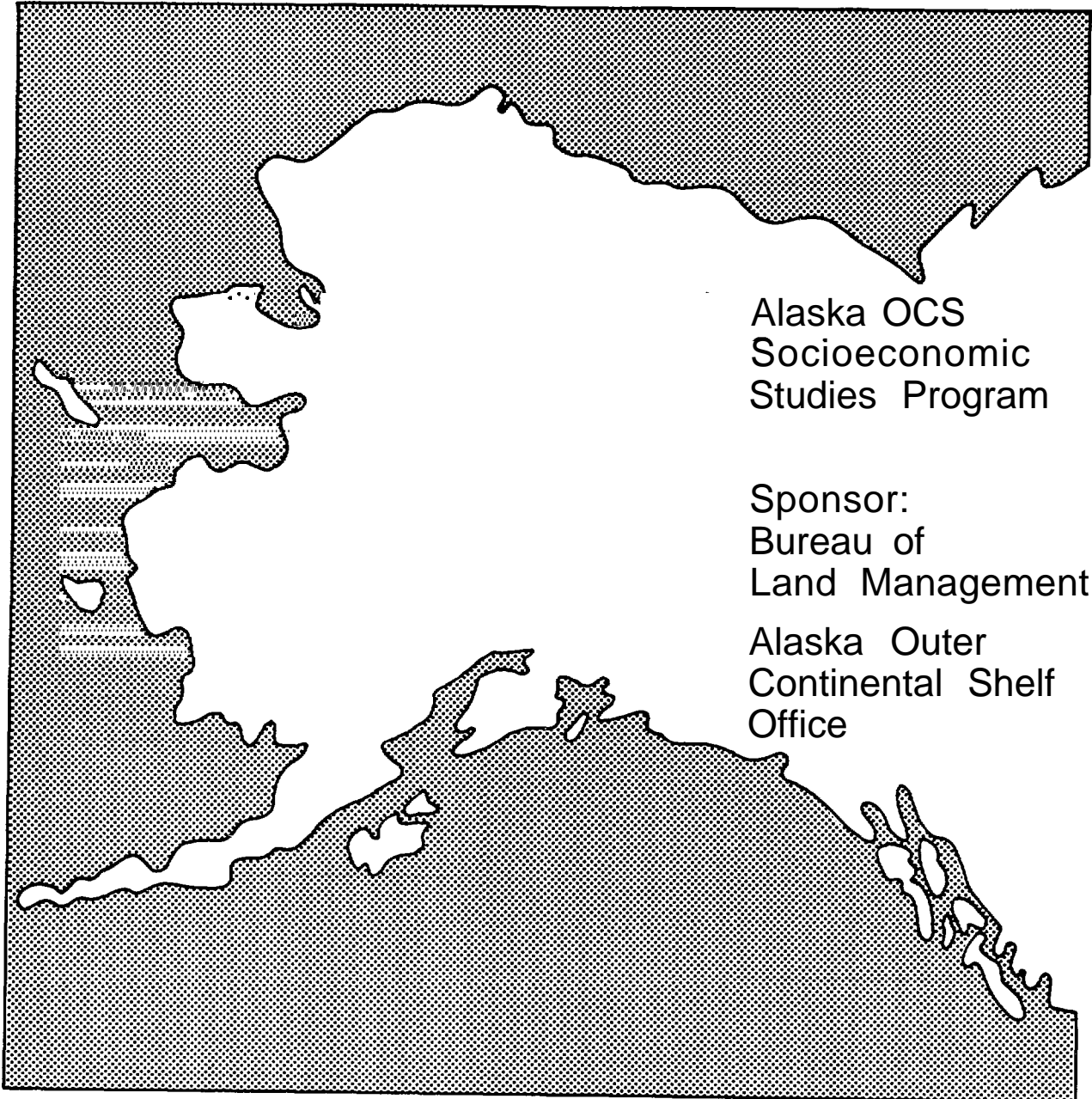


Technical Report
Number 8



Alaska OCS
Socioeconomic
Studies Program

Sponsor:
Bureau of
Land Management

Alaska Outer
Continental Shelf
Office

Beaufort Sea Region
Man-Made Environment

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 off-shore 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 off-shore development. In Alaska, unique cultural differences and climatic conditions create a need for developing additional socioeconomic and environmental information to improve OCS decision making at all governmental levels. In fulfillment of its federal responsibilities and with an awareness of these additional information needs, the **BLM** has initiated several investigative programs, one of which is the Alaska OCS Socioeconomic Studies Program.

The Alaska OCS Socioeconomic Studies Program is a multi-year research effort which attempts to predict and evaluate the effects of Alaska OCS Petroleum Development upon the physical, social, and economic environments within the state. The analysis addresses the differing effects among various geographic units: the State of Alaska as a whole, the several regions within which oil and gas development is likely to take place, and within these regions, the various **communities**.

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

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

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ALASKA OCS SOCIOECONOMIC STUDIES PROGRAM

BEAUFORT SEA REGION - MANMADE ENVIRONMENT

PREPARED FOR

BUREAU OF LAND MANAGEMENT
ALASKA OUTER CONTINENTAL SHELF OFFICE

28 APR 1978

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ALASKA OCS SOCIOECONOMIC STUDIES PROGRAM
BEAUFORT SEA REGION - MANMADE ENVIRONMENT

Prepared by
ALASKA CONSULTANTS, INC. for PEAT, MARWICK, MITCHELL & CO.

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| <p>The Beaufort Sea region encompasses an area of 141,250 square kilometers (88,281 square miles) extending across the extreme north of Alaska between the Chukchi Sea and the Canadian border and as far south as the Brooks Range. The region is sparsely settled, with an estimated total population of 9,163 people in July 1977. Over half of these people lived in oil and gas-related camps, with most of the remainder living in one of the eight traditional Eskimo communities of the region. Almost all local government services and facilities in the region are provided by a single unit of local government, the North Slope Borough.</p> <p>This report contains a description of the manmade environment of the Beaufort Sea region generally and of four of its member communities in particular. For the region, an outline of the population and economy, selected community facilities and services, and local government organization is provided, plus an indication of inter-regional and inter-community ties. Similar information is provided in detail for the traditional communities of Barrow, Kaktovik, Wainwright and Nuiqsut. For Wainwright and Nuiqsut, additional information on land use, land status, utilities and transportation facilities and services is also included.</p> | | | | | |
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I. INTRODUCTION

The following pages of this report contain an overview of the economy and population, selected community facilities and services, and the local government organization of the North Slope Borough and four of its member communities. Additional information on land use, land status, utilities, and transportation facilities and services is provided for the communities of **Nuiqsut** and **Wainwright**.

As part of the preparation of this report, field trips were taken to Juneau, Barrow, Kaktovik and **Nuiqsut**, while **Wainwright** was visited by Alaska Consultants, Inc. shortly before work on this project was begun. Land use information was collected in the field for Kaktovik and **Nuiqsut** and counts of employment were undertaken in these two **communities** plus Barrow. Appropriate data on the range of **community** facilities and services for Barrow, Kaktovik and **Nuiqsut** and for the Borough as a whole was collected in the field. This was felt to be necessary since, except for **Wainwright**, reliably accurate information on the subjects required to be covered was generally not available. Data for **Wainwright** was obtained from a comprehensive development plan for that **community** by Alaska Consultants, Inc. but which has not yet been published.

A wide range of people **was** contacted during the course of this project. Almost all employers in the communities of Barrow, Kaktovik and **Nuiqsut** were contacted in order to obtain as accurate a count of average annual full-time employment in these communities as possible. In addition,

Borough, Borough School District and City personnel were contacted in Barrow and the villages to provide information on services such as public safety, health, education, recreation, utilities, local transportation services and local government finances. Arctic Slope Regional Corporation personnel and officials of local village corporations, plus other agencies or companies which are significant in the local economy or which provide essential community services were also contacted. Included in the latter group, for example, were the operators of the Barter Island DEW Line station, personnel from the U.S. Public Health Service hospital in Barrow, Barrow **Utilities** and Electric **Co-op, Inc.**, the **Naval** Arctic Research Laboratory, and **local** airline and air taxi operators.

Private companies and government agencies located outside the North Slope Borough also provided information for this report. Included in this group were a range of federal and State government agencies located in Juneau, Fairbanks and Anchorage. Prominent among these were the U.S. Environmental Protection Agency, the U.S. Public Health Service, the U.S. Bureau of Indian Affairs, the U.S. Bureau of Outdoor Recreation, the U.S. Air Force and the U.S. Federal Aviation Administration. State agencies included the Department of Community and Regional Affairs, the Department of Administration, the Department of Health and Social Services, the Department of Natural Resources, the Department of Transportation and **Public** Facilities, the Department of Education, the Department of Labor and the Alaska State Housing Authority.

Private companies contributing to this report included the Atlantic Richfield Company, BP (Sohio), the Alyeska Pipeline Service Company, NANA Arctic Utilities, Inc., Husky Oil NPR Operations, Inc., Dupere and Associates, Inc. and Worl Associates.

II. BEAUFORT SEA REGION

Population and Economy

POPULATION

Past Population Trends

It is difficult to trace past population trends before 1970 in the area now encompassed by the North Slope Borough. Population figures are available for individual towns. However, areas of the region outside the traditional communities have periodically seen large and usually temporary influxes of people for **special** purposes such as oil and gas exploration or military and scientific programs. Since the region was within three census divisions for the **1960** and **1970** census and within two completely different divisions for several censuses before 1960, it is almost impossible to derive a complete picture of population trends in what is now the Borough even for the period since World War II. A further complication is that before about 1950 some of the Eskimo population, most notably the **nunamiut** Eskimos who settled at Anaktuvuk Pass, was still migratory and was probably missed by the census takers.

While reliable figures on the total population of the North Slope region between World War II and 1970 are scarce, a review of the three major population in-migrations to areas outside the traditional communities during this period does convey some idea of their impact. The first of

these was associated with oil and gas exploration in Naval Petroleum Reserve #4 (**NPR-4**); the second with military construction during the "cold war" years; and the third with oil and gas exploration and development activities in the **Prudhoe** Bay area.

During the period 1944-1953, the Navy and its contractors conducted a major exploration program in **NPR-4**. This involved a large influx of military and civilian personnel and brought lasting change to Barrow which became a jumping-off point for exploration activity. A base camp was constructed near Barrow on a site now occupied by the Naval Arctic Research Laboratory, an airport was built and a road was developed between the camp and the village of Barrow in 1944. During the exploration period, about 80 Eskimos were employed but these jobs ceased with the end of the exploration program in 1953.

The next major in-migration of people to areas outside traditional **communities** of the North Slope region occurred during the 1950's with the construction of the Distant Early Warning (DEW) Line system and associated Aircraft Control and Warning (AC & W) sites. The main station for the entire system was built at Barter Island and resulted in the physical moving of the village of Kaktovik in 1952 and again in 1953 and 1964 when the site was determined by the Air Force to be needed for its facilities. DEW Line stations were also built near other villages in the region, notably Point Lay, Barrow and **Wainwright**. In addition, an AC & W site was constructed in 1956 at Cape **Lisburne**, a location remote from the region's traditional settlements.

After these military facilities were built, the construction crews left the region. However, personnel required to man the facilities stayed and, although some DEW Line stations have since been closed, a significant defense-related presence remains in the Borough today.

After the Navy's exploration program in NPR-4 ended, some interest in the oil and gas potential of the North Slope remained. However, it was not until the State's lease sales in the **Prudhoe Bay** area in **1964, 1965** and 1967 that further oil and gas exploration took place at any scale. With the announcement of major oil discoveries in 1968 and the State's "bonanza" **lease** sale in 1969, another in-migration of people to the North Slope occurred. This group has remained there to this day.

Between 1939 and 1970, the population of the region's traditional communities rose 144 percent from 1,258 in 1939 to 3,075 in 1970. Two main factors were involved in this very substantial rate of growth which occurred despite some **outmigration**, primarily for education purposes. The first was a very high birth rate of the Eskimo population accompanied by an increasing life expectancy. The second was an influx of government personnel to provide services such as health and education to the Eskimo people of the region or to undertake scientific research.

While the overall **population** of the North Slope's traditional settlements rose significantly between 1939 and 1970, not all communities in the region shared in this growth. During this period, Atkasook, **Nuiqsut** and Point Lay were abandoned as permanent towns. By

contrast, Barrow's population increased almost 500 percent, mainly because it had become a regional center for government services and a center for Arctic scientific research. An influx of government personnel took place and the community also attracted Eskimo residents from smaller villages on the North Slope. Today, it is **clearly** the dominant permanent community in the region.

Since 1970, population trends in all areas of the North Slope Borough are fairly well documented. According to Borough estimates, 9,163 people lived in the region in July 1977, an increase of 158 percent since the 1970 Census. However, Alaska Consultants, Inc. believes that the Borough's estimates for Barrow since 1970 have consistently been too conservative. Using a common Alaska ratio of 3 persons for every job, Alaska Consultants derived its own estimate of 2,700 people living in this community in 1977. If this estimate is taken instead of that of the Borough, the region had a total population of 9,643 in July 1977, an increase of almost 172 percent since 1970.

The population of the region's traditional communities rose a healthy 33 percent between 1970 and 1977 (using Alaska Consultants' 1977 estimate of Barrow's population). The largest numerical increase occurred in Barrow where the population grew an estimated 25.5 percent to 2,700 people. Significant rates of growth were also recorded in Anaktuvuk Pass (52.5 percent) and **Wainwright** (26.3 percent) but Kaktovik and Point Hope saw only 'limited growth. The 1970-1977 period saw another important development, the re-establishment of three of the region's

TABLE 1

POPULATION ESTIMATES
NORTH SLOPE BOROUGH REGION
1939 - 1977

| Community | | 1939 | 1950 | 1960 | 1970 | Jan. 1974 | Jan. 1975 | July 1975 | Dec. 1975 | July 1976 | Jan. 1977 | July 1977 |
|-----------------------------------|-------|-------|-------|-------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <u>Traditional Communities a/</u> | | | | | | | | | | | | |
| Anaktuvuk Pass | --- | 66 | 35 | 30 | 99 | 134 | 134 | 129 | 129 | 150 | 150 | 151 |
| Atkasook (Meade River) | 78 | 49 | 49 | 30 | --- | --- | --- | --- | --- | --- | --- | 86 |
| Barrow | 363 | 951 | 1,314 | 2,152 | 2,163 | 2,163 | 2,163 | 2,141 | 2,107 | 2,294 | 2,294 | 2,220 |
| Kaktovik | 13 | 116 | 120 | 123 | 141 | 141 | 119 | 119 | 119 | 123 | 123 | 134 |
| Nuqsut | 89 | --- | --- | 145 | 145 | 145 | 149 | 149 | 149 | 152 | 152 | 157 |
| Point Hope | 257 | 264 | 324 | 386 | 386 | 404 | 384 | 403 | 403 | 408 | 408 | 412 |
| Point Lay | 117 | 75 | --- | 27 | 27 | 27 | 48 | 48 | 48 | 51 | 51 | 54 |
| Wainwright | 341 | 227 | 253 | 315 | 354 | 354 | 341 | 344 | 344 | 357 | 394 | 398 |
| 011 & Gas/Pipeline Camps b/ | 1,258 | 1,678 | 2,076 | 3,075 | 3,368 | 3,368 | 3,311 | 3,299 | 3,299 | 3,535 | 3,572 | 3,612 |
| Prudhoe Bay/Deadhorse Area | NA | NA | NA | 279 | 927 | 3,158 | 5,022 | 5,531 | 5,531 | 8,801 | 7,765 | 5,318 |
| NPR-A | NA | NA | NA | 3 | 5 | 5 | 5 | 5 | 5 | 55 | 505 | 33 |
| Military Stations c/ | --- | --- | NA | 282 | 932 | 3,163 | 5,027 | 5,536 | 5,536 | 8,856 | 8,270 | 5,351 |
| Cape Lisburne | --- | --- | NA | 83 | 112 | 112 | 112 | 112 | 112 | 112 | 112 | 92 |
| DEM Line | --- | --- | NA | 194 | 223 | 223 | 223 | 223 | 223 | 223 | 223 | 200 |
| 101V1 | --- | --- | --- | 3,551 | 4,523 | 6,754 | 8,561 | 9,058 | 9,058 | 12,614 | 12,065 | 9,163 |

a/ Population for traditional communities since 1970 based on actual counts or Borough Planning Department estimates. The estimates for Barrow appear low. In the opinion of Alaska Consultants, Inc., the community's 1977 population was at least 2,700 persons.

b/ Population for oil/gas and Pipeline camps since 1970 provided to the North Slope Borough by industry groups. Estimates for NPR-A from January 1974 through December 1975 provided by the U.S. Geological Survey. Population for DEM Line stations (excluding POW-Main) provided to the North Slope Borough by FELEC Services, Inc. for the period December 1975 through July 1977. DEM Line populations back through 1970 assumed by Alaska Consultants, Inc. to be at December 1975 level.

Sources: U.S. Census.
North Slope Borough.

traditional communities - Atkasook, **Nuiqsut** and Point Lay. These three communities had a combined population of 297 in 1977, most of them **out-** migrants from Barrow who claimed some cultural affinity with the settlements although they had not necessarily been born there.

While the North Slope's traditional communities have grown since 1970, the major source of population increase in the region has been caused by development of the Prudhoe Bay field and the resulting construction of the Trans Alaska Pipeline. These activities brought very large groups of workers into the region and were the major factor in the 225 percent increase in the Borough's population between 1970 and July 1976. They were also the cause of a 27.6 percent decline in the Borough's population between July 1976 and July 1977 (using Borough estimates of Barrow's population). Construction of the Trans Alaska Pipeline officially ended in August 1977 and the only people now in the region associated with this project are maintenance and pump station personnel. According to industry figures, there were 4,904 Pipeline employees in the Borough in July 1976 but only 1,814 by July 1977, a 63 percent drop.

The presence or absence of oil and gas-related populations has little direct impact on the region's traditional communities. Indirectly, however, their absence has had an enormous impact because the ability of the North Slope Borough to tax oil and gas property for operating revenues has been tied to a \$1,500 per capita formula through the current **fiscal** year. Thus, when the Borough's population declined, so did its ability to collect tax revenues. (Oil and gas populations and

all other people in the Borough are counted as residents if they are physically present in the region as of July 1 in a given year. The July figures are then certified by the Alaska Department of Community and Regional Affairs for both State revenue sharing and oil and gas property taxation purposes).

The only other event in the North Slope region since 1970 which has resulted in a significant population increase in areas outside the traditional communities has been a renewal of oil and gas exploration in **NPR-A**. A total of 505 persons working in **NPR-A** were counted as Borough residents in January 1977. Exploration work in **NPR-A** is being concentrated in the winter months so that the apparent decline to 33 people in July 1977 is actually only a seasonal variation in employment.

Military subcontractors constitute the third major population group in the North Slope Borough. However, unlike oil and gas-related populations, the number of people in this group has remained virtually unchanged since 1970.

Population Composition

The outstanding feature of the population composition of the North Slope Borough in 1970 was that most people living in the region were Inupiat Eskimos. Because the area now encompassed by the North Slope Borough was within three different census divisions in 1970, statistics for the Barrow Census Division were combined with those for the traditional

villages of Point Hope and Kaktovik, plus the **oilfield** camps at Deadhorse and **Prudhoe Bay** in order to obtain a regionwide perspective on population composition. It should be noted, however, that these figures are incomplete since they include only 3,384 of the 3,551 persons living in the region in 1970. For example, no figures were available for the Barter Island DEW Line station which had a complement of 58 white and 2 Eskimo personnel living on base in 1977.

Within the above limitations, the population of the North Slope region in **1970** was about 83 percent **Alaska** Native (assuming that **all** persons categorized as "other" in the Barrow Census Division were Alaska Natives). However, the Native population was not evenly distributed. The population of all five traditional communities then in existence was at least 85 percent Alaska Native (ranging from Kaktovik with a population that was 87.8 percent Native up to Anaktuvuk Pass with a 98 percent Native population). By contrast, the three non-traditional settlements for which 1970 statistics by race are available (Cape Lisburne, Deadhorse and Prudhoe Bay) all had populations that were at least 90 percent non-Native. In fact, blacks were the second largest ethnic group at Cape **Lisburne** in 1970. (Cape **Lisburne** was then manned by 83 Air Force personnel of whom 70 were whites, 10 were blacks, 2 were Indians and 1 was listed as being in an "other" race category).

Since 1970, the racial composition of the North Slope Borough's population has changed dramatically. Alaska Natives are no longer the dominant group regionwide. Persons engaged in oil and gas-related

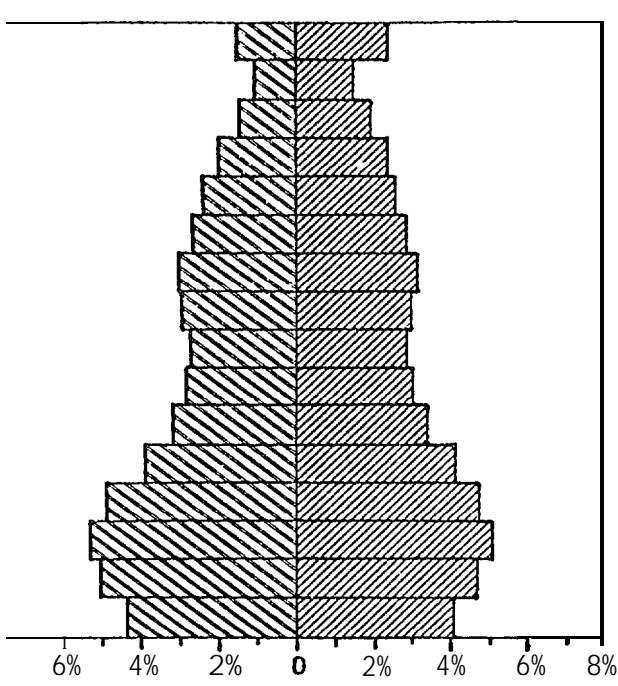
activities in the **Prudhoe** Bay area and in NPR-A, plus those associated with Pipeline camps and military stations, accounted for 57.6 percent of the Borough's total population (even using Alaska Consultants' estimate of 2,700 people living in Barrow) in July 1977. While no breakdown by race of the region's 1977 population is available, it is assumed that the population associated with Pipeline camps and with military and oil and gas-related activities is still at least 90 percent non-Native. Thus, by this definition, non-Natives clearly outnumber Natives in the region today.

The population of the North Slope's traditional communities is still overwhelmingly dominated by persons of Inupiat Eskimo origin. However, it is believed that there are significantly more white residents in these towns now than there were in 1970. The professional employment opportunities opened up by the North Slope Borough and the Arctic Slope Regional Corporation have attracted a new group of whites to the region since 1970, most of them to Barrow. While there are virtually no hard statistics on the impact of this new migrant group, a survey of population in **Wainwright** in 1977 by Alaska Consultants, Inc. found that the proportion of Eskimos had fallen from 97.5 percent in 1970 to 93.4 percent in 1977. Virtually all whites in the region's smaller communities are school teachers. Since the Borough has upgraded education services regionwide, the increased presence of whites in **Wainwright** is probably repeated in the other small towns. In Barrow, however, the proportion of whites has undoubtedly risen more significantly as this is the location of the Borough School District's

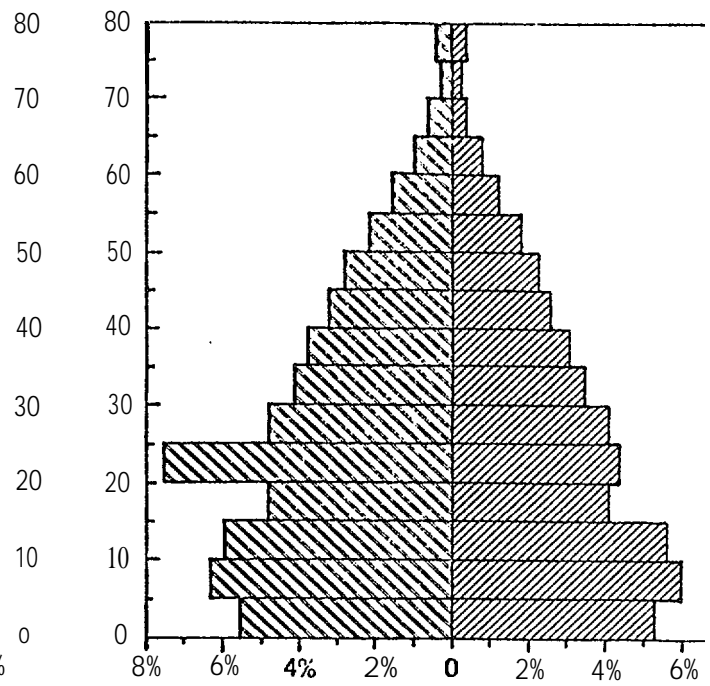
central offices plus those of the Borough's general government and the Arctic Slope Regional Corporation. All three agencies have opened up new job opportunities for whites. Furthermore, although Barrow has continued to attract new Eskimo residents from the region, this has been offset to some extent by an out-migration of Eskimos from Barrow to resettle Atkasook, Point Lay and Nuiqsut.

A review of the age and sex characteristics of the North Slope Borough population as measured by the 1970 Census indicates that the population composition of this region is fundamentally unlike national norms. Furthermore, although the Borough exhibits some typically Alaskan characteristics in the youth of its population and the predominance of males, it possesses these characteristics to a much more extreme degree than does the State.

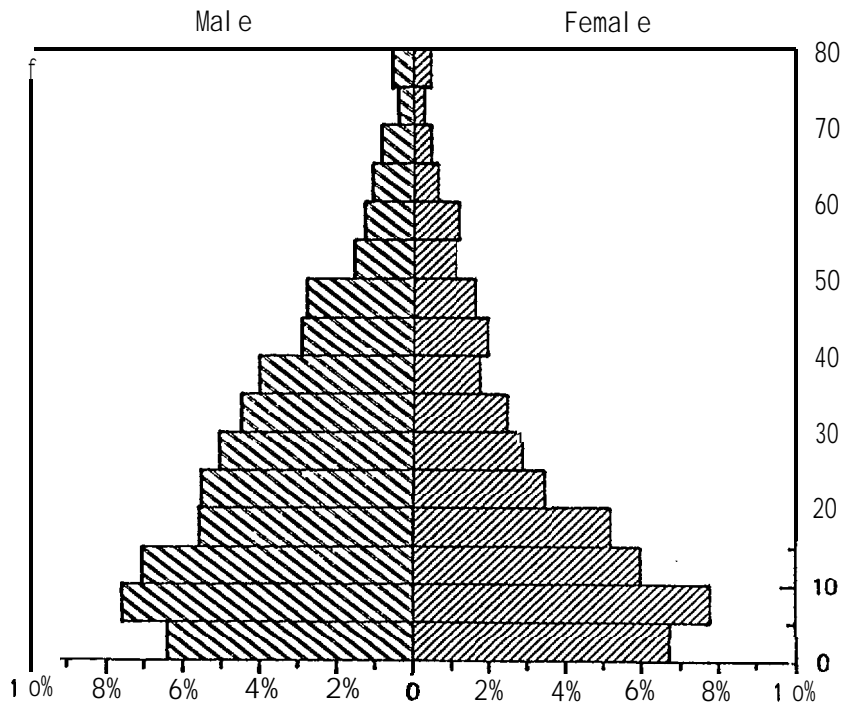
The North Slope Borough's population in 1970 was very young. The median age as measured by the 1970 Census was 18.7, compared with 22.9 for the State and a nationwide median of 28. The median age of females (16 years) in the Borough was much lower than that of males (21.3), mainly because of the presence of a numerically significant group of working age males in the Prudhoe Bay/Deadhorse area. (There were no females recorded by the 1970 Census at either Prudhoe Bay or Deadhorse). However, except for Wainwright and Kaktovik, the median age of males was also older than that of females in the region's traditional communities.



UNITED STATES



ALASKA



NORTH SLOPE BOROUGH

COMPOSITION OF POPULATION
1970

FIGURE 1

Males outnumbered females by 57.2 to 42.8 percent in the North Slope Borough in 1970. This disparity was more extreme than the male to female ratio for the State (54.3 percent males to 45.6 percent females) and completely unlike the 1970 national norm of 51 percent females to 49 percent males. Although the presence of an all male population in the Prudhoe Bay/Deadhorse area contributed to the extreme differences between the number of males and females in the region, males also outnumbered females in all of the Borough's traditional communities. The imbalance between male and female Native populations in the North Slope occurs in post-high school age ranges, indicating that more out-migration by females than males from the region has taken place.

The composition of the North Slope Borough's population in 1977 is fundamentally different from that in 1970. In 1977, the Prudhoe Bay/Deadhorse area accounted for over half of the Borough's total population whereas it was a relatively minor element in 1970. While no current age or sex statistics are available, the population of the region as a whole is undoubtedly now much older and has an even higher proportion of males than was the case in 1970. (In 1970, no one counted by the Census at Prudhoe Bay or Deadhorse was younger than 18 or older than 66).

Growth Prospects

In the future, the North Slope Borough region as a whole is likely to continue its recently established uneven pattern of population growth. Populations related to oil and gas exploration and development are

likely to continue to fluctuate depending on the scale and type of activity underway at a given time. The region's total population has dropped following completion of construction on the Trans Alaska Pipeline. However, construction of the planned gas line and the scheduled Beaufort Sea State and federal offshore lease sales will bring a new influx of workers into the Borough. Once the gas line is completed, the construction workers associated with it will leave the region. The number of workers associated with offshore exploration activity will depend on the stage of development and, ultimately, on the exploration program's degree of success. There is also a potential for oil and gas discoveries in other areas of the Borough which, if realized, would certainly influence population growth. In addition, future decisions as to the development of NPR-A could have a direct impact on the number of people living within the North Slope Borough's boundaries.

While there are a wide range of possibilities influencing future population growth in the North Slope Borough as a whole, the growth prospects of the region's traditional communities are much more easily defined. Excluding Barrow, growth in the villages is expected to be related primarily to rates of natural increase and out-migration. No significant in-migration to any of these communities is anticipated. It is assumed that rates of natural increase will continue to decline so that rates of out-migration are the key element in determining how much these villages will grow.

A very significant factor influencing migration rates from the North Slope's villages has been the Borough capital improvements program which has permitted a higher level of living in these communities as well as providing increased local employment opportunities. The establishment of village corporations under the terms of the Alaska Native Claims Settlement Act has also been a factor. In the future, the ability of the North Slope Borough to sustain its program of **community** improvements in these villages will be a major determinant in their rates of growth. Another very significant factor will be the continued access of these people to the range of subsistence resources.

Growth prospects for Barrow are more complex, Its future growth will be affected by the same factors as those cited for the region's smaller villages. However, Barrow has experienced substantial in-migration over the years, both from within the region and from outside, and this is expected to continue in the future. The rate at which it does **so will** be largely dependent on the continued expansion of the activities of the North Slope Borough. These activities will, in turn, be affected by the number of oil and gas-related workers located within the Borough boundaries (i.e. within the 3 mile limit) if current per capita or other population-related formulas for determining local government operating revenues continue to be used. The extent of local investment by the Arctic Slope Regional Corporation and the degree of success of its development operations outside the community will also be significant in determining Barrow's future rates of growth.

ECONOMY

Composi ti on of Empl oymen t

According to Alaska Department of Labor statistics, nonagricultural wage and salary employment in the North Slope Borough averaged 6,932 jobs in 1976. The three largest employment sectors were contract construction, mining and government. Contract construction alone accounted for over half of the Borough's nonagricultural wage and salary employment but a large share of jobs in this sector have now ended as they were associated with the **Trans** Alaska Pipeline. Mining jobs made up close to 20 percent of the Borough's nonagricultural wage and salary employment and were mainly located in the **Prudhoe** Bay area, although some were associated with exploration activities in National Petroleum Reserve-Alaska (NPR-A). It is significant that these two sectors, which accounted for almost three-quarters (72.2 percent) of the jobs in the Borough in 1976, employ people in areas remote from the region's traditional communities. Furthermore, most employees in these sectors are whites who are only temporary Borough residents.

By contrast, almost all jobs in government, the third largest sector with 12.9 percent of the region's nonagricultural wage and salary employment in 1976, are located within the Borough's permanent communities. Most of these jobs are in the State and local government category, principally the North Slope Borough. Of the remaining sectors, the only ones for which employment information could be disclosed by the

TABLE 2
 NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT DISTRIBUTION
 NORTH SLOPE BOROUGH
 1976

| <u>Industry Classification</u> | <u>Number</u> | <u>Percent of Total</u> % |
|--|---------------|------------------------------|
| Mining | 1,271 | 18.3 |
| Contract Construction | 3,738 | 53.9 |
| Manufacturing | <u>a/</u> | |
| Transportation, Communications and Public Utilities | 316 | 4.6 |
| Trade | <u>a/</u> | |
| Finance, Insurance and Real Estate | <u>a/</u> | |
| Service | 445 | 6.4 |
| Miscellaneous | 0 | --- |
| Government | 892 | 12.9 |
| Federal | (239) | (3.4) |
| State | { 652 } | { 9.4 } |
| Local | | |
| <u>TOTAL</u> | <u>6,932</u> | <u>100.0</u> |

a/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

Alaska Department of Labor in 1976 were services and transportation, communications and public utilities. Together, these two sectors accounted for 11 percent of the region's nonagricultural wage and salary employment. The three sectors for which information could not be disclosed made up a combined total of only 3.9 percent of total nonagricultural wage and salary employment. Since there is essentially no manufacturing activity in the Borough, virtually all remaining jobs are either in trade or in finance, insurance and real estate. Both sectors are represented in all of the region's traditional communities, with most employment in finance, insurance and real estate being associated with the Native regional and village corporations established under the terms of the Alaska Native Claims Settlement Act.

Overall, the composition of employment in the North Slope Borough is fundamentally unlike that of the State. Government was the State's largest employment sector in 1976, followed by contract construction, services and trade. Federal employment accounted for the largest share of the government sector **Statewide** in 1976, although local and State government were not far behind. In the North Slope Borough, however, local government was **by** far the most important government sector. Federal government employment was significant, but there are very few State government jobs in this region.

Contract construction was the second largest employment sector Statewide in 1976 with 17.6 percent of total nonagricultural wage and salary employment. This is low when compared with the Borough figure.

TABLE 3

NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT DISTRIBUTION
NORTH SLOPE BOROUGH AND STATE OF ALASKA
1976

| <u>Industry Classification</u> | <u>North Slope Borough</u> % | <u>Alaska</u> % |
|--|---------------------------------|--------------------|
| Min ing | 18.3 | 2.3 |
| Contract Construction | 53.9 | 17.6 |
| Manufacturing | <u>a/</u> | 6.0 |
| Transportation, Communications and Public Utilities | 4.6 | 9.2 |
| Trade | <u>a/</u> | 16.1 |
| Finance, Insurance and Real Estate | 6.4 | 16.2 |
| Miscellaneous | --- | .7 |
| Government | 12.9 | 27.6 |
| Federal | (3.4) | (10.5) |
| State | (9.4) | (8.2) |
| Local | (9.4) | (8.9) |
| <u>TOTAL</u> | <u>100.0</u> | <u>100.0</u> |

a/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

However, although contract construction is usually an important element of the State economy, it too was distorted in 1975 and 1976 by work on the **Trans Alaska Pipeline**.

Compared with the State, the North Slope Borough has relatively undeveloped trade and services sectors. This is common in rural Alaska where people with limited incomes and locally high costs of living rely almost exclusively on mail order purchases and make few demands on the service sector. However, in the North Slope Borough it is believed to be more a reflection of the presence of a sizable transient population housed in camps associated with the Pipeline, Prudhoe Bay and similar activities which makes virtually no demands on the region for goods and services.

Mining employment in the North Slope Borough in 1976 accounted for almost one-third of the total Statewide employment in this industry, Since employment in the Borough as a whole accounted for only 4 percent of the State's nonagricultural wage and salary employment during that year, mining jobs are obviously much more significant in the North Slope Borough than they are in the State as a whole.

In summary, the composition of employment in the North Slope Borough is fundamentally different from that of the State. The Borough is a mixture of traditional communities where government is the major employment sector and of isolated enclaves where mining or contract construction is the dominant activity. The two groups are united only

in terms of their general geographic location within the Borough's boundaries.

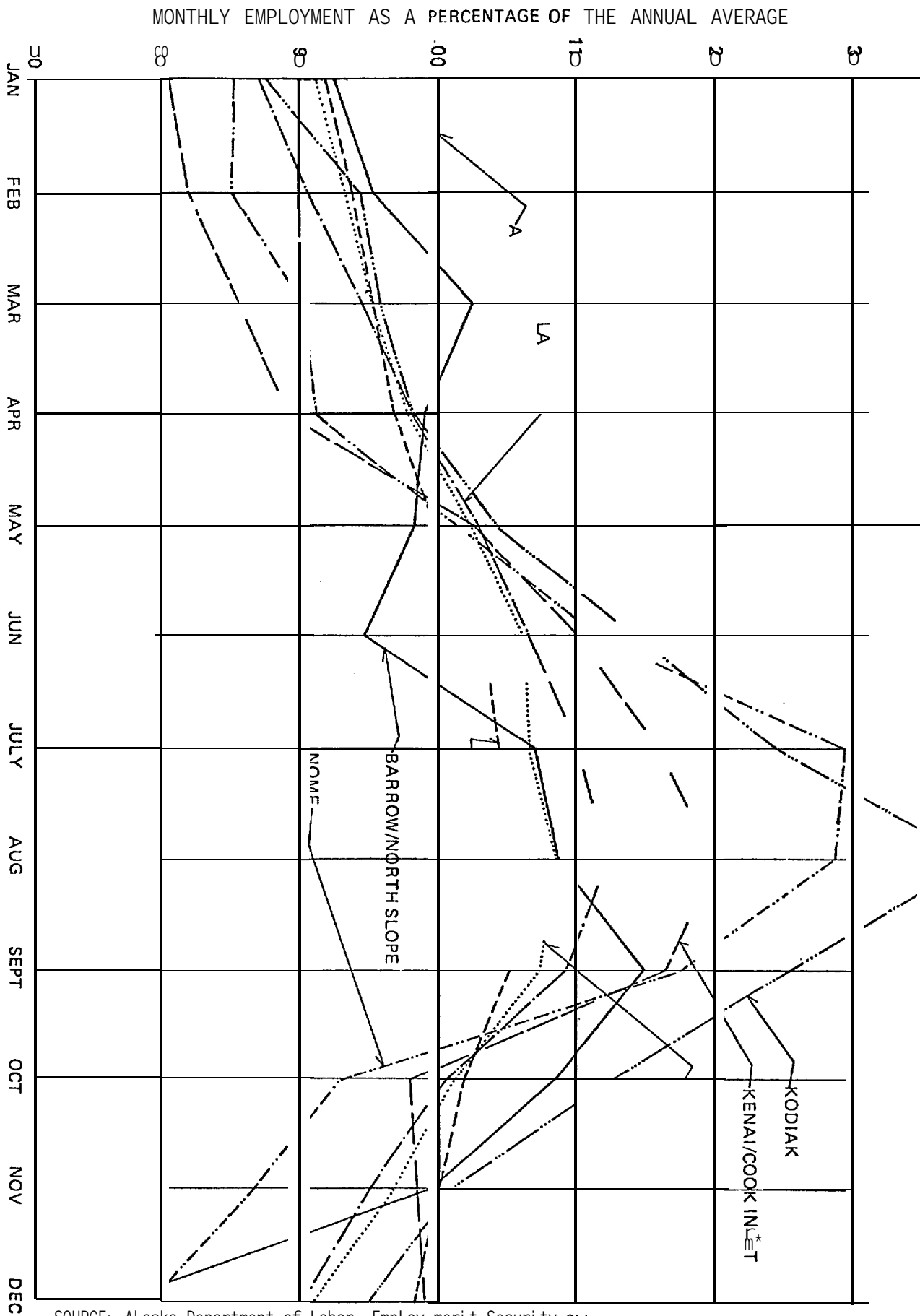
Unemployment and Seasonality of Employment

According to statistics published by the Alaska Department of Labor, the Barrow-North Slope division had an unemployment rate of 3.7 percent in 1976, the lowest in the State and well below the 8.2 percent Statewide average. However, while this unemployment figure may be reasonably accurate for the region as a **whole**, it does not represent conditions in all areas of the Borough. In July 1976, 71.1 percent of the Borough's population lived outside traditional communities, mainly in the **Prudhoe Bay/Deadhorse** area and in Pipeline camps. All of these people were employed and, when their jobs ended, they simply left the region. One can therefore conclude that within some of the Borough's traditional communities, unemployment rates are relatively high.

Another factor contributing to an apparently low level of unemployment in the North Slope and in other rural areas of Alaska is that State statistics count as unemployed only those people who are actively seeking work. As there are very few jobs available in most Alaska rural communities, many people in these areas are outside the labor force and are therefore not counted as being unemployed.

Although unemployment in the region's traditional communities is higher than indicated by Boroughwide statistics, unemployment rates have

SEASONALITY OF NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
 SELECTED ALASKA DISTRICTS
 1976



SOURCE: Alaska Department of Labor, Employment Security Division

declined recently in the region's villages, mainly because of new employment opportunities afforded by the North Slope Borough and the regional and village Native corporations. The availability of jobs associated with the Trans Alaska Pipeline has also been a factor, albeit a less permanent one, in reducing unemployment in the region's traditional communities.

No unemployment statistics are available for individual communities within the Borough. However, a review of employment within Barrow, **Nuiqsut** and Kaktovik undertaken in December 1977 by Alaska Consultants, Inc. indicate that while there is a good deal of under-employment in these communities, unemployment is much less of a problem here than in most rural areas of the State. A survey of employment in **Wainwright** conducted by Alaska Consultants, Inc. in April of 1977, however, found a higher rate of unemployment in that community as there was only one local job for every 6.6 residents (compared with about one for every 3.8 residents in **Nuiqsut** and Kaktovik). **Wainwright** is a relatively large village and some economies of scale can be realized in the provision of government services here. As a result, a higher proportion of people are not able to be accommodated by a combination of Borough and village corporation jobs. In such a case, an individual choice between leaving the community or remaining unemployed must be made. A comparable situation may exist at Point Hope, a village about the same size as **Wainwright**.

A review of month to month nonagricultural wage and salary employment for the Barrow-North Slope division in 1976 indicates that employment in the region showed more seasonal variation than it did in the State as a whole. Employment in the North Slope region peaked in September at 115 percent of the annual average and dropped to a low of 76.8 percent in December, whereas that for the State as a **whole** ranged between a high of 112.5 percent of the annual average in **August** and a low of 87.5 percent in January.

A look at **conditions** in Anchorage in 1976 indicated that this community experienced even less seasonal variation than the State, with employment ranging between a high of 106.6 percent of the annual average in August and a **low** of 92 percent in January. Employment in Fairbanks showed only slightly more **seasonality**. However, areas like Kodiak and **Kenai-Cook Inlet** where fishing and fish processing is an important segment of the economy generally exhibited more employment **seasonality** than the North Slope. The same was true of the Nome area where a combination of mining, tourism and construction activities normally contribute to a high degree of employment **seasonality**.

When individual sectors of the Barrow-North Slope division are analyzed, it is apparent that contract construction was the major contributor to seasonal variations in employment in the region in 1976. In December of 1976, employment in contract construction was about 1,700 jobs below that recorded in this sector during the previous month. Peak employment in contract construction occurred in September, as did that for the

Barrow-North Slope division as a whole. Employment in services also showed a high degree of **seasonality**. However, this sector has many fewer employees. By contrast, employment in government is relatively stable. Peak employment in this sector in 1976 occurred between June and September, probably reflecting the Borough's ongoing force account ("in-house") construction programs.

Employment **seasonality** statistics for the Barrow-North Slope division are not representative of conditions in the region's traditional communities. During 1976, employment in the region was dominated by construction of the **Trans** Alaska Pipeline, by oil and gas development in the Prudhoe Bay area and by related transportation, communications and service activities. Employment in the Borough's traditional communities, however, is dominated by the government sector.

As part of Alaska Consultants' count of employment in Barrow, employers were asked to indicate average annual employment and whether additional employees were hired at particular times of the year. While no precise measurements can be derived, it was apparent that the major elements contributing to **seasonality** of employment in the community were tourism and construction activities. **Tourism** adds jobs in trade, services and transportation during the summer months. Construction activities are also highly seasonal because of the region's harsh climate. However, seasonal variations in employment in Barrow do not approach the extremes registered for the region as a whole.

In the smaller communities, seasonal variations in employment usually result from the closure of the local schools during the summer months and from summer construction activities. School teachers generally leave the region during the long summer vacation and other positions associated with the schools except for maintenance jobs also cease temporarily. The number of construction jobs in these communities varies from year to year depending on the projects scheduled. However, while seasonal variations in employment do occur in these communities, they are less extreme than those experienced Boroughwide.

Recent Trends and Changes

The composition of employment in the North Slope region has undergone a fundamental change during the past ten years. Four main events precipitated this change. These are the discovery of a major **oilfield** in the Prudhoe Bay area which was announced in 1968; the passage of the Alaska Native Claims Settlement Act in 1971; the formation of the North Slope Borough as an areawide unit of local government in 1972; and the construction of the **Trans** Alaska Pipeline between 1974 and 1977.

Because of severe limitations in available data, figures measuring trends in employment caused by these events are generally incomplete. However, within these limitations, the following trends and changes have been noted.

According to statistics provided by the Alaska Department of Labor, nonagricultural wage and salary employment in the Barrow labor area

(the boundaries of which coincide with the former Barrow Census Division previously described), plus insured employment for the remainder of the region totalled 1,065 jobs in 1970. By 1974, this combination of employment types accounted for 3,062 jobs or, an increase of 187.5 percent over the 1970 figure. However, rates of increase in different parts of the North Slope region and in different employment sectors varied widely. Insured employment in the region outside the Barrow labor area rose almost 1,732 percent (from an annual average of 88 jobs in 1970 to 1,612 in 1974), while nonagricultural wage and salary employment in the Barrow labor area rose by a more modest 48 percent (from an annual average of 977 jobs in 1970 to 1,450 in 1974).

The largest increases in employment in the region outside the Barrow labor area between 1970 and 1974 were in mining, contract construction, transportation, communications and public utilities, and in services. Disclosure regulations prevent the measurement of changes in individual sectors. However, increases in employment were largely due to the development of the Prudhoe Bay field and the construction of the Trans Alaska Pipeline, plus increased needs for transportation and communications and services generated by these activities. Some idea of the impact of Pipeline construction on this area can be gauged by the fact that total insured employment in 1974, the first year of work on this project, was 418 percent above that in 1973.

More complete statistics on trends and changes in employment are available for the Barrow labor area. Nonagricultural wage and salary

TABLE 4

COMPARISON OF INSURED EMPLOYMENT
NORTH SLOPE BOROUGH AREAS OUTSIDE **BARROW** LABOR AREA a/
1970 AND 1974

| Employment Sector | 1970 | | 1974 | | 1970 - 1974 % Change |
|---|-----------|--------------|--------------|--------------|-------------------------|
| | Number | % of Total | Number | % of Total | |
| Mining | <u>b/</u> | | 580 | 36.0 | |
| Contract Construction | <u>b/</u> | | 697 | 43.2 | |
| Manufacturing | <u>b/</u> | | <u>b/</u> | | |
| Transportation, Communications and Public Utilities | <u>b/</u> | | 160 | 9.9 | |
| Trade | <u>b/</u> | | <u>b/</u> | | |
| Finance, Insurance and Real Estate | <u>b/</u> | | <u>b/</u> | | |
| Service | <u>b/</u> | | <u>b/</u> | | |
| Miscellaneous | <u>b/</u> | | <u>b/</u> | | |
| Government | <u>b/</u> | | 18 | 1.1 | |
| Federal | (27) | (30.7) | (15) | (.9) | (-33.3) |
| State and Local | <u>b/</u> | | (3) | (.2) | |
| <u>TOTAL</u> | <u>88</u> | <u>100.0</u> | <u>1,612</u> | <u>100.0</u> | <u>1,731.8</u> |

a_/ Includes Point Hope/Cape Thompson, Deadhorse, Crazy Horse Camp, Prudhoe Bay and an assortment of smaller centers, not all of which are within the Borough's boundaries.

b/ Employment figures withheld to comply with disclosure regulations or no employment recorded.

Source: Alaska Department of Labor.

TABLE 5
TRENDS IN NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
BARROW LABOR AREA
1970 - 1974

| Employment Sector | 1970 | | 1971 | | | 1972 | | |
|---|------------|---------------|------------|--------|----------|-----------|--------------|----------|
| | Number | % | Number | % | % Change | Number | % | % Change |
| Mining | 280 | 28.7 | 119 | 14.0 | -57.5 | 117 | 12.8 | -1.7 |
| Contract Construction | 173 | 77.7 | 137 | 16.2 | -20.8 | 104 | 11.4 | -24.1 |
| Manufacturing | <u>a/</u> | | 0 | --- | | 0 | --- | --- |
| Transportation, Communications and Public Utilities | 86 | 8.8 | 80 | 9.4 | -7.0 | 95 | 10.4 | 18.8 |
| Trade | <u>a/</u> | | <u>a/</u> | | | <u>a/</u> | | |
| Finance, Insurance and Real Estate | <u>a/</u> | | <u>a/</u> | | | <u>a/</u> | | |
| Service | 142 | 14.5 | 150 | 17.7 | 5.6 | 175 | 19.2 | 16.7 |
| Miscellaneous | 0 | --- | 0 | --- | --- | 0 | --- | --- |
| Government | 165 | 16.9 | 282 | 33.3 | 70.9 | 334 | 39.6 | 18.4 |
| Federal | (128) | (13.1) | (168) | (19.8) | (46.9) | (173) | (18.9) | (3.0) |
| State and Local | (37) | (3.8) | (114) | (13.4) | (208.1) | (161) | (17.6) | (41.2) |
| <u>TOTAL</u> | <u>977</u> | <u>100.0</u> | 848 | 100.0 | -13.2 | 913 | <u>100.0</u> | 7.7 |

a/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

TABLE 5
(cont'd)

| Number | 1973 | | Number | 1974 | | 1970 - 1974 |
|--------------|--------------|-------------|--------------|--------------|-------------|-------------|
| | % | % Change | | % | % Change | % Change |
| 103 | 9.8 | -12.0 | 290 | 20.0 | 181.6 | 3.5 |
| 70 | 6.6 | -32.7 | 119 | 8.2 | 70.0 | -31.2 |
| 0 | --- | --- | 0 | --- | --- | |
| 168 | 16.0 | 76.8 | 145 | 10.0 | -13.7 | 68.6 |
| <u>a/</u> | | | <u>a/</u> | | | |
| <u>a/</u> | | | <u>a/</u> | | | |
| 187 | 17.8 | 6.8 | 96 | 6.6 | -48.7 | -32.4 |
| 0 | --- | --- | 0 | --- | --- | --- |
| 395 | 37.5 | 18.3 | 641 | 44.2 | 62.3 | 288.5 |
| (171) | (16.2) | (-1.2) | (283) | (19.5) | (65.5) | (121.1) |
| (224) | (21.3) | (39.1) | (358) | (24.7) | (59.8) | (940.5) |
| <u>1,052</u> | <u>100.0</u> | <u>15.2</u> | <u>1,450</u> | <u>100.0</u> | <u>37.8</u> | <u>48.4</u> |

employment in the labor area increased 48 percent between 1970 and 1974. However, significant gains in employment were recorded in **only** two sectors - government and transportation, communications and public utilities. Employment in mining rose slightly; contract construction and services employment declined, while that in manufacturing, trade and in finance, insurance and real estate was affected by disclosure regulations.

By far the largest **increase in** employment in the Barrow labor area between **1970** and 1974 occurred in State and local government where the number of persons **employed** rose from 37 **to** 358, an increase of 940 percent. This **dramatic** rate of growth was due almost entirely to the incorporation of the North Slope Borough in 1972 and the subsequent extension of a range of local government services to communities in the region. Federal government employment also increased during the 1970-74 period, registering a 121 percent gain, but most of this increase is believed to be related either to activities in National Petroleum Reserve-Alaska (**NPR-A**) or to deficiencies in State statistics. Employment in transportation, communications and public utilities increased by a healthy 68 percent during this same period.

After 1974, nonagricultural wage and salary employment information is available for the entire Borough. However, it is not directly comparable with the combination of nonagricultural wage and salary and insured employment information provided for prior years and few reliable conclusions can be drawn about employment trends from only two years of data.

Overall, nonagricultural wage and salary employment in the North Slope region increased slightly more than 12 percent between 1975 and 1976. Healthy but relatively modest increases were recorded in mining (9 percent), services (7 percent) and government (almost 11 percent). A much greater rate of increase (close to 19 percent) was registered in contract construction, with 1976 being the last full year of work on the Trans Alaska Pipeline. However, the largest increase took place in the State and local government portion of the government sector where employment rose 24 percent. Virtually all of this increase was in local government. Federal government employment, on the other hand, declined almost 15 percent between 1975 and 1976. Much of this decline and the corresponding increase in local government employment may result from the Borough's takeover of the school system from the State and the U.S. Bureau of Indian Affairs between 1974 and 1975.

Employment in the transportation, communications and public utilities sector also declined between 1975 and 1976, with employment dropping by 27 percent. However, this decline is believed to be unrelated to services provided to the traditional communities of the region since no drop in employment in this sector was encountered in Barrow. The transportation, communications and public utilities sector is an insignificant element in the economies of other traditional communities of the region,

One very significant recent change in employment in the North Slope region is not indicated by employment statistics because jobs in

TABLE 6
TRENDS IN NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
NORTH SLOPE BOROUGH
1975 - 1976

| Employment Sector | 1975 | | 1976 | | 1975 - 1976 |
|---|---------------|--------------|--------------|--------------|-------------|
| | Number | % | Number | % | % Change |
| Mining | 1,166 | 18.9 | 1,271 | 18.3 | 9.0 |
| Contract Construction | 3,152 | 51.1 | 3,738 | 53.9 | 18.6 |
| Manufacturing | <u>a/</u> | | <u>a/</u> | | |
| Transportation, Communications and Public Utilities | 434 | 7.0 | 316 | 4.6 | -27.2 |
| Trade | 135 <u>b/</u> | 2.2 | <u>a/</u> | | |
| Finance, Insurance and Real Estate | <u>a/</u> | | <u>a/</u> | | |
| Service | 415 | 6.7 | 445 | 6.4 | 7.2 |
| Miscellaneous | <u>a/</u> | | 0 | --- | |
| Government | 805 | 13.0 | 892 | 12.9 | 10.8 |
| Federal | (280) | (4.5) | (239) | (3.4) | (-14.6) |
| State and Local | (525) | (8.5) | (652) | (9.4) | (24.2) |
| <u>TOTAL</u> | <u>6,172</u> | <u>100.0</u> | <u>6,932</u> | <u>100.0</u> | <u>12.3</u> |

a/ Employment figures withheld to comply with disclosure regulations.
b/ Retail trade employment only.

Source: Alaska Department of Labor.

finance, insurance and real estate are usually affected by disclosure regulations. It is in this sector that central office jobs accruing to the Native regional and village corporations formed under the terms of the Alaska Native Claims Settlement Act are recorded. In addition, subsidiaries of these corporations are often submerged in the trade, services and other sectors of the region's employment picture. Nevertheless, given the very substantial land and cash entitlements of these corporations, they are an important element in the regional economy and should continue to be so through the foreseeable future.

The discovery of oil and gas at Prudhoe Bay and the need to construct a pipeline across Alaska to transport oil (and shortly another line to transport natural gas) have had far-reaching effects on employment not only in the North Slope region but also in the State as a whole. In the North Slope, a very large share of employment is presently engaged in mining or related construction activities. Borough taxes levied on these activities support most local government employment in the region and, through greatly increased levels of spending by the Borough government and its employees, also help support employment in other sectors. A similar situation exists in Alaska as a whole since revenues from the 1969 Prudhoe Bay oil and gas lease sale and from petroleum taxes have been used to greatly increase the level of State spending (and the number of State employees, although not in the North Slope Borough). This increased State spending, in turn, has had a major impact on employment in other sectors throughout the State, particularly in its urban centers.

There is no published information available which indicates trends in employment in individual communities of the North Slope region. However, it can be said that the incorporation of the North **Slope** Borough and the formation of Native village corporations and the Arctic Slope Regional Corporation have had a major impact on the number of jobs available to the region's permanent residents. Before the Borough and the corporations existed, the employment pattern in the region's traditional communities was probably typical of most rural areas in the State. That is, a highly skilled group of people, almost exclusively white, providing services such as health and education to a largely unskilled and unemployed group of people, **almost** exclusively Alaska Native. Today, however, Eskimos in this region have many more opportunities for employment in their home towns.

New employment opportunities outside the region's traditional communities have also been available to Borough residents during the past few years as a result of the development of the Prudhoe Bay field and the construction of the Trans **Alaska** Pipeline. It should be noted, however, that relatively few Natives presently work in permanent jobs in the Prudhoe Bay area. (Alaska Consultants counted only 2 **Nuiqsut** residents and 4 **Wainwright** residents who were regular oil company employees although some people from Barrow also work in this area). By contrast, a large number of Alaska Natives from the North Slope region and elsewhere in the State worked at least temporarily on the construction of the Trans **Alaska** Pipeline. Nevertheless, these jobs plus those associated with the Borough and the regional and village

corporations have provided local Eskimo residents with a range of well paid job opportunities not available elsewhere in rural Alaska.

Occupational Skills

There is little comprehensive information available as to the skills of the workforce in the North Slope region. The Barrow Manpower Center maintains a list of skills (as classified by the U.S. Department of Labor) of people who register there when **looking** for work. Registrants at the Center are generally people from the region's traditional communities and their skills are not typical of those of the region's **workforce** as a whole. (For a discussion of the skills of people in permanent communities of the North Slope, see the Barrow chapter of this report).

Overall, the population of the North Slope region is highly skilled. Persons working at Prudhoe Bay, NPR-A and on the Pipeline accounted for over half of the region's July 1977 population. All of these people were hired because they possessed specific skills. **While** there are no statistics available, it is apparent that the skills possessed by the majority of people working in areas outside the region's traditional communities fall into the structural, miscellaneous and service groups as defined by the U.S. Department of Labor.

Income Levels

According to Alaska Department of Labor statistics, individual wage levels in the North Slope Borough in 1975 and 1976 were among the highest in the State. The average monthly wage in the region in 1976 was \$3,897, a figure exceeded only in the Southeast Fairbanks, **Valdez-Chitina-Whittier** and Yukon-Koyukuk census divisions. Unfortunately, statistics are not available on a Boroughwide basis prior to 1975 as it is apparent **that** wage levels in all of these four census divisions are distorted by salaries paid to persons working on the **Trans** Alaska Pipeline during these two years. The average monthly wage Statewide in 1976 was \$1,928 but this too was distorted by Pipeline construction activities.

A review of monthly wage levels by industry sector in the Barrow-North Slope Census Division for 1975, 1976 and the first quarter of 1977 indicates very clearly why Boroughwide wage figures are so high. The average wage in the construction sector in the region was more than \$5,000 per month after the first quarter of 1976, peaking at \$6,120 per month in the fourth quarter of 1976. Essentially all of this activity was associated with the **Trans** Alaska Pipeline.

Average wage levels in mining, services and in transportation, communications and utilities in the North Slope Borough were also high when compared with those of other sectors. The average wage in mining exceeded \$3,000 per month after the second quarter of 1976 (with a peak

TABLE 7

AVERAGE MONTHLY WAGE
ALASKA CENSUS DIVISIONS
1976

| <u>Census Division</u> | <u>Average Monthly Wage</u> |
|--------------------------------|-----------------------------|
| Al euti an I sl and s | \$ 1,499 |
| Anchorage | \$ 1,613 |
| Angoon | \$ 899 |
| Barrow-North Slope | \$3,897 |
| Bethel | \$ 940 |
| Bristol Bay Borough | \$ 1,309 |
| Bristol Bay | \$1,142 |
| Cordova-McCarthy | \$1,220 |
| Fairbanks | \$ 2,161 |
| Haines | \$ 1,093 |
| Juneau | \$ 1,414 |
| Kenai-Cook Inlet | \$ 1,742 |
| Ketchikan | \$1,294 |
| Kobuk | \$ 1,161 |
| Kodiak | \$ 1,287 |
| Kuskokwim | \$ 1,577 |
| Matanuska-Susitna | \$1,316 |
| Nome | \$ 1,286 |
| Outer Ketchikan | \$ 918 |
| Prince of Wales | \$1,493 |
| Seward | \$ 1,178 |
| Si tka | \$ 1,377 |
| Skagway-Yakutat | \$1,229 |
| Southeast Fairbanks | \$3,956 |
| Upper Yukon | \$ 2,009 |
| Valdez-Chitina-Whittier | \$3,932 |
| Wade Hampton | \$ 1,349 |
| Wrangell-Petersburg | \$ 1,290 |
| Yukon-Koyukuk | \$ 4,082 |
| <u>STATE OF ALASKA</u> | <u>\$1,928</u> |

Source: Alaska Department of Labor.

of \$3,437 per month recorded for the first quarter of 1977). All of this employment was in areas remote from the region's traditional communities, mainly in the vicinity of Prudhoe Bay or in National Petroleum Reserve-Alaska.

Wages in services jobs also averaged more than \$3,000 per month in 1976 (with a peak of \$3,519 per month in the third quarter of 1976) although average wage rates in this sector dropped to slightly below \$3,000 in the first quarter of 1977. The largest share of these jobs was related to oil and gas development or to Pipeline construction activities.

Wage levels in transportation, communications and utilities were slightly below those in mining and services but were still high when compared with all other sectors except for construction. The highest average monthly wage recorded to date in this sector was \$3,093 which was reached during the third quarter of 1976. Again, most jobs in this sector were based outside the region's traditional communities servicing oil and gas or Pipeline activities or associated with the DEW Line stations. However, Barrow has a fairly large transportation, communications and utilities sector which probably serves to lower average monthly wage levels in this sector for the region as a whole.

While individual wage rates in construction, mining, services and transportation, communications and utilities are obviously very high, part of the reason for this in the North Slope Borough is due to the fact that employers in these sectors do not maintain office staffs in

TABLE 8

AVERAGE MONTHLY WAGE BY INDUSTRY SECTOR
BARROW-NORTH SLOPE DIVISION
1975 - 1977

| | 1975 | | | | 1976 | | | | 1977 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | 1st Qr | 2nd Qr | 3rd Qr | 4th Qr | 1st Qr | 2nd Qr | 3rd Qr | 4th Qr | 1st Qr |
| TOTAL NONAGRICULTURAL INDUSTRIES | \$2,654 | \$2,879 | \$3,439 | \$3,310 | \$3,092 | \$3,904 | \$4,311 | \$4,230 | \$3,224 |
| Mining | \$2,709 | \$2,662 | \$2,686 | \$3,201 | \$2,924 | \$2,946 | \$3,254 | \$3,162 | \$3,437 |
| Construction | \$3,793 | \$3,738 | \$4,337 | \$4,055 | \$3,733 | \$5,103 | \$5,820 | \$6,120 | \$5,158 |
| Transportation, Communications & Utilities | \$2,231 | \$2,745 | \$2,692 | \$2,245 | \$2,889 | \$2,760 | \$3,093 | \$2,502 | \$2,799 |
| Wholesale Trade | a/ | a/ | a/ | | a/ | a/ | | | |
| Retail Trade | \$ 457 | \$ 428 | \$ 483 | \$ 447 | \$ 612 | \$ 551 | \$ 508 | a/ | \$ 642 |
| Finance, Insurance & Real Estate | \$1,013 | \$1,038 | a/ | \$1,456 | a/ | a/ | \$2,540 | \$1,564 | a/ |
| Services | \$2,498 | \$2,282 | \$2,475 | \$2,939 | \$3,060 | \$3,251 | \$3,519 | \$3,094 | \$2,918 |
| Federal Government | \$ 916 | \$ 885 | \$ 939 | \$ 992 | \$ 668 | \$1,039 | \$ 962 | \$1,078 | \$ 980 |
| State & Local Government | \$ 852 | \$1,213 | \$1,442 | \$1,638 | \$1,007 | \$1,746 | \$1,453 | \$1,578 | \$1,426 |
| Miscellaneous & Manufacturing | a/ | a/ | | | | | | a/ | a/ |

a/ Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

the region (or if they do, they are very small). The Alaska offices of most companies in these sectors are based in Anchorage or Fairbanks, or both. As a result, the lower salaries normally paid to clerical and junior technical personnel are not reflected in North Slope Borough figures. Another reason for the high average monthly wage rates in these sectors is the very large number of hours of over-time logged by employees, particularly in jobs associated with the **Trans Alaska Pipeline**.

The salaries recorded for the Barrow-North **Slope** Census Division in trade and government are much lower. The highest average monthly wage in trade recorded for the region between 1975 and the first quarter of 1977 was only \$642 (in the first quarter of 1977). Wages in trade are normally relatively low. However, the average monthly wage in this sector in the North Slope region during the first quarter of 1977 was significantly below that of Anchorage (\$976), Fairbanks (\$1,042) and most other census divisions in the State.

Average monthly wages in government were higher than those in trade in the North Slope Borough between 1975 and the first quarter of 1977. The average for the federal government sector was \$980 per month in the first quarter of 1977 (down from a high of \$1,078 in the fourth quarter of 1976), while that for State and local government was \$1,426 (with a high of **\$1,746** per month during the second quarter of 1976). Wage rates for federal employees in the North Slope region are lower than those recorded for most other census divisions. However, a high proportion of

federal employees in the region are associated with the Public Health Service hospital and hospital employees generally receive relatively low wages. Furthermore, the salaries of many federal employees in Barrow are supplemented by employer-provided housing.

Almost all employment in the State and local government sector in the North Slope Borough is based in the traditional communities, principally Barrow. Since there are very few State employees in the region, the State and local government sector here is mainly made up of Borough employees. The average monthly wage in the State and local government sector in the first quarter of 1977 for the North Slope region was comparable to that received in local government in Anchorage (\$1,458) and the State (\$1,376) but was significantly lower than that received in Fairbanks (\$1,804). Given the high cost of living of North Slope communities, the spending power of wages in this sector in the Borough is undoubtedly below State averages.

There is obviously a wide disparity in the incomes received by people who live and work in traditional communities of the North Slope Borough and those received by people who are based in camps along the Pipeline, in the Prudhoe Bay area, in National Petroleum Reserve-Alaska or other isolated locations in the region. However, since the population of the region in 1975 and 1976 was dominated by people who lived outside the region's villages, the incomes of permanent residents are difficult to determine from regionwide figures.

Income data which are more representative of the region's traditional communities were obtained from the 1970 Census, from a 1974 survey conducted by Dupere and Associates and a 1976 survey carried out by the North Slope Borough School District. In addition, information on welfare payments which have, from time to time, been important sources of supplemental income in the North Slope region was obtained from the Alaska Department of Health and Social Services and the U.S. Bureau of Indian Affairs.

At the time of the 1970 Census, 86.6 percent of the population of the North Slope region lived within traditional communities (compared with only 42.4 percent in July 1977 even using Alaska Consultants' revised population figure for Barrow). Data are not available for the entire region because it was then included within three census divisions. However, the median family income for the Barrow Census Division (which included the communities of Anaktuvuk Pass, Barrow and **Wainwright** but excluded people in the Prudhoe Bay/Deadhorse area) was found to be \$8,575. While this was higher than that recorded for any census division in northern or western Alaska except for the Bristol Bay Borough, it was well below the Statewide median of \$12,443.

A comparison of the results of surveys undertaken by Dupere and Associates and the North Slope Borough School District indicates that, except in Kaktovik, median family income levels in the region's traditional villages underwent a significant increase between 1973 and 1975. For example, the Dupere survey found a median family income of

TABLE 9
 FAMILY INCOME DISTRIBUTION
 BARROW CENSUS DIVISION AND STATE OF ALASKA
 1969

| <u>Family Income</u> | <u>Barrow Census Division</u> % | <u>State of Alaska</u> % |
|---------------------------|------------------------------------|-----------------------------|
| Less than \$ 1,000 | 5.3 | 2.2 |
| \$ 1,000- \$ 1,999 | 6.9 | 2.3 |
| \$2,000- \$ 2,999 | 6.5 | 2.7 |
| \$ 3,000- \$ 3,999 | 13.2 | 3.2 |
| \$ 4,000- \$ 4,999 | 1.4 | 3.7 |
| \$5,000- \$5,999 | 5.8 | 5.0 |
| \$6,000- \$6,999 | 7.2 | 4.9 |
| \$ 7,000- \$ 7,999 | 7.2 | 4.6 |
| \$8,000- \$8,999 | 4.6 | 4.7 |
| \$9,000- \$9,999 | 6.5 | 4.3 |
| \$10,000- \$11,999 | 13.6 | 10.2 |
| \$12,000- \$14,999 | 12.5 | 14.3 |
| \$15,000- \$24,999 | 9*5 | 28.2 |
| \$25,000- \$49,999 | 6.0 | 8.7 |
| \$50,000 or more | --- | .8 |
| <u>TOTAL</u> | <u>100.0</u> | <u>100.0</u> |
| <u>Median Income</u> | <u>\$8,575</u> | <u>\$12,443</u> |

Source: U. S. Census.

TABLE 10
 FAMILY INCOME DISTRIBUTION
 NORTH SLOPE BOROUGH TRADITIONAL COMMUNITIES
 1973

| <u>Family Income</u> | <u>Number of Families</u> | <u>Percent of Total</u> |
|----------------------|---------------------------|-------------------------|
| Less than \$ 1,000 | 14 | 3.9 |
| \$ 1,000- \$4,999 | 106 | 29.8 |
| \$5,000- \$10,999 | 93 | 26.1 |
| \$11,000- \$15,999 | 37 | 10.4 |
| \$16,000- \$20,999 | 30 | 8.4 |
| \$21,000- \$24,999 | 17 | 4.8 |
| \$25,000 or more | 15 | 4.2 |
| No Response | 44 | 12.4 |
| <u>TOTAL</u> | <u>356</u> | <u>100.0</u> |

Source: Dupere and Associates.

TABLE 11

MEDI AN FAMI LY I NCOME
NORTH SLOPE BOROUGH TRADI TIONAL COMMUNI TIES

| <u>Tradi ti onal Communi ty</u> | <u>Medi an Fami ly I ncome</u> |
|---------------------------------|--------------------------------|
| Anaktuvuk Pass | \$3, 591 |
| Barrow | \$8, 560 |
| Kaktovi k | \$16, 500 |
| Nuiqsut | \$3, 800 |
| Point Hope | \$6, 770 |
| Point Lay | \$6, 250 |
| Wainwright | \$5, 833 |
| <u>BOROUGHWI DE</u> | <u>\$6, 962</u> |

Source: Dupere and Associates.

TABLE 12

PER CAPI TA AND FAMI LY I NCOME
NORTH SLOPE BOROUGH TRADI TIONAL COMMUNI TIES a/
1975

| <u>Communi ty</u> | <u>Percent of Popul ati on Covered</u> % | <u>Per Capi ta I ncome</u> \$ | <u>Medi an Fami ly I ncome</u> \$ |
|-------------------|---|--------------------------------------|--|
| Anaktuvuk Pass | 81 | \$1, 815 | \$10, 062 |
| Barrow | 23 | \$3, 508 | \$22, 676 |
| Kaktovi k | 54 | \$2, 317 | \$15, 289 |
| Nuiqsut | 89 | \$1, 925 | \$11, 899 |
| Point Hope | 75 | \$1, 966 | \$11, 992 |
| Point Lay | 69 | \$1, 566 | \$7, 832 |
| Wainwright | 85 | \$1, 323 | \$8, 906 |

a/ Survey conducted in March, 1976.

Source: North Slope Borough School District.

\$8,560 in Barrow in 1973. According to the School District survey, this had risen to \$22,676 in 1975, an increase of about 165 percent. Even greater increases between the two survey periods were found in Anaktuvuk Pass (180 percent) and Nuiqsut (213 percent) and significant increases were also registered in Point Hope (77 percent) and Wainwright (almost 53 percent). A comparatively modest increase was recorded in Point Lay (25 percent) and a slight decline (about 7 percent) in Kaktovik. Dupere and Associates found a median family income of \$6,962 for the region's permanent villages. While no more recent figures are available Boroughwide, it is apparent from the results of the School District survey that the region's median family income is now probably well in excess of \$12,000.

Surveys of income conducted by the Alaska Department of Administration in Barrow in December 1976 and by Alaska Consultants, Inc. in Wainwright in April 1977 indicate a continuing improvement in local incomes. The Alaska Department of Administration estimated average household income in Barrow in 1976 to be \$27,507 (although this may not be very reliable as it was based on a survey of only 10 households). Alaska Consultants, Inc. found that the median 1976 household income in Wainwright was \$10,000.

The main reasons for increases in family incomes of the North Slope's permanent residents are believed to be related to the incorporation of the North Slope Borough in 1972 and to the formation of the regional and village corporations under the terms of the Alaska Native Claims

Settlement Act. Together, the Borough and the corporations have served to greatly increase the number of jobs available to Eskimos in the region, both in Barrow and in the smaller villages. The availability of jobs on the Pipeline and in the **Prudhoe** Bay area has also been a factor.

Although income levels in the North Slope region's traditional communities have risen significantly since 1970, with the possible exception of Barrow they are still far behind Statewide averages. For example, the median family income in **Wainwright** in 1976 was lower than the median for the State in 1969, without even considering the increases in Statewide figures since that time.

Another factor which **should** be considered in a review of income levels in North Slope villages is the region's extremely high cost of living. According to the Alaska Department of Administration, food costs in Barrow in December 1976 were the highest in the State and averaged 73.6 percent above those in Anchorage. (This disparity was confirmed in December 1977 by Alaska Consultants, Inc. which found a list of selected grocery items in Barrow to cost 70 percent more than the same items in Safeway in Anchorage, although prices in Kaktovik and **Nuiqsut** were slightly lower than in Barrow). The same survey by the Department of Administration indicated that Barrow residents paid less for housing than did people in Anchorage. However, the cost of standard housing in Barrow is so high that, unless it is subsidized, it is beyond the reach of most local residents.

General assistance payments from the Bureau of Indian Affairs and public assistance funds distributed by the Alaska Department of Health and Social Services are an important form of supplemental income for a number of families in the Borough although they are less important today than they were a few years ago. The Bureau of Indian Affairs distributed a total of \$22,700 to 58 "cases" in the region during its 1976 fiscal year but this was down sharply from FY 1970 when the agency distributed a total of \$61,300 to 109 "cases". Payments by the Alaska Department of Health and Social Services are also down from 1970 when \$32,606 was divided among 173 recipients during a typical month to 1976 when a total of \$19,914 was paid out in a typical month to 130 recipients. By far the major source of public assistance is Aid to Families with Dependent Children where a total of \$15,786 was paid out to 62 recipients during a typical month in 1976.

In summary, income levels in traditional communities of the North Slope region have improved significantly since 1970. However, they remain, on the average, well below State levels. When other factors such as high living costs and large family sizes are taken into consideration, it is apparent that a share of the population in this region is still living in conditions of extreme poverty and that, for many, subsistence hunting and fishing is an act of economic necessity. By contrast, persons employed in isolated enclaves associated with the Pipeline and oil and gas activities have extremely high incomes. Furthermore, these incomes are not diminished by the North Slope's high living costs since the families of almost all of these people are located outside the region.

TABLE 13

GENERAL ASSISTANCE PAYMENTS a/
 NORTH SLOPE BOROUGH TRADITIONAL COMMUNITIES
 FY 1970, FY 1974, FY 1976

| | <u>FY 1970</u> | <u>FY 1974</u> | <u>FY 1976</u> |
|------------------|----------------|----------------|----------------|
| Total Payment | \$61,300 | \$189,300 | \$22,700 |
| Number of Cases | 109 | 293 | 58 |
| Average Payment: | | | |
| Annual | \$ 562 | \$ 646 | \$ 391 |
| Monthly | \$ 47 | \$ 54 | \$ 33 |

a/ Payments by the Bureau of Indian Affairs.

Source: U.S. Bureau of Indian Affairs.

TABLE 14

PUBLIC ASSISTANCE PROGRAM PAYMENTS a/
 NORTH SLOPE BOROUGH TRADITIONAL COMMUNITIES
 OCTOBER, 1970 AND OCTOBER, 1976

| | Old Age Assistance | | Aid to the Blind | | Aid to the Disabled | | Aid to Families with Dependent Children | | Total | |
|-----------------|--------------------|---------|------------------|------|---------------------|---------|---|----------|----------|----------|
| | 1970 | 1976 | 1970 | 1976 | 1970 | 1976 | 1970 | 1976 | 1970 | 1976 |
| Total Payment | \$11,388 | \$4,694 | \$185 | \$- | \$2,961 | \$1,434 | \$18,072 | \$15,786 | \$32,606 | \$19,914 |
| Number of Cases | 74 | 51 | 1 | - | 16 | 17 | 82 | 62 | 173 | 130 |
| Average Payment | \$ 154 | \$ 92 | \$185 | \$- | \$ 185 | \$ 84 | \$ 220 | \$ 255 | \$ 188 | \$ 153 |

a/ October is considered to be a representative month for public assistance payments.

Source: Alaska Department of Health and Social Services.

SECTOR ANALYSIS

Oil and Gas

The oil and gas industry is not a new one in the North Slope region. Numerous oil seeps generated interest in the region's potential as far back as the early 1900's when mining claims were first staked in the Cape Simpson area. However, the activities of private oil interests there were halted following the creation of Naval Petroleum Reserve #4 (NPR-4) by Presidential order in 1923.

A major exploration program in **NPR-4** was conducted by the Navy and later by civilian contractors between 1944 and 1953. During the nine year period, nine oil and/or gas fields were discovered but, because of high costs and the relatively small scale of the discoveries, only the South Barrow gas field has been developed to date. Furthermore, it was developed only because of its proximity to Barrow. Exploration activities in NPR-4 ceased in 1953 when it was determined that the Reserve's remote location and its environmental vulnerability, combined with the absence of major finds, were serious obstacles to further development of the area.

After the cessation of the NPR-4 exploration program, no more exploratory drilling took place on the North Slope for another ten years when private companies leased federal lands east of NPR-4 and south of the present Prudhoe Bay field. However, no commercial quantities of oil

or gas were discovered during this period and interest then shifted to State-selected lands along the Beaufort Sea coast.

The State held four competitive oil and gas lease sales on the North Slope - one each in 1964, 1965, **1967** and 1969. Most of the area leased at Prudhoe Bay was acquired in the 1965 sale by Humble Oil (now EXXON) and the Richfield Oil Corporation (now **ARCO**). The discovery well for the Prudhoe Bay field was spudded in 1967 and the find was officially announced in July of 1968. The size of the Prudhoe Bay discovery (projected recoverable reserves of 9.6 billion barrels of crude oil and 26 trillion cubic feet of natural gas) dramatically increased the value of State leases, with the most recent lease sale in 1969 bringing in about \$900 million in revenues to the State (compared with \$1.5 million for 23 offshore tracts leased in January 1967).

Plans to construct a pipeline to carry oil from Prudhoe Bay to Alaska's south coast were announced in 1969. However, these plans were delayed until a settlement of pending Native claims was reached with the 1971 passage of the Alaska Native Claims Settlement Act and until litigation against construction of the Pipeline was finally resolved with the passage of the **Trans** Alaska Pipeline Authorization Act. The latter was signed into law in November 1973. Construction of the Pipeline finally got underway in April 1974 and continued for the next three years. The Pipeline began operation on June 20, 1977 with the first oil reaching **Valdez** 38.5 days after start-up.

As of June 15, 1977, there was a total of 5,318 persons stationed in the Prudhoe Bay industrial area and at Pipeline camps within the North Slope region. This was down significantly from the 8,856 persons counted in these areas in July 1976. Since the summer of 1977, however, the number of people in the area has fallen still further. (A breakdown of employers in the area as of June 15, 1977 is given in the following table).

While the Prudhoe Bay area remains the focus of most oil and gas-related activity on the North Slope, National Petroleum Reserve-Alaska is also the scene of renewed interest. Numerous estimates of the potential of NPR-A have been made with the latest, by the U.S. Federal Energy Administration (cited in an information sheet distributed by Husky Oil NPR Operations, Inc.), being a relatively conservative 5 billion barrels of oil and 14.3 trillion cubic feet of natural gas. A comprehensive evaluation of the petroleum potential of the Reserve was begun by Husky Oil for the Navy in 1975 and is continuing under the Department of the Interior. Seven wells had been drilled by the end of the 1976-77 season, although none to date have indicated commercial finds. During the first two years of the Husky contract, attention was focused in the eastern sections of the Reserve. However, during the current year of operation (winter of 1977-78), drilling is taking place at widely scattered sites within the Reserve.

Under its **fiscal** year 1978 contract, Husky Oil is drilling six exploratory wells, three to less than 12,000 feet and three deeper. Two

TABLE 15
 POPULATION BREAKDOWN
 ALYESKA PIPELINE CAMPS AND PRUDHOE BAY INDUSTRIAL AREA
 JUNE 15, 1977

| | <u>Popul ati on</u> |
|--|---------------------|
| <u>Prudhoe Bay Industrial Area</u> | <u>3, 504</u> |
| BP Alaska Base Operations Center | 261 |
| BP Alaska Construction Camp No. 1 | 446 |
| BP Alaska Construction Camp No. 2 | 442 |
| Alaska General Construction (Service City) | 105 |
| Frontier Equipment | 215 |
| NANA Oilfield Services | 165 |
| Wien Air Alaska | 46 |
| Mukluk (Camps 1, 2 & 3) | 20 |
| Crazy Horse Camp <u>a/</u> | 100 |
| Happy Horse Camp | 33 |
| Dead Horse Camp <u>a/</u> | 64 |
| Brinkerhoff Drilling Co. | 40 |
| Nabors Drilling Co. | 25 |
| Atlantic Richfield Co. - Base Operations | 292 |
| ARCO Construction Camp No. 1 | 1, 004 |
| ARCO Construction Camp No. 2 | 77 |
| Nabors-Kodiak Camp | 65 |
| ARCO Drilling Rigs | 104 |
| <u>Alyeska Pipeline Camps</u> | <u>1, 814</u> |
| Franklin Bluffs Camp | 220 |
| Happy Valley Camp | 228 |
| Galbraith Lake Camp | 213 |
| Chandalar Camp | 400 |
| Pump Station 1 | 287 |
| Pump Station 3 | 209 |
| Pump Station 4 | 257 |
| <u>TOTAL POPULATION</u> | <u>5, 318</u> |

a_/ Estimated population - data not certain.

Source: BP Alaska, Inc.

of the latter are scheduled to go to more than 19,500 feet, the deepest ever drilled on the North Slope. In addition, the company is in the process of constructing two drilling pads for planned fiscal year 1979 exploratory wells and is engaged in drilling three natural gas wells to continue development of the gas supply in the Barrow area. Another element of Husky's current program is the gathering and processing of 3,349 kilometers (2,081 line miles) of seismic surveys in the Southern Foothills, **Umiat** and Barrow areas.

Servicing of camps in NPR-A is being handled out of Camp Lonely in the eastern section of the Reserve. The activities in **NPR-A** are unlike those of the Prudhoe Bay area in that these are winter operations. Equipment and supplies are barged from Seattle during the summer to designated "drop-off" points and are hauled overland as soon as weather conditions permit. Airfields at the drill sites are ice strips except in the case of Icy Cape where the depth of the well being drilled is such that it requires year-round service.

The current **NPR-A** exploration program is scheduled to continue through about **1980**, by which time a total of 26 wells should have been drilled. However, the Department of the Interior is also evaluating the best procedures for the development, production, transportation and distribution of petroleum resources in the Reserve. In addition, a special task force is conducting a major study to determine the values and best uses of lands within and adjacent to the Reserve, including subsistence, scenic, historical, recreational, fish and wildlife,

wilderness and other values. These studies are scheduled to be presented to the Secretary of the Interior in June and April, 1979 respectively. Then, based on its analysis, the U.S. Congress will make a decision as to the future of NPR-A.

As of July 1, 1977, Husky Oil counted 33 persons based within **NPR-A**. During the 1976-77 winter program, however, the Navy estimated that in the peak month (February) there were 55 persons stationed at Camp Lonely, 265 at various drill sites and between 200 and 250 persons engaged on the seismic program. The number of personnel based in **NPR-A** during the current season is probably at least as great as that recorded for the 1976-77 season.

The impact of oil and gas exploration and development activity on traditional communities in the North Slope **region** has generally been an indirect one although it has provided jobs for a number of local residents from time to time. The Prudhoe Bay area is remote from traditional settlements and exploration activities in **NPR-A** to date have not impacted on established communities (except Barrow to a very minor degree). However, the indirect impact of the oil and gas industry on the region's permanent settlements has been enormous as the industry provides the tax base upon which the North Slope Borough depends to undertake its capital improvements program designed to bring the quality of life of its residents up to an acceptable standard.

Government

Government was the third **largest** employer in the North Slope Borough in 1976 (after contract construction and mining). However, it was the major source of employment within all traditional communities of the region. Government jobs accounted for 56.6 percent of average annual full-time employment in Barrow in 1977 and for a higher proportion in each of the other communities studied by Alaska Consultants, Inc. (Kaktovik, Nuiqsut and Wainwright).

Government employment in the North Slope's traditional communities falls almost entirely into the **local** government category except in Barrow. In the smaller villages, the only non-Borough government jobs are generally those associated with the Post Office (although the U.S. Fish and Wildlife Service has a person stationed in Kaktovik and Wainwright's central water supply and shower facility is run by the U.S. Environmental Protection Agency).

Of the 517.5 government employees counted in Barrow during 1977, 420 or 81 percent, worked for the North Slope Borough. However, the federal government was also a significant source of employment in the community. Of the 84.5 federal jobs identified here, the Public Health Service was the major employer, with most of its 54 employees being associated with the operation of the hospital. Other federal employees in Barrow were associated with the Federal Aviation Administration, the National Weather Service, the Post Office and several other agencies. State

government was an insignificant element in Barrow's total employment, accounting for a total of only 13 jobs in 1977 (excluding 60 University personnel stationed at the Naval Arctic Research Laboratory).

In the areas outside the region's traditional communities, government employment is almost non-existent unless military subcontractors at the DEW Line stations and Cape **Lisburne** are counted. There is a State trooper and one Alaska Department of Transportation employee based out of Deadhorse. In addition, the Federal Aviation Administration has four airways facilities and three air traffic employees at Deadhorse who rotate out of Fairbanks. However, most government services here are contracted out. The North Slope Borough contracts with NANA **Oilfield** Services, Inc. for the provision of utilities services at Deadhorse, while the Alaska Department of Transportation contracts with a private firm for airport maintenance. Most other services normally provided by government agencies are provided by the companies operating in the area.

NPR-A has seen a great deal of visitation by federal personnel involved in Congressionally mandated studies and some U.S. Geological Survey personnel are associated with Husky Oil operations. However, except for emergency situations requiring a response from the Borough public safety department, there is a complete absence of local government or State services provided to oil and gas exploration activities in this area.

While federal government employment will continue to be a significant element in Barrow's economy and some increases in State employment in

this community can also be expected, it is activities in the local government sector, namely the North Slope Borough government, which have the greatest potential for continued economic and social change in the region. With the Prudhoe Bay area as its tax base, the Borough has undertaken an ambitious capital improvements program designed to bring the quality of life in all areas of the region up to a level comparable to that now enjoyed in most of the rest of the State. Given the fact that housing conditions and the range of community facilities in the traditional settlements were grossly inadequate at the time of the Borough's incorporation, plus the high costs of construction and "doing business" in the North, the capital improvements program is a very expensive one.

The initial emphasis of the Borough capital improvements program has been to provide each community in the region with basic life, health and safety support. As a result, projects designed to provide electric power generation, health clinics, sewage disposal and safe water sources received first priority for funds.

Next priority for capital improvements has generally been concentrated on housing, schools and community service centers. The Borough is currently engaged in building or planning new school facilities in all traditional communities of the region, while new housing has also been or is being built in these towns. Programs determined to be of lower priority, such as libraries and museums, will be undertaken when the range of basic facilities and services has been provided.

Including its most recent bond sale (1977) the North Slope Borough has sold a total of \$85,100,000 in general obligation bonds since its incorporation in 1972. However, the total amount of bonds authorized per Ordinance 77-10 for all purposes for the capital improvements program ending FY 1982-83 amounts to \$131,577,000. The largest **single** sale took place in 1977 when \$51,100,000 in general obligation bonds were sold by the Borough. This issue included \$23,000,000 for school facilities, **\$7,600,000** for housing, \$7,800,000 for roads, \$5,500,000 for light, power and heating systems, \$5,500,000 for sanitary facilities at Deadhorse and lesser amounts for water facilities, sewer facilities and sanitary facilities.

The Borough capital improvements program was substantially amended in 1977. In September 1976, the Borough restricted its construction work in the capital improvements program to 19 priority projects because of litigation over its ability to collect taxes for debt service on certain oil and gas property in excess of the \$1,500 per capita formula then in use. This shutdown adversely affected the Borough's ability to finance its long range capital improvement program in the manner and within the time schedule which was originally projected.

An important side effect of the Borough capital improvements program is that it has provided new employment and income opportunities to people in the smaller villages as **well** as Barrow. In the villages, these jobs are generally associated with the construction, maintenance and operation of new facilities. Ideally, the Borough attempts to pace

TABLE 16

STATUS OF CAPITAL IMPROVEMENTS PROGRAM
TO BE FUNDED BY BONDS AUTHORIZED AND TO BE AUTHORIZED a/
FY 1974 - FY 1983

(in \$000's to nearest \$1,000)

| | Total Bond Program FY 74-83 | Total Bonds Authorized | Bonds Sold | Contracts or Other Obligations b/ |
|----------------------------------|--------------------------------|---------------------------|-----------------|--------------------------------------|
| Education | \$47,313 | \$40,000 | \$40,000 | \$21,797 |
| Roads | \$ 18,221 | \$18,111 | \$11,200 | \$ 7,126 |
| Housing | \$ 37,043 | \$13,792 | \$13,700 | \$12,958 |
| Water Facilities | \$ 215 | \$ 186 | \$ 100 | \$ 26 |
| Sewer Facilities | \$ 560 | \$ 386 | \$ 375 | \$ 2 |
| Airports | \$ 882 | \$ 667 | \$ 175 | \$ 58 |
| Urban Development | \$ 1,430 | \$ 1,230 | \$ 1,230 | \$ 1,132 |
| Light, Power, Heating Systems | \$ 7,297 | \$6,944 | \$ 5,550 | \$2,265 |
| Public Safety | \$ 1,800 | \$ 127 | \$ -- | \$ -- |
| Sanitary Facilities | \$ 15,951 | \$12,770 | \$12,770 | \$12,500 |
| Communications | \$ 540 | \$ 540 | \$ -- | \$ -- |
| Health Facilities | \$ 325 | \$ -- | \$ -- | \$ -- |
| <u>TOTAL</u> | <u>\$131,577</u> | <u>\$94,753</u> | <u>\$85,100</u> | <u>\$57,864</u> |

a/ Bonds authorized and to be authorized as per North Slope Borough Ordinance 77-10.

b/ Contracts or other obligations as of May 31, 1977.

Source: North Slope Borough.

construction projects in these communities so that jobs are available during the summer months at a fairly constant rate. However, **this has** not always been possible. When the temporary shutdown **of** the capital improvement program ended in 1977, for example, an accumulated backlog of projects in some villages resulted in more jobs being available than could be filled locally. As a result, some temporary importing of workers from outside of individual communities took place.

The impact of the formation of the North Slope Borough on Barrow's economy has been even more dramatic than its impact on the smaller villages since a very large number of administrative jobs has been added here as well as those in the construction, maintenance and operation of facilities. More than any other **single** factor, the North Slope Borough has been responsible for the major improvement in the living standard of Barrow's Eskimo residents which has taken place since 1970.

The extent to which the North Slope Borough can continue to contribute to the economic wellbeing of people from Barrow and elsewhere in the region during the next twenty years will be affected by decisions rendered as to its taxing abilities. (The particular issues involved are discussed in detail in the section of this chapter dealing with Borough powers). However, it is assumed that the Borough will continue to be the key element in bringing living standards of **all** people in the region up to a standard comparable to that now enjoyed in most other areas of the State.

Tourism

Tourism is a comparatively recent industry in the North Slope region. The area's remoteness from the State's major transportation centers, its short cool summers, high transportation costs and limited hotel accommodations all tended to discourage tourism. Furthermore, tourism in Alaska's north was long dominated by Nome which offered a colorful past associated with the gold rush era as well as the opportunity for people to view Eskimos and Eskimo lifestyles. Today, however, tourism is a significant element in Barrow's economy during the summer months. Many tourists also travel to the **Prudhoe** Bay area although very few overnight there. Tourism in other areas of the region is presently insignificant.

Almost all tourists visiting the North Slope travel in organized tours marketed by Alaska Tour and Marketing Services, Inc. This company is based in Seattle but has offices in Anchorage and, during the summer months, also in Fairbanks and Barrow. Four travel packages to the North Slope are offered between June 1 and September 15 with daily trips via Wien Air Alaska from both Anchorage and Fairbanks. These are a one day excursion trip to Barrow, a one day excursion trip to Prudhoe Bay, an overnight trip to Barrow, and a two day/one night trip to Barrow and Prudhoe Bay. Advertised prices for these tours, during the 1977 season, including hotel costs but not food, ranged from \$199 per person for the day excursion trip to Prudhoe Bay from Fairbanks (\$249 per person from Anchorage) to \$396 per person for the two day/one night combination trip

to Barrow and Prudhoe Bay from Anchorage (\$340 per person from Fairbanks). Ground transportation in Anchorage and Fairbanks is provided by Westours, the agency which books the largest share of Alaska Tour and Marketing Services' tours to the North Slope. Local transportation in Barrow and Prudhoe Bay is via bus. Trained guides accompany each tour group.

In Barrow, tourists are treated to a program which features an Eskimo blanket toss, traditional Eskimo dancing, a lecture on whale hunting and demonstrations of the skills of Eskimo craftsmen. Locally made arts and crafts items are available for purchase at **Stuaqpak** and the hotel gift shop. The overnight tour to Barrow and the Barrow/Prudhoe Bay combination tour also include a visit to the Naval Arctic Research Laboratory, a short distance by bus outside town.

Most facilities at Prudhoe Bay are off-limits to unauthorized personnel and are therefore viewed by tourists through bus windows. The tour here includes an orientation lecture on the history of development of the Prudhoe Bay field and construction of the Trans Alaska Pipeline, plus some discussion of the wildlife and ecology of the region.

Opportunities are also provided for tourists to view the Arctic Ocean and to catch glimpses of wildlife in the area.

Hotel facilities in Barrow consist of the 40 room Top of the World Hotel which is owned by the Arctic Slope Regional Corporation and is managed by Sheffield Enterprises of Anchorage. The hotel has a coffee shop,

dining room, conference room and a banquet room which is capable of accommodating 80 people. A beauty salon and gift shop, the latter open only during the summer months, are also located within this facility. Other restaurant facilities in town as of December 1977 included Brewer's Cafe (open only during the summer), Ken's Restaurant (located in the new **Wien** airport terminal) and Arctic Kitchen.

Overnight facilities at Deadhorse are operated by NANA **Oilfield** Services, Inc. which has a 240-man public camp near the airport. A large share of the rooms at this facility are occupied by "permanent" area residents; however, overnight accommodations are available although they are not used by tour groups. As of December 1977, daily rates were \$100, including meals.

Alaska Tour and Marketing Services, Inc.'s Seattle office was contacted by both letter and telephone in order to obtain information on the number of tourists taking the various tours to the North Slope during the past few years. The company refused to provide any of this information except to say that a total of 4,396 people, including children, visited the region under its sponsorship during the 1977 tour season. The company also indicated that the total number of tourists to the region had been increasing steadily.

Some data developed by the NANA Corporation on the number of tourists visiting the **Prudhoe** Bay area, however, was made available to Alaska Consultants, Inc. According to this source, the number of tourists

taking the Prudhoe Bay bus tour rose rapidly for the first four years it was offered but has since levelled off. A total of 300 people took the Prudhoe Bay bus tour in 1972. This doubled to 600 persons in 1973 and doubled again in 1974 to 1,200 people. In 1975, 1,750 people took the Prudhoe Bay bus tour but since that time the numbers have levelled off to 1,600 persons in both 1976 and 1977.

Very few tourists visit the North Slope independently of tour groups. However, some people charter aircraft for hunting and fishing trips and hiking, particularly in the lower slopes of the Brooks Range, is becoming increasingly popular. In addition, officials of the U.S. Bureau of Outdoor Recreation acknowledged the increasing recreation¹ use of North Slope rivers but were unable to say how many people participated in such activities except to say that, relatively speaking, their numbers are not large.

Given the provision of adequate facilities and services, the tourist potential of the North Slope Haul Road is also significant. In January of 1978, the State administration announced its policy regarding future use of this route. Although it will be closed to public use at least until construction of the gas line is completed, industrial and tour bus traffic will be permitted.

Because of the lack of facilities along the Haul Road to serve tourists, potential tour bus operators will first have to demonstrate their ability to provide a complete range of services for their passengers

before they can obtain a certificate to operate the route. Assuming that this is possible, some tourist traffic on the Haul Road appears likely in the near future although, if this traffic is limited to closely confined tour groups, its negative impact on the environment should be held to a minimum. In the longer term, however, the tourist potential of the Haul Road will depend to a very large degree on the extent to which services such as food, lodging and gasoline are permitted along the route and at its Prudhoe Bay terminus. The desirability of general public use of the Haul Road also has to be viewed in terms of strong and frequently stated opposition to such a development from the North Slope Borough and from village people **along** the length of the route, as well as environmental groups.

Several of the D-2 proposals currently being considered by the U.S. Congress involve lands within the boundaries of the North Slope Borough. As presently proposed, expansion of the Arctic National Wildlife Range and establishment of a Noatak National Arctic Range would not impact significantly on the amount of tourism in the region because both are designated as wilderness areas and therefore no facilities would be developed for visitors. These wilderness designations are not yet law and there is considerable interest in removing the wilderness designation from the Arctic National Wildlife Range although this interest has been generated primarily by the area's oil and gas potential, not its attraction for tourists. Nevertheless, if facilities are developed in conjunction with the proposed Gates of the Arctic National Park, additional tourists will doubtless be attracted to the region.

Two rivers within the Borough, the Utukok and portions of the Colville, have been included in the Administration's D-2 proposal as part of the National Wild and Scenic River system and a third river, the Ikpikpak, is recommended for Wild and Scenic River status by H.R. 39, the D-2 proposal developed for mark-up by the Congress. Designation of any of these rivers as wild and scenic would encourage some increased recreational use of them and adjacent lands. However, those factors which have traditionally inhibited tourism in the region - remoteness, cost and lack of amenities - should keep rates of use at a low level.

In summary, the North Slope region has some potential for increases in tourism. However, the extent to which such increases will benefit the permanent residents of this region is subject to debate. Increases in tour group operations to Barrow would have the effect of adding a few jobs in this community. However, recreational use of remote areas of the region is expected to bring few benefits to the Borough's villages. Furthermore, the designation of rivers as being Wild and Scenic would have the effect of encouraging increased recreational use of these river systems, a development about which the Borough has expressed concern. The Borough has also voiced objection to the designation of areas such as the Arctic National Wildlife Range as wilderness. This is not so much because it objects to a wilderness designation but because it believes that the natural resources of the entire region would best be managed as a single unit, such as a wildlife refuge, rather than by a series of jurisdictions.

Alaska Native Claims Settlement Act

Under the terms of the Alaska Native Claims Settlement Act passed in 1971, twelve Native regional corporations (with provision made for a thirteenth which has since been established) and a very large number of village corporations were established to manage lands and to invest cash payments transferred to Alaska Natives in the settlement of their claims. The Arctic Slope Regional Corporation is the regional entity for the North Slope. (The boundaries of the ASRC'S region are not identical to those of the North Slope Borough but they are similar and each includes the same villages).

Under Section 12(a) of the Claims Act, the Arctic Slope Regional Corporation is entitled to receive title to approximately 2.2 million hectares (5.5 million acres) of land within the North Slope region. This area includes lands selected by the regional corporation on its own account to which it will receive both surface and subsurface rights, plus subsurface title to lands selected by designated Native villages in the region. The area in the latter category amounts to 344,990 hectares (852,480 acres).

As of January 1978, the regional corporation had received interim conveyance to almost 1.8 million hectares (4.5 million acres). Lands not yet conveyed to the corporation include "in lieu" and "dual withdrawal" lands. "In lieu" lands consist of subsurface rights to 223,870 hectares (552,960 acres) selected by the village corporations of

Atkasook, Barrow, Nuiqsut, Wainwright and Kaktovik. These communities are located either within the former NPR-4 or within the Arctic National Wildlife Range. Since no subsurface selections are permitted in either NPR-4 or wildlife refuges under the terms of the Claims Act, the regional corporation has been able to select "regional deficiency" lands elsewhere in the region, mostly in the central and western area. "Dual withdrawal" lands are those selected by the Arctic Slope Regional Corporation but which have also been proposed for inclusion in the D-2 lands system. Thus, the status of the regional corporation's selections in such areas (about 303,643 hectares [750,000 acres]) will not be determined until the D-2 lands question has been resolved.

Based on an enrollment of about 3,900 persons, the Arctic Slope Regional Corporation is entitled to a cash payment of approximately \$51 million to be paid over a twenty year period between 1971 and 1991 from the so-called Native Fund. (The Fund includes Congressional appropriations and mineral revenues from federal and State lands in Alaska). In turn, half of the cash payments received by the regional corporation must be redistributed to individuals enrolled in the region and to the village corporations. As of September 1977, the ASRC had received about \$17.2 million in cash payments, half of which had been redistributed as required.

To date, the Arctic Slope Regional Corporation has invested its cash payments almost wholly in companies doing business on the North Slope which has had a dual result of keeping money within the region and of

providing additional jobs for local residents. Included among the corporation's investments are Tundra Tours, Inc., which owns and operates the Top of the World Hotel in Barrow under a management contract with Sheffield Enterprises and has also been involved in providing catering services in the Prudhoe Bay area; Eskimos Inc., which sells gasoline and provides vehicle and heavy equipment maintenance services in Barrow; Arctic Slope Alaska General Construction Company, a partnership which is presently engaged in construction activities in NPR-4 and, to a lesser extent, in the Prudhoe Bay area; Arctic Technical Services, an association which includes two other corporate entities and which has architectural, engineering and a range of scientific capabilities; Eskimos Inc. **Oilfield** Services which, as its name suggests, provides **oilfield** services; ASRC Communications Limited, which specializes in the fields of communications and security; and a joint venture between Eskimos Inc. and SKW Contractors, the latter an independent construction company, to build facilities such as the new ASRC office building in Barrow.

Because it has received interim conveyance to much of its lands and, with it all rights and privileges of ownership, the Arctic Slope Regional Corporation has been able to lease potential oil and **gas-**bearing lands in the central and western Arctic to petroleum companies. As of December 1977, the corporation had three separate agreements with major oil concerns. Under an agreement with Standard Oil Company of California, the corporation will receive \$2.5 million for exploration rights. In addition to a lease fee bonus, the corporation will also

receive a percentage of any profits if **Socal** decides to drill a specific site.

In March 1977, the Arctic Slope Regional Corporation announced a ten year lease of 566,802 hectares (1.4 million acres) of land to Chevron and Union-Amoco. Under the terms of this agreement, the ASRC is to receive an annual rental fee and a base royalty fee of 16 and two-thirds percent of the value of production when and if that takes place. Under subcontract to Union-Amoco and Chevron, Texaco has initiated an exploratory drilling program approximately 48 kilometers (30 miles) southeast of Umiat. Two exploratory wells have been drilled in this area to date. No test results had been published as of December 1977 but the area is considered by geologists to be one of promising potential.

Each of the 3,900 persons enrolled in the Arctic Slope Regional Corporation owns 100 shares of the corporation's stock (with persons enrolled in villages also owning 100 shares of village corporation stock). Like other corporations, dividends are paid to stockholders based on earnings. On December 14, 1977, the Arctic Slope Regional Corporation announced a profit of \$1,389,504 for the fiscal year ending June 30, 1977 and, because of this, dividends **totalling** \$190,000 are to be distributed to stockholders.

The Arctic Slope Regional Corporation is potentially among the wealthiest of the Native corporations as some of its lands are

considered to have good potential for oil and gas discoveries. Although the Claims Act presently requires that 70 percent of all profits received by corporations from the development of timber resources and the subsurface estate be shared among the other corporations, mineral production at any scale would certainly benefit this region's shareholders.

Aside from the lands and investments of the Arctic Slope Regional Corporation, eligible Native villages in the region (Anaktuvuk Pass, Atkasook, Barrow, Kaktovik, **Nuiqsut**, Point Hope, Point Lay and **Wainwright**) were entitled to select the surface estate to a total of 345,145 hectares (852,480 acres) of land under the terms of the Alaska Native Claims Settlement Act. Village land selections are generally in the immediate vicinity of each eligible community, with the selectable area being determined by the number of people enrolled.

The land and cash entitlements of Arctic Slope village corporations are modest when compared with those of the Arctic Slope Regional Corporation. However, they are a significant element in the economies of the region's villages. Aside from some employment opportunities in village corporation offices, most of these corporations have taken over the operation of the local stores and oil dealerships and have, therefore, assumed a dominant business role.

The impact of the regional and village corporations on the economy of the North Slope region may be even greater than indicated in the

TABLE 17

VILLAGE CORPORATION ENROLLMENT AND LAND Entitlements/
ARCTIC SLOPE REGION

| Village Corporation | Enrollment | Land Entitlement | |
|--|-----------------|--------------------------------------|-------------------------------------|
| | | Section 12(a) | Section 12(b) |
| Anaktuvuk Pass (Nunamiut Corporation) | 132 | 37,312 ha. (92,160 at.) | --- |
| Atkasook (Atkasook Corporation) | 71 | 27,983 ha. (69,120 at.) | --- |
| Barrow (Ukpeagvik Inupiat Corporation) | 2,031 | 65,296 ha. (161,280 at.) | 19,486 ha. (48,130 at.) |
| Kaktovik (Kaktovik Inupiat Corporation) | 112 | 37,312 ha. (92,160 at.) | --- |
| Nuiqsut (Kuukpik Corporation) | 212 | 46,640 ha. (115,200 at.) | 3,402 ha. (8,403 at.) |
| Point Hope (Tigara Corporation) | 498 | 55,968 ha. (138,240 at.) | --- |
| Point Lay (Cully Corporation) | 89 | 27,983 ha. (69,120 at.) | 7,455 ha. (18,415 at.) |
| Wainwright (Ongoni Corporation) | 369 | 46,640 ha. (115,200 at.) | 18,067 ha. (44,625 at.) |
| <u>TOTAL</u> | 3,514 <u>b/</u> | <u>345,134 ha.</u> (852,480 at.) | <u>48,410 ha.</u> (119,573 at.) |

a_/ Enrollment current as of January 1977.

b/ Enrollment in village corporations only. Arctic Slope Regional Corporation enrollment was 3,911 as of January 1977.

Sources: U.S. Bureau of Land Management.
Federal Register, February 2, 1977.

preceding pages if proposed amendments to some of the provisions of the Claims Act are enacted. Of these, potentially the most significant is Section 7(i) which requires that 70 percent of the revenues received by a particular regional corporation from timber resources or subsurface estate be divided among the other regional corporations. Any downward revision of the sharing requirement would obviously be of major benefit to the Arctic Slope Regional Corporation if oil and gas is discovered in commercial quantities on its lands since the additional revenues which it would then retain could be reinvested for the benefit of all of its stockholders.

Community Facilities and Services

PUBLIC SAFETY

Police

The North Slope Borough assumed areawide police powers on July 1, 1976. Prior to that time, police protection was provided by individual communities, often with only volunteer officers. Local services were supplemented by those of State troopers based in Barrow, Fairbanks and Deadhorse. However, the only State trooper now stationed in the Borough is located at Deadhorse.

The Borough **public** safety department is headquartered **in** Barrow. The department head and his deputy have offices in the main Borough building

with the remainder of the staff operating either out of the old fire hall across from the Post Office or in the field. As of January 1978, the police force numbered 16 commissioned officers, of whom 13 were trained. Thirteen of these officers were stationed in Barrow (11 Barrow police officers plus the Borough public safety director and his deputy) plus 3 in the field (one each at **Wainwright** and Anaktuvuk Pass and one rotating among the other North Slope **villages** as needed). The Borough anticipates hiring an additional 4 **officers** by July 1978 so that resident police protection can be **provided** to all communities in the region.

Except for Barrow and Point Hope, no villages in the Borough presently have police stations or detention facilities. The capital improvements program, however, has scheduled the construction of modest public safety buildings in each village, plus a regional headquarters building in Barrow. The first of these facilities is scheduled to be built at **Wainwright** in 1978.

According to the Borough public safety director, crimes in this area are almost always related to alcohol abuse. Public safety department statistics indicate that at least 95 percent of all persons arrested are intoxicated to some extent and that a high proportion of deaths among young persons as a result of snowmobile and auto accidents or fires are related to excessive alcohol consumption. Department statistics also indicated a strong relationship between unnatural deaths and legally available liquor in the community in 1977, noting that 7 alcohol-related

deaths occurred in Barrow during the **first** seven weeks after the City liquor store was **re-opened**. All told, a **total** of 17 alcohol-related deaths of people between the ages of 2 months and 22 years were recorded in Barrow in 1977, whereas none had occurred in 1976 when the town was officially dry. It should be emphasized, however, that not all of these deaths were crime-related.

Aside from excessive alcohol consumption and events leading from it, the Borough public safety director noted that serious crime is not a major law enforcement problem in the Borough. Because alcohol abuse stands out as the leading cause of anti-social behavior in the region's traditional communities, however, dealing with this problem has been a major focus of the public safety department's attention. In 1977, the department instituted a policy of detaining severely intoxicated persons in Barrow for their own protection. Detainees are usually held from four to eight hours and are released without being booked. According to the public safety department, arrests have been reduced by 40 to 50 percent since the initiation of the program. This program is presently restricted to Barrow as other villages in the region except for Point Hope lack detention facilities.

Although it has assumed areawide police powers, the North Slope Borough in fact provides little protection outside the region's traditional communities. The State provides police protection services along the **length** of the **Trans** Alaska Pipeline and has a trooper stationed at Deadhorse for this purpose. The Borough public safety department has

responded several times to emergency calls associated with ongoing exploration activities in NPR-A. However, no need for stationing Borough police personnel in areas outside the traditional communities is presently foreseen.

Fire Protection

Fire protection is one of the two municipal powers retained by individual communities within the North Slope Borough. Except for Barrow, however, fire protection services in the traditional villages are virtually non-existent. Only two other villages, Point Hope and Kaktovik, had an organized fire department as of December 1977 and **only** Barrow has any firefighting **equipment** beyond a few portable fire extinguishers. Access to water for firefighting, particularly in winter, is a problem in most **villages** as they generally lack central water supplies and most available water sources are frozen at that time of the year.

Barrow has a well organized 22 man volunteer fire department. The department is housed in a station built in 1975 and has a pumper truck, a tracked vehicle with a tank and a fully **equipped** rescue unit. The community has an Insurance Services class rating of 8 for residential buildings and 9 for commercial structures. This is a poor rating which reflects, among other things, the lack of a community water system and translates into very high rates which must be paid for fire insurance. All other traditional villages in the region have a rating of 10, the

worst possible. (For a more detailed description of the facilities and services of the Barrow fire department, see the Barrow chapter of this report).

Most North Slope traditional villages are extremely vulnerable to major damage from fires. The combination of old, deteriorated wooden structures located close together in a region where high winds are extremely common is dangerous since, once a fire took hold, a **number** of buildings could be lost. Moreover, the lack of firefighting equipment in **all** villages except Barrow would severely limit local efforts to control a major fire once it got underway.

By contrast, firefighting equipment and **facilities** at the region's oil and gas-related camps and at remote military installations are highly sophisticated. Each major company provides its own facilities and equipment, an investment justified by the very high value of the properties required to be protected.

Alyeska Pipeline Service Company is responsible for safety and fire protection at the Trans Alaska Pipeline plant and three pump stations within the Borough's boundaries. According to company spokesmen, these facilities are outfitted with a range of equipment specifically designed to combat fires resulting from oil and gas combustion. Each pump station has two built-in fixed fire protection systems - a **halon** system and a combination water/foam system. In addition, a number of hand portable and wheeled extinguishers are also available. There is at

least one fire truck at each station which is outfitted with a 4,731 liter (1,250 gallon) water tank, 226 kilograms (500 pounds) of dry chemical, 473 liters (125 gallons) of A3F foam and a 1,135 liters (300 gallons) per minute pump. Pump station #1, which is situated within the Prudhoe Bay complex, has two such fire trucks, one of which is available under a mutual aid agreement to supplement BP (Sohio) and Atlantic Richfield's firefighting capabilities.

In addition to fire trucks, each pump station also has a portable twin-engine unit equipped with 204 kilograms (450 pounds) of dry chemical and 757 liters (200 gallons) of pre-mixed light water. These are usually mounted on the back of pick-up trucks but, when required, can be readily picked up by helicopter and flown to another location.

A full-time safety and fire protection specialist is responsible for the maintenance and operation of fire protection equipment at each of the three pump stations in the North Slope Borough. This person is also charged with the responsibility for organizing and training the station's fire brigade. According to Alyeska safety officials, existing equipment is adequate to protect the pump stations but the amount of assistance that they could provide in the event of a fire at another location would be very limited without leaving themselves vulnerable.

Responsibility for management of the Prudhoe Bay field is divided between BP (Sohio) and Atlantic Richfield Company. Each has its own personnel and fire protection and fighting equipment designed to meet

the needs of its particular operation. Although these may differ in specifics, both companies have systems which meet guidelines established by the National Fire Protection Association for the types of fires most likely to occur in this environment. Only the BP (**Sohio**) system is described in detail here.

BP (**Sohio**)'s fire station is located close to its base operations center. The company's safety engineer and three safety technicians who are responsible for maintaining both fixed and mobile fire protection equipment are housed here. A 20 man fire brigade assigned to each 7 hour shift and equipped with electronic pagers is spread throughout the complex and can be called immediately in the event of a major fire. The entire brigade receives weekly training and all brigade members are trained annually at special firefighting courses given at Texas A & M University. Mobile equipment stationed at the firehouse includes a fire truck equipped with a 2,839 liters (750 gallons) per minute pumper, a 7,570 liter (2,000 gallon) water tank, 1,514 liters (400 gallons) of 3F foam and 680 kilograms (1,500 pounds) of dry chemical. A water truck has a 7,570 liter (2,000 gallon) capacity and a 1,892 liters (500 gallons) per minute pneumatic pumper.

In addition to mobile equipment, each of the company's major facilities has a built-in fire protection system. The central power station has four 3,629 **kilogram** (4 ton) carbon dioxide systems for its turbines, several **halon** systems and a 75,700 liter (20,000 gallon) water tank with pumps powered by elevation and air pressure for each pair of turbines.

The three gas gathering centers are similarly equipped. Each has a 1.6 million liter (433,000 gallon) circulating system with two 5,677 liters (1,500 gallons) per minute pumps, one electric and one diesel. System outlets are located in each module within the gathering centers. Each gathering center also has standard foam application systems and is equipped with water curtains between modules. Fire detection systems vary depending upon the particular activity involved and the type of fire danger associated with it.

The company's three housing complexes have elaborate fire detection systems. In addition, these buildings have automatically closing doors which would serve to contain fires within specific areas and there is halon protection throughout. Water for **firefighting** comes from two sources, the 113,550 liter (30,000 gallon) swimming pool and the buildings' potable water source which has a 113,550 liter (30,000 gallon) reserve at all times. An additional 302,800 liter (80,000 gallon) water tank equipped with two 1,892 liters (500 gallons) per minute pumps is now under construction at the fire station.

Air Force DEW Line stations on the North Slope are typically outfitted with portable fire extinguishers, hoses, "escape" doors and a number of fire alarm boxes. A fire officer is responsible for organizing, training and directing the station fire brigade and each station has a water tank truck and a pumper. According to Air Force sources, fire protection at the Cape **Lisburne** AC & W site is the responsibility of a full-time civilian fire chief and a 13 man auxiliary fire brigade.

Firefighting equipment at the facility includes a pumper with a 1,892 liter (500 gallon) tank.

HEALTH AND SOCIAL SERVICES

Health and social services in the North Slope Borough's **traditional** communities are provided by three agencies representing three levels of government. These are the U.S. Public Health Service which operates a hospital in Barrow and provides itinerant medical and dental care to the smaller villages of the region; the Alaska Department of Health and Social Services which runs the Barrow Health Center with public health nurse personnel who are based in Barrow but who also travel to other communities in the region; and the North Slope Borough health department which operates clinics in villages outside Barrow and which is in the process of setting up its own health program designed to supplement services provided by the U.S. Public Health Service.

Health services in areas outside the region's traditional communities are generally lacking. However, BP (**Sohio**) and Atlantic Richfield Company do maintain facilities in the Prudhoe Bay area.

Public Health Service

The Public Health Service operates a 14 bed general hospital in Barrow which serves all people (including whites) in traditional communities of the region except for residents of **Anaktuvuk** Pass (served by the **Tanana**

Service Unit) and Point Hope (served by the Kotzebue Service Unit). The hospital is staffed by 3 doctors, a dentist and a complement of nursing and other support personnel and, in addition to inpatient services, operates a health clinic for outpatient diagnosis and treatment. (Staffing of this facility is described in more detail in the section of this report dealing with health and social services facilities in Barrow).

Besides resident medical personnel, specialists from the Alaska Native Medical Center in Anchorage or private physicians under contract are periodically brought to Barrow to hold special clinics. In FY 1976, for example, clinics were held in the fields of pediatrics, medicine, gynecology, orthopedics, surgery, ear-nose-throat, radiology, ophthalmology and urology.

Public Health Service medical teams make several visits each year to villages within the Service Unit. These visits involve coordination with Borough health aides in the various communities. Public Health Service personnel also coordinate their activities with those of the State public health nurses.

During FY 1976, the Barrow hospital had an average daily patient load of 3.9 persons, down from an average of 8.5 patients per day recorded in FY 1968. All told, a total of 1,520 inpatient days was logged at the hospital during FY 1976, with the average patient length of stay being 3.9 days. According to Public Health Service statistics, the leading

TABLE 18

LEADING CAUSES OF HOSPITALIZATION a_/
BARROW SERVICE UNIT
FY 1974 - FY 1976

| Health Condition | Number of Inpatient Days | | |
|---|--------------------------|--------------|--------------|
| | FY 1974 | FY 1975 | FY 1976 |
| Influenza & Pneumonia | 174 | 197 | 250 |
| Accidents & Injuries | 141 | 264 | 244 |
| Deliveries | 153 | 161 | 141 |
| Chronic Otitis Media | 1 | 60 | 86 |
| Alcohol Misuse | 49 | 86 | 67 |
| Upper Respiratory Problems | 51 | 42 | 57 |
| Infected Skin & Abrasions | 117 | 90 | 36 |
| Functional Psychoses | -- | 16 | 32 |
| Active Pulmonary Tuberculosis | -- | -- | 30 |
| Inflammatory Diseases of Central Nervous System | 11 | 13 | 27 |
| <u>Ten Leading Causes of Hospitalization</u> | <u>697</u> | 929 | 970 |
| <u>TOTAL INPATIENT DAYS</u> | <u>1,267</u> | <u>1,708</u> | <u>1,520</u> |

a/ The Barrow Service Unit excludes the communities of Point Hope and Anaktuvuk Pass.

Source: U. S. Public Health Service.

causes of hospitalization in FY 1976 were influenza and pneumonia, accidents and injuries, deliveries, chronic otitis media, alcohol misuse, upper respiratory problems, infected skin and abrasions, functional psychoses, active pulmonary tuberculosis and inflammatory diseases of the central nervous system. Although not always a primary cause of hospitalization, the Public Health Service notes that a large number of patients have underlying social, mental or alcohol problems that compound or complicate their cases. Because of this, a social worker contributes to weekday morning inpatient ward rounds.

According to the U.S. Public Health Service, the primary effort of the Barrow Service Unit hospital is to provide health care services to ambulatory patients. General clinic is held every weekday afternoon while the mornings are reserved for both inpatient care and specialty clinics for outpatients. The latter include physical examinations, prenatal and postnatal check-ups, well-child care and women's clinic. Emergency treatment is available at any time.

During FY 1976, the Barrow hospital received a total of 23,393 outpatient visits, a 14 percent increase over the number of visits in FY 1975 and an extraordinarily large number of visits in relation to the region's population. More than half of the visits in FY 1976 (12,273) were first visits, with the remainder classed as **re-visits** for continued treatment. Using Public Health Service statistics, the leading causes of outpatient visits were upper respiratory problems, accidents and injuries, acute **otitis** media, alcoholism (both acute and chronic),

TABLE 19

LEADING CAUSES OF OUTPATIENT VISITS a/
 BARROW SERVICE UNIT
 FY 1974 - FY 1976

| <u>Health Condition</u> | <u>Number of Diagnoses</u> | | |
|---|----------------------------|---------------|---------------|
| | FY 1974 | FY 1975 | FY 1976 |
| Upper Respiratory Problems | 2,403 | 2,302 | 2,850 |
| Accidents & Injuries | 1,903 | 2,576 | 2,215 |
| Acute Otitis Media | 721 | 879 | 956 |
| Alcoholism, Acute/Chronic | 413 | 451 | 597 |
| Influenza & Pneumonia | 155 | 460 | 449 |
| Strep Throat | 149 | 417 | 441 |
| Diseases of Teeth & Gums | 146 | 268 | 435 |
| Schizophrenia & Other Psychoses | 226 | 379 | 414 |
| Eczema, Urticaria , Skin Allergies | 287 | 322 | 388 |
| Tests Only | 384 | 391 | 374 |
| <u>Ten Leading Causes of Visits</u> | <u>6,847</u> | <u>8,445</u> | <u>9,119</u> |
| <u>TOTAL DIAGNOSES</u> | <u>17,122</u> | <u>20,462</u> | <u>23,393</u> |

a/ Outpatient visits at Barrow Service Unit hospital only.

Source: U.S. Public Health Service.

influenza and pneumonia, strep throat, diseases of the teeth and gums, schizophrenia and other psychoses, eczema, **urticaria** and skin allergies, and laboratory tests.

An important part of the outpatient care provided by the Public Health Service in Barrow is dental services. While the emphasis of this program is directed toward children in the five to fifteen year old age group, services are also theoretically available to adults. However, there is an enormous disparity between services rendered and those needed to provide optimal health care. According to the Public Health Service, of a total of 789,660 service minutes required for optimal care in FY 1976, only 32,174 were provided by Indian Health Service dentists in that year (or 4.1 percent of the total required). As a result, services are generally provided to patients in the most urgent need and much of the population receives virtually no care at all.

"The population of the Barrow Service Unit has one of the highest rates of decayed, missing and filled teeth in Alaska. Many teeth are removed with no chance of prosthetic replacement and for the three to five year old who is already suffering from rampant decay, lack of space maintenance from symptomatic extractions will lead only to future orthodontic extractions.

The scope of dental services provided in outlying villages is even more restrictive, being almost solely comprised of emergency treatments in various types. No periodontal, prosthetic, space maintenance, or orthodontic services are provided in field locations." (United States Department of Health, Education and Welfare, Public Health Service. May, 1977; page 50. Barrow Service Unit operating plan FY 1978. Anchorage).

Because of the inadequate level of dental service provided (even with supplemental contract care provided in **Wainwright** and **Kaktovik** by

private dentists), the North Slope Borough had planned to take over the dental program and hire two dentists at its new health facility. While it may still do so in the future, in the meantime it is acquiring the services of a second dentist whose salary will be paid by the National Health Service Corps, with the Borough supplementing the cost of his and an assistant's travel to the villages of the region. This dentist will operate out of the Public Health Service hospital and his presence should contribute to a much needed improvement in dental care in Barrow and the villages.

In its annual review of health and health-related problems, the Public Health Service noted in its FY 1978 operating plan (May 1977) that top priority should be given to the development of an adequate water source, water and sewer distribution systems and an improved system for solid waste disposal in Barrow. In the Public Health Service's opinion, these improvements would probably result in a dramatic decline in the incidence of skin infections, neonatal diarrhea, gastroenteritis and most common communicable diseases and possibly also to a decline in mental illness and alcoholism.

Venereal disease is another recognized health problem in the North Slope region. Alaska has the highest rate of venereal disease in the United States and the rate in the Barrow Service Unit, according to Public Health Service officials, is among the highest if not the highest in the State. The national incidence of gonorrhea in 1974 was estimated at 100 cases per 100,000 people; in Barrow during the same year gonorrhea

incidence was estimated at between 865 and 1,190 cases per 100,000 people. It is the opinion of health officials that the incidence of gonorrhea in the North Slope is still increasing although there are no statistics to prove this assertion.

Alaska Department of Health and Social Services

The Alaska Department of Health and Social Services operates the Barrow Health Center with a normal staff complement of two public health nurses and a Borough community health aide. The Health Center is located in the old area of the Barrow hospital and the nursing staff make frequent visits to the region's villages as well as serving the public health needs of Barrow.

The Health Center staff is responsible for monitoring a range of public health problems. The major focus of their activities in the North Slope region is described in the section of this report dealing with health and social services facilities in Barrow.

North Slope Borough

The North Slope Borough operates a system of health clinics staffed by health aides in all villages within the region. Each village has a clinic staffed by one primary aide and an alternate (except for Point Hope and Wainwright which have two primary aides and an alternate). However, none of the clinics are adequate. The clinics in Kaktovik,

Nuiqsut, Point Hope and **Wainwright** are in structures originally designed for other uses, those in Anaktuvuk Pass and Atkasook are located in school buildings and the clinic in Point Lay is in the health aide's home. Because of the inadequacy of existing facilities, the Borough plans to replace all clinics in the region in the near future except for Point Hope where the city government has obtained an Economic Development Administration (EDA) grant of \$250,000 to build its own facility. All of these clinics will be leased by the U.S. Public Health Service under its Village Built Clinic program.

Aside from its system of clinics, the North Slope Borough is also involved in supplementing the health care services provided by the U.S. Public Health Service. The old Post Office building in Barrow has been acquired by the Borough and will be remodeled to house health administration and social services offices plus space for a senior citizens' center. The types of services which it hopes to provide at this location are described in the section of this report dealing with health and social services facilities in Barrow. Services to be provided immediately and those which will be provided in the **longer** term are subject to some change. For example, the Borough had hoped to take over the Public Health Service dental program in the very near future. In the short term, however, it will instead be contributing to the addition of a second dentist at the Public Health Service hospital.

Aside from improved dental care, areas identified by the Borough as in need of substantial upgrading include mental health, alcoholic

detoxification and rehabilitation, and optometric care. The Borough was interviewing applicants for psychologist and paraprofessional assistant positions in January 1978; an alcoholic detoxification and rehabilitation program is being established at the hospital; and, by April of 1978, the Borough hopes to have a person with optometric training operating an eye aid clinic at the new Borough health facility.

Other

Outside of the traditional communities, health facilities and services in the North Slope region are very limited. According to the Air Force, Cape Lisburne probably has a local medic but any cases requiring more than first aid care are evacuated out of the region. The DEW Line stations also have no more than first aid capabilities. However, both BP (Sohio) and Atlantic Richfield Company maintain health-related facilities in the Prudhoe Bay area to handle the needs of their employees. Services are not provided to residents of the region's traditional communities unless these people are employed at Prudhoe Bay.

Atlantic Richfield has a well equipped clinic located at its main base camp. This facility is staffed full-time by a physician and two physician's assistants, all of whom are furnished under contract by a clinic in Fairbanks. BP (Sohio) has two medical facilities, one at its base camp and one at its construction camp #2, which are staffed by a licensed physician's assistant or nurse practitioner. A direct telephone line connects these facilities to a doctor in Anchorage.

However, persons requiring more than primary care are evacuated out of the region.

EDUCATION

The North Slope Borough automatically inherited the mandatory areawide borough power of education upon its incorporation in 1972. At that time, both the U.S. Bureau of Indian Affairs and the State operated schools within the region. The **Wainwright**, Kaktovik and Barrow schools were run by the Bureau of Indian Affairs and those in Point Hope and **Anaktuvuk** Pass were part of the State system. The Borough School District took over the Point Hope and Anaktuvuk Pass schools from the State in 1974, shortly after incorporation, while the Bureau of Indian Affairs turned over the Barrow, **Wainwright** and Kaktovik schools in 1975. New schools were built by the Borough in the resettled villages of Point Lay in 1975 and in Atkasook in 1977. The original **Nuiqsut** school was brought to the community by the Arctic Slope Regional Corporation in 1974.

At the time the Borough School District took over responsibility for education on the North Slope, there was no high school program offered in any school in the region except for 9th grade classes in Barrow. Students wishing to continue their education into high school were therefore forced to leave the region to attend Bureau of Indian Affairs schools at Mt. **Edgecumbe (Sitka)**, **Chemawa** (Oregon) or elsewhere or they could attend high schools in communities such as Anchorage and Fairbanks

and board with families in those towns. While well intentioned, this forced out-migration from the North Slope abruptly thrust students into a foreign environment dominated by Western culture and mores and, at the same time, cut them off from their parents at a critical period of their development. The drop-out rate is believed to have been very high. Those who did "survive" the experience often found it difficult to return to their villages.

The lack of high school facilities in the North Slope region undoubtedly contributed to the extremely low educational attainment levels of residents of the Barrow Census Division at the time of the 1970 Census. Only slightly more than a quarter (27.6 percent) of the Census Division's population aged 25 or more had more than an elementary school education in 1970 and the median number of school years completed was only 7.3 for males and 6.3 for females. This compares very unfavorably with the State as a whole where over 80 percent of the population aged 25 or more had completed elementary school and the median number of school years completed was 12.4 at that time.

The North Slope Borough School District initiated a Boroughwide high school program in 1975. Some students already enrolled in other high school programs elected to complete their schooling outside the region. However, high school enrollment in the Borough has increased significantly. In the 1975-76 school year, the first year of the high school program, there were 171 secondary students enrolled in Borough schools. During the 1976-77 school year, there was a final enrollment

of 201 high school students, an increase of 17.5 percent. Some further increases in secondary student enrollment are expected as the School District enlarges its school program and makes scheduled improvements to its education facilities.

The facilities which the School District inherited from the State and the Bureau of Indian Affairs were, for the most part, in poor physical condition. Furthermore, since these facilities had been designed to accommodate only elementary students, they were inadequate in both design and space to also accommodate the needs of a high school program. Facilities such as vocational technology classrooms or equipment and gymnasiums, for example, were not provided. Furthermore, the physical design of facilities for small children is necessarily different from that required for teenagers.

The provision of adequate education¹ facilities throughout the region is seen as a very high priority item in the North Slope Borough's ongoing capital improvements program. As originally conceived, educational facilities were to be an integral part of a community "educational and service center", a complex that would house educational and community needs such as water, sewer and electrical services. This concept has been revised as a result of the capital improvements program shutdown in 1976 and to comply with schedules imposed by the availability of State and federal funding. As revised, the initial phase of the education facility construction program consists of providing basic space to supplement existing requirements. Then, as

additional requirements are assessed and identified, the facilities will be expanded and integrated into the community center complex. (Specific projects in Barrow, Kaktovik, Nuiqsut and Wainwright are discussed in greater detail in later sections of this report).

Aside from elementary and high school programs offered in the region's traditional communities, Barrow also has an institution for higher education. Inupiat University is largely supported by Borough funds but had only 6 employees as of December 1977. However, this institution is again expanding its curriculum which is designed to serve the specialized education needs of the region's Inupiat Eskimo population.

There are no educational facilities located outside the traditional communities of the North Slope Borough for the very simple reason that none of the non-traditional settlements has any children. Persons stationed at military, Pipeline and oil and gas-related facilities are all there specifically to perform a given job. Thus, any families which these people might have are located outside the region or, in the case of North Slope permanent residents, in one of the Borough's traditional communities.

RECREATION

Recreation is a local government power which is retained by individual communities in the North Slope Borough. At the present time, however, recreational facilities and organized recreation activities are limited

almost entirely to small gymnasiums (where these exist) or to small community centers. In addition, National Guard armories are available for public use in several towns and local churches sometimes offer limited recreation programs to their members.

Despite the general lack of adequate facilities, people in the region are interested in improved recreation opportunities. Most towns have recreation committees appointed by their city councils. These committees generally raise funds from the proceeds of bingo games and use them to sponsor special community-wide events. However, Barrow is the **only** community in the Borough to have a salaried recreation director.

While the responsibility for providing recreation facilities remains with individual communities in the North Slope Borough, the Borough government is in the process of upgrading the range of local facilities as part of its program of constructing community service centers in all villages of the region. Generally these facilities will take the form of gymnasiums/multi-purpose rooms which will be included as part of new school complexes. (More detailed descriptions of these facilities are found in later chapters of this report dealing with recreation amenities of individual communities).

Compared to the limited recreation facilities available in most of the North Slope's traditional communities, the facilities available to people living in camps outside these communities are relatively lavish.

For example, BP (Sohio)'s base camp is equipped with a full gymnasium including basketball and handball courts, a swimming pool and saunas, an indoor track and a fully equipped exercise room. In addition, the camp has a theater which shows scheduled movies and, on occasion, live entertainment brought in from outside the region. Employees also have access to a wide range of hobby-oriented and academic classes taught by fellow employees when a particular skill is locally available or by imported specialists when it is not.

Atlantic Richfield's Prudhoe Bay base camp has a range of recreation facilities similar to that offered by BP (Sohio). This camp has an indoor basketball court which can be converted for volleyball and badminton and has an elevated indoor track over it. The camp also has a fully equipped exercise room, saunas, pool tables and other table games. A 135 seat theater is included in the complex and is used for both movies and live entertainment. Recreation activities are organized by a full-time recreation director.

Alyeska's three pump stations operating within the North Slope Borough each has a large recreation area, half of which is devoted to table games such as table tennis and pool, with the other half used as a theater for daily movie shows. Each station also has a sauna, a fully equipped exercise room and a commissary where employees can purchase personal items plus books, newspapers and magazines.

According to the Air Force, recreation facilities at Cape **Lisburne** are typical of those offered at AC & W sites and consist of a hobby shop, a **gymnasium**, table tennis and pool tables, a bowling alley and a bar. Facilities provided at the various DEW Line stations are similar to those at Cape **Lisburne**. The main station on the system, the Barter Island station near Kaktovik, has an exercise room, a lounge, a bar and a recreation room equipped with table games which can be converted for use as a movie theater.

The Alaska Division of Parks and Recreation sponsors a variety of programs aimed at developing recreation facilities throughout the State, but the benefits which the North Slope Borough has derived from them have been extremely limited. There are no existing State parks within the Borough's boundaries, nor are any planned in the near future. Funds from the State trails and footpaths program have virtually all been expended on bikepaths in urban areas such as Anchorage and Juneau for the past few years. In addition, the Division of Parks and Recreation distributes funds for historic preservation but as of December 1977 it had not expended any within the North Slope Borough.

Another program administered by the Alaska Division of Parks and Recreation is the Bureau of Outdoor Recreation Land and Water Conservation program which provides grants to local communities for recreation projects. However, during the ten or so years that this program has been available, only one "bush" **community** has received funds. This is Barrow which received a \$20,000 grant in 1977 for an outdoor playground.

Recognizing a need to channel more recreation funds into small villages around the State, the Division of Parks and Recreation is in the process of undertaking a Statewide assessment of small community recreational facilities and needs. Based on a study of 14 villages, including Wainwright and Barrow, the Division hopes to develop a broader understanding of the types of additional recreation facilities which small Alaska towns require.

While recreation facilities within the Borough's traditional settlements are limited, the region as a whole has a high potential for outdoor recreation. During the past several years, the federal government has conducted extensive research on the recreation resources of the region in connection with its proposed classification of D-2 lands and the Congressionally-mandated National Petroleum Reserve-Alaska study. The Alaskan Arctic Gas Pipeline Company also conducted a recreation use study of the Arctic National Wildlife Range in connection with its proposed natural gas pipeline route through that area.

As part of the NPR-A study, a task force headed by the Bureau of Outdoor Recreation and including other agencies such as the National Park Service and the North Slope Borough, is charged with developing the wilderness scenery and recreational potential element of the overall NPR-A land use plan. As part of this effort, the group is also studying local recreation needs and the region's potential for tourism. During the summer of 1977, Bureau of Outdoor Recreation personnel floated four rivers in NPR-A - the Awuna, the Nigu-Etivluk system, the Colville and

the Utukok. The Ikpikpuk River and the Kuk-Ketik system will be studied during the summer of 1978. In addition, the Bureau of Outdoor Recreation plans to assess the kayaking and wildlife viewing potential of the Arctic coast between Icy Cape and Wainwright.

Two rivers in NPR-A, the Utukok and portions of the Colville, have been included in the Administration's D-2 proposal as part of the National Wild and Scenic River system. H.R. 39, the D-2 proposal developed for mark-up by the Congress, also recommends the inclusion of the Ikpikpuk River in this system.

Local Government Organization

BOROUGH POWERS

For purposes of local government administration, the State of Alaska is divided into organized and unorganized boroughs. Organized boroughs are classified as being first, second or third class. Incorporated as a first class borough in 1972, the North Slope Borough adopted a home rule charter in April 1974 which essentially allows it to assume all powers not expressly forbidden by State law. A mayor elected for a three year term provides administrative and policy direction to the Borough government, while a seven member elected school board assumes management control of the North Slope Borough School District.

As a first class borough, the North Slope Borough has mandatory **areawide** powers of assessment and collection of taxes, education, and planning and zoning. According to State statute, boroughs may acquire additional areawide powers either by transfer from incorporated cities within their boundaries or as a **result** of an areawide election. In addition, the Borough has the power to establish "service areas" within its boundaries for the purpose of providing special services to a given area which are not provided on an areawide basis.

Aside from its three mandatory areawide powers, the North Slope Borough assumed the following powers from incorporated communities in the region as the result of an election held April 30, 1974:

- sewer and sewage treatment facilities
- watercourse and flood control facilities
- health services and hospital facilities
- 0 telephone systems
- 0 light, power and heat
- water
- 0 transportation systems, including airport and aviation systems and streets and sidewalks
- 0 libraries
- 0 garbage and solid waste collection and disposal services and facilities
- 0 housing and urban renewal, rehabilitation and development
- 0 preservation, maintenance and protection of historic sites, buildings and monuments

The areawide police power was transferred to the Borough as the result of an election held July 1, 1976.

On November 20, 1973, the Borough assumed by ordinance all municipal powers granted by Alaska statutes in the area outside incorporated cities. By so doing, unincorporated communities such as Point Lay and Atkasook as well as Prudhoe Bay can receive full benefit of all available local government services. In addition, the Borough created a service area at Deadhorse in 1975 to provide solid waste, sewer and water services.

To provide the range of local government services, organized boroughs and first class or home rule cities may, under Alaska law, assess and collect taxes on real and personal property at a rate up to 30 mills, In addition, they may levy sales taxes of up to 3 percent although this limitation does not apply to local governments with home rule charters.

Although the North Slope Borough theoretically has the power to levy real and personal property taxes of up to 30 mills, in reality its taxing ability falls far short of this because of the limitations on local government taxation of certain property of the oil and gas industry as defined in Title 43.56 of the Alaska Statutes. These limitations are set forth in Section 29.53.045 of the Alaska Statutes, which is quoted in part:

- " (a) A municipality may levy and collect taxes on taxable property taxable under AS 43.56 only by using one of the methods set out in (b) or (c) of this section.

- "(b) A municipality may levy and collect a tax on the full and true value of taxable property taxable under AS 43.56 as valued by the Department of Revenue at a rate not to exceed that which produces an amount of revenue from the total municipal property tax equivalent to \$1,500 a year for each person residing within its boundaries.
- "(c) A municipality may levy and collect a tax on the full and true value of that portion of taxable property taxable under AS 43.56 as assessed by the Department of Revenue which value, when combined with the value of property otherwise taxable by the municipality, does not exceed the product of 225 percent of the average per capita assessed full and true value of property in the State multiplied by the number of residents of the taxing municipality."

Title 29.53.055 of the Alaska Statutes states that there is no limitation on taxes levied or pledged to pay or secure the payment of the principal and interest on bonds. However, this assertion is currently being challenged in the State Supreme Court. It is the contention of the North Slope Borough that the statutory limitations on local government taxation imposed by Section 29.53.045 do not apply to debt service but only to operating revenues. Should the Court rule against the Borough, its ability to collect the revenues necessary for it to carry out its capital improvements program would be very much more limited since oil and gas property accounts for by far the largest share of the value of taxable property in the Borough. (The State assessed value of property held by the Borough's ten largest taxpayers in 1977 amounted to \$3,273,320,800. All ten were oil and gas or related companies).

Even granting the Borough's position on limitations of local governments to tax certain oil and gas property not being applicable to debt service, the legislatively enforced link between local taxation ability

and population has resulted in some hardship, mainly because the population of the region has recently varied so much from year to year. During the peak of Pipeline construction, there were more than 12,500 Borough residents. By July of 1977, however, this figure had fallen to around 9,000 and since then it has fallen still further. Sporadic population increases can again be expected with construction of the gas line and the forthcoming Beaufort Sea offshore oil and gas lease sale (providing that personnel are located within the 3 mile limit). However, the "highs" and lows that accompany these activities are not desirable as a determinant of revenues needed to provide essential Borough services.

Because the taxing formula contained in Section 29.53.045(c) of the Alaska Statutes is less sensitive to local fluctuations in population and also because it contains a built-in inflation factor (assuming that the average Statewide per capita value of civilian property will increase each year), the Borough plans to switch to this formula for the upcoming fiscal year. Through the current fiscal year, however, it has used the \$1,500 per capita formula.

With the above limitations in mind, the Borough mill rate in 1977 was set at 7.52 mills (including a tax at the rate of 2.12 mills which is subject to debt service litigation). In addition, the Borough presently levies a 3 percent consumer sales tax on all sales made within the Borough. Because some cities within the Borough also levy sales taxes, local residents pay a combined rate of up to 6 percent in communities

TABLE 20

GENERAL REVENUES BY SOURCE a/
 NORTH SLOPE BOROUGH
 FY 1973 - FY 1978
 (in \$000's to nearest \$1 ,000)

| <u>Fiscal Year</u> | <u>General Property Taxes</u> <u>b/</u> | <u>Sales Taxes</u> <u>c/</u> | <u>State</u> | <u>Federal</u> | <u>Miscellaneous Revenues</u> | <u>Total</u> |
|--------------------|---|------------------------------|--------------|----------------|-------------------------------|--------------|
| 1973 | \$ 418 | \$ 37 | \$ 69 | \$ 27 | \$ -- | \$ 551 |
| 1974 | \$ 3,548 | \$1,040 | \$1,376 | \$ 31 | \$ 168 | \$6,163 |
| 1975 | \$5,501 | \$1,181 | \$2,295 | \$1,767 | \$ 975 | \$11,719 |
| 1976 | \$6,884 | \$ -- | \$5,342 | \$1,270 | \$2,138 | \$16,634 |
| 1977 | \$18,220 <u>d/</u> | \$ -- | \$5,302 | \$1,883 | \$ 892 | \$26,297 |
| 1978 | \$26,556 <u>e/</u> | \$ 240 | \$6,839 | \$2,091 | \$2,034 | \$37,760 |

a/ General revenues means all cash receipts except for enterprise funds.

b/ property taxes includes penalties, interest and charges.

c/ Sales taxes includes penalties and interest.

d/ Includes a tax at the rate of 2.62 mills (\$4,631,000) which is the subject of litigation.

e/ Includes a tax at the rate of 2.12 mills (\$7,634,000) which is the subject of litigation.

Source: North Slope Borough.

such as Barrow and **Wainwright**. All local sales taxes are collected by the Borough and are remitted back to individual cities, where applicable.

Other sources of Borough revenue are the State and federal governments, primarily for health and education services. The Borough also collects revenue from miscellaneous sources including earnings from interest, the teacher lunch and housing program, and athletic gate admission charges.

BOROUGH PROGRAMS

Although the North Slope Borough as assumed areawide powers for a wide variety of municipal services, it does not in fact provide all of them at the present time. Its services and its capital improvements program have been designed to first provide each village within its boundaries with basic life, health and safety support. Thus, projects to provide electrical generation, health facilities, sewage disposal and safe water systems, and year-round airstrips have initially received the highest priority. (Airstrips are included as a basic support facility because aviation is the primary and often the only mode of transportation available to North Slope villages).

Housing, schools and community service centers generally have second priority and the Borough is presently engaged in constructing new school facilities in most **communities** of the region. In addition, new **housing** units have been or are being built in **all** of the Borough's traditional

communities. Programs to supply amenities deemed to be of lower priority, such as libraries and museums, will be undertaken when the range of basic facilities and services has been provided.

Several services for which the Borough has assumed areawide responsibility, such as hospital facilities and telephone service, are already provided by other agencies. Hospital services in the region are presently furnished by the U.S. Public Health Service. Telephone services are privately owned and operated, In Barrow, the local system is run by General Telephone, while all other traditional communities in the Borough are served by RCA **Alascom's** bush communications system.

Inter-Regional and Inter-Community Ties

The North Slope Borough covers a 228,648 square kilometer (88,281 square mile) area across the extreme north of Alaska. It extends from near Point Hope on the **Chukchi** Sea approximately 1,040 kilometers (650 miles) east to the Canadian border, and from Point Barrow in the north to 68 degrees latitude in the Brooks Range, a distance of about 360 kilometers (225 miles). The Borough's estimated 9,643 residents in July 1977 lived primarily in the **Prudhoe** Bay area (which, including Pipeline camps, accounted for 55.5 percent of the Borough's 1977 population) or in eight widely separated traditional Eskimo communities - Anaktuvuk Pass, Atkasook, Barrow, Kaktovik, **Nuiqsut**, Point Hope, Point Lay and **Wainwright**.

There is no **intra-regional** transportation system connecting all of the various North Slope communities. The North Slope haul road which runs from the Yukon River north to Prudhoe Bay is the only highway in the region. However, access to it is presently limited to traffic related to oil and gas development activity or to maintenance and operation of the **Trans Alaska Pipeline**. With the exception of the Prudhoe Bay/Deadhorse area, no North Slope community is closer than 90 miles to this highway route.

In the absence of an inter-connecting overland transportation system, transportation among the various North Slope communities is limited to air travel. As of December **1977**, Kaktovik, Prudhoe Bay/Deadhorse, **Nuiqsut**, Barrow and **Wainwright** were all connected (although not necessarily directly) by scheduled air service. Point Hope and Anaktuvuk Pass, on the other hand, had scheduled air service only to communities outside the region. Point Hope is connected to Kotzebue and Anaktuvuk Pass to Fairbanks. The newly resettled villages of Atkasook and Point Lay had no scheduled air service in December 1977 and were dependent on private charter operators based in Barrow. Charter operators at Barrow, Deadhorse, Kaktovik, **Bettles** (for Anaktuvuk Pass) and Kotzebue (for Point Hope) provide links between communities not connected by scheduled air service.

Air transportation to Fairbanks and points south from most communities in the North Slope Borough is through either Barrow or Deadhorse, both of which have daily scheduled service to Fairbanks and Anchorage. Point

Hope residents travel to Fairbanks and Anchorage through Kotzebue while Anaktuvuk Pass has direct service to Fairbanks.

Although all passenger traffic and most freight to and from North Slope villages is by air, the coastal communities of the region are accessible by barge and shallow draft vessels during the short ice-free summer season. Point Hope, **Wainwright** and Barrow are supplied annually from Seattle by the Bureau of Indian Affairs ship **North Star III**. These same communities also receive their annual fuel supplies from Seattle but by barge. In addition, the **Prudhoe Bay** area, the DEW Line stations and NPR-A exploration activities are all supported by barge service.

Except as they all relate to Barrow, there are few relationships between **individual** North Slope traditional settlements. As the North Slope Borough seat and as the headquarters of the Arctic Slope Regional Corporation, however, Barrow clearly has relationships with all communities in the region. In addition, over the past fifty years there has been a significant amount of out-migration from most traditional villages to Barrow so that most villages have personal and family ties with Barrow as well as governmental and corporate links with that community. **Atkasook**, **Nuiqsut** and Point Lay have particularly strong ties since they were very recently resettled, largely by Barrow residents.

Another link connecting most traditional villages in the region to Barrow is the Public Health Service hospital in that **community**. Except

for Point Hope and Anaktuvuk Pass residents, people from other villages travel to Barrow when they require medical services beyond the capability of local health aides (although Kaktovik residents are sometimes also evacuated to Inuvik in Canada's Northwest Territories). In turn, patients requiring surgery or specialized medical care that is not available in Barrow are flown outside the region to Fairbanks or Anchorage. Point Hope residents are flown to the Public Health Service hospital in Kotzebue or, if they require additional services, they are transferred to Fairbanks or Anchorage. Anaktuvuk Pass patients have direct access to Fairbanks.

Both the North Slope Borough and the Arctic Slope Regional Corporation have strong ties with communities outside the North Slope region, as do military subcontractors and organizations such as the Naval Arctic Research Laboratory. The Arctic Slope Regional Corporation has an Anchorage office and the Borough has offices in both Anchorage and Washington, D.C. Both entities use specialized consultant services, most of which are located in Anchorage, and on legal firms, some of which are based in Anchorage and others outside the State.

The ties between Barrow and the Prudhoe Bay/Deadhorse are quite different from those between Barrow and the region's traditional settlements. Prudhoe Bay, Deadhorse and other camps in this area exist solely to support oil and gas development and production. The North Slope Borough has established a service area at Deadhorse to provide solid waste, sewer and water services and has built a local tax

assessment office. However, the operators in this area do not depend on the Borough for other government services at the present time.

Furthermore, although some permanent Borough residents do work here, for the most part people from elsewhere in the region have little contact with the Prudhoe Bay/Deadhorse area. None of the companies maintains an office in Barrow, nor are there any hiring halls in the region.

There is, however, one very important link between the Prudhoe Bay/Deadhorse area and the remainder of the North Slope region as it is on this area that the Borough's tax base essentially rests. The property taxes paid by companies operating in this area form the basis upon which the Borough capital improvements program is financed. Thus, the recent improvements in the quality of life in the region's traditional villages are directly related to oil and gas developments in the Prudhoe Bay/Deadhorse area.

Other linkages between the Prudhoe Bay/Deadhorse area and villages in the North Slope region are limited to law enforcement and transportation connections. A State trooper has been stationed at Deadhorse since April 1975 and he or a trooper from Fairbanks travel to Borough villages when required. In addition, Kaktovik, Nuiqsut and Barrow all receive scheduled air service to and from Deadhorse airport and supplementary charter services are also available.

In general, however, it can be said that except for the provision of Borough solid waste, sewer and water services at Deadhorse, the

relationships between the operators in the **Prudhoe Bay/Deadhorse** area are generally those between the Borough and the oil and gas-related companies rather than vice versa. For the most part, the companies operating in this area provide their own services and their employees generally travel from Deadhorse directly outside the region to Fairbanks, Anchorage or points beyond. The transportation requirements of this area are also generally independent of other communities in the Borough. Supplies are brought in from Anchorage and Fairbanks via the North Slope haul road, by air charter from Fairbanks, or in the summer by barge from Seattle. Management and executive personnel are based in offices in Fairbanks, Anchorage and outside the State.

The DEW Line stations and the Cape **Lisburne** AC & W site have few ties to the region's traditional communities. These facilities were established in the region to perform specific military-related functions and are self-contained units which do not depend on established communities for services. However, there is some contact with neighboring villages (Point Lay, **Wainwright**, Barrow and Kaktovik). The greatest amount of contact occurs at Kaktovik where the airstrip at the Barter Island station is also used for general aviation and where local residents have more opportunities for employment "on-base". The town of Point Lay is being moved closer to the DEW Line station in that area and now uses the station's airport facilities.

The DEW Line system is administered by the Air Force's Aerospace Defense Command which is based at ENT Air Force Base in Colorado Springs.

Operation of the system is handled by a private contractor (FELEC Services, Inc.) and most personnel are hired out of State. The stations in the North Slope region are supplied weekly by an Air Force charter while fuel and bulk supplies are transported during the summer months by barge from Seattle. Cape Lisburne is also operated by a civilian contractor (RCA) and is supplied independently of the region's traditional communities.

The only other major group presently operating in areas of the Borough outside the established communities is Husky Oil which is undertaking oil and gas exploration work in NPR-A for the U.S. Department of the Interior. The firm does have a very small office in Barrow but its operations in the region are generally directed out of Anchorage.

Servicing of oil and gas exploration activity in NPR-A is being undertaken out of Camp Lonely in the eastern section of the Reserve although Husky Oil has also obtained permission to use up to 3,785,000 liters (1 million gallons) of the NARL camp's total fuel storage capacity of 9,462,500 liters (2.5 million gallons) near Barrow. During the summer of 1977, barges from Seattle dropped off supplies at Peard Bay, Husky Point and Icy Cape which were hauled overland during the winter months to planned drill sites. Air services are contracted out of Fairbanks. Except for its use of the NARL facilities, the entire operation has very little relationship to the remainder of the North Slope Borough.

III. CITY OF BARROW

Population and Economy

POPULATION

Past Trends

Patterns of settlement along the Arctic coast were historically based upon subsistence harvesting of sea mammals. Small bands of coastal Eskimos hunted, fished and traded with nomadic inland Eskimos who hunted the caribou. The traditional village of **Utkiagvik**, a consolidation of several settlements scattered along the coast and located at the present site of Barrow, served as a central point for these activities.

With the arrival of the commercial whalers in the 1850's, traditional patterns changed. The coastal Eskimos clustered at Point Barrow and gradually began trading with the whalers rather than with the inland Eskimos so that the latter group was forced to move to the coast to obtain necessary supplies. Throughout the commercial whaling period, the village at Point Barrow furnished many men for the whaling expeditions in exchange for trade goods.

Following the decline of whaling in 1915, Point Barrow Eskimos, now dependent upon trade with whites, turned to trapping as their primary economic activity. When the bottom fell out of the market in 1929,

TABLE 21

POPULATION TRENDS
BARROW, ALASKA
1890 - 1977

| <u>Year</u> | <u>Population</u> | <u>Percent Change</u> |
|----------------|-------------------|-----------------------|
| 1890 | 152 | |
| 1910 | 446 | 193.4 |
| 1920 | 322 | - 27.8 |
| 1929 <u>a/</u> | 330 | 2.5 |
| 1939 <u>a/</u> | 363 | 10.0 |
| 1950 | 951 | 162.0 |
| 1960 | 1,314 | 38.2 |
| 1970 | 2,104 | 60.1 |
| 1977 | 2,700 <u>b/</u> | 28.3 |

a/ Census taken as of October 1, 1929 and October 1, 1939.

b/ Alaska Consultants' estimate of Barrow's population assumes a ratio of approximately 3 persons per job. The official North Slope Borough estimate of 2,220 appears too low.

Sources: U. S. Census.
Alaska Consultants, Inc.

villagers were forced to return to a subsistence economy. These changes in trading patterns and economic vicissitudes are reflected in Barrow's population. Forty houses and 250 people were observed at Point Barrow in 1852-53, the 1890 Census indicated 150 people living in the area and the 1910 Census counted 446 people. Between 1910 and 1920, Barrow's population declined by 28 percent (446 to 322), a period which coincided with the decline of the whaling industry.

Over the past century, various federal government activities in the Barrow area have contributed to the development of the village as a regional center. In 1881, the U.S. government established a polar station for magnetic and meteorological research .8 kilometers (1/2 mile) northeast of Barrow. The project lasted for only two years and it is not known whether or how many local residents participated in its construction and operation. Around the turn of the century, the federal government introduced a herd of reindeer to help the economy and replace some of the depleted game resources. By 1935, the herd had grown to 35,000 but overgrazing, disease, predators and poor management reduced the herd to a fraction of its original size shortly afterwards. By 1950, reindeer had completely disappeared from the area but, while it lasted, reindeer herding provided some employment opportunity and significant food resources. Federal welfare programs which became available in the 1930's also provided some cash income.

Substantial federal employment in the Barrow area resulted from exploration activities in Naval Petroleum Reserve #4 (NPR-4) between

1944 and 1953 and from construction of the Naval Arctic Research Laboratory (NARL) in 1947 and the POW-Main DEW Line station in the 1950's. In its account of the exploration program in Naval Petroleum Reserve #4, the U.S. Geological Survey noted that ". . . about 80 Eskimos were employed by Arcon and attendant activities such as the Arctic Research Laboratory. Natives were paid the same wages as the Whites for similar work so that substantial cash was known in Barrow village." (U.S. Department of the Interior, Geological Survey, 1958).

The effect of these activities on Barrow's growth is reflected in contemporary Census figures. Between 1929 and 1939, the village's population grew from 330 to 363, an increase of 10 percent. During the following decade of NPR-4 and NARL activity, the growth rate was 162 percent. From 1950 to 1960, which includes the period of DEW Line station construction, Barrow's population increased an additional 38 percent.

The community has continued to experience significant population growth since 1960. Between 1960 and 1970, Barrow's population rose from 1,314 to 2,700, an increase of 105 percent. During the 1960's, the range of government services in Barrow was expanded considerably and served to attract new Eskimo residents from other villages in the North Slope region.

Since 1970, the passage of the Alaska Native Claims Settlement Act in 1971 and the incorporation of the North Slope Borough in 1972 have been

major factors in Barrow's continued growth. The Arctic Slope Regional Corporation (ASRC) and the Borough have opened up a range of new employment opportunities for local residents and thus are believed to have checked the rate of out-migration from the region as well as attracting new Eskimo residents from the region's villages. In addition, the job opportunities afforded by the ASRC and the Borough appear to have contributed to a new influx of whites into Barrow since 1970.

Barrow's 1977 population was estimated by Alaska Consultants, Inc. to be 2,700 persons. The official Borough estimate in July 1977 was 2,220. However, despite an out-migration of Eskimos from Barrow to resettle the traditional villages of Nuiqsut, Point Lay and Atkasook, the Borough estimate is felt to be unrealistically low in view of the amount of in-migration from some of the other villages and from outside the region which has recently taken place. Alaska Consultants, Inc. counted a total of 915 full-time jobs in Barrow in 1977. Using a typical ratio of 3 persons for every job, a population figure of about 2,700 persons in this community was thus derived.

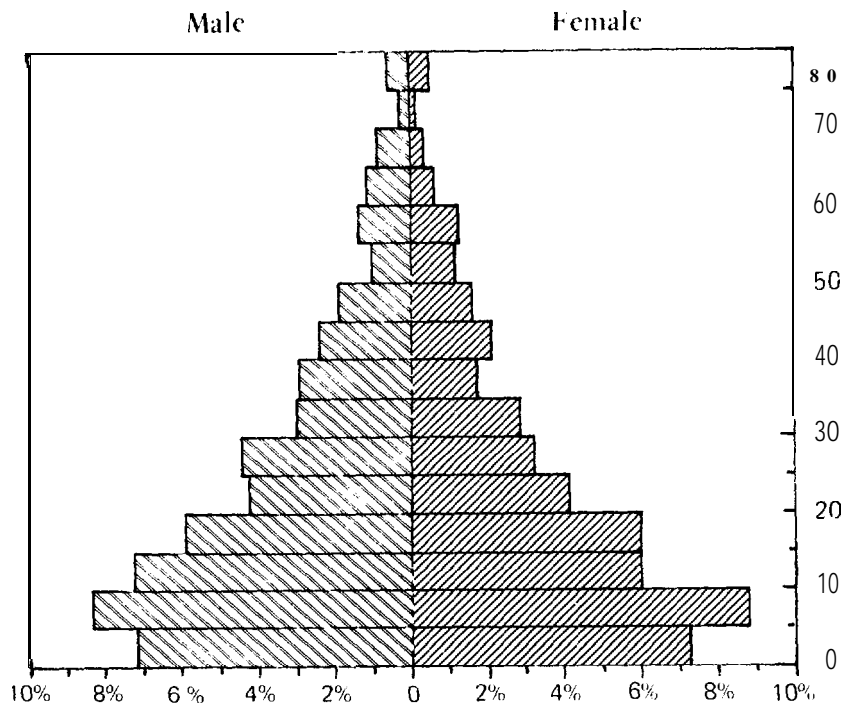
Concomitant with Barrow's growth over the past century, many small North Slope settlements completely disappeared or significantly decreased in population. In 1939, Point Lay had a population of 117 but no population was recorded for this location in the 1960 or 1970 censuses. This community has recently been re-established, however, and had a population of 54 in July 1977 according to Borough estimates.

Two other communities for which no population was recorded by the 1970 Census but which have since been re-established are Atkasook and **Nuiqsut**. In the Barrow comprehensive development plan prepared in 1970, the Alaska State Housing Authority related the growth of Barrow directly to rates of out-migration from traditional communities. (Alaska State Housing Authority, July 1970). The **re-establishment** of three traditional communities, mainly by Barrow residents, represents the first significant population movement from **the** regional center back to the villages in many years although it is believed that migration by Eskimos into Barrow since 1970 has exceeded this planned out-migration. Point Lay, **Atkasook** and **Nuiqsut** had a combined population of 297 in July 1977 according to Borough estimates.

Population Composition

Barrow's population is predominantly Eskimo. The City has, in fact, the distinction of being the largest Eskimo community in the State. According to the 1970 Census, 90 percent of Barrow's people were Eskimo. Of the remaining 207, nearly all (191) were white and most of these were attached to one of the various federal agencies.

A review of age and sex characteristics of Barrow's 1970 population indicates that the community displays some peculiarly Alaskan characteristics to an exaggerated degree. Males outnumbered females by a 52 to 48 percent margin here in 1970. This is just slightly less than the 1970 State ratio of 54 percent males to 46 percent females but is



BARROW

COMPOSITION OF POPULATION
1970

FIGURE 3

TABLE 22
COMPOSITION OF POPULATION BY RACE AND SEX
BARROW, ALASKA, 1970

| Race | Sex | | | Percent of Total % |
|--------------|--------------|--------------|--------------|-----------------------|
| | Male | Female | Total | |
| White | 109 | 82 | 191 | 9.1 |
| Negro | 3 | 1 | 4 | .2 |
| Indian | 4 | 4 | 8 | .4 |
| Aleut | 1 | 0 | 1 | a/ |
| Eskimo | 975 | 921 | 1,896 | 90.1 |
| Other | 3 | 1 | 4 | .2 |
| <u>TOTAL</u> | <u>1,095</u> | <u>1,009</u> | <u>2,104</u> | <u>100.0</u> |

a/ Less than .1 percent.

Source: U. S. Census.

TABLE 23
HOUSEHOLD DENSITIES
BARROW, ALASKA
1970

| <u>Persons Per Household</u> | <u>Total Housing Units</u> | <u>Percent Total Population</u> | <u>Percent Total Housing Units</u> |
|------------------------------|----------------------------|---------------------------------|------------------------------------|
| 1 person | 34 | 1.6 | 9.1 |
| 2 persons | 39 | 3.7 | 10.5 |
| 3 persons | 38 | 5.4 | 10.2 |
| 4 persons | 50 | 9.5 | 13.4 |
| 5 persons | 37 | 8.8 | 9.9 |
| 6 persons | 35 | 10.0 | 9.4 |
| 7 persons | 33 | 11.0 | 8.8 |
| 8 persons or more | 107 | 50.0 | 28.7 |
| <u>TOTAL</u> | 373 | <u>100.0</u> | <u>100.0</u> |

Source: U. S. Census.

quite dissimilar to that of the U.S. as a whole where females outnumbered males 51 to 49 percent.

Barrow's population is very young. The median age of males in 1970 was 17.8 and that of females was 16.5. The median age of the Barrow Native population was even lower: 17.2 for males and 16.0 for females. This is not atypical of rural Alaska. In the Barrow Census Division in 1970, for example, the male median age was 19.6 and that of females was 16.4. However, it is younger than normal for the State and much younger than the nation as a whole. In 1970, the median age of males in the State was 23.3 and in the nation, it was 27.0. For females, the 1970 State median age was 22.9 and that for the U.S. was a much older 29.6.

In large part, the extreme youth of Barrow's population in 1970 reflects the high birth rates characteristic of predominantly Native areas of the State. The average number of persons per household in Barrow in 1970 was 5.6, the highest of any major community in Alaska and well above State (3.52) and national (3.17) averages at that time.

Growth Prospects

Of all the traditional communities in the North Slope region, Barrow is the only one to have experienced substantial in-migration. The activities of the U.S. Navy in its exploration of **NPR-4** and the establishment of the Naval Arctic Research Laboratory here, as well as the selection of Barrow by other federal agencies such as the Bureau of

Indian Affairs and the Public Health Service as the location from which to base their activities in the region, served to clearly establish the community as the dominant population center on the North Slope. The in-migration of technicians from outside the region to undertake scientific research or to provide health, education and other services was more than matched by an in-migration of Eskimos from other North Slope villages seeking to take advantage of the new services being offered and of the increased opportunities for employment and cash income. As a result, Barrow experienced rapid population growth between 1939 and 1970. A similar growth pattern was experienced in other developing regional centers of northern and western Alaska such as Bethel and Kotzebue.

Since 1970, Barrow has continued to experience rates of population growth in excess of rates of natural increase, This is believed to be due primarily to the activities of the Arctic Slope Regional Corporation and the North Slope Borough. Together, these organizations have added over 400 "new" (i.e. not previously provided by other locally based agencies or firms) jobs in Barrow since 1970 and have encouraged a further in-migration of whites and Eskimos to the community. Recent rates of population increase in Barrow would be even higher were it not for the re-establishment since 1970 of the traditional communities of Point Lay, Atkasook and Nuiqsut, mainly by Barrow residents (see discussion in Population Composition section of this chapter).

Future growth prospects for Barrow are seen as continuing to be determined primarily by the activities of the Arctic Slope Regional

Corporation and the North Slope Borough. The regional corporation's investments and development operations, such as those for oil and gas, should be translated into new central office job opportunities in Barrow in the future, with the number being largely determined by the corporation's degree of financial success. The corporation has already invested heavily in the community and appears likely to continue to do so in the future.

The impact of the North Slope Borough on future employment and population in Barrow should continue to be very significant. However, the extent of this impact will be largely determined by the tax revenues which it receives. Oil and gas property accounts for virtually all of the Borough's assessed valuation. Since local taxation for operating revenues (i.e. excluding debt service) of such property is presently restricted by State law to either a \$1,500 per capita formula or to a formula which limits a local government's tax base to 225 percent of the average per capita value of civilian property in the State multiplied by a local government's total civilian population, the taxing ability of the North Slope Borough is to a large extent determined by factors outside its control. A lawsuit to determine if debt service is also subject to these limitations on local government taxation is presently before the Alaska Supreme Court. If the decision goes against the North Slope Borough, its ability to carry out its capital improvements program would be severely limited.

Despite the uncertainties **placed** upon its ability to tax oil and gas property within its borders, the North Slope Borough is expected to continue to be the major factor in Barrow's future growth. The rate of that growth, however, will undoubtedly be influenced by decisions made as to the Borough's taxation capabilities.

ECONOMY

Composition of Employment

A count of employment in Barrow was undertaken by Alaska Consultants, Inc. in December 1977. This was necessary because there were no **meaningful** current employment statistics available for the community. Jobs were counted both in the community itself and at nearby government **facilities** such as the Naval Arctic Research Laboratory (NARL) and the POW-Main DEW Line station. Jobs held by Barrow residents in areas such as Prudhoe Bay and NPR-A which are outside the immediate Barrow area, however, were not included.

When converted to average annual full-time employment, a total of 915 jobs were counted in Barrow in **1977**. Close to 57 percent of these jobs were in government occupations, most of them with the North Slope Borough.

Of 420 average annual full-time jobs identified in local government occupations, the Borough accounted for 404.5 (213.5 in the general

TABLE 24

AVERAGE ANNUAL FULL-TIME EMPLOYMENT
BARROW, ALASKA
1977

| <u>Industry Classification</u> | <u>Number</u> | <u>Percent of Total</u> % |
|--|---------------|------------------------------|
| Mining | 1.5 | .2 |
| Contract Construction | 17.0 | 1.9 |
| Manufacturing | 0 | --- |
| Transportation, Communications and Public Utilities | 173.75 | 19.0 |
| Trade | 56.5 | 6.2 |
| Finance, Insurance and Real Estate | 48.0 | 5.2 |
| Service | 100.75 | 11.0 |
| Miscellaneous | 0 | --- |
| Government | 517.5 | 56.6 |
| Federal | (84.5) | (9.2) |
| State | (13.0) | (1.4) |
| Local | (420.0) | (45.9) |
| <u>TOTAL</u> | <u>915.0</u> | <u>100.0</u> |

Source: Alaska Consultants, Inc.

government category and 191 with the Borough School District). The federal and State governments accounted for 84.5 and 13.0 jobs respectively.

After government, most jobs in Barrow were in transportation, communications and public utilities. This sector accounted for roughly 174 jobs or 19 percent of the total annual average full-time employment in the community. The largest single employer was ITT (based at NARL) with 73 jobs, followed by Barrow Utilities with 20 jobs.

Approximately 100 jobs were counted in the service sector. The largest employer was the University of Alaska with 60 employees, all of whom are associated with NARL, followed by the Top of the World Hotel with 22 jobs. Eskimos, Inc., a vehicle repair and maintenance concern, accounted for 14 jobs in services (plus 2 in trade). Both the hotel and Eskimos, Inc. are subsidiaries of the Arctic Slope Regional Corporation. The **service** sector also includes three churches, a cleaners and a beauty salon.

Trade accounted for 56.5 jobs. This sector had 12 employers and 6 percent of all the jobs in Barrow. The largest employer was **Stuaqpak** (Barrow's main general store), followed by Brewer's Store No. 1 and Cash and Carry. Finance, insurance and real estate accounted for 48 jobs in 1977, nearly all of therewith the Arctic Slope Regional Corporation. Finally, mining and contract construction together accounted for 18.5 jobs, roughly 2 percent of the total. Husky Oil was

the sole employer in the mining sector and accounted for an annual average full-time equivalent of only 1.5 jobs. Jobs in the construction sector were all based in the community and were split among SKW (10 jobs), Blackstock Homes (3 jobs) and Skyline Construction (4 jobs). It should be noted, however, that peak employment by each of these construction firms was much higher than indicated by annual average full-time employment figures because construction activities here are extremely seasonal,

Unemployment and Seasonality of Employment

Reliable figures on unemployment and seasonality of employment are difficult to develop for North Slope communities. Information is generally poor and incomplete, making accurate historical comparisons impossible. Prior to 1975, for population and employment data gathering purposes, Barrow was included as part of a large area extending between Beechey Point and Cape Lisburne and as far south as the Brooks Range. Both the census division and the labor area also included Wainwright, Point Lay, Anaktuvuk Pass, Nuiqsut and Cape Lisburne, plus seismic or exploration crews operating in NPR-4. Barrow accounted for nearly 80 percent of the census division's population in 1970 but, nevertheless, conclusions developed vis a vis Barrow from these data can only be considered indicative. In 1975, the Alaska Department of Labor began collecting its employment statistics on a Boroughwide basis, making recent data incompatible with that for previous years.

Alaska Department of Labor data indicate that unemployment in the Barrow labor area averaged 11 percent in 1970, ranging from a high of 18.8 percent in June to a low of 6.1 percent in January. Unemployment in 1970 averaged 9 percent Statewide, somewhat lower than in the Barrow labor area. Lowest unemployment Statewide occurred in September (6.5 percent) and the highest in February (11.6 percent), a seasonal high-low employment pattern quite different from that exhibited by the Barrow area. In 1972, the Barrow labor area's unemployment rate rose to 11.8 percent, ranging from a high of 18.5 percent in February to a low of 7.3 percent in October, a more "normal" Alaska pattern. The Statewide unemployment rate also increased, from 9 to **10.5** percent. As was the case with the Barrow area, the highest State unemployment rate occurred in February (14.7 percent). The lowest rate was in August (8 percent).

Between 1972 and 1975, unemployment in the Barrow labor area decreased significantly and seasonal variations became much less extreme. Average unemployment in 1975 was 6.0 percent, somewhat lower than the State average for that year of 8.4 percent. Statewide, seasonal unemployment ranged from a high of 11.2 percent in January of 1975 to a low of 6.0 percent in September. In the Barrow labor area, the peak unemployment month was July (9.5 percent) and the low was March (4.1 percent).

Recent Trends and Changes

Between 1970 and 1975, nonagricultural wage and salary **employment** in the Barrow labor area rose from 977 to 1,997, a **104** percent increase. This

TABLE 25

EMPLOYMENT COMPOSITION
BARROW LABOR AREA
1970 AND 1975

| <u>Employment Sector</u> | 1970 | | 1975 | |
|---|-----------|--------------|--------------|--------------|
| | Number | % of Total | Number | % of Total |
| Mining | 280 | 28.7 | 261 | 13.1 |
| Contract Construction | 173 | 17.7 | 380 | 19.0 |
| Manufacturing | <u>a/</u> | | <u>a/</u> | |
| Transportation, Communications & Public Utilities | 86 | 8.8 | 185 | 9.3 |
| Trade | <u>a/</u> | | 129 | 6.4 |
| Finance, Insurance & Real Estate | <u>a/</u> | | 56 | 2.8 |
| Service | 142 | 14.5 | 196 | 9.8 |
| Miscellaneous | 0 | --- | <u>a/</u> | |
| Government | 165 | 16.9 | 790 | 39.6 |
| Federal | (128) | (13.1) | (265) | (13.3) |
| State and Local | (37) | (3.8) | (525) | (26.3) |
| <u>TOTAL</u> | 977 | <u>100.0</u> | <u>1,997</u> | <u>100.0</u> |

a_/ Employment figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

rate of growth was well above that experienced Statewide where nonagricultural wage and salary employment increased almost 55 percent during the same period. In the Barrow labor area, three sectors showed substantial change between 1970 and 1975. Mining fell from 28.6 percent of total nonagricultural wage and salary employment in 1970 to 13.1 percent in 1975 although the number of jobs in this sector declined only slightly. Virtually none of the jobs in this sector are held in Barrow or even by Barrow residents. The service sector, although it increased in absolute numbers from 1970 to 1975, actually declined as a percentage of total nonagricultural wage and salary employment during the five year period. However, it was employment in the government sector which saw the greatest change.

Federal, State and local government employment in the Barrow labor area in 1970 represented 165 jobs or 17.8 percent of total nonagricultural wage and salary employment. By 1975, this sector accounted for 790 jobs or 39.5 percent of the total, an increase of 379 percent. Most of this growth occurred in State and local government where employment rose from 37 jobs in 1970 to 525 in 1975, almost all of which can be directly traced to the establishment of the North Slope Borough. Reliable historical employment data are not available specifically for Barrow but a December 1977 employment count by Alaska Consultants, Inc. found 517.5 jobs, or 56.6 percent of average annual full-time employment in the community, to be in the government sector. About 78 percent of all these government jobs in Barrow were held by North Slope Borough employees.

Statewide, historical trends by industry sector are quite dissimilar from those of the Barrow labor area. Contract construction remained fairly stable as a percentage of nonagricultural wage and salary employment in the Barrow labor area between 1970 and 1975, whereas for the State as a whole it rose sharply from 7.4 to 16.0 percent. However, most of this growth Statewide can be attributed to the work on the Trans Alaska Pipeline which got underway in 1974. In 1976, contract construction Statewide accounted for 17.6 percent of all nonagricultural wage and salary employment. By contrast, only 1.8 percent of Barrow's average annual full-time employment was found to be employed in this sector in 1977. However, the apparently small scale of the contract construction sector in Barrow is misleading. This is because another 50 average annual full-time construction jobs in the community are held by Borough employees and these jobs were therefore counted as being in the government sector.

Occupational Skills

Comprehensive information on the skills of the workforce in the North Slope region is generally lacking, and there are no reliable and current statistics developed on an individual community basis. The Employment Security Division of the Alaska Department of Labor conducted a comprehensive manpower and skill survey of the Barrow-Wainwright area in 1969 but this information is now very much out of date.

The Barrow Manpower Center maintains a list of skills of persons who register there when looking for a job. Since there are no union hiring halls in Barrow or elsewhere in the Borough, registrants at the Center are generally local Barrow people or residents of other North Slope communities. The skills claimed by these people are not necessarily representative of those of the region's permanent residents. However, they are probably typical of those possessed by people seeking work.

During FY 1977, a total of 497 people registered at the Barrow Manpower Center. Of this group, 357 were males and 381 were listed as American Indians but were certainly almost all Eskimos. The largest single group (almost 31 percent) claimed no specific skills followed by 29 percent with skills in structural work, mainly in construction-related occupations. Other numerically important occupational categories were clerical and sales (13.5 percent), services, (10.7 percent) and miscellaneous (9.5 percent). Most persons in the miscellaneous occupational group had skills in heavy equipment operation or in packaging and materials handling. Another 4.4 percent claimed professional/technical/managerial occupational skills. The remaining four occupational categories accounted for a combined total of only 11 registrants. No conclusions can be reached from available data as to the number of people with skills in oil and gas-related occupations.

The distribution of skills among registrants at the Barrow Manpower Center understates the proportion of permanent residents of the North Slope region who have skills in the professional/technical/managerial

TABLE 26

OCCUPATIONAL SKILLS
BARROW MANPOWER CENTER REGISTRANTS
FY 1977

| <u>Occupation Category</u> | <u>Number</u> | <u>Percent of Total</u> % |
|-----------------------------------|---------------|------------------------------|
| Professional/technical/managerial | 22 | 4.4 |
| Clerical and sales | 67 | 13.5 |
| Services | 53 | 10.7 |
| Farming, fishery, forestry | 2 | .4 |
| Processing | 4 | .8 |
| Machine trades | 4 | .8 |
| Bench work | 1 | .2 |
| Structural work | 144 | 29.0 |
| Miscellaneous | 47 | 9.5 |
| Unskilled | 153 | 30.8 |
| <u>TOTAL</u> | 497 | <u>100.0</u> |

Source: Alaska Department of Labor.

area. A large proportion of the jobs in Barrow require these types of skills although many are not **filled** locally. Nevertheless, new **employees** with professional/technical/managerial skills soon become permanent community residents.

Income Levels

Historically, family income levels in Barrow have been well below Statewide averages. In recent years, however, the incomes of many families in this community have risen sharply. Recent surveys indicate that average and median Barrow household incomes now compare favorably with those of other communities around the State at least in absolute terms.

The 1970 Census reported that the median family income in 1969 for the Barrow Census Division (Barrow constituted about 80 percent of the Barrow Census Division's population) was \$8,575. This was well below the Statewide median income at that time of \$12,443. **In** 1969, 120 Barrow families (or 27.7 percent) had incomes below defined poverty levels. A 1974 survey of 171 Barrow households undertaken by **Dupere** and Associates showed a median 1973 family income for the community of \$8,560, slightly lower than the 1970 Census figure. This discrepancy could be attributed to different sampling techniques or to the fact that a higher proportion of the households in the **latter** survey were Native. In 1974, 26.3 percent of the households surveyed were found to have incomes below the officially defined poverty level.

TABLE 27

FAMILY INCOME DISTRIBUTION
BARROW CENSUS DIVISION, ALASKA
1969

| <u>Family Income</u> | <u>Number of Families</u> | <u>Percent of Total</u> |
|---------------------------|---------------------------|-------------------------|
| Under \$1,000 | 23 | 5.3 |
| \$1,000- \$1,999 | 30 | 6.9 |
| \$2,000- \$2,999 | 28 | 6.5 |
| \$3,000- \$3,999 | 57 | 13.2 |
| \$4,000- \$4,999 | 6 | 1.4 |
| \$5,000- \$5,999 | 25 | 5.8 |
| \$6,000- \$6,999 | 5 | 1.2 |
| \$7,000- \$7,999 | 31 | 7.2 |
| \$8,000- \$8,999 | 20 | 4.6 |
| \$9,000- \$9,999 | 28 | 6.5 |
| \$10,000- \$11,999 | 59 | 13.6 |
| \$12,000- \$14,999 | 54 | 12.5 |
| \$15,000- \$24,999 | 41 | 9.5 |
| \$25,000- \$49,999 | 26 | 6.0 |
| \$50,000 or more | 0 | --- |
| <u>TOTAL</u> | 433 | <u>100.0</u> |

Source: U. S. Census.

TABLE 28

FAMILY INCOME DISTRIBUTION
BARROW, ALASKA
1973

| <u>Family Income</u> | <u>Number of Families</u> | <u>Percent of Total</u> |
|----------------------|---------------------------|-------------------------|
| Under \$1,000 | 7 | 4.1 |
| \$1,000- \$4,999 | 38 | 22.2 |
| \$5,000- \$10,999 | 33 | 19.3 |
| \$11,000- \$15,999 | 21 | 12.3 |
| \$16,000- \$20,999 | 14 | 8.2 |
| \$21,000- \$24,999 | 10 | 5.8 |
| \$25,000 or more | 13 | 7.6 |
| No response | 35 | 20.5 |
| <u>TOTAL</u> | 171 | <u>100.0</u> |

Source: Dupere and Associates.

A survey undertaken by the North Slope Borough School District in March 1976 shows a sharp rise in family income in Barrow between 1973 and 1975. Based on a sample of 23 percent of Barrow households, the School District found the community's median family income in 1975 to be \$22,676.

A second survey, conducted by the Alaska Department of Administration in 1976 found the average Barrow household income to be \$27,507, significantly higher than that identified by the School District. It should be pointed out, however, that State data were based on a sample of only 10 households and all but one of the people interviewed were employed in skilled occupations. This same survey found an average household income of \$34,316 in Fairbanks, significantly higher than Barrow figure, while the average household income for Anchorage was found to be \$25,053, slightly lower than that of Barrow.

Barrow residents are clearly enjoying increasingly higher incomes. However, in real terms the purchasing power of the Barrow dollar is significantly less than that of other communities in the State. The 1976 Alaska Department of Administration Survey of food and housing costs in selected communities around the State, for example, found that Barrow food prices averaged 73.6 percent above those in Anchorage. In fact, food costs in Barrow were shown to be much higher than any of the other 28 communities surveyed. Similarly, a check of 13 market basket items by Alaska Consultants, Inc. in December 1977 found that Barrow grocery prices averaged about 70 percent above those in Anchorage. Although average family income in Barrow was found by the Alaska

TABLE 29

GENERAL ASSISTANCE PAYMENTS a/
 BARROW, ALASKA
 FY 1973 - FY 1976

| | <u>FY 1973</u> | <u>FY 1974</u> | <u>FY 1975</u> | <u>FY 1976</u> |
|------------------|----------------|----------------|----------------|----------------|
| Total Payment | \$154,900 | \$83,600 | \$26,300 | \$12,000 |
| Number of Cases | 191 | 148 | 67 | 40 |
| Average Payment: | | | | |
| Annual | \$ 811 | \$ 565 | \$ 393 | \$ 300 |
| Monthly | \$ 68 | \$ 47 | \$ 33 | 25 |

a/ Payments made by the Bureau of Indian Affairs.

Source: U.S. Bureau of Indian Affairs.

TABLE 30

PUBLIC ASSISTANCE PROGRAM PAYMENTS a/
 BARROW, ALASKA
 OCTOBER, 1976

| | <u>Old Age Assistance</u> | <u>Aid to the Disabled</u> | <u>Aid to Families with Dependent Children</u> | <u>Total</u> |
|-----------------|-------------------------------|--------------------------------|--|--------------|
| Total Payment | \$2,488 | \$ 492 | \$9,541 | \$12,521 |
| Number of Cases | 28 | 8 | 37 | 73 |
| Average Payment | \$ 89 | \$ 62 | \$ 258 | \$ 172 |

a/ October is considered to be a representative month for public assistance payments.

Source: Alaska Department of Health and Social Services.

Department of Administration to be 9 percent above that of Anchorage, Barrow residents clearly have a much lower spending power. The high cost of living in Barrow most severely impacts those who are unemployed or living on fixed incomes.

Public assistance programs provide an income supplement for some Barrow households. During FY 1976, the Bureau of Indian Affairs distributed a total of \$12,000 in general assistance payments to 40 Barrow residents, with the average recipient receiving a monthly payment of \$25. However, general assistance payments are down sharply from 1973 when approximately \$155,000 was distributed to 191 recipients for an average monthly payment of \$68.

Public assistance payments by the Alaska Department of Health and Social Services also help to supplement income for some families. During a typical month in 1976, 28 Barrow residents received Old Age Assistance payments, 8 people qualified for Aid to the Disabled and 37 were eligible for Aid to Families with Dependent Children funds. Monthly Old Age Assistance payments averaged \$89, Aid to the Disabled monthly payments averaged \$62 and monthly Aid to Families with Dependent Children payments averaged \$258.

Community Facilities and Services

PUBLIC SAFETY

Police

Police protection services in Barrow, as in other traditional communities of the region, are provided by the North Slope Borough public safety department. The public safety director and an assistant are based out of the main Borough building. However, day to day police operations are located across from the Post Office in the old fire hall. This structure dates from 1946 but was remodeled in 1975 to provide space for police personnel and a jail. A local magistrate operates out of the District Court building located on the main road between the Borough building and the airport.

The police station is divided internally into two offices (a squad room and a supervisor's office) plus a dispatch/communications center, a small kitchen, a garage and the jail. The jail is basically only a holding facility and contains four temporary detention cells, three for men and one for women. Juveniles cannot be held in the jail and no one can be held here for more than 24 hours. Prisoners requiring detention for longer periods are transported to Fairbanks. Although the police station is in reasonably good condition, according to the Borough public safety director its 464.5 square meter (5,000 square foot) area is now much too small. The lack of running water in the building was also cited as a problem.

The Barrow police staff is made up of 11 officers and 7.5 civilian support personnel (including 5 dispatchers, 1 records clerk, a supervisor and a part-time janitor). Police equipment consists of two multi-purpose patrol vehicles, two staff vehicles and two snowmachines.

According to the Borough public safety director, almost all law enforcement problems in Barrow are related to alcohol abuse. In 1977, the Borough instituted a policy of detaining severely intoxicated persons for their own protection. Detainees are held from four to eight hours and are released without being booked.

Some idea of the scale of the alcohol abuse problem in Barrow can be gauged by comparing the number of arrests and detentions in September 1977. In that month, the peak activity month for the public safety department in 1977, 19 persons were arrested on criminal charges whereas 102 were detained for their own protection. Most criminal charges, some of them extremely serious (there were four homicides in August/September), were also related to alcohol abuse.

Construction of a new public safety building in Barrow is planned in 1981. The site for the new facility has not yet been finalized although a location next to the fire hall on Weather Bureau property is seen to be the most desirable. The new building will house the public safety director and his assistant as well as police officers and support personnel. According to the Borough public safety director, the new facility should have more space for law enforcement and emergency medical functions than is presently available.

Fire Protection

The City of Barrow has provided fire protection services to all areas of the community except for the State-operated airport and the Naval Arctic Research Laboratory since it was incorporated in 1959. The local firefighting force is made up of 2 partially salaried employees (the fire chief and his assistant) and 22 volunteers.

The fire station is located on Kiogak Street across from the old Post Office. The building was constructed in 1975 with a U.S. Economic Development Administration (EDA) grant of \$235,000 and \$50,000 in local matching funds. In addition to firefighting personnel, the station houses the department's rolling stock which includes a 3,785 liter (1,000 gallon) pumper truck, a tracked vehicle with the same tank capacity and a fully equipped ambulance. A second firehouse will be built by the City in **Browerville** in 1978. Funded with a \$695,000 EDA grant, the new structure will house a new fire truck while the second story will be used for municipal offices.

The fire department purchases water from Barrow Utilities or from a private distributor during the winter months but during the summer it uses local lakes as its water source. The community has an Insurance Services class rating of 8 for residential buildings and one of 9 for commercial structures. This poor rating is due in large part to the lack of a public water system although the deteriorated condition of many of Barrow's structures, the fact that the department is volunteer

(i.e. no full-time coverage) and other considerations are also contributing factors. Two of the largest commercial buildings in town (the Borough building and **Stuaqpak**) have sprinkler systems but they are not hooked up to a water source.

Despite the fact that its fire department is well organized and firefighting equipment is adequate, Barrow remains vulnerable if a serious fire got started during a period of high winds. Most of the main part of town is very densely developed and substandard wood frame structures predominate. Under "favorable" wind conditions, a major conflagration could develop if it were not quickly controlled.

HEALTH AND SOCIAL SERVICES

Basic health care services in Barrow are provided by the U.S. Public Health Service which has a hospital in the community. In addition, the Alaska Department of **Health** and Social Services operates the Barrow **Health** Center, while the North Slope Borough health department is in the process of developing its own health program in the community to supplement services provided by other agencies.

Hospital

The Barrow Public Health Service hospital is a regional facility which serves an area of 217,560 square kilometers (84,000 square miles), the entire North Slope Borough except for the villages of Point Hope and

Anaktuvuk Pass. The hospital was constructed in 1965 and is presently the newest Public Health Service facility in the State. It has 14 general hospital beds plus 5 bassinets and is a general medical/surgical facility which is accredited by the Joint Commission on Accreditation of Hospitals. Public Health Service hospitals in Alaska normally serve only Alaska Natives (and foreign seamen). However, as Barrow has no other health facilities, emergency medical services are also made available to whites on a fee basis.

Aside from patient beds, the hospital includes a combined surgery/delivery room, an emergency room, an outpatient clinic, a laboratory and X-ray department and a pharmacy. Emergency transportation service to and from the hospital is provided by the City of Barrow ambulance and trained emergency medical treatment (EMT) personnel associated with the volunteer fire department. A hospital vehicle is used mostly for non-emergency transport of patients.

The hospital's professional staff includes 3 doctors, a dentist, 8 registered nurses, 6 to 8 nurses' aides, a social worker, a pharmacist, an X-ray technician, a laboratory technician, 2 medical records personnel and the hospital superintendent. Another 21 persons perform kitchen, laundry, janitorial, maintenance, supply and clerical functions. Besides resident medical personnel, the Public Health Service periodically brings in specialists from Anchorage and Fairbanks for clinics in Barrow and a dietitian visits the hospital for three days

each quarter. In addition, the North Slope Borough has an interpreter and a dental assistant stationed in the hospital.

According to Public Health Service statistics, a total of 1,520 inpatient days were logged at the hospital during FY 1976, with the average length of stay for patients being 3.9 days. During the same year, the outpatient clinic received 23,393 visits, an extraordinarily high number of visits for a town of 2,700 people (plus some visits by people from other communities in the region). Mental health patients are not kept in Barrow but are instead sent to Anchorage.

The hospital nursing supervisor was asked about the major health problems in Barrow. She stated that the health level of Eskimos in the region had risen dramatically during the past ten to fifteen years and that considering the lack of public water and sewer systems, local residents maintained a fairly good level of hygiene. Tuberculosis, once the scourge of Alaska Natives, is no longer a major health problem. Today, alcohol abuse is considered the community's #1 health problem. Other problem areas include upper respiratory infections such as pneumonia and bronchitis, otitis media, skin diseases such as impetigo, gastro-enteritis (much of it alcohol-related or derived from poor sanitary conditions), strep throat/colds and accidents (most of them alcohol-related). Venereal disease and mental health are also considered to be problem areas.

Barrow Health Center

The Barrow Health Center is located in a building on the grounds of the Public Health Service hospital and is operated by the Alaska Department of Health and Social Services. This facility is normally staffed by two State public health nurses and a Borough community health aide and is charged with providing a range of public health care services not **only** to Barrow but also to villages in the North Slope region. These services generally come under the heading of disease prevention and health promotion and include health education, screening clinics for women (pap smears and venereal disease) and children, communicable disease control and follow-up, immunizations, family planning and maternity care education, well baby clinics and a number of other programs.

North Slope Borough Health Program

The North Slope Borough operates health clinics in all villages of the region except Barrow (although a new clinic at Point Hope is being funded with an EDA grant directly to the City). However, the Borough is also engaged in programs designed to supplement the health care provided by the Public Health Service and in providing health-related services which are needed but which are not locally available.

Except for its system of health clinics, the Borough health program is still in its formative stages. The Borough health department has given

top priority to upgrading the level of mental health, dental, optometric and alcoholic detoxification and rehabilitation care available to North Slope residents. Toward this end, it was interviewing applicants for the positions of a psychologist and a paraprofessional assistant in early 1978. In addition, it is acquiring the services of a second dentist in Barrow. This person will operate out of the Public Health Service hospital but his salary will be paid by the National Health Service Corps with the Borough supplementing the cost of his and an assistant's travel to smaller communities of the region. Other scheduled improvements include the establishment of an alcoholic detoxification and rehabilitation program at the Barrow hospital, while the Borough presently has a person undertaking optometric training in Anchorage who will provide this service in Barrow in early 1978.

The old Barrow post office building has been acquired by the Borough and will be remodeled to accommodate health administration and social services offices plus a senior citizens' center. The psychologist and his assistant and the newly trained optometrist will operate out of this building, as will members of the Borough health department staff.

EDUCATION

Education services in Barrow are provided by the North Slope Borough School District. The School District is responsible both for hiring teachers and also for maintaining the school plant, while the Borough is responsible for the construction of new school facilities, as required.

At the present time, all schoolchildren in Barrow are housed in one complex centrally located in the community on Okpik and Momegama Streets. The main school building was constructed by the Bureau of Indian Affairs in 1965 and nine temporary classrooms have been used by the school since January 1976. Vocational education and vocational education technology classrooms were added in 1975 and 1976.

Included within the Barrow school plant are 22 elementary (early childhood education through the 6th grade) classrooms and 15 high school (7th through the 12th grade) classrooms. In addition, there is a gymnasium, a multi-purpose room/lunchroom, a kitchen, an instructional materials center, two nurses stations, a TV studio, 10 offices, 9 storage rooms and 5 mechanical rooms. The school site covers an area of about 5 hectares (12.36 acres). Approximately 75 percent of this is covered by school buildings with the remainder being devoted to playground facilities and maintenance shops.

In addition to regular academic courses, the Barrow school offers its students a number of special programs. Title I federal funds provide individualized instruction in mathematics, reading and language. Special education in language, speech, mathematics and reading is available to primary and intermediate students, while improved skills in English communication are taught through music and language classes. Summer school is provided for junior and senior high school students. A day care center developed in cooperation with the high school work-study program provides after-school child care for working mothers

between 2:30 p.m. and 6:00 p.m., and a drop-in center provides crisis care for children who find their homes temporarily unsafe or unhealthy. The instructional materials center offers a recreation program before and after school which includes story telling, songs, movies and other similar activities. Finally, during non-school hours the school multi-purpose room and gymnasium are open for community league basketball, public meetings and such special events as the Arctic Winter Games and the Eskimo Olympics.

The Barrow school is one of the largest employers in town. The professional staff includes 54 teachers (25 elementary and 29 high school), 6 administrators, a nurse, and 9 secretaries. In addition, there are 33 aides, including people with special skills in traditional crafts as well as general classroom assistants. The kitchen has a staff of 13 and there are 18 maintenance personnel. Janitorial and transportation services are contracted.

The school complex is in fair condition with an estimated remaining useful life of 12 years for the main complex. Major problems include plumbing and inadequate space, but both of these should be relieved with planned renovations to the school plant and the construction of a new high school and vocational education facility in 1979.

As presently planned, the new school complex will be designed to accommodate general community as well as student needs and will contain 16 general classrooms, a learning resource center, 2 science laboratories,

2 business education rooms and a home science room. The new facility is also planned to house a trades and industries area, including constructions (i.e. woodwork), power mechanics, welding/metal, drafting and career work study rooms; a physical education area, including a gymnasium, swimming area and indoor ice activities; a fine arts area, including an art room, a band/chorus room and TV production studio; and auxiliary spaces such as an auditorium, administrative offices and food services. All told, the floor area of the new school facility is tentatively planned to occupy approximately 9,290 square meters (100,000 square feet) and is currently estimated to cost between \$24 and \$25 million. However, it is highly likely that the facility will be scaled down before it is actually built.

Final enrollment in the Barrow school system in 1976-77 was 618 students, a decline of 11.3 percent from the peak year of 1970-71 which saw a final enrollment of 697. (However, 1970-71 figures included 51 "beginners", an equivalent of the early childhood classes now offered by the Borough but which are not counted in State statistics). All of the decline has taken place in the elementary school where, excluding "beginner" classes, final enrollment dropped from 616 in 1970-71 to 498 in 1976-77, a decrease of **19.2** percent. A complete high school program was not offered in Barrow until 1975-76. However, final enrollment in the 9th grade has remained fairly constant during the past ten years.

Declining school enrollments have been experienced in many school districts around the State in recent years as a result of a declining

TABLE 31

ENROLLMENT TRENDS
FINAL ENROLLMENT, BARROW, ALASKA
1959-60 - 1976-77

| Year | Grades K - 8 | | Grades 9 - 12 | | Total |
|-------------------|---------------|------------|---------------|------------|---------------|
| | Number | % of Total | Number | % of Total | |
| 1959-60 | 356 | 100.0 | | | 356 |
| 1960-61 | 380 | 100.0 | | | 380 |
| 1961-62 | 340 | 100.0 | | | 340 |
| 1962-63 | 458 | 100.0 | | | 458 |
| 1963-64 | | | | | 469 <u>a/</u> |
| 1964-65 | | | | | 465 <u>a/</u> |
| 1965-66 | 526 | 100.0 | | | 526 |
| 1966-67 | 493 | 88.8 | 62 <u>b/</u> | 11.2 | 555 |
| 1967-68 | 517 | 92.0 | 45 <u>b/</u> | 8.0 | 562 |
| 1968-69 | 459 | 93.3 | 33 <u>b/</u> | 6.7 | 492 |
| 1969-70 | 650 <u>c/</u> | 93.9 | 42 <u>b/</u> | 6.1 | 692 |
| 1970-71 | 667 <u>c/</u> | 95.7 | 30 <u>b/</u> | 4.3 | 697 |
| 1971-72 | 615 <u>c/</u> | 88.5 | 43 <u>b/</u> | 6.2 | 695 <u>d/</u> |
| 1972-73 | 613 <u>c/</u> | 89.9 | 30 <u>b/</u> | 4.4 | 682 <u>d/</u> |
| 1973-74 | 544 | 92.4 | 45 <u>b/</u> | 7.6 | 589 |
| 1974-75 <u>e/</u> | | | | | |
| 1975-76 | 504 | 82.5 | 107 | 17.5 | 611 |
| 1976-77 | 498 | 80.6 | 120 | 19.4 | 618 |

a/ No breakdown by grade available.

b/ High school classes 1966-67 through 1973-74 limited to the 9th grade.

c/ Elementary school enrollment includes early childhood classes.

d/ Total enrollment includes special education (ungraded) students.

e/ No enrollment data available for 1974-75.

Source: Alaska Department of Education.

birth rate, an occurrence that is being felt nationwide. At the time of the 1970 Census, the largest age group in Barrow was children between 5 and 9 years old. Most of these children are now in high school and their place in the elementary grades has been taken by a numerically smaller group.

Another factor in the decline in elementary enrollments in Barrow is believed to be the out-migration of young adults from the community to re-settle the traditional villages of Atkasook, Point Lay and Nuiqsut. The combined final enrollment for elementary students at Point Lay and Nuiqsut in 1976-77 was 80 students, almost all of whom would otherwise have been attending school in Barrow. While Barrow's population is believed to have grown since 1970, despite this planned out-migration of Eskimos, the group which has replaced them contains a high proportion of whites who have no or very few dependents. (The Barrow school system reported only 53 white students in 1977-78, 42 of them in the elementary grades). Future trends in school enrollment in Barrow are thus likely to be influenced not only by Native birth rates but also to the extent of in-migration to this community by whites from outside the region.

RECREATION

Recreation facilities and programs in Barrow have been documented in the Socioeconomic Studies Program Technical Report Number 5, entitled "Baseline Studies of the Physical and Manmade Environment: The Beaufort Sea Region - Interim Report".

Local Government Organization

The City of Barrow was incorporated June 8, 1959 and became a first class city on April 30, 1974. Barrow has adopted the council-manager form of government. The council consists of six councilmen and a mayor elected at large. Councilmen serve for three-year terms and the mayor serves for two years. The city manager, who is hired by the council and serves at its pleasure, directs the day-to-day operations of the City with policy direction from the mayor and the council.

As a first class city within an organized borough, Barrow may exercise all municipal powers except those of assessment and collection of taxes, education, and planning and zoning which are mandatory areawide borough powers under Alaska law. Although first class cities within organized boroughs can normally exercise a wide variety of municipal powers, Barrow has transferred almost all of its powers to the North Slope Borough. When an areawide governmental power is assumed by a borough, the cities within the borough may not exercise such authority. In addition to the three basic powers mentioned previously, the following municipal powers were transferred to the Borough as the result of an areawide election held April 30, 1974:

- sewer and sewage treatment facilities
- watercourse and flood control facilities
- o health services and hospital facilities
- telephone systems
- light, power and heat

- water
- transportation systems, including airport and aviation systems and streets and sidewalks
- libraries
- garbage and solid waste collection and disposal services and facilities
- housing and urban renewal, rehabilitation and development
- preservation, maintenance and protection of historic sites, buildings, and monuments

The police power was transferred to the Borough in an election held July 1, 1976.

The two municipal powers retained and exercised by the City of Barrow are recreation and fire protection. Specific services provided by the City in these areas are described in a previous section of this report. To pay for these services, a first class city within an organized borough may levy a property tax not to exceed 30 mills for operating and maintenance purposes and a sales and use tax of not more than 3 percent if it is approved by referendum. If this taxing authority were exercised by the City of Barrow, it would be administered by the Borough and revenues would then be remitted to the City.

Although it has the power to do so, Barrow does not levy a property tax. It does, however, levy a 3 percent sales tax. In 1976-77 the sales tax brought \$183,958 in revenue to the City of Barrow; estimated revenues from the tax for 1977-78 are \$100,000. The expected decrease in

revenue is attributed to the closing of the City-owned liquor store as of January 1, 1978 because City residents voted to become "dry." Other anticipated sources of revenue for Barrow during FY 1977-78 are profits from the liquor store (\$200,000), State revenue sharing (\$35,000), refunds from business licenses (\$20,000), rents and leases (\$20,000), sale of City property (\$75,000) and a Bureau of Indian Affairs (BIA) social services contract (\$16,270) for total estimated municipal revenues of \$466,420.

IV. CITY OF KAKTOVIK

Population and Economy

POPULATION

Past Trends

The village of Kaktovik began as the historic settlement of Eḷupak, a traditional taremiut village which served as a trading center for nomadic Eskimos in this general area. Barter Island, on which the present day village of Kaktovik is located, is a translation of the Inupiat word for "place of barter", the name applied to the place by local inhabitants. The establishment of Kaktovik as a permanent community dates back to 1923 when a trading post was established there. From that time until the establishment of a DEW Line station at Barter Island, villagers by and large maintained a subsistence lifestyle.

During the late 1940's, the construction of the DEW Line system was determined to be an essential part of the United States "cold war" defense posture. This decision had a major impact on Kaktovik as the community was subsequently moved three times to accommodate the needs of the Bar-Main DEW Line station. However, on the positive side, the Bar-Main DEW Line station has also afforded local residents some opportunity for employment, while its airstrip is now available for general community use.

TABLE 32

POPULATION TRENDS
KAKTOVIK, ALASKA
1939 - 1977

| <u>Year</u> | <u>Population</u> | <u>Percent Change</u> |
|-------------|-------------------|-----------------------|
| 1939 | 13 | |
| 1950 | 46 | 253.8 |
| 1960 | 120 | 160.9 |
| 1970 | 123 | 2.5 |
| 1977 | 134 | 8.9 |

Sources: U. S. Census.
North Slope Borough.

The village was first moved in 1952 to allow construction of an airstrip and hangar facilities, while a second move took place in 1953 because of changes in the layout of the DEW Line station. Despite these moves, the arrival of the federal government and the possibility of employment for wages served to attract population to the village. Between 1950 and 1960, Kaktovik's population rose from 46 to 120, an increase of about 160 percent.

Kaktovik was moved for a third time in 1964, again to accommodate the increased space needs of the DEW Line station. However, the community's population has remained quite stable since 1960. The 1970 Census counted 123 Kaktovik residents. According to the most recent North Slope Borough estimate (July 1977), the village now has a population of 134, a 9 percent increase over the 1970 figure. In the

opinion of Dupere and Associates (1974), the stability of Kaktovik's population is the result of substantial outmigration, primarily to Barrow.

Population Composition

The 1970 Census indicates three outstanding features of Kaktovik's population. It is primarily Eskimo, young and heavily dominated by males. In 1970, 87 percent of the village's population was Eskimo; the remainder included 1 Indian and 15 whites. However, although Eskimos were clearly the dominant racial group, Kaktovik's 1970 population included a higher proportion of whites than that recorded for any other community in the region.

In 1970, 28.9 percent of the population in Kaktovik was under 10 years of age. This was less extreme than the 1970 Boroughwide norm of 34.1 percent under 10. However, it was significantly higher than the national and State figures of 19 and 22.8 percent respectively. In 1970 the median age of Kaktovik males was 16.3 and that of females was 22.0. Although this is not atypical of rural Alaska (in the Barrow Census Division, the male median was 19.6 and the female median was 16.4), it is younger than normal for the State and much younger than national averages. In 1970, the median age of males in the State was 22.3 and in the nation as a whole it was 27.0. For females, the State median age was 22.9 and for the country, 29.6.

TABLE 33

COMPOSITION OF POPULATION BY RACE AND SEX
KAKTOVIK, ALASKA, 1970

| <u>Race</u> | <u>Sex</u> | | | <u>Percent of Total</u> |
|--------------|------------|-----------|-------|-------------------------|
| | Male | Female | Total | % |
| White | 10 | 5 | 15 | 12.2 |
| Indian | 0 | 1 | 1 | .8 |
| Eskimo | 63 | 44 | 107 | 87.0 |
| <u>TOTAL</u> | <u>73</u> | <u>50</u> | 123 | <u>100.0</u> |

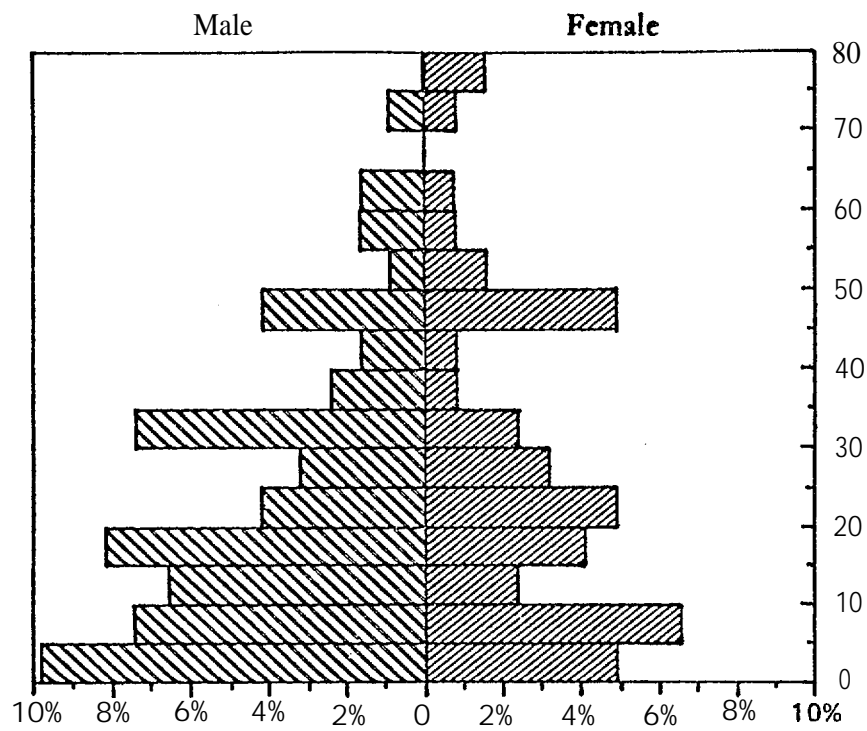
Source: U. S. Census.

TABLE 34

HOUSEHOLD DENSITIES
KAKTOVIK, ALASKA, 1970

| <u>Persons Per Household</u> | <u>Total Housing Units</u> | <u>Percent Total Population</u> | <u>Percent Total Housing Units</u> |
|------------------------------|----------------------------|---------------------------------|------------------------------------|
| | | % | % |
| 1 person | 2 | 2 | 8 |
| 2 persons | 5 | 8 | 19 |
| 3 persons | 4 | 10 | 15 |
| 4 persons | 1 | 3 | 4 |
| 5 persons | 7 | 28 | 27 |
| 6 persons | 7 | 5 | 4 |
| 7 persons | 3 | 17 | 12 |
| 8 persons or more | 3 | 27 | 12 |
| <u>TOTAL</u> | <u>26</u> | 100 | <u>100</u> |

Source: U. S. Census.



KAKTOVIK

COMPOSITION OF POPULATION

1970

FIGURE 4

Males outnumbered females 59 to 41 percent in Kaktovik in 1970. This is significantly more disproportionate than the 1970 State male to female ratio of 54 to 46 percent and quite at odds with the 1970 U.S. ratio of 49 percent males to 51 percent females.

Household densities in Kaktovik are relatively high. The average number of people per household in 1970 was 4.7. While this is **lower** than the average recorded for the Barrow Census Division in 1970 (5.3), it is well above the 1970 Statewide average figure of 3.5.

Growth Prospects

At the present time, Kaktovik has a very limited economic base. The community exists not because of the presence of some economic activity and attendant employment opportunities but primarily because it was a convenient location from which to provide services to people who had traditionally lived in the area. It has survived **mainly** because of family and cultural ties. Although these will be the major reason for Kaktovik's continued survival, opportunities for employment and cash income are seen as the primary factors determining future rates of growth in the community. With few new prospects for employment and a reasonable level of income, many young people will continue to leave Kaktovik, and the community's population could actually decline in the longer term. However, if prospects for local employment and income improve, more young people are likely to remain and the community can expect steady rates of population increase.

It is assumed that no significant in-migration of population into Kaktovik will take place. Thus, future rates of population growth in the community will depend almost entirely on rates of natural increase and rates of outmigration. If the North Slope Borough continues to expand the range of services provided here, resulting small but significant increases in employment should ensure some continued community growth. Additional jobs for local residents may also be afforded by the Kaktovik Inupiat Corporation and the Bar-Main DEW Line station although the latter's long term presence in the area is occasionally rumored to be uncertain. Other options for employment open to Kaktovik residents include working in the Prudhoe Bay area and returning to the village during leave periods. However, persons desiring entry into professional and technical occupations will continue to leave the community.

ECONOMY

Composition of Employment

A study of employment in Kaktovik was undertaken by Alaska Consultants, Inc. in December 1977 because there are no meaningful employment statistics collected by the Employment Security Division of the Alaska Department of Labor which can be disclosed for communities of Kaktovik's small size. When converted to average annual full-time employment, a total of 35.5 jobs was counted in Kaktovik in December 1977. Roughly 52 percent were in government occupations, most of them associated with the

TABLE 35

AVERAGE ANNUAL FULL-TIME EMPLOYMENT
KAKTOVIK, ALASKA
1977

| <u>Industry Classification</u> | <u>Number</u> | <u>Percent of Total</u> % |
|--|---------------|------------------------------|
| Mining | 0 | --- |
| Contract Construction | 3.0 | 8.5 |
| Manufacturing | 0 | --- |
| Transportation, Communications and Public Utilities <u>a/</u> | 6.5 | 18.3 |
| Trade | 1.0 | 2.8 |
| Finance, Insurance and Real Estate | 3.0 | 8.5 |
| Service | 0 | --- |
| Government | 22.0 | 62.0 |
| Federal | (1.5) | (4.2) |
| State | (0) | (---) |
| Local | (20.5) | (57.7) |
| <u>TOTAL</u> | <u>35.5</u> | <u>100.0</u> |

a_/ Four local residents employed at the Barter Island DEW Line station included in the Transportation, Communications and Public Utilities sector. The remaining personnel at this facility are not included in local employment data.

Source: Alaska Consultants, Inc.

Kaktovik school. The school is the largest single employer in town, accounting for an equivalent of 10.5 full-time jobs. However, about half of the jobs connected with the school were held by whites.

Aside from the school, there were an additional 11.5 government jobs in Kaktovik in 1977. These were divided between the federal government (Post Office and Fish and Wildlife Service) and local government (city hall, the local IñĀ [Indian Reorganization Act] council and the North Slope Borough) sectors. There are no State government employees in Kaktovik.

After government, most jobs in Kaktovik are in transportation, communications and public utilities. This sector had 3 employees and 18.3 percent of all the jobs in the village in 1977. The largest **single** employer was the Bar-Main DEW Line station (4 jobs); the remaining 2.5 jobs in this sector were associated with a locally based air taxi service and Mien Air Alaska. Finance, insurance and real estate accounted for 3 jobs, all of them with the Kaktovik Inupiat Corporation. The trade sector accounted for 1 job in 1977 derived from the operation of the village corporation store.

There were 13 additional full-time jobs associated with temporary State and North Slope Borough construction projects in December 1977. Three residents were employed on the school construction project funded by the State, 2 were employed by the Anchorage Electric Company on the North Slope Borough power plant project and 2 were employed by General Services

Electric on the Borough electrification project. Blackstock Homes had another 6 employees working on the Borough housing project.

Unemployment and Seasonality of Employment

No unemployment statistics are available for individual communities within the North Slope Borough. Statistics collected by the Employment Security Division of the Alaska Department of Labor are collected on a Boroughwide basis and can be misleading when applied to individual communities. For example, the Barrow-North Slope labor division had an unemployment rate of 3.7 percent in 1976, the lowest of any area in the State and well below the Statewide average of 8.2 percent. This unemployment rate may be reasonably accurate for the region as a whole but it is not representative of all areas of the Borough. In July 1976, 71.1 percent of the Borough's residents lived outside the region's traditional villages, mainly in the Prudhoe Bay/Deadhorse area and in Pipeline camps. All of these 'people were employed since housing is provided only for workers. One can assume that unemployment rates within some of the traditional villages are therefore much higher.

Unemployment is not currently viewed as being a problem in Kaktovik although there is undoubtedly a good deal of under-employment. In an interview with Alaska Consultants in December 1977, the Mayor of Kaktovik stated that no one in the community was on welfare and that there was only one household which required "some help from time to time." Unemployment has been a problem in the past, however, and could

very well be again in the future if jobs do not materialize to replace those currently represented by North Slope Borough and State temporary construction projects.

Seasonal variations in employment in Kaktovik result from the closure of the local school during the summer months and from summer construction activities. School teachers normally leave the region during the long summer vacation and other positions associated with the school except for maintenance jobs also cease temporarily. The number of construction jobs available fluctuates from year to year depending on the projects scheduled, but most construction activity takes place during the summer because of the region's harsh winter climate. The temporary loss of jobs associated with the school and the addition of those associated with construction offset each other to some extent. Thus, while seasonal variations in employment do occur in Kaktovik, they do not appear to be severe.

Recent Trends and Changes

The composition of employment in Kaktovik has undergone a fundamental change in the past several years. Two main events appear to have caused this: the passage of the Alaska Native **C**laims Settlement Act in 1971 and the formation of the North Slope Borough as an areawide unit of **l**ocal government in 1972. Limited data make it difficult to measure trends caused by these events but, within this limitation, some trends and changes have been noted.

Employment has increased significantly in Kaktovik in the past five years. In 1974, the U.S. Department of the Interior noted in its Alaska Natural Gas Transportation System EIS that there was a total of only 19 jobs in Kaktovik. In 1977, Alaska Consultants counted 35.5 average annual full-time jobs in the village, an 87 percent increase although Kaktovik's population remained constant during this period. The DEW Line station was the village's largest single employer in 1974, accounting for roughly two-thirds of the total wage and salary employment (13 out of 19 jobs). In 1977, the DEW Line station accounted for only 4 jobs in Kaktovik or 8 percent of the total employment.

There were only 4 jobs in the government sector in Kaktovik in 1974 and only 1 of these was in local government. By contrast, the government sector represented 62 percent of total employment in the community in 1977. Furthermore, of the 22 jobs in this sector, 20.5 were in local government. The largest employer in the community is now the North Slope Borough. There were no jobs in either the contract construction or finance, insurance and real estate sectors in 1974. In 1977, because of North Slope Borough and village corporation activity, these sectors accounted for an annual average full-time equivalent of 6 jobs or 16.8 percent of the total employment in the community.

Aside from new jobs within the village of Kaktovik, additional employment opportunities have also been available outside town during the past few years as a result of the development of the Prudhoe Bay field and the construction of the Trans Alaska Pipeline. Although the

Pipeline is now operational, construction of the proposed natural gas pipeline is likely to offer similar employment opportunities in the near future.

Occupational Skills

Comprehensive information on the skills of the **workforce** in the North Slope region is generally lacking and there are no reliable or current statistics on an individual community basis. Some general idea of the occupational skills of Kaktovik residents can be inferred, however, from Barrow Manpower Center statistics if one assumes that workforce skills are relatively consistent Boroughwide. The occupational skills of Barrow Manpower Center registrants are listed on page 139 of this report.

Income Levels

There are no figures available on income levels in Kaktovik prior to 1973 but, since that time, incomes appear to have been static or to have decreased slightly. A 1974 survey of 20 Kaktovik families by Dupere and Associates found the village's median 1973 family income to be \$16,500, well above that of the other permanent North Slope Borough communities. However, when household income and family size are matched against U.S. Department of Agriculture poverty level income standards for eligibility in the federal school lunch program, at least 20 percent of Kaktovik's households were at or below the officially determined poverty level at

TABLE 36

FAMILY INCOME DISTRIBUTION
KAKTOVIK, ALASKA
1973

| <u>Family Income</u> | <u>Number of Families</u> | <u>Percent of Total</u> % |
|----------------------|---------------------------|------------------------------|
| Under \$1,000 | 0 | --- |
| \$ 1,000-\$4,999 | 4 | 20.0 |
| \$ 5,000- \$10,999 | 3 | 15.0 |
| \$11,000- \$15,999 | 3 | 15.0 |
| \$16,000- \$20,999 | 4 | 20.0 |
| \$21,000- \$24,999 | 6 | 30.0 |
| \$25,000 or more | 0 | --- |
| <u>TOTAL</u> | <u>20</u> | <u>100.0</u> |

Source: Dupere and Associates.

TABLE 37

GENERAL ASSISTANCE PAYMENTS a/
KAKTOVIK, ALASKA
FY 1973 - FY 1976

| | <u>FY 1973</u> | <u>FY 1974</u> | <u>FY 1975</u> | <u>FY 1976</u> |
|------------------|----------------|----------------|----------------|----------------|
| Total Payment | \$16,100 | \$14,700 | \$9,200 | \$200 |
| Number of Cases | 11 | 19 | 13 | <u>b/</u> |
| Average Payment: | | | | |
| Annual | \$1,464 | \$ 774 | \$ 707 | <u>b/</u> |
| Monthly | \$ 122 | \$ 64 | \$ 59 | <u>b/</u> |

a/ Payments made by the Bureau of Indian Affairs.

b/ No information available.

Source: U.S. Bureau of Indian Affairs.

that time, In 1973, the U.S. Department of Agriculture considered \$7,340 or less to be a poverty level income for a family of five and \$6,390 or less to be a poverty level income for a family of four. Using Dupere's figure of an average of 4.9 persons per household in Kaktovik, a minimum of four families earning less than \$5,000 in 1973 thus fell into the poverty category. All told, out of 20 families surveyed, 35 percent had incomes below \$11,000 and 35 percent had incomes of between \$11,000 and \$20,999. Six families, or 30 percent, had incomes between \$21,000 and \$24,999.

A March 1976 survey conducted by the North Slope Borough School District found that the median family income in Kaktovik had dropped slightly to \$15,289 although it remained second only to Barrow among the region's villages. Using the same data sources, all other Borough communities experienced significant income growth during the period from 1973 to 1976. In 1977, the Mayor of Kaktovik estimated the average annual household income in the community to be approximately \$15,000, about the same as that found by the School District in 1976.

Public assistance or welfare programs provide an income supplement for some Kaktovik residents. No 1976 data were available for Kaktovik but, in 1975, two village residents received an average monthly payment of **\$132 in Old Age Assistance** from the Alaska Department of Health and Social Services. No residents were eligible for other State public assistance programs. General assistance payments by the U.S. Bureau of Indian Affairs (61A) have decreased radically since 1973. In that year,

the BIA paid out a total of \$16,100 to 11 "cases", an average monthly payment of \$122. In its fiscal year 1976, the BIA distributed only \$200 in general assistance to Kaktovik residents. No data are available on the number of recipients.

Despite Kaktovik's relatively high income levels and lack of unemployment, subsistence activities continue to play an important role in the culture and economy of the village. There are no current figures available on the village's subsistence activities but a 1974 study by Dupere and Associates found that a majority of Kaktovik residents' annual food supply came from subsistence hunting and fishing. This study estimated that employed residents had a 30 percent dependency on subsistence and unemployed residents significantly more than that, from 40 to 80 percent. Not only are subsistence activities an important part of the culture and social organization of Kaktovik but, because food obtained this way does not require a direct cash outlay, it serves to some extent as a substitute for earned income.

It is difficult to assign **dollar** values to products obtained from subsistence activities since their pursuit has other than economic values. However, some cost comparisons can be made with subsistence products and comparable items in the market place. The Alaska Planning Group estimated in 1974 in its final environmental impact statement for the proposed Arctic National Wildlife Refuge (U.S. Department of the Interior, June 1975) that if subsistence resources were valued in terms of Anchorage prices for substitutable items, the annual per capita gross

value of subsistence items in Kaktovik **would** be about \$475. The sale of pelts from trapping would provide an additional \$35 per capita. This is based on a total estimated average annual subsistence harvest value for Kaktovik of \$64,129.

It should be emphasized that subsistence has very strong social and cultural as well as economic implications in Kaktovik. However, from a strictly economic standpoint, it is apparent that given the extremely high cost of living in Kaktovik and the limited cash incomes of some of the village's residents, subsistence activities are an essential element in the local economy.

While median family incomes appear to be remaining fairly static in Kaktovik, costs are increasing. In 1974, **Dupere** and Associates found the median monthly fuel bill in Kaktovik to be \$110.37. **In** December 1977, Alaska Consultants found that Kaktovik households averaged \$180.00 a month in fuel expenses, an increase of 63 percent. Monthly costs for electricity have also risen, from \$40 to \$50 per month. Furthermore, the purchasing power of the Kaktovik dollar is significantly lower than that of virtually all other communities in the State. **In** December 1977, prices for fuel oil in Kaktovik were 36 percent above those in Anchorage. **Food** prices in Kaktovik and Anchorage showed an even greater disparity. **A** review of 11 market basket items by Alaska Consultants in December 1977 indicated that prices in Kaktovik averaged 70 percent above those in Anchorage. At that time, the Mayor of Kaktovik estimated that the average household in the community had an annual income of

about \$15,000, whereas the average household income in Anchorage in 1976 was reported **by** the Alaska Department of Administration to be \$25,053.

Community Facilities and Services

PUBLIC SAFETY

Police

The North Slope Borough is responsible for providing police protection services in Kaktovik but has no officer stationed permanently in the community. In fact, no policeman has been based in the village since 1974 when protection was provided as needed by unpaid local volunteers. Today, Borough officers fly in from Barrow or State troopers are brought in from Deadhorse or Fairbanks, as required.

There were no jail facilities in Kaktovik in December 1977 but the North Slope Borough plans to construct a simple 8.53 by 13.41 meter (28 by 44 foot) modular public safety building for this purpose in 1978. Funded with State and federal money, the anticipated cost of the new facility is in the order of \$82,000. Following completion of the public safety building, the North Slope Borough plans to base a full-time policeman in Kaktovik.

Fire Protection

Fire protection is one of two municipal powers retained by the City of Kaktovik. Although services currently available are limited, they are nevertheless superior to those offered by any other community in the region except Barrow. The village has an organized 30 to 35 man volunteer fire department but no **firefighting** equipment. However, a fire truck and personnel based at the nearby DEW Line station are available in emergencies. Within the village, water for **firefighting** is presently obtained from the school's tank and those of several private homes.

Fire has **long** been a hazard in Kaktovik and there have been several serious fires in the past decade. In December 1975, three houses and a church burned to the ground while two children lost their lives in a house fire in 1971.

The City of Kaktovik is engaged in an active fire protection improvement program. The City is purchasing 9.07 kilogram (20 lb) portable extinguishers to be installed in each household in town without adequate equipment, and proceeds from the Recreation Committee will be used to purchase smoke detectors for each home. In addition, three fire sirens will be placed at strategic locations around town. Local fire protection capabilities will be further upgraded in 1978 when a new 2,271,000 liter (600,000 gallon) community water storage tank is completed and when an emergency firefighting water supply in the form of the school swimming pool comes on line.

HEALTH AND SOCIAL SERVICES

Kaktovik's population is not sufficiently large to warrant construction of a hospital but the community does have a fairly good range of health care services for a town of this size. The Kaktovik health clinic has a staff of one primary health aide and an alternate, with one aide being on call at all times. In addition to locally based personnel, Public Health Service doctors and dentists and a State public health nurse periodically visit Kaktovik from Barrow. People requiring hospital care are flown to Barrow, Fairbanks or Anchorage. Seriously ill patients are sometimes also flown to **Inuvik**, Northwest Territories, Canada, a distance of approximately 322 kilometers (200 miles).

The Kaktovik health center is operated by the North Slope Borough in space leased by the U.S. Public Health Service. Located in a building constructed in 1920 (reputedly the first building on Barter Island), the facility is in poor condition and has an extremely inadequate heating system. It is divided internally into a waiting room, an examination room, a kitchen and a bathroom. Replacement of this facility is scheduled by the North Slope Borough within the next couple of years.

The North Slope Borough is currently developing a Boroughwide health service to supplement local services. Aside from the replacement of the existing clinic, this will not involve the establishment of additional facilities in Kaktovik but **it will** provide more visits to the community by medical and dental personnel. In addition, Kaktovik residents will

have access to planned Borough health facilities in Barrow as well as to services already provided by the U.S. Public Health Service in that community.

EDUCATION

Education services in Kaktovik are provided by the North Slope Borough School District. The School District is responsible both for hiring teachers and for maintaining the school plant, while the Borough is responsible for the construction of new school facilities, as required.

At the present time, all schoolchildren in Kaktovik are housed in two separate but connected buildings located in the central part of town. Kindergarten through sixth grade students are housed in a building constructed by the Bureau of Indian Affairs in 1964. A high school building completed by the North Slope Borough in 1977 contains grades 7 through 12.

The school site covers an area of **8,361** square meters (90,000 square feet). In addition to the two school buildings, the site also contains two teacher housing units, two storage buildings and the school maintenance shop. The remaining area accommodates a playground, including a basketball court, and the new 1,021.9 square meter (11,000 square foot) community center building scheduled for completion in August 1978. This building is located adjacent to the high school and will contain a three-quarter size gymnasium, a small swimming pool and a

TABLE 38

ENROLLMENT TRENDS
FINAL ENROLLMENT, KAKTOVIK, ALASKA a/
1964-65 - 1976-77

| <u>Year</u> | <u>Grades K - 8</u> | | <u>Grades 9 - 12</u> | | <u>Total</u> |
|-------------|---------------------|------------|----------------------|------------|--------------|
| | Number | % of Total | Number | % of Total | |
| 1964-65 | 35 | 100.0 | | | 35 |
| 1965-66 | 40 | 100.0 | | | 40 |
| 1966-67 | 39 | 100.0 | | | 39 |
| 1967-68 | 35 | 100.0 | | | 35 |
| 1968-69 | 35 | 100.0 | | | 35 |
| 1969-70 | 40 | 100.0 | | | 40 |
| 1970-71 | 41 | 100.0 | | | 41 |
| 1971-72 | 34 | 100.0 | | | 34 |
| 1972-73 | 44 <u>b/</u> | 100.0 | | | 44 |
| 1973-74 | 37 <u>b/</u> | 100.0 | | | 37 |
| 1974-75 | 18 <u>b/ c/</u> | 100.0 | | | 18 |
| 1975-76 | 35 <u>b/</u> | 87.5 | 5 <u>d/</u> | 12.5 | 40 |
| 1976-77 | 35 | 85.4 | 6 <u>d/</u> | 14.6 | 41 |

a/ School not operating prior to 1964-65.

b/ No kindergarten classes held 1972-73 to 1975-76 inclusive.

c/ No enrollment in kindergarten through the 2nd grade in 1974-75.

d/ Ninth grade classes taught only.

Source: Alaska Department of Education.

community library center plus offices, a kitchen and shower/locker room space. The existing library is limited to several shelves in a hallway in the high school.

Administratively, the Kaktovik school is divided on an elementary (kindergarten through the 6th grade) and high school (7th through the 12th grade) basis. The present school plant contains three classrooms plus a separate room for vocational education. According to the Kaktovik school principal, there were no major behavioral problems with students in 1977-78 but some students were achieving below their grade levels.

School facilities are also used after hours for school advisory council meetings, for both adult and youth craft clubs and for the community schools program. The school plant is reportedly in good condition but is too small. Completion of the community center building should help alleviate the space problem. However, the Borough is already considering a further addition to the Kaktovik school plant. Plans have not yet been finalized but two options are under study. The first involves the addition of a vocational education facility to the new State-constructed community center building. This addition would be about 185.8 square meters (2,000 square feet) in area and would include facilities for three vocational education programs - constructions (i.e. woodwork), metals/welding and power mechanics. The second option is more comprehensive. It calls for the addition of between 743.2 (8,000 square feet) and 836.1 (9,000 square feet) square meters of floor area

to the new community center building. The library now being added by the State would be converted to a science lab and space for a new library, 3 secondary school classrooms, a business education room, a home economics room and offices would be provided.

RECREATION

In addition to fire protection, the City of **Kaktovik** has retained the municipal power of recreation. There is no paid recreation staff but the city hall does include an approximately 92.9 square meter (1,000 square foot) area designated as the recreation center. The room contains a pool table and City-sponsored bingo games and movies are held here **weekly**. **The** City has also financed construction of a basketball court in the school yard.

The school provides Kaktovik's other major recreational facility. Classrooms are available for club meetings when school is not in session and the school playground is open at all times. When the new school building is opened in August 1978, Kaktovik's existing range of recreation facilities will be considerably expanded. The gymnasium, pool, showers, kitchen and library will function in coordination with the school program but will be open to the community at large during non-school hours.

Local Government Organization

Kaktovik was incorporated as a fourth class city in 1971 and was reclassified as a second class city in 1972. State law provides that second class cities shall have an elected seven member council which must meet at least once a month. A mayor elected by the council serves as the chief administrative officer.

As a second class city within an organized borough, Kaktovik may exercise **all** municipal powers except those of assessment and **collection** of taxes, **education**, and planning and zoning which are mandatory areawide borough powers. Although the City could in theory exercise a **wide** range of other municipal powers, it has transferred **nearly** all of them to the Borough. In addition to the three mandatory areawide borough powers, the following municipal powers were transferred to the Borough as the result of an election held April 30, 1974:

- sewer and sewage treatment facilities
- watercourse and flood control facilities
- health services and hospital facilities
- telephone systems
- light, power and heat
- water
- transportation systems, including airport and aviation systems and streets and sidewalks
- libraries
- garbage and solid waste collection and **disposal** services and facilities

- housing and urban renewal, rehabilitation and development
- preservation, maintenance and protection of historic sites, buildings and monuments

The police power was transferred to the Borough **in** an election held July 1, 1976.

The two municipal powers retained and exercised by the City of Kaktovik are recreation and fire protection. To pay for **these services, the City** may levy a sales and use tax upon all sources taxed by the Borough in the manner provided by the Borough. The property tax may not exceed 5 **mills** or one-half of one percent and it must be approved by referendum. The sales and use tax must also be approved by referendum and may not exceed 3 percent. If Kaktovik chose to exercise this authority, the tax would be assessed by the Borough and then remitted to the City.

Although it has the power to do so, the City of Kaktovik has not levied a sales tax since 1973 and has never levied a property tax. Funds for City services have been obtained from State revenue sharing (recreation) and from proceeds from City-sponsored bingo games and movies. State revenue sharing funds are available to local governments for fire protection but Kaktovik's application for these funds was disapproved in 1976 because the City failed to indicate that it had expended local funds for this purpose.

v. CITY OF WAINWRIGHT

Population and Economy

POPULATION

Past Trends

Wainwright became a permanent settlement in 1904 when a school house was constructed here but there were people living in the general area long before that time. The selection of the present townsite is believed to have been largely dictated by ice conditions when the school house building materials were landed. When completed, the presence of the school encouraged people from the area to settle here.

The village's early economic activity centered around reindeer. Concern by the Bureau of Education over dwindling Native food resources led to the introduction of reindeer herds at all schools and church missions in western and northwest Alaska. By 1918, Wainwright had three herds with a total of 2,300 reindeer. By 1924, this had increased to four herds with about 8,000 head of reindeer and by 1934, locally owned herds included 22,000 animals. Shortly afterward, however, a combination of overgrazing, changes from individual to corporate ownership of herds, and the introduction of open herding led to a dramatic decline in the number of reindeer. The animals mixed with migratory caribou herds and today there are no domesticated reindeer on the Arctic coast.

TABLE 39

POPULATION TRENDS
WAINWRIGHT, ALASKA
 1920 - 1977

| <u>Year</u> | <u>Populati on</u> | <u>Percent Change</u> |
|-------------|--------------------|-----------------------|
| 1920 | 99 | \ |
| 1929 | 197 | 99.0 |
| 1939 | 341 | 73.1 |
| 1950 | 227 | -33.4 |
| 1960 | 253 | 11.4 |
| 1970 | 315 | 24.5 |
| 1977 | 380 <u>a/</u> | 20.6 |

a/ April 1977 population count by Alaska Consultants, Inc.
 excludes children attending school outside **Wainwright**.

Sources: U.S. Census.
 Alaska Consultants, Inc.

Wainwright's population has grown steadily over **the** past fifty years except for a substantial decline in population between 1940 and 1950. In 1939, **Wainwright** and Barrow were approximately the same size but location decisions by government agencies subsequently established Barrow as the regional center for the North Slope and caused the rapid growth of that community to the detriment of other North Slope villages. Shortly after the end of World War II, the U.S. Navy sponsored a search for oil and gas in its Petroleum Reserve #4 and a large camp was established at Barrow. Other federal government agencies involved with geological and topographical surveying began major work programs in the

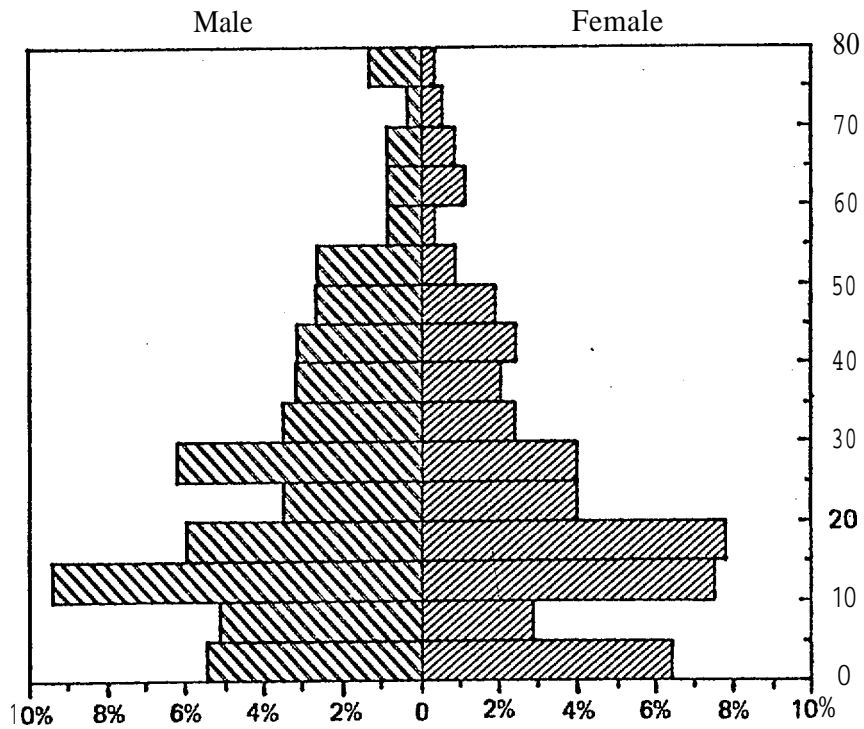
Barrow area at about the same time. These activities attracted people looking for wage paying jobs away from communities like Wainwright. Between 1939 and 1950, Wainwright lost about one-third of its total population, while Barrow's population increased by 162 percent during this same period.

Wainwright has grown steadily since 1950, mostly as a result of natural increase and a decline in rates of out-migration to other communities. Employment opportunities in Wainwright have risen since the passage of the Alaska Native Claims Settlement Act and the formation of the North Slope Borough and have encouraged more people to remain here. A local census conducted by Alaska Consultants, Inc. in April 1977 counted 380 people or, slightly over 20 percent more than the community's population at the time of the 1970 Census. Including children attending school outside Wainwright, the town's present population is closer to 400.

Population Composition

Wainwright is a predominantly Eskimo community. At the time of the April 1977 survey by Alaska Consultants, Inc., 93.4 percent of the people living in Wainwright were Eskimo. The remaining 25 people in town were white, most of them connected with the school.

Wainwright's 1977 population exhibits some peculiarly Alaskan age and sex characteristics to an exaggerated degree. However, in some respects it tends to be closer to national norms. Males outnumber females and a



WAINWRIGHT

COMPOSITION OF POPULATION
1977

FIGURE 5

much higher proportion of **Wainwright's** population is in the younger age groups than is the case nationally. On the other hand, the fact that **Wainwright's** population has been more stable and permanent than that of Alaska as a whole is reflected in a higher proportion of people in the older age groups.

Males outnumbered females 55 to 45 percent in **Wainwright** in 1977. This is slightly more disproportionate than the 1970 State male (54 percent) to female (46 percent) ratio and is quite unlike that of the United States as a whole in 1970. At that time, females (**51** percent) outnumbered males (49 percent) nationwide.

Wainwright has a very youthful population. In 1977, the median age of males was found to be 20 and that of females to be **18**. This is not atypical of rural Alaska. In the Barrow Census Division in 1970, for example, the median age of males was 19.6 and that of females was 16.4. It is younger than normal for the State, however, and much younger than national averages. In 1970, the median age of **males** in the State was 23.3 and in the United States as a whole it was 27.0. For females, the 1970 State median age was 22.9 and that for the nation was a much older 29.6.

There is a relatively high proportion of **Wainwright's** population in the older age ranges. Persons aged 65 or over made up 4.0 percent of **Wainwright's** 1977 population. Although lower than the 1970 national figure of 9.8 percent, **Wainwright** is well above State norms where

TABLE 40

COMPOSITION OF POPULATION BY RACE AND SEX
WAINWRIGHT, ALASKA, 1970

| <u>Race</u> | | | | <u>Percent of Total</u> |
|--------------|------------|--------|-------|-------------------------|
| | Male | Female | Total | % |
| White | 3 | 5 | 8 | 2.5 |
| Eskimo | 162 | 145 | 307 | 97.5 |
| <u>TOTAL</u> | 165 | 150 | 315 | <u>100.0</u> |

Source: U. S. Census.

TABLE 41

HOUSEHOLD DENSITIES
WAINWRIGHT, ALASKA
1977

| <u>Persons Per Household</u> | <u>Total Housing Units</u> | <u>Percent Total Population</u> | <u>Percent Total Housing Units</u> |
|------------------------------|----------------------------|---------------------------------|------------------------------------|
| 1 person | 4 | 1.0 | 5.1 |
| 2 persons | 10 | 5.3 | 12.8 |
| 3 persons | 11 | 8.7 | 14.1 |
| 4 persons | 18 | 19.0 | 23.1 |
| 5 persons | 10 | 13.2 | 12.8 |
| 6 persons | 7 | 11.1 | 9.0 |
| 7 persons | 6 | 11.1 | 7.7 |
| 8 persons | 4 | 8.4 | 5.1 |
| 9 persons | 3 | 7.1 | 3.8 |
| 10 persons | 0 | --- | --- |
| 11 persons | 1 | 2.9 | 1.3 |
| 12 persons | 2 | 6.3 | 2.6 |
| 13 persons | 2 | 6.9 | 2.6 |
| <u>TOTAL</u> | <u>78</u> | <u>100.0</u> | <u>100.0</u> |

Source: Alaska Consultants, Inc.

persons aged 65 or more in 1970 accounted for only 2.2 percent of the total population.

Household densities in Wainwright are relatively high. The median number of people per household in the community in 1977 was found to be 4.8. While this is lower than that recorded for the Barrow Census Division in 1970 (5.55), it is well above the Statewide median figure (3.52).

Growth Prospects

Wainwright presently has a very limited economic base. The community does not exist for any specific economic reason, nor does it have any specific economic function. Instead, it exists because it was a convenient location from which to provide services to people who had traditionally lived in the area and it has survived mainly because of cultural and family ties. However, although cultural ties will be the major reason for Wainwright's continued survival, opportunities for employment and cash income are seen as the primary factors determining future rates of growth. With few prospects for employment and a reasonable level of income, a high proportion of young people will leave Wainwright and the community's population could even decline. If, on the other hand, prospects for local employment and income continue to improve, more young people are likely to remain and the community can expect some further increases in population.

There are several existing and potential sources of employment in the **Wainwright** area which have a potential for growth in the future. These include an expansion of services provided by the North Slope Borough, investments made by the Arctic Slope Regional Corporation and the **Olgoonik** Corporation, the development of coal and oil and gas resources within the **Wainwright** region, and miscellaneous other activities such as reindeer herding and tourism. However, the development of nearby coal resources for other than strictly local use is viewed as highly unlikely, while no oil or gas finds resulting from ongoing NPR-A exploration activities near **Wainwright** have yet been announced. **In addition**, only very small increases in employment would be likely to occur with the **re-introduction** of reindeer herding or the initiation of day tours from Barrow. On the negative side, an existing limited source of employment in the area, the nearby LIZ-3 DEW Line station, may be automated or phased out during the next twenty years.

While the prospects for increased job opportunities in **Wainwright** are relatively modest, they should be adequate to encourage a share of the community's young people to remain here. Others may choose to retain **Wainwright** as their home base but to migrate periodically to jobs at **Prudhoe** Bay or elsewhere in the region, returning home during leave periods. No significant in-migration of whites or Eskimos to **Wainwright** is anticipated.

ECONOMY

Composition of Employment

In April 1977, Alaska Consultants undertook a survey of employment in **Wainwright**. This was necessary because there are no meaningful employment statistics collected by the Employment Security Division of the Alaska Department of Labor which can be disclosed for communities of **Wainwright's** size. Only those jobs in the community itself were counted by Alaska Consultants even though several local residents earn the bulk of their cash income outside town at places **such** as the nearby LIZ-3 DEW Line station or at **Prudhoe** Bay.

When converted to average annual full-time employment, a total of 57.5 jobs were counted in **Wainwright** in 1977. The government sector accounted for almost 60 percent of these jobs, most of which were associated with the North Slope Borough. The **Wainwright** school is the largest single employer in town, accounting for 36.5 percent of the" average annual full-time jobs in the community. However, about half of the jobs associated with the school are held by whites.

Aside from the school, there were another 13 government jobs in **Wainwright** in 1977. These were equally divided between the federal government (Post Office, EPA and the **WIC** [Women, Infants, Children] program) and local government (city hall, police, light plant, health clinic and village coordinator) sectors. **Wainwright** has no State government employees.

TABLE 42

AVERAGE ANNUAL FULL-TIME EMPLOYMENT a/
WAINWRIGHT, ALASKA
 1977

| <u>Industry Classification</u> | <u>Number</u> | <u>Percent of Total</u> % |
|--|---------------|------------------------------|
| Mining | 0 | --- |
| Contract Construction | 3.0 | 5.2 |
| Manufacturing | 2.0 | 3.5 |
| Transportation, Communications and Public Utilities | 0 | --- |
| Trade | 11.5 | 20.0 |
| Finance, Insurance and Real Estate | 4.0 | 7.0 |
| Service | 3.0 | 5.2 |
| Miscellaneous | 0 | --- |
| Government | 34.0 | 59.1 |
| Federal | (6.5) | (11.3) |
| State | (0) | (---) |
| Local | (27.5) | (47.8) |
| <u>TOTAL</u> | <u>57.5</u> | <u>100.0</u> |

a_/ Employment count of jobs in **Wainwright** only. Several local residents are employed outside town at the LIZ-3 DEW Line station or in the Prudhoe Bay area.

Source: Alaska Consultants, Inc.

After government, most jobs in **Wainwright** are in trade. This sector had 4 employees and 20 percent of **all** jobs in the community in **1977**. The largest single employer was the **Wainwright co-op** store, followed by the **Olgoonik** Corporation tank farm. (According to **Olgoonik** Corporation officials, the tank farm had a storage capacity of 870,550 liters [230,000 gallons] in 1977 with a further 189,250 liters [50,000 gallons] planned to be added). The other two businesses were Shooters' Supply and Emily's. Shooters' specializes in sporting goods. Emily's mainly sells groceries but this store was open only intermittently in 1977.

Finance, insurance and real estate accounted for 4 jobs in 1977, **all** of them associated with the **Olgoonik** Corporation office. An estimated 3 persons were engaged in contract construction at the time of the 1977 survey and another 3 people were engaged in service occupations. However, the number of jobs in contract construction fluctuates widely from year to year and rose later in 1977 with the construction of new housing, the community building and the high school. Most service jobs were associated with the two churches but this sector also included a **local** privately owned movie theater. An estimated 2 full-time jobs in **1977** were derived from the production of Native arts and crafts items.

In addition to conventional employment, the National Guard is a significant contributor to **Wainwright's** present economy. According to the North Slope Borough, there were 21 National Guardsmen in the community in 1977. Their activities contributed a combined total of about \$25,200 to the local economy in 1976.

Unemployment and Seasonality of Employment

No unemployment statistics are available for individual communities within the North Slope Borough and Boroughwide information collected by the Employment Security Division of the Alaska Department of Labor is not representative of conditions in the region's traditional villages. This is because employment in the Borough is dominated by jobs in the Prudhoe Bay area. Reflecting the fact that there is no unemployment at Prudhoe Bay or the various Pipeline camps, figures for the region as a whole were the lowest in the State in 1976. However, while unemployment rates in North Slope communities are believed to be lower than those of most Alaska Native villages, they are not nearly as low as suggested by Boroughwide statistics.

The employment situation in **Wainwright** has improved dramatically over the past several years. According to a 1970 survey conducted by the Alaska State Housing Authority, there were no more than a dozen steadily employed Eskimos in **Wainwright**. In 1977, Alaska Consultants identified 57.5 average annual full-time jobs in the community, an increase of 469 percent during the seven year period. Nevertheless, unemployment remains a problem. The 1977 survey by Alaska Consultants identified 191 people in **Wainwright** between the ages of 18 and 65, the age ranges when people are normally assumed to be available for employment. Since there were only 57.5 full-time job equivalents in the community at that time, it is obvious that a large share of the village's adult population is either unemployed or under-employed.

As in other small villages of the region, seasonal variations in employment in **Wainwright** result from the closure of the local schools during the summer months and from summer construction activities. School teachers normally leave the region during the long summer vacation and other positions associated with the school except for maintenance jobs also cease temporarily. The number of construction jobs available fluctuates from year to year depending on the projects scheduled, but most construction activity is limited to the summer because of the region's harsh winter climate. Thus, depending on the amount of construction work underway during a given year, the temporary loss of jobs associated with the school and the addition of seasonal construction jobs tend to offset each other.

Recent Trends and Changes

There is no published information available which indicates trends in employment in individual North Slope communities. However, the incorporation of the North Slope Borough and the formation of the **Native** village corporations and the Arctic Slope Regional Corporation under the terms of the Alaska Native Claims Settlement Act have had a dramatic impact on the number of jobs available in the region as a whole and in individual communities, including **Wainwright**.

Prior to the existence of the Borough and the Native corporations, the employment pattern in **Wainwright** was similar to that exhibited in other rural areas of the State - a group of highly skilled people almost

entirely white, providing services such as education and health to a largely unemployed group of Native people. **Today**, however, the town's Eskimo residents have many more opportunities for employment.

New employment opportunities outside **Wainwright** have also become available during the past few years as a result of the development of the Prudhoe Bay field and the construction of the Trans Alaska Pipeline. Although the Pipeline is now operational, construction of the proposed natural gas pipeline is likely to offer similar employment opportunities in the near future.

Occupational Skills

Comprehensive information on the skills of the workforce in the North Slope region is generally lacking and there are no reliable or current statistics on an individual community basis. Some general idea of the occupational skills of **Wainwright** residents can be inferred, however, from information developed by the Barrow Manpower Center if one assumes that workforce skills are relatively consistent **Boroughwide**. A breakdown of skills possessed by Barrow Manpower Center registrants is given on page 139 of this report.

Income Levels

Household incomes in **Wainwright** are low when compared with State averages, but the incomes of many local families have risen sharply

TABLE 43

HOUSEHOLD INCOME DISTRIBUTION a/
WAINWRIGHT, ALASKA
 1976

| <u>Household Income</u> | <u>Percent of Total</u> |
|----------------------------|-------------------------|
| Under \$1,000 | 3.1 |
| \$1,000 - \$1,999 | 4.7 |
| \$2,000 - \$2,999 | 4.7 |
| \$3,000 - \$3,999 | 14.1 |
| \$4,000 - \$4,999 | 1.6 |
| \$5,000 - \$5,999 | 1.6 |
| \$6,000 - \$6,999 | 4.7 |
| \$7,000 - \$7,999 | 6.2 |
| \$8,000 - \$8,999 | 7.8 |
| \$9,000 - \$9,999 | --- |
| \$10,000 - \$11,999 | 7.8 |
| \$12,000 - \$14,999 | 6.2 |
| \$15,000 - \$24,999 | 18.8 |
| \$25,000 - \$49,999 | 15.6 |
| \$50,000 or more | 3.1 |
| <u>TOTAL</u> | <u>100.0</u> |

a/ Based on responses of 64 out of a total of 78 households surveyed in April 1977.

Source: Alaska Consultants, Inc.

during the past few years. In 1970, the Alaska State Housing Authority reported that less than 5 of the 50 Native families then living in **Wainwright** had annual incomes of over \$7,000. In 1974, a survey of 51 **Wainwright** households by Dupere and Associates found that the median 1973 family income in the community had risen to \$5,833. By contrast, an April 1977 survey by Alaska Consultants, **Inc.** found the median 1976 household income in **Wainwright** to be \$10,000, almost double the 1973 figure. However, while incomes in **Wainwright** have risen substantially,

they are still low. The median family income for the State in 1969 was \$12,443, substantially above that in **Wainwright** in 1976 without even considering the increases in Statewide incomes which have taken place between 1969 and 1976.

When household income and family size are compared with recent U.S. Department of Labor standards for poverty level incomes, over one-third of the 64 **Wainwright** households which reported income information in the April 1977 survey had incomes which were at or below the official federal poverty level. These federal standards do not take the extremely high living costs of remote Alaska areas into consideration but they nevertheless indicate that a significant share of **Wainwright's** households is still living in extreme poverty.

Public assistance programs are an important income supplement for many **Wainwright** households. During FY 1976, the Bureau of Indian Affairs distributed a total of \$7,300 in general assistance payments to 15 **Wainwright** recipients, with the average recipient receiving a monthly payment of \$41. However, these payments in **Wainwright** are down sharply from a couple of years ago when close to \$50,000 was distributed to 68 local recipients for an average monthly payment of \$60. Public assistance payments (or welfare) distributed by the Alaska Department of Health and Social Services are another important source of supplemental income. During a typical month in 1976, 13 people in **Wainwright** received Old Age Assistance payments, 4 qualified for Aid to the Disabled and 12 were eligible for Aid to Families with Dependent

TABLE 44

GENERAL ASSISTANCE PAYMENTS a/
WAINWRIGHT, ALASKA
 FY 1973 - FY 1976

| | <u>FY 1973</u> | <u>FY 1974</u> | <u>FY 1975</u> | <u>FY 1976</u> |
|------------------|----------------|----------------|----------------|----------------|
| Total Payment | \$42,700 | \$48,800 | \$16,800 | \$7,300 |
| Number of Cases | 59 | 68 | 25 | 15 |
| Average Payment: | | | | |
| Annual | \$ 724 | \$ 718 | \$ 672 | \$ 487 |
| Monthly | \$ 60 | \$ 60 | \$ 56 | \$ 41 |

a/ Payments made by the Bureau of Indian Affairs.

Source: U. S. Bureau of Indian Affairs.

TABLE 45

PUBLIC ASSISTANCE PROGRAM PAYMENTS a/
WAINWRIGHT, ALASKA
 OCTOBER, 1976

| | <u>Old Age Assistance</u> | <u>Aid to the Disabled</u> | <u>Aid to Families with Dependent Children</u> | <u>Total</u> |
|-----------------|-------------------------------|--------------------------------|--|--------------|
| Total Payment | \$1,250 | \$ 370 | \$3,238 | \$4,858 |
| Number of Cases | 13 | 4 | 12 | 29 |
| Average Payment | \$ 96 | \$ 92 | \$ 270 | \$ 168 |

a/ October is considered to be a representative month for public assistance payments.

Source: Alaska Department of Health and Social Services.

Children funds. The amounts paid to individuals under these programs averaged between \$90 and \$100 per month except for Aid to Families with Dependent Children where the average **Wainwright** recipient received \$270 per month in 1976.

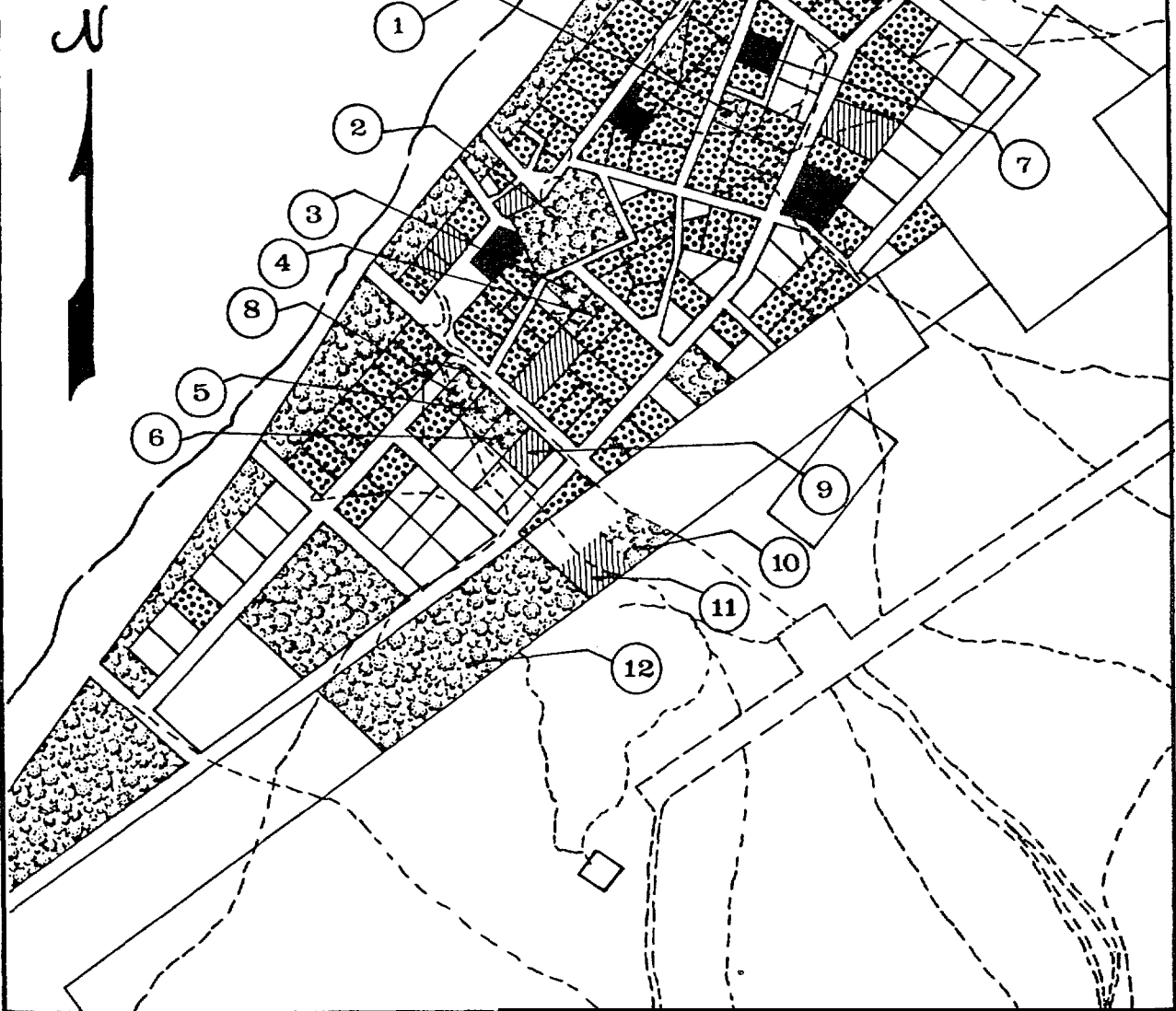
Land Use

OVERALL PATTERNS



Including the airport and graveyard properties, the **Wainwright** townsite occupies a total of 179.31 hectares (443.07 acres). Of the 155.78 hectares (384.93 acres) in use in 1977 (including the new Borough housing units and community building under construction), the largest amount (125.49 hectares or 310.08 acres) was taken up by the **Wainwright** airport. Residential uses occupied 12.14 hectares (almost 30 acres) of land, while the municipal reserve (5.67 hectares or 14 acres) and cemeteries (slightly over 6 hectares [15 acres]) accounted for most of the remaining land in use.

Like many Eskimo communities, **Wainwright** developed in a linear form along the coast. This form has been accentuated by the location of the airport parallel to the coast immediately beyond the town's inland boundary. Inside the village, the densest development is near the school which, together with the adjacent co-op store, city hall and armory, serves as a focus of community activity. Outside this central area, the Post Office, the EPA facility, the **Olgoonik** Corporation office

WAINWRIGHT



LAND USE

-  Residential
-  Commercial
-  Public & Semi-Public
-  Utilities & Storage

- 1. Health Center
- 2. School
- 3. City Office
- 4. Armory
- 5. Public Safety Building (to be built in 1978)
- 6. Community Building (under construction)
- 7. Village Corporation
- 8. Post Office
- 9. Power Plant
- 10. EPA
- 11. Water Tank
- 12. High School & Power Plant (under construction)

FIGURE 6

TABLE 46

**EXISTING LAND USE
WAINWRIGHT, ALASKA
1977**

| Land Use | Land Area | | Percent of |
|--------------------------------------|---------------|---------------|------------------------------|
| | (hectares) | (acres) | Townsite Area <u>a/</u> % |
| Residential | 12.12 | 29.95 | 6.8 |
| Commercial | .73 | 1.80 | .4 |
| Industrial | 125.49 | 310.08 | 70.0 |
| Utilities & Storage | (.82) | (2.03) | (.5) |
| Airport <u>b/</u> | (124.67) | (308.05) | (69.5) |
| Public and Semi-Public | 14.12 | 34.90 | 7.9 |
| Municipal Reserve | (5.67) | (14.00) | (3.2) |
| Cemeteries | (6.11) | (15.11) | (3.4) |
| Other Public | (1.89) | (6.11) | (1.1) |
| Semi-Public | (.45) | (1.89) | (.3) |
| Developed Streets | 3.32 | 8.20 | 1.9 |
| <u>Total Developed Area</u> | <u>155.78</u> | <u>384.93</u> | <u>86.9</u> |
| Vacant | 25.53 | 58.14 | 13.1 |
| Undeveloped Streets | (4.94) | (12.21) | (2.8) |
| Other | (18.59) | (45.93) | (10.4) |
| <u>TOTAL TOWNSITE AREA <u>a/</u></u> | <u>179.31</u> | <u>443.07</u> | <u>100.0</u> |

a/ Townsite area includes the airport and cemetery tracts.

b/ Airport acreage includes developed but unplatted sections of Airport Road.

Source: Alaska Consultants, Inc.

and two churches are other centers of community activity. However, none of these other meeting points are located near each other.

The only development in the immediate vicinity of **Wainwright** outside town and the airport and cemetery tracts is the **Olgoonik** Corporation tank farm a short distance to the northeast, the community dump located further to the north, the community water source southwest of town, the local gravel supplies which are taken from along the shore of **Wainwright Inlet** south of the community, and a DEW Line station located a few kilometers inland and which has an associated tank farm at the coast northeast of town. Nevertheless, even though there is a general absence of physical development, the region around **Wainwright** is heavily used by local residents as a source of subsistence supplies.

HOUSING

Residential uses occupied a total of 12.12 hectares (29.95 acres) of land in **Wainwright** in 1977. Everyone in town lived in single family structures except for two apartments in the school which were occupied by teachers. A detailed survey of housing conditions in **Wainwright** was carried out in April 1977 by Alaska Consultants, Inc. At that time, a **total** of 78 housing units were occupied in the community. Since then, 12 more units have been built by the North Slope Borough.

Like many rural Alaskan communities, housing in **Wainwright** is generally either very new or very old. Aside from housing constructed by the

Borough during the summer of 1977, the Alaska State Housing Authority (ASHA) built 25 homes here in 1971, the Borough constructed 2 units of teacher housing in 1976 and six people have financed their homes with the help of a Veterans' loan during the past few years. Reflecting this building activity, 32 of the 78 units (41 percent) surveyed in April 1977 were less than 5 years old. Most of the remainder (38.5 percent) were more than 15 years old, some of them dating from the turn of the century.

Housing in **Wainwright** which is less than 5 years old can generally be described as being in acceptable condition. Although these units would not meet the standards of a conventional building code, they are nevertheless structurally sound, have a reasonably modern interior layout and provide their occupants with an adequate degree of protection from the severe winter cold. Older housing units associated with the school and the Assembly of God church are also classed as **being** in acceptable condition. Although not built at the time of the April 1977 survey, the 12 units built by the North Slope Borough during the summer of 1977 certainly qualify as acceptable housing.

The 25 homes constructed by the Alaska State Housing Authority are rated as being in acceptable condition. However, these units have major deficiencies which were assessed by ASHA in 1977 and should be corrected in 1978. Of the remaining 42 units, probably not more than half a dozen are capable of being brought up to an acceptable standard, mainly because of inadequate original construction. Nevertheless, there are

TABLE 47

AGE OF OCCUPIED HOUSING UNITS
WAINWRIGHT, ALASKA
1977

| <u>Age</u> | <u>Number</u> | <u>Percent of Total</u> |
|-------------------|---------------|-------------------------|
| Less than 5 years | 32 | 41.0 |
| 5 - 9 years | 11 | 14.1 |
| 10 - 14 years | 5 | 6.4 |
| 15 years or older | 30 | 38.5 |
| <u>TOTAL</u> | <u>78</u> | <u>100.0</u> |

Source: Alaska Consultants, Inc.

TABLE 48

HOME OWNERSHIP CHARACTERISTICS
WAINWRIGHT, ALASKA
1977

| <u>Type of Occupancy</u> | <u>Number</u> | <u>Percent of Total</u> |
|--------------------------|---------------|-------------------------|
| Owner occupied | 60 | 76.9 |
| Renter occupied | 11 | 14.1 |
| Other <u>a/</u> | 7 | 9.0 |
| <u>TOTAL</u> | <u>78</u> | <u>100.0</u> |

a/ People living in rent-free accommodations,

Source: Alaska Consultants, Inc.

several old structures dating from the turn of the century which may be retained because of their historic value.

Most people in **Wainwright** own their own homes. More than three-quarters of the people surveyed in April 1977 by Alaska Consultants, **Inc.** either owned their homes outright or were in the process of buying them. Eight of the 11 renters surveyed were whites. However, all except one of the households recorded as living in rent-free accommodations were Eskimo.

Houses in **Wainwright** are small by urban standards. Ten homes surveyed in April 1977 were less than 23.23 square meters (250 square feet) in area and another 24 were between 23.23 and 46.36 square meters (250 and 499 square feet). Most homes more than 46.45 square meters (500 square feet) in area were constructed by ASHA or are teacher housing units.

Wainwright homes have few rooms. This is particularly true of the older units which tend to be less well insulated. Instead of erecting permanent partitions which impede heat circulation and thus increase fuel costs, residents in these older homes have traditionally preferred to use temporary barriers such as curtains to gain a degree of privacy, especially for sleeping purposes. Twelve of the homes surveyed in **Wainwright** in April 1977 consisted of a single room, and 9 of these were **15 years** old or older. By contrast, the newer homes in the community tend to be larger in area, better insulated and are divided internally. This is indicated by the fact that of the 32 homes surveyed which were 5 years old or newer, none had fewer than 3 rooms.

TABLE 49

SIZE OF OCCUPIED HOUSING UNITS
WAINWRIGHT, ALASKA
1977

| <u>Size of Units</u> | <u>Number</u> | <u>Percent of Total</u> |
|---------------------------|---------------|-------------------------|
| Less than 250 square feet | 10 | 12.8 |
| 250 - 499 square feet | 24 | 30.8 |
| 500 - 749 square feet | 32 | 41.0 |
| 750 - 999 square feet | 7 | 9.0 |
| 1,000 square feet or more | 5 | 6.4 |
| <u>TOTAL</u> | <u>78</u> | <u>100.0</u> |

Source: Alaska Consultants, Inc.

TABLE 50

NUMBER OF ROOMS AND BEDROOMS BY HOUSEHOLD SIZE
OCCUPIED HOUSING UNITS
WAINWRIGHT, ALASKA, 1977

| <u>Household Size</u> | <u>Number of Households</u> | <u>Number of Rooms Per Household</u> | | | | | | | <u>Number of Bedrooms Per Household</u> | | | | |
|---------------------------|---------------------------------|--|----|----|----|---|----|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 |
| 1 person | 5 | 4 | -1 | - | -- | - | - | - | 4 | 1 | - | - | - |
| 2 persons | 10 | 3 | 2 | 3 | - | 2 | - | - | 3 | 3 | 3 | 1 | - |
| 3 persons | 11 | 3 | 2 | 4 | - | - | 2 | - | 3 | 3 | 5 | - | - |
| 4 persons | 17 | 1 | 55 | 32 | 1 | - | - | - | 1 | 6 | 5 | 5 | - |
| 5 persons | 9 | 1 | 33 | 1 | - | - | - | - | 1 | 4 | 3 | - | 1 |
| 6 persons | 8 | - | 62 | - | - | - | - | - | - | - | 6 | 2 | - |
| 7 persons | 6 | - | 2 | 3 | 1 | - | - | - | - | - | 2 | 4 | - |
| 8 persons | 4 | - | 1 | 1 | - | 1 | 1 | - | - | - | 1 | 1 | 2 |
| 9 persons | 3 | - | -1 | 1 | 1 | - | -- | - | - | - | 1 | 1 | 1 |
| 10 persons | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 persons | 2 | - | 1 | 1 | - | - | - | - | - | 1 | 1 | - | - |
| 12 persons | 1 | - | - | - | - | 1 | - | - | - | - | - | - | 1 |
| 13 persons | 2 | - | - | - | 2 | - | - | - | - | - | - | 2 | - |
| <u>TOTAL</u> | <u>78</u> | | | | | | | | | | | | |

Source: Alaska Consultants, Inc.

The combination of small homes with relatively few rooms (the average home in **Wainwright** at the time of Alaska Consultants' April 1977 survey had three rooms) with **large** numbers of people per household results in a good deal of overcrowding within units. **If** the commonly **used standard** for overcrowding of more than one person per room is used, 53 of the 78 houses surveyed in **Wainwright** were overcrowded. According to U.S. Public Health Service standards, any home having less than 7.43 square meters (80 square feet) per person is considered overcrowded and any having less than 4.65 square meters (50 square feet) per person is considered seriously overcrowded. Using these standards, only 17 houses in **Wainwright** in 1977 were overcrowded, 6 of them to a serious degree.

In April 1977 most **Wainwright** residents paid very little in direct housing costs, i.e. for house payments or rent. In fact, 37 of the 73 households for which this information was obtained by Alaska Consultants, Inc. either made no house payments or lived rent free. Utilities costs, particularly fuel, on the other hand, were very high. Most households which made no monthly utilities payments had these costs "hidden" in their rent. However, several households still obtain their own water supply or have coal stoves.

The typical household in **Wainwright** currently makes monthly payments of about \$250 for direct housing and utilities costs. While this is low in terms of average costs in larger population centers, it consumes an extremely high portion of disposable cash income (the 1976 median household income in **Wainwright** was found to be \$10,000) of many households.

TABLE 51

MONTHLY HOUSING COSTS
WAINWRIGHT, ALASKA
1977

| <u>costs</u> | <u>Rent/House Payments</u> | <u>El ectri ci ty</u> | <u>Water</u> | <u>costs</u> | <u>Fuel</u> | <u>Total Housi ng Costs</u> |
|-----------------|--------------------------------|-----------------------|--------------|-----------------|-------------|---------------------------------|
| Zero | 37 | 8 | 14 | Zero | 10 | 0 |
| \$ 1 - \$ 2 0 | 13 | 0 | 39 | \$ 1 - \$ 50 | 0 | 1 |
| \$ 21 - \$ 40 | 6 | 46 | 16 | \$ 51 - \$ 100 | 1 | 1 |
| \$ 41 - \$ 60 | 4 | 15 | 2 | \$ 101 - \$ 150 | 6 | 0 |
| Over \$ 60 | 13 | 1 | 0 | \$ 151 - \$ 200 | 34 | 14 |
| Unknown | 5 | 8 | 7 | \$ 201 - \$ 250 | 12 | 17 |
| <u>TOTAL a/</u> | <u>78</u> | <u>78</u> | <u>78</u> | \$ 251 - \$ 300 | 6 | 23 |
| | | | | Over \$ 300 | 2 | 12 |
| | | | | <u>TOTAL a/</u> | <u>78</u> | <u>78</u> |

a/ Total of 78 units surveyed.

Source: Alaska Consultants, Inc.

Land Status

Two very important considerations in land use planning are the ownership of land and the conditions under which it is held. **Wainwright** is located within the former Naval Petroleum Reserve #4 which was transferred to the Department of the Interior in 1976 and is now known as NPR-A. However, lands in town and in the immediate vicinity of the community are held under several forms of ownership. These include the **Wainwright** townsite patented to the Townsite Trustee in the U.S. Bureau of Land Management; a patented U.S. survey within the townsite on which the school is located; airport properties within the townsite which were patented to the State Division of Aviation by the Townsite Trustee in May, 1977 (excluding several graveyard tracts); lands used by the nearby DEW Line station and its associated tank farm; and lands selected by the **Olgoonik** Corporation under the terms of the Alaska Native Claims Settlement Act.

WAINWRIGHT TOWNSITE

The Bureau of Land Management surveyed the **Wainwright** townsite between August and October, 1970. The survey was approved on January 26, 1976 and the Townsite Trustee visited **Wainwright** in September 1977 to take applications from residents for title to individual lots. Until these applications are approved and title conveyed, however, all property within the **Wainwright** townsite except the school site and lands patented to the Division of Aviation will continue to be owned by the federal government.

Because **Wainwright** is a Native townsite, Alaska Natives applying for title to lands which they occupied at the time the plat of survey was approved can choose to hold their land in either a restricted or unrestricted status. Unrestricted lands are held under normal fee simple title, but lands held under restricted title retain some of the trust relationship between the federal government and Native citizens. Title conditions limit the Native owner's ability to **sell** or transfer his property. On the other hand, lands held under this type of ownership are not subject to taxation, nor can zoning, housing, building or other regulatory codes be enforced.

Thus far, all individuals applying to the Townsite Trustee for lands in **Wainwright** have elected to receive restricted title. The imposition of areawide property taxes by the North Slope Borough had undoubtedly been a major factor in this. However, while there are advantages to restricted deeds, there are also disadvantages. These include **difficulties** in transferring title and in obtaining State or federal **housing** assistance.

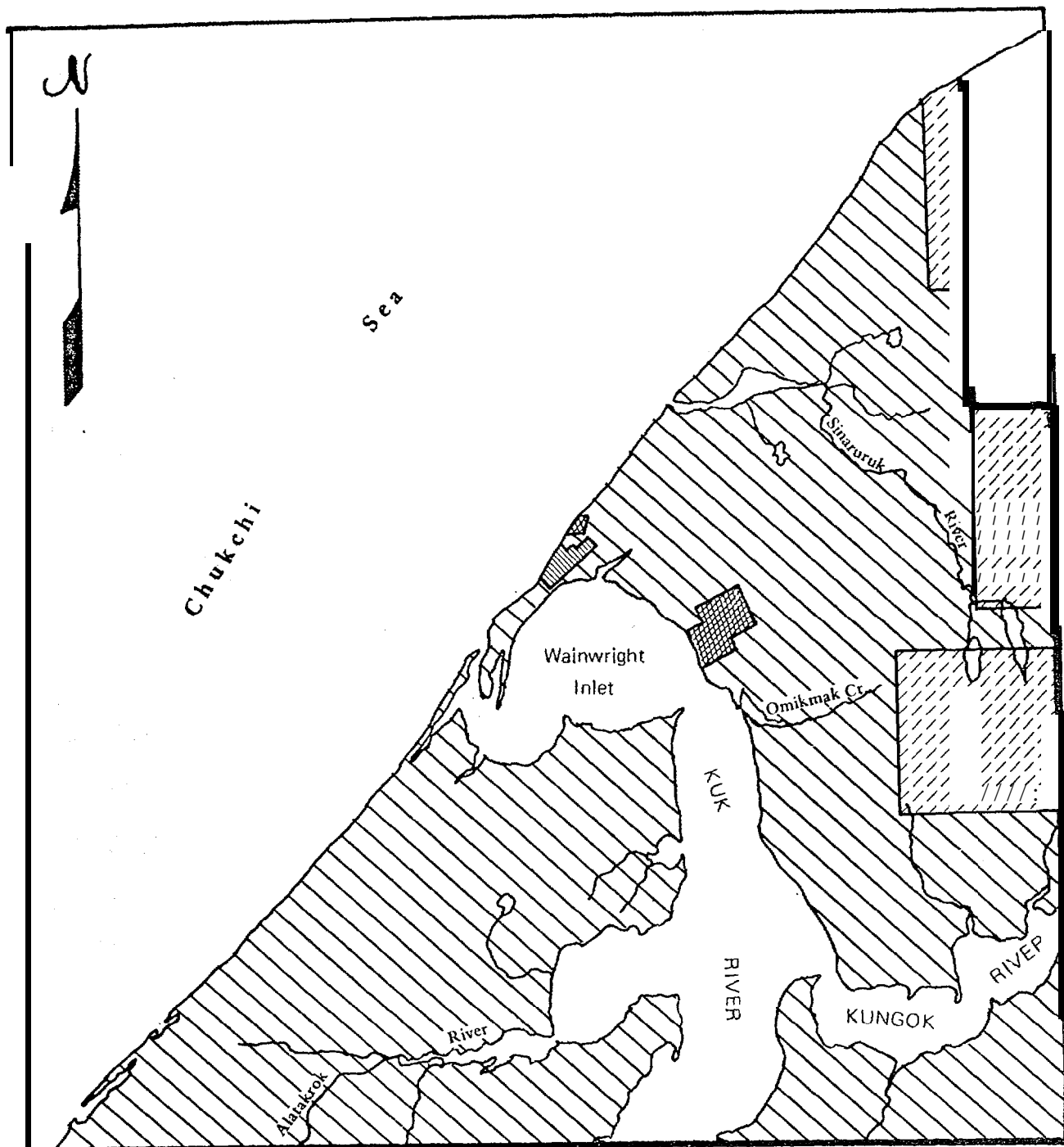
Title to land held in a restricted status cannot be transferred except, in the event of the owner's death, to his/her heirs. Instead, permission for the sale or transfer must be sought from the Bureau of Indian Affairs which then appraises the property to establish a fair market value and approves the actual sale. Restricted property sold or willed to non-Natives assumes an unrestricted status.

It can also be more difficult to obtain federal or State housing assistance when property is held under a restricted status. Unless the Bureau of Indian Affairs signs a statement that the property in question can be encumbered with a mortgage, restricted property cannot be condemned if the property holder does not make his or her payments. Given such conditions, agencies are understandably reluctant to enter into long term housing agreements.

Owners of property to which improvements were made after January 26, 1976 (the date the **plat** of survey was approved) cannot obtain restricted title to their land from the Townsite Trustee. However, the Trustee can give title to the City of **Wainwright** which can then transfer the deed to individuals. In these cases, however, the deeds will be unrestricted and subject to property taxation. All housing constructed by the North Slope Borough on lots not previously occupied will therefore be on unrestricted lands. The owners of ASHA housing, on the other hand, can obtain restricted deeds to their properties since these houses were built before the townsite survey was approved. Other lands in the **Wainwright** townsite which are owned by public agencies, corporations, church groups or the like will all be owned in an unrestricted status.

WAINWRIGHT AREA

Lands outside the **Wainwright** townsite are within the former Naval Petroleum Reserve #4, now NPR-A and under the jurisdiction of the U.S. Department of the Interior. In the immediate vicinity of **Wainwright,**



**WAINWRIGHT COMMUNITY STUDY
WAINWRIGHT AREA AND STATUS**



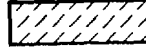
Wainwright Townsite



Dew Line



Olgoonik Corp. Conveyance
(surface only)



Olgoonik Corp.
Lands Selected but not
yet Conveyed

SCALE IN MILES

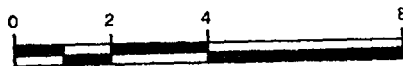


FIGURE 7

however, surface rights to lands are also vested with the U.S. Department of the Air Force and the **Olgoonik** Corporation.

The Air Force's DEW Line site, LIZ-3, is located inland about 8 kilometers (5 miles) southeast of town and has an associated tank farm at the coast northeast of the community. All told, this facility occupies close to 526.1 hectares (1,300 acres) of land.

The **Olgoonik** Corporation is a Native village corporation established under the terms of the Alaska Native Claims Settlement Act. Its enrollment of 369 entitled it to select the surface rights to 46,620.1 hectares (115,200 acres) of land surrounding the **Wainwright** townsite under Section 12(a) of the Claims Act. Under the terms of Section 12(b) of the Act, **Wainwright** was also entitled to receive surface title to some lands from the Arctic Slope Regional Corporation. Since no subsurface rights were selectable from NPR-4, the Arctic Slope Regional Corporation was given alternative lands outside **NPR-4** from which to make its selections.

As of September 30, 1977, the village corporation had received interim conveyance to 42,619.18 hectares (105,312 acres) of its Section 12(a) entitlement and it had received all of its Section 12(b) entitlement, determined by the Arctic Slope Regional Corporation to be 18,060 hectares (44,625 acres). Thus, unlike village corporations in other regions of the State, the **Olgoonik** Corporation had received close to 94 percent of its total land entitlement by late 1977.

Community Facilities and Services

PUBLIC SAFETY

Police

The North Slope Borough is responsible for providing police protection services in **Wainwright** and has a trained public safety officer stationed in town. The City of **Wainwright** has sometimes retained as many as two additional officers at its own expense to make sure that a policeman was always either on duty or on call in the community. This situation has now been resolved but, because it is very important to people in **Wainwright** that a policeman be available in town at all times, the Borough is attempting to hire a second officer on a part-time basis.

Serious crime is rare in **Wainwright**. Like elsewhere in Alaska, most crime here is related to alcohol abuse, even though **Wainwright** is officially "dry". Some problems with drug abuse have also been encountered.

There are presently no facilities in **Wainwright** to house the Borough police officer or, if one were appointed, a local magistrate. In addition, there are no formal holding facilities for prisoners. In response to this need, an 81.75 square meter (880 square foot) structure containing space for the Borough police officer and an assistant, an office for a magistrate and two temporary holding cells for prisoners

is scheduled for construction at **Wainwright** in the spring of 1978. Funding for the project is from the U.S. Law Enforcement Assistance Administration and is being administered by the Criminal Justice Planning Agency in the Office of the Governor. The new facility will be located on a site between the Post Office and the new community building. The provision of a public safety building with space for police officers, a magistrate's office and two holding cells (which cannot be used to house minors) should help improve any local law enforcement problems which do exist, as also should the hiring of a second Borough public safety officer.

Fire Protection

Fire protection is one of the two municipal powers retained by the City of **Wainwright**. However, except for a fire siren at the city hall, fire protection services in the community are non-existent. There is no organized volunteer fire department nor any firefighting equipment. Aside from the loss of the original Environmental Protection Agency (EPA) **plant** in November 1973, **Wainwright** has had few serious fires but the community could lose a number of buildings if a major fire got started in one of the more densely **developed** sections of town **during** a period of high winds.

As part of the April 1977 household survey conducted by Alaska Consultants, **Inc.**, people were asked to name three community facilities or services which they **would** most like to see added or improved in

Wainwright. Fifty of the 72 people who answered this question said they would like better fire protection services. (The next most often listed community need was an improved power system with 38 responses).

Although fire protection was on people's minds at the time of the survey because a fire had destroyed a home in town a short time before, it is still obvious that this is a service which **Wainwright** residents want very much.

HEALTH AND SOCIAL SERVICES

Wainwright's population is too small to justify building a hospital but the community does have a fairly good range of health care services for a town of this size. The **Wainwright** health center has a staff of two primary health aides and one secondary aide, with one primary aide being on call at all times. **In addition, two** doctors were temporarily based at **Wainwright** between December 1976 and December 1977 to assist with health aide training and with establishing a health education program in the **Wainwright** school. Aside from locally based medical personnel, a State health nurse from Barrow visits **Wainwright** every three months and Public Health Service doctors and dentists make periodic visits. For people requiring hospital care, the Public Health Service hospital at Barrow is within reasonably convenient reach.

Wainwright's health problems are typical of those found elsewhere in the North. Most cases treated by the health aides involve colds, sore throats and other minor health problems. However, health safety

problems associated with **snowmachines** and exposure, **otitis** media, hearing problems (related to noise from **snowmachines** and guns), trichinosis (from eating undercooked walrus) and nutritional problems (related to borderline intakes of Vitamin C) were also cited by one of the doctors temporarily based in the community.

The **Wainwright** health center is operated by the North Slope Borough. It is located in a converted house near the north end of town and is divided internally into two examination rooms, a waiting room and a fourth room which is **not used**. Although **Wainwright's** clinic is superior to facilities in many other communities of the Borough, the building was not designed as a clinic and is poorly laid out for this purpose. Plans are being made to replace this facility but other villages with even more inadequate clinics have a higher priority for Borough funds.

EDUCATION

Education services in **Wainwright** are provided by the North Slope Borough School District. The School District is responsible not only for hiring teachers but also for maintaining the school plant, while the Borough is responsible for the construction of new school facilities, as required.

Almost all school children in **Wainwright** are presently housed in one physical plant located in the heart of the community. The main school building was built by the Bureau of Indian Affairs, with the oldest part dating from the early 1960's and the remainder being built in 1968.

Major repairs to the main building were carried out in 1975 and relocatable classrooms were added in the summer of 1976.

The school site covers an area of about .8 hectares (slightly under 2 acres). Most of the site is covered by buildings so that outdoor playground space is very limited. Formal playground space is limited to a half basketball court and many children are forced to play off the school site when they are outdoors.

Administratively, the **Wainwright** school is divided on an elementary (early childhood through the 8th grade) and high school (9th through the 12th grade) basis. During the 1976-77 school year, elementary classes occupied 5 classrooms while another 4 rooms were used by high school grades. Early childhood classes through the 6th grade were held in the main school building and the 7th and 8th grades were held in a relocatable unit. High school grades were taught in a relocatable unit, in a permanent building on the school site and in an old church off the school site. In addition, sewing classes were held in two private homes.

The main school building and the relocatable units are structurally sound and are in good condition but the school plant was not designed to house both elementary and high school students. Grades 9 and 10 were added during the 1975-76 school year and a complete high school program was offered for the first time in 1976-77. While some local students are completing high school at Mt. **Edgecumbe (Sitka)** or elsewhere outside the community, the present school plant and site are inadequate to

TABLE 52

ENROLLMENT TRENDS
 FINAL ENROLLMENT, WAINWRIGHT SCHOOL
 1959-60 - 1976-77

| Year | Grades K - 8 | | Grades 9 - 12 | | Total |
|--------------------|---------------|------------|---------------|------------|-------|
| | Number | % of Total | Number | % of Total | |
| 1959-60 | 69 | 100.0 | | | 69 |
| 1960-61 | 59 | 100.0 | | | 59 |
| 1961-62 | 60 | 100.0 | | | 60 |
| 1962-63 | 72 | 100.0 | | | 72 |
| 1963-64 | 74 | 100.0 | | | 74 |
| 1964-65 | 83 | 100.0 | | | 83 |
| 1965-66 | 94 | 100.0 | | | 94 |
| 1966-67 | 90 | 100.0 | | | 90 |
| 1967-68 | 89 | 100.0 | | | 89 |
| 1968-69 | 97 | 100.0 | | | |
| 1969-70 | 104 | 100.0 | | | 1;; |
| 1970-71 | 100 | 100.0 | | | 100 |
| 1971-72 | 97 | 100.0 | | | 97 |
| 1972-73 | 110 <u>a/</u> | 100.0 | | | 110 |
| 1973-74 | 107 <u>a/</u> | 100.0 | | | 107 |
| 1974-75 | 96 <u>a/</u> | 100.0 | | | |
| 1975-76 | 102 <u>b/</u> | 82.3 | 22 <u>c/</u> | 17.7 | 1;; |
| 1976-77 | 89 <u>b/</u> | 73.6 | 32 | 26.4 | 121 |

a/ No kindergarten classes held 1972-73 - 1974-75 inclusive.

b/ Elementary school enrollment figures exclude early childhood classes.

c/ 9th and 10th grade classes only were offered in 1975-76.

Source: Alaska Department of Education.

accommodate even those high school students who have chosen to finish school in their home town.

Because the Wainwright school was not designed to house high school students and because the present school site cannot be easily enlarged, a separate high school is presently being built on a 4.05 hectare (10 acre) site at the south end of town. This facility will include 5 classrooms (with one doubling as a science lab), a library and rooms for TV/radio, home economics and vocational education. A gymnasium large enough for basketball is also being constructed.

RECREATION

Wainwright presently has very limited recreation facilities. The school has an outdoor half-court for basketball and conducts some physical education classes in the hallways for younger students. In addition, children play Norwegian baseball in an informal open area between the school and the co-op store. The Assembly of God church has a ping pong table and some table games, and the Presbyterian church offers a calisthenics program for children.

Formal recreation facilities for adults in Wainwright are almost non-existent. The school and the National Guard armory are usually made available when needed for community meetings or special functions. The armory is also used heavily during the two major community celebration periods each year - Christmas and Fourth of July - when a series of

recreational contests are staged and prizes are awarded with some of the community bingo proceeds. The only other formal recreation facility in **Wainwright** is the Kuk theater which is located in the home of a village resident and which shows movies. According to the owner, however, few movies were shown in 1977 because of the unreliability of the community power system.

Bingo is a major recreational activity in **Wainwright**. Games are sponsored about nine times a month by three different community organizations: The **Wainwright Motormushers**, the Search and Rescue Group, and the **Wainwright** Recreation Committee. This latter group, which is selected by the City Council, raises about \$6,000 annually from bingo most of which is used to put on the Fourth of July and Christmas programs.

The range of formal recreation facilities in **Wainwright** will be greatly improved in 1978 when a high school gymnasium and a community building are scheduled to be completed. The gymnasium will enable the school to offer an adequate indoor recreation program and it should also be available to the public after school hours. A community building has been a top priority item in **Wainwright** since a previous facility of this type burned down in November 1968. As designed, this will be a 173.91 square meter (1,872 square foot) structure and, except for toilets and a furnace room, will not be divided internally so that it can be used for major community events as well as activities requiring less space.

UTILITIES

Water and Sewage

The water system in Wainwright is operated by the U.S. Environmental Protection Agency (EPA) which selected this community as the site of one of its Alaska Village Demonstration Projects, intended to show how sanitary conditions in Alaska Native villages could be improved. Water is pumped via a summer pipeline from a lake 3.2 kilometers (2 miles) southwest of town near Point Collie to a central 3,785,000 liter (1 million gallon) storage tank where it is filtered and chlorinated. The storage tank was installed by the U.S. Public Health Service and is filled annually. Water is piped to the school while that for home consumption is delivered by a 1,892.5 liter (500 gallon) Bombardier tundra tank truck. Delivered water costs \$.06 per gallon; water collected individually at the central storage tank costs slightly less, \$.04 per gallon. Accounting is handled by the City Clerk.

Basic to the Wainwright project are the concepts of central community facilities and water conservation. The central EPA facility, which is adjacent to the water storage tank and connected to it, contains laundry and shower rooms intended for use by the entire village. The central laundry room includes four coin-operated washers and dryers as well as folding tables and chairs for laundry patrons. Separate shower rooms for men and women each contain four toilets, four showers (coin-operated) and a sauna. Plant capacity for community drinking water,

showers, laundry and toilets is 45,420 liters (12,000 gallons) per day, with 18,925 liters (5,000 gallons) of storage. Effluent water (gray water) from showers and the laundry is recycled an average of two and one-half times and is treated each time by disinfection, flocculation and sedimentation, sand filtration, carbon filtration, and post chlorination. Gray water is also available for fire protection. A maximum of 94,625 liters (25,000 gallons) of gray water can be treated each day, with 18,925 liters (5,000 gallons) of storage provided for untreated water.

According to the University of Alaska (June 15, 1977), the use of water from the original EPA facility averaged about 79,485 liters (21,000 gallons) per month or about 7.57 liters (2 gallons) per capita per day. About half of this water was used by the school. This estimated water usage figure did not include water for laundry, showers, or toilets at the EPA facility itself, nor did it take into consideration the fact that several households continue to haul their own water requirements. However, because the water at the EPA facility is recycled and low flow showers are timed, total per capita water use was still estimated at a low 15.14 liters (4 gallons) per capita per day. This is well below average rates of water use at the nearby DEW Line station, estimated at 124.91 liters (33 gallons) per capita for 15 people.

Honey buckets are used for collection and disposal of solid waste in **Wainwright** homes. The North Slope Borough pays individual residents \$7 per drum for hauling these to a dump about three miles northeast of

town. Wastes from the six recirculating chemical toilets in the original EPA facility were originally incinerated, but this system was changed in the reconstructed plant. (The original building burned down in 1973). **In** the reconstructed facility, wastes are treated biologically via extended aeration and lime disinfection. Wastes from the school toilets are piped to this same treatment facility. Sludge from both the black water and gray water treatment systems is hauled to the dump. Sewage effluent and excess gray water are dumped onto the sand near the ocean.

The water system and EPA facility are currently operated and maintained by the U.S. Environmental Protection Agency but it is the intent of the demonstration project ultimately to turn the facility over to the local community. The system is by no means economically self-sufficient and the City of **Wainwright** does not have the funds needed to maintain and operate the facility. As the North Slope Borough has assumed areawide responsibility for water and sewage collection and disposal, it may eventually take over the system's operation.

Electric Power

The North Slope Borough owns and operates the electric power system in **Wainwright**. **In** December 1977, the system consisted of an extremely unreliable diesel-powered 75 kilowatt generator and two additional inoperative generators. The two largest power consumers in the village, the school and the EPA facility, have separate power sources.

A new power plant and distribution system is scheduled for completion in 1978. Funded with a \$600,000 EDA grant and \$156,000 on Borough funds, the new facility will contain two diesel-powered 160 kilowatt generators and will be able to accommodate a third generator when and if this is required. The new system will serve the entire **village**, including the school and EPA facility which are not on the current system, and has the capacity to serve the airstrip runway and local street lighting in the future if this is deemed desirable. The electrical contractor responsible for installing the plant and distribution system estimated that, when completed, the capacity of the new system will be adequate to satisfy **Wainwright's** foreseeable demands for the next ten years.

Solid Waste Disposal

Solid waste (garbage) disposal is handled on an individual basis in **Wainwright** with reimbursement by the North Slope Borough. The Borough budgets \$17,500 annually for this service. Most garbage is collected in summer and hauled in the winter on sleds and **ski-doo**s to the dump about 4.8 kilometers (3 miles) outside town although several residents do have vehicles which can haul garbage in summer. The dump is posted with a sign instructing where garbage should be dumped and a fine of \$15 is theoretically imposed if the instructions are not heeded. The capacity of the dump is unknown, as is the average annual rate of usage.

Like dumps in other traditional villages of the region, the **Wainwright** facility does not meet EPA standards since permafrost conditions

prohibit the development of adequate sanitary landfills. Furthermore, low temperatures inhibit the decomposition of organic wastes. According to the U.S. Public Health Service, individual communities in this region would need incinerators to meet EPA standards for solid waste disposal but the cost of these facilities makes their use impractical in small villages.

Communications

Telephone service, initiated in **Wainwright** in 1976, is provided by RCA **Alascom's** bush communications system. One telephone located in the city office serves the entire village. There is a charge of \$.25 per call to Barrow and one of \$.50 per call beyond Barrow. However, calls beyond Barrow must either be collect or by credit card. The **Wainwright** school has its own telephone system which is hooked into the DEW Line communications system. According to school officials, however, the line is often inoperative.

Transportation

REGIONAL TRANSPORTATION

Air

As with other North Slope communities, transportation of people **and** goods to and from **Wainwright** depends heavily on aviation. Arctic Air

Guide provides twice weekly scheduled service to the village from Barrow under contract to Wien Air Alaska. Demand has increased recently and the operator usually flies the route twice daily, seven days a week with a Cessna 207 capable of accommodating six passengers or 544 kilograms (1,200 pounds) of freight. Other equipment used as required ranges from a five-passenger Cessna 185 to a DeHavilland Twin Otter which can carry 19 passengers or 1,588 kilograms (3,500 pounds) of freight. The round trip air fare **Barrow/Wainwright** and return is \$52.70 while a round trip ticket between **Wainwright** and Fairbanks is \$192.70.

Under an inter-line agreement with Wien Air Alaska, freight from Anchorage and Fairbanks to **Wainwright** through Barrow can be shipped at a lower rate than freight originating in Barrow and destined for **Wainwright**. Wien charges **68.2¢** per kilogram (**31¢** per pound) Anchorage to Barrow and **19.84¢** per kilogram (**9¢** per pound) Barrow to **Wainwright**, while Arctic Air Guide charges **26.4¢** per kilogram (**12¢** per pound) for freight **originating** in Barrow. The postal rate between Anchorage and **Wainwright** for packages under 27.22 kilograms (60 pounds) and within cube specifications is \$2.05 for the first kilogram (**93¢** for the first 2 pounds) and **20¢** per additional kilogram (**9¢** per pound over two pounds).

Charter services to **Wainwright** from Barrow are available from three operators: Arctic Air Guide, **Fel-Air** and **Jen-Air**. The charter rate for a typical six-passenger aircraft Cessna 207 flight to **Wainwright** is \$210 plus tax. According to local residents, there are also occasional charters from Kotzebue to **Wainwright**.

The **Wainwright** airstrip is owned by the State and maintained under contract by the Borough and has a 670.56 by 30.48 meter (2,200 foot by 100 foot) gravel runway. Low intensity runway lights have been installed by the village, and there is a communications tie-in with the FAA Flight Service Station at Barrow. There are currently no fueling or terminal facilities available to shelter waiting passengers or freight. The State does not anticipate making any improvements to the **Wainwright** airstrip during the next several years although village residents would like the runway lengthened sufficiently to accommodate Hercules-type aircraft.

The DEW Line airstrip, located about 8 kilometers (5 miles) east of **Wainwright**, is available for public use on an emergency basis only and clearance is required in advance of landing. Arctic Air Guide and Jen-Air have the requisite clearance. The strip is gravel, 1,066.8 by 30.48 meters (3,500 feet by 100 feet), and equipped with high-intensity runway lights. Navigational aids include ground-to-air communications, a homer beacon and wind-driven measuring equipment. The facility also has two D-8 cats for maintenance.

Water

Marine transportation to **Wainwright** is limited by the short navigation season in the Arctic. According to the U.S. Coast Pilot, average break-up is the last of June, average freeze-up the first of October. Navigation is difficult from early November to mid-July and usually

suspended between early December and early July. The Pilot further cautions that the entrance to **Wainwright** Lagoon, a narrow winding channel with a controlling depth of 1.83 meters (6 feet), should not be attempted without a local guide. Shoals extend 1.12 kilometers (0.7 miles) off the inlet and ice may enter during southwest storms.

An aero radio beacon is located 4.8 kilometers (3 miles) southeast of the village. However, there are no docking or storage facilities and cargo must be lightered ashore by barges or small craft. In addition, there are no facilities to house about 34 small locally owned craft.

Wainwright is visited annually by the Bureau of Indian Affairs cargo ship North Star **III**. In 1977, according to the North Star **III** purser, the ship delivered approximately 45,360 kilograms (50 tons) of cargo to the village, including school supplies, food and furniture. An all-terrain vehicle equipped with a forklift offloaded cargo from landing craft to the beach, and then to higher ground.

The North Star **III** has a limited fuel capacity. Consequently, fuel for the village is purchased from Chevron in Point Wells, Washington, is barged to Kotzebue by **Crowley** Maritime and then lightered to **Wainwright** by Arctic Lighterage. In 1977, the village purchased 870,550 liters (230,000 gallons) of No. 1 heating oil and 94,625 liters (25,000 gallons) of gasoline, the latter primarily for snowmachines. Fuel tank capacity is 870,550 liters (230,000 gallons) but the **Olgoonik** Corporation has indicated plans to increase this capacity by another 189,250 liters (50,000 gallons).

Land

There is no road system connecting **Wainwright** with other North Slope communities so that overland transportation is limited to winter travel by **snowmachine** and all-terrain vehicle. Approximately 80 percent of the households in **Wainwright** owned **snowmachines** in 1977, with nearly 35 percent having two or more. Most travel is for hunting and fishing but people sometimes travel via trails to Barrow, Point Lay and Atkasook.

LOCAL TRANSPORTATION

Phase I of the North Slope Borough community road program was completed in 1975. At a total cost of \$200,000 (\$50,000 from the Borough and \$150,000 in State Local Service Roads and Trails funds), approximately 2,590.8 meters (8,500 linear feet) of 3.66 meter (12 foot) wide road on a 5.5 meter (18 foot) wide gravel base were constructed.

Phase II of the program scheduled for the 1977 and 1978 construction seasons involves the building of an additional 533.4 meters (1,750 feet) of 3.66 meter (12 foot) wide road to new Borough houses and 304.8 meters (1,000 feet) of 5.5 meter (18 foot) wide road to the new school site at an estimated total cost of \$122,000. Part of the funding for this is from an Economic Development Administration electrical generation grant.

An April 1977 survey conducted by Alaska Consultants, Inc. indicated that there are several privately owned road vehicles (trucks and 4-wheel

drive vehicles) in town plus some all-terrain vehicles and a water and a fuel truck.

Local Government Organization

The City of **Wainwright** is a second class city and was incorporated in 1962. State law provides that second class cities shall have an elected seven member council which must meet at least once a month. A mayor elected by the council serves as the chief administrative officer.

As a second **class** city within an organized borough, **Wainwright** can theoretically exercise all municipal powers except those of assessment and collection of taxes, education, and planning and zoning which are mandatory areawide borough powers under Alaska law. However, the City **has** transferred nearly all of its remaining powers to the Borough since the latter's tax base enables it to provide a much more comprehensive range of services. The following municipal powers were transferred to the Borough in an election held April 30, 1974:

- sewer and sewage treatment facilities
- watercourse and flood control facilities
- health services and hospital facilities
- telephone systems
- light, power and heat
- water
- transportation systems, including airport and aviation systems and streets and sidewalks

- e libraries
- garbage and solid waste collection and disposal services and facilities
- housing and urban renewal, rehabilitation and development
- preservation, maintenance and protection of historic sites, buildings and monuments

Wainwright's police power was transferred to the Borough in an election held July 1, 1976.

The two municipal powers retained and exercised by the City of Wainwright are recreation and fire protection. To pay for these services, the City may levy a sales and use tax upon all sources taxed by the Borough in the manner provided by the Borough. The property tax may not exceed 5 mills or one-half of one percent and it must be approved by referendum. The sales and use tax must also be approved by referendum and may not exceed 3 percent. If the City were to exercise this authority, the tax would be assessed and collected by the Borough and then remitted to the City.

Wainwright raises money for its limited municipal services through a 3 percent local sales tax but the village has never levied a property tax. Additional funds have been obtained from City-sponsored bingo games. State revenue sharing funds available to local governments for which Wainwright could be eligible are fire protection and recreation but the City did not apply for these in 1976.

VI. CITY OF NUIQSUT

Population and Economy

POPULATION

Past Trends

Nuiqsut was one of three traditional abandoned Inupiat villages in the North Slope region which was identified in the Alaska Native Claims Settlement Act. Situated at the base of the Colville River delta, the locale's abundant hunting and fishing resources historically supported a permanent population of varying numbers. As recently as 1939, the Census counted 89 Nuiqsut residents but during the ensuing three decades the village was virtually abandoned as residents moved to Barrow in search of wage employment, school for their children and improved social services. The 1950, 1960 and 1970 Censuses indicate no population for the village. According to the North Slope Borough, however, at least five cabins in the environs of the traditional village site continued to be utilized for hunting and fishing purposes at various times during the year by Native people with second residences in Barrow and one cabin served as a full-time family residence.

The Nuiqsut village corporation, with an enrollment of 207, was established in Barrow in the winter of 1972-73. Many of these people had lived in the Colville River area 25 or 30 years earlier or

customarily hunted and fished in the area. In April 1973, 27 families moved to the area by snowmobile and established a "tent city" at the present village site on the **Nechelik** Channel near its confluence with the **Kuukpik** Channel. A year later, in the spring of 1974, 31 prefabricated buildings were airlifted from Barrow to **Nuiqsut** by Hercules aircraft under the sponsorship of the Arctic Slope Regional Corporation. Thus, **Nuiqsut** was re-established almost overnight.

Dr. Fred Milan, Professor of Anthropology at the University of Alaska, counted 145 **Nuiqsut** residents in the summer of 1974. A population count undertaken by the North Slope Borough in January of 1977 noted 144 Native people, five non-Native school teachers and their families and one non-Native minister for a total of 152 people. By July 1977, Borough estimates put the community's population at 157.

Population Composition

According to **Milan**, there were 85 males and 60 females residing in the village in 1974. The predominance of males over females was especially evident in the 11 to 15 and 16 to 20 age ranges. **Nuiqsut's** ratio of 59 percent males to 41 percent females is nevertheless typical of North Slope villages. Males outnumbered females 59 to 41 percent in Kaktovik in 1970, 52 to 48 percent in Barrow in 1970, and 55 to 45 percent in **Wainwright** in 1977. However, the male to female discrepancy in **Nuiqsut** is higher than the 1970 Statewide ratio of 54 percent males to 46 percent females and quite **unlike** the 1970 national ratio of 51 percent females to 49 percent males.

Dr. Milan further noted that the median age of **Nuiqsut's** 1974 population was 14, an extremely low figure even by rural Alaska standards.

However, in the summer of 1977, according to a study undertaken by the North Slope Borough, the median age of males in the community was 19 and that of females was 15. This is only slightly younger than figures recorded for Barrow Census Division in 1970 where the median age of males was 19.6 and that of females was 16.4. It is, however, significantly younger than the 1970 norms for both the State and the nation. In 1970, the median age of males in the State was 23.3 and in the United States as a whole it was 27.0. For females, the 1970 State median age was 22.9 while that for the nation was a much older 29.6.

Household density figures for **Nuiqsut** are scanty, but a survey of 26 households conducted by Dupere and Associates in 1974 prior to the construction of **Nuiqsut's** permanent housing, indicated that the number of people per household was relatively high. The survey found that 69.3 percent (or 18 out of a total sample of 26) of all households had more than four members and that 31 percent had seven or more members. Three years later, in the summer of 1977, the North Slope Borough found that 56 percent (or 13 of **Nuiqsut's** 23 households) had more than five people. This is similar to the 1970 Barrow Census Division figure of 5.55 people per household but well above the 1970 Statewide average of 3.5 persons.

TABLE 53
HOUSEHOLD DENSITIES
NUIQSUT, ALASKA
1974

| <u>Persons Per Household</u> | <u>Number of Housing Units</u> | <u>Percent of Population</u> % |
|------------------------------|--------------------------------|-----------------------------------|
| One | 4 | 15.4 |
| 2 - 3 | 4 | 15.4 |
| 4 - 6 | 10 | 38.5 |
| 7 - 9 | 6 | 23.1 |
| 10 or more | 2 | 7.7 |
| <u>TOTAL</u> | 26 | <u>100.0</u> |

Source: Dupere and Associates, Inc.

Growth Prospects

Nuiqsut presently has a very limited economic base. The community exists not because of any specific economic activity and attendant employment opportunities but because families who had traditionally lived in the area and thus had close cultural ties to the land wished to return. (It is doubtful, however, that this return would have taken place without the impetus of the Alaska Native Claims Settlement Act and the assistance of the Arctic Slope Regional Corporation). Nevertheless, while cultural and family ties should ensure Nuiqsut's continued existence, opportunities for employment and cash income will be the primary factors determining future rates of growth in this community. With few prospects for employment and a reasonable level of income, many young people will leave Nuiqsut and the village's population could easily decline. If, on the other hand, prospects for local employment and income improve, more young people are likely to remain and the community can expect steady rates of population increase.

There are several sources of employment in the Nuiqsut area with a potential for encouraging population growth. Foremost among these is the further expansion of North Slope Borough services. However, investments by the Arctic Slope Regional Corporation and the locally based Kuukpik Corporation are also likely to influence future growth while Nuiqsut's proximity to Prudhoe Bay should continue to encourage some local residents to work in that area. On the other hand, people seeking entry into professional and technical occupations will continue to leave the community.

ECONOMY

Composi ti on of Employment

The Employment Security Division of the Alaska Department of Labor does not disclose employment statistics for communities of **Nuiqsut's** small size. Employment data was therefore obtained from a survey conducted by the North Slope Borough in the summer of 1977 and from a count undertaken by Alaska Consultants, Inc. in December 1977.

When converted to average annual full-time employment, a total of 42 jobs were identified in **Nuiqsut** by Alaska Consultants, Inc. in December 1977. Slightly over two-thirds of these jobs were in government occupations, almost all of them associated with the North Slope Borough.

The **Nuiqsut** school was the largest single employer, accounting for 19.25 full-time job equivalents or about 46 percent of the average annual employment in the village. However, 7 of the 8 teaching positions were held by whites while one job equivalent counted for the school actually represented 9 students employed part-time to provide janitorial services, each working about four hours a week at \$5 an hour. Of the remaining 9.25 government jobs, one was associated with the Post Office and the others were either general Borough government positions (village coordinator and personnel involved in the operation of the health clinic and the power plant) or temporary Borough construction and maintenance positions. There are no State government employees in **Nuiqsut**.

TABLE 54
 AVERAGE ANNUAL FULL-TIME EMPLOYMENT
 NUIQSUT, ALASKA
 1977

| <u>Industry Classification</u> | <u>Number</u> | <u>Percent of Total</u> % |
|---|---------------|------------------------------|
| Min ing | 0 | --- |
| Contract Constructi on | 5.0 | 11.9 |
| Manufacturi ng | 0 | --- |
| Transportati on, Communi cations and Public Util ities | 0 | --- |
| Trade | 4.5 | 10.7 |
| Finance, Insuranc e and Real Estate | 4.0 | 9.5 |
| Servi ce | 0 | --- |
| Mi scel laneous | 0 | --- |
| Government | 28.5 | 67.9 |
| Federal | (1.0) | (2.4) |
| State | (0) | (---) |
| Local | (27.5) | (65.5) |
| <u>TOTAL</u> | <u>42.0</u> | <u>100.0</u> |

Source: Alaska Consultants, Inc.

A number of short-term construction and maintenance jobs are provided by the North Slope Borough in **Nuiqsut**. According to the Borough, such employment accounted for 42 non-permanent jobs for 20 individuals in the community during the period October 1, 1976 to October 1, 1977. The average duration of these jobs was 19 days or 110.5 hours. When converted to average annual full-time employment, these activities accounted for an equivalent of 3.25 jobs.

After government, most jobs in **Nuiqsut** in 1977 were in contract construction. All 5 persons in **this** sector were employed by Steve Construction under contract to the North Slope Borough to build a road to the new community water source. The trade sector had 4.5 employees or 10.7 percent of the jobs in the village. All of these people were employed by the **Kuukpik** Corporation store. Finance, insurance and real estate accounted for 4 jobs in the **Kuukpik** Corporation office.

Aside from jobs counted by Alaska Consultants in 1977, 2 people from **Nuiqsut** are employed by ARCO at Prudhoe Bay. These job holders return to the community during their leave periods.

Unemployment and Seasonality of Employment

No unemployment statistics are available for individual communities within the North Slope Borough. Statistics collected by the Employment Security Division of the Alaska Department of Labor are collected on a Boroughwide basis and do not necessarily give a true picture of

conditions in individual communities such as **Nuiqsut**. For example, the Barrow-North Slope labor division had an unemployment rate of 3.7 percent in 1976, the lowest of any area in the State and well below the Statewide average of 8.2 percent. However, **as of July 1976, 71.1** percent of the Borough's residents lived outside the region's traditional villages, primarily in the **Prudhoe Bay/Deadhorse** area and in Pipeline camps. All of these people were employed since housing is provided only for workers. One can assume that unemployment rates within some of the traditional villages are therefore higher than indicated by **regionwide** figures.

Although there are no verifiable statistics available for **Nuiqsut**, it appears that there is a shortage of jobs for men in the community. The population of **Nuiqsut** is predominantly **male**, yet over half the full-time jobs identified here by the North Slope Borough in the summer of 1977 were held by females. The Borough further noted that many of the available jobs required a fairly high level of education and a complete mastery of English. Such a requirement **places severe** limitations on **Nuiqsut's** adult population which, according to a 1974 survey by Dupere and Associates, is the least well educated of any community on the North Slope. At that time, 88 percent of **Nuiqsut's** heads of household had less than an eighth grade education. Thus, men with vocational backgrounds rather than formal educations have difficulty finding steady jobs and rely heavily on seasonal construction projects as a source of employment and income.

In **Nuiqsut**, as in most other small North Slope communities, seasonal variations in employment result from the closure of the local school during the summer months and from summer construction activities. School teachers normally leave the region during the long summer vacation, and other positions associated with the school except for maintenance jobs also cease temporarily. The number of construction jobs available fluctuates from year to year depending on the projects scheduled, but most activity takes place **during** the summer because of the harsh winter climate.

Recent Trends and Changes

There is no published information available which indicates trends in employment in individual communities of the North Slope region. Nor would such information be particularly relevant to **Nuiqsut** since it has been in existence for only three years. In the absence of documentation of employment trends and historical perspective for **Nuiqsut**, it can only be said that the incorporation of the North Slope Borough and the formation of the local native village corporation are the key events in **Nuiqsut's** present economic situation. (Both of these events took place, however, before the community was re-established). Only 1 of the 42 jobs counted in 1977 by Alaska Consultants was not directly derived from the operations of either the Borough or the **Kuukpiik** Corporation.

New employment opportunities outside the community have also been available to **Nuiqsut** residents during the past few years as a result of

the development of the Prudhoe Bay field and the construction of the Trans Alaska Pipeline. Construction of the proposed natural gas pipeline should offer similar opportunities in the future.

Occupational Skills

Comprehensive information on the skills of the workforce in the North Slope region is generally lacking, and there are no reliable and current statistics for individual communities. Some general idea of the occupational skills of Nuiqsut residents can be inferred, however, from information available from the Barrow Manpower Center if one assumes that occupational skills are relatively consistent Boroughwide. A breakdown of skills possessed by Barrow Manpower Center registrants is given on page 139 of this report.

Income Levels

Compared with State averages, household incomes in Nuiqsut are low. However, the incomes of many local families have risen sharply during the past few years. A survey of 26 households conducted by Dupere and Associates in 1974 found that the median 1973 family income in Nuiqsut was only \$3,800. In March 1976, a survey of 89 percent of Nuiqsut's households conducted by the North Slope Borough School District found that the median income had risen to \$11,899, slightly more than three times the 1973 figure. Nevertheless, although household incomes in Nuiqsut have risen sharply, they are still low. For example, the median

TABLE 55

FAMILY INCOME DISTRIBUTION
NUIQSUT, ALASKA
1973

| <u>Family Income</u> | <u>Number of Families</u> | <u>Percent of Total</u> |
|---------------------------------------|---------------------------|-------------------------|
| Under \$1,000 | 3 | 11.5 |
| \$1,000- \$4,999 | 10 | 38.5 |
| \$5,000- \$10,999 | 8 | 30.8 |
| \$11,000 | 2 | 7.7 |
| \$16,000 - \$18,999 | 0 | --- |
| \$21,000- \$24,999 | 0 | --- |
| \$25,000 or more | 1 | 3.8 |
| No response | 2 | 7.7 |
| <u>TOTAL</u> | 26 | <u>100.0</u> |

Source: Dupere and Associates.

TABLE 56

HOUSEHOLD INCOME DISTRIBUTION
NUIQSUT, ALASKA
1975

| <u>Household Income</u> | <u>Number of Households</u> | <u>Percent of Total</u> |
|-------------------------|-----------------------------|-------------------------|
| Under \$10,000 | 7 | 30.4 |
| \$10,000- \$14,999 | 3 | 13.0 |
| \$15,000- \$19,999 | 4 | 17.4 |
| \$20,000 or more | 6 | 26.1 |
| Not available | 3 | 13.0 |
| <u>TOTAL</u> | 23 | <u>100.0</u> |

Source: North Slope Borough.

family income in the State in 1969 was \$12,443, well above that found in Nuiqsut in 1976 without even considering the increases that have occurred in Statewide incomes between 1969 and 1976.

Public assistance programs provide supplemental income for some Nuiqsut households. During FY 1976, the Bureau of Indian Affairs distributed a total of \$800 in general assistance to one Nuiqsut family. This is down sharply from FY 1974 when the BIA paid out \$6,200 in general assistance to 19 Nuiqsut recipients. Public assistance payments distributed by the Alaska Department of Health and Social Services also provide some supplemental income. During a typical month in 1976, 2 families were eligible for Aid to Families with Dependent Children (AFDC) funds. In 1976, the average AFDC payment per recipient was \$102 per month. According to Department of Health and Social Services records, no other public assistance payments were made to Nuiqsut residents in 1976.

Recent household income data collected by the North Slope Borough are too generalized to compare with U.S. Department of Labor standards for poverty level incomes but 1973 data collected by Dupere and Associates indicate that well over 50 percent of Nuiqsut's families had incomes below what was then considered to represent a poverty level income for a non-farm family of two in Alaska. The Dupere data do not indicate family size (usually larger than two) nor do the federal standards take into account the extremely high living costs of remote Alaskan areas, but one can assume that even with rising incomes, a significant share of Nuiqsut's households continue to live in conditions of extreme poverty.

TABLE 57

GENERAL ASSISTANCE PAYMENTS a_/
 NUIQSUT, ALASKA
 FY 1974 - FY 1976

| | <u>FY 1974</u> | <u>FY 1975</u> | <u>FY 1976</u> |
|------------------|----------------|----------------|----------------|
| Total Payment | \$6,200 | \$ 500 | \$ 800 |
| Number of Cases | 19 | 2 | 1 |
| Average Payment: | | | |
| Annual | \$ 326 | \$ 250 | \$ 800 |
| Monthly | \$ 27 | \$ 21 | \$ 66 |

a/ Payments made by the Bureau of Indian Affairs.

Source: U. S. Bureau of Indian Affairs.

Land Use

OVERALL PATTERNS

Nuiqsut has a very simple and basic land use pattern. However, it is not one that is typical of Eskimo communities. Nuiqsut's city limits take in close to 23.31 square kilometers (9 square miles), with the surveyed area (excluding the airport south of town and the new school/community center site immediately to the north) covering about 48.56 hectares (120 acres). All of the town's development to date has been concentrated within the northeast portion of the surveyed area.

The Nuiqsut townsite was laid out by the Arctic Slope Regional Corporation on a grid with very large lots for an Arctic community (1,858 square meters or 20,000 square feet). Platted street widths are also extremely wide (30.48 meters or 100 feet) and 15.24 meter (50 foot) wide alleys running down the center of each block have also been platted. Because of the way the community was laid out, development is much more dispersed than normal in an Eskimo village.

According to a study of land use in Nuiqsut carried out by Alaska Consultants, Inc. in December 1977, residential, public/semi-public, commercial and utilities/storage uses occupied about 8.62 hectares (21.3 acres) of land within the townsite. Of this, residential uses (including two Borough houses about to be occupied) took up 6.6 hectares (16.3 acres). Public/semi-public uses (the school, health clinic, Post

Office and two churches) occupied 1.38 hectares (3.4 acres). Of the remaining .65 hectares (1.6 acres), .28 hectares (.7 acres) were taken up by commercial uses represented by a store and the **Kuukpik** village corporation office and .36 hectares (.9 acres) were occupied by utilities/storage uses (the community power plant and a lot used for equipment storage). Taking the platted width of developed streets, another 5.95 hectares (14.7 acres) of land were in use. However, there are no developed streets in the community that are wider than 4.88 meters (16 feet).

In terms of relationships between land uses, almost all residences in **Nuiqsut** are within a two block area in the northeast portion of town. A Presbyterian church, the health clinic, village corporation office, Post Office and the school are located immediately south of the residential area, while the power house and equipment storage area are located immediately to the north. A second church operated by the Assembly of God is situated immediately west of most of the town's residences.

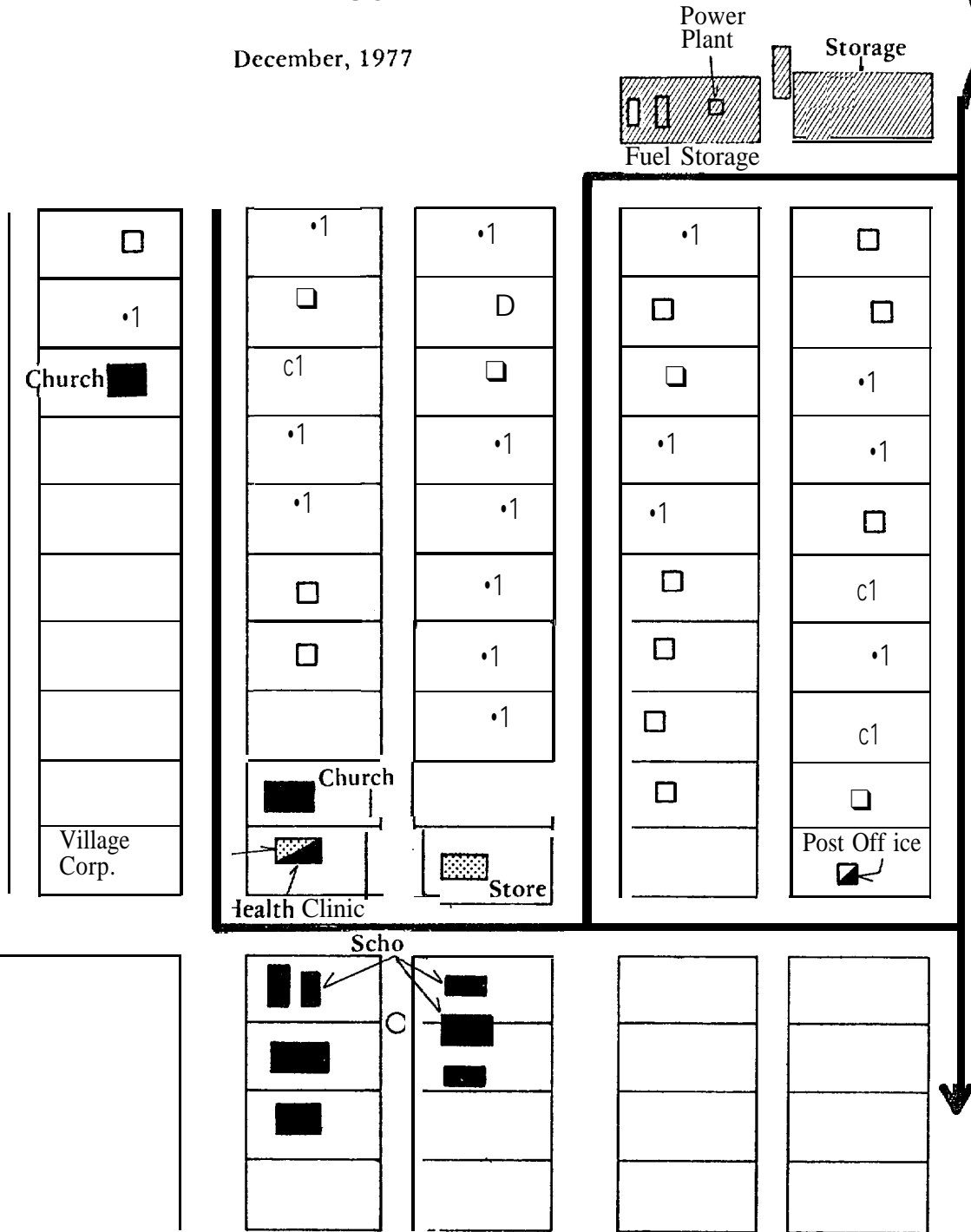
The only physical development in the immediate vicinity of **Nuiqsut** outside the townsite area are the airstrip located east of the village, the water sources to the northeast and south, and the community dump located to the northwest. However, the region around **Nuiqsut** is used heavily by local residents as a source of subsistence supplies.

NUIQSUT LAND USE

December, 1977

To NSB
equipment storage and
future community center

To
airport







-  Residential
-  Commercial
-  Public & Semi-Public
-  Utilities & Storage



FIGURE 8

HOUSING

Residential uses occupied a total of 6.6 hectares (16.3 acres) in **Nuiqsut** in 1977, with all residents living in single family homes. In December 1977, a total of 34 housing units in the village were occupied; an additional 2 units were scheduled for occupation in the immediate future.

Unlike most rural Alaskan villages where the housing stock is usually a combination of very old and very new structures, all homes in **Nuiqsut** were built within the past three years. Thirty-one of the 36 units were built by the Arctic Slope Regional Corporation in 1974 and 1975 soon after the town was established, while another 5 units were constructed by the North Slope Borough in 1976 and 1977. In addition, because **all** homes in the community are new, the average house size in **Nuiqsut** is much larger than that found in the older established towns of the region.

All housing in **Nuiqsut** is in acceptable condition. Although these units would not necessarily meet conventional building code standards (for example, none have running water or flush toilets), they are structurally sound, have a modern interior layout and afford their occupants adequate **protection** from the severe winter cold.

Land Status

At the present time, all land in the immediate vicinity of Nuiqsut is owned by the federal government. The community is located within the former Naval Petroleum Reserve #4 (NPR-4) which was transferred to the Department of the Interior in 1976 and is now known as National Petroleum Reserve-Alaska (NPR-A). However, the ownership of land in the Nuiqsut area will change in the very near future when the Kuukpik Corporation receives surface title to lands under the terms of the Alaska Native Claims Settlement Act.

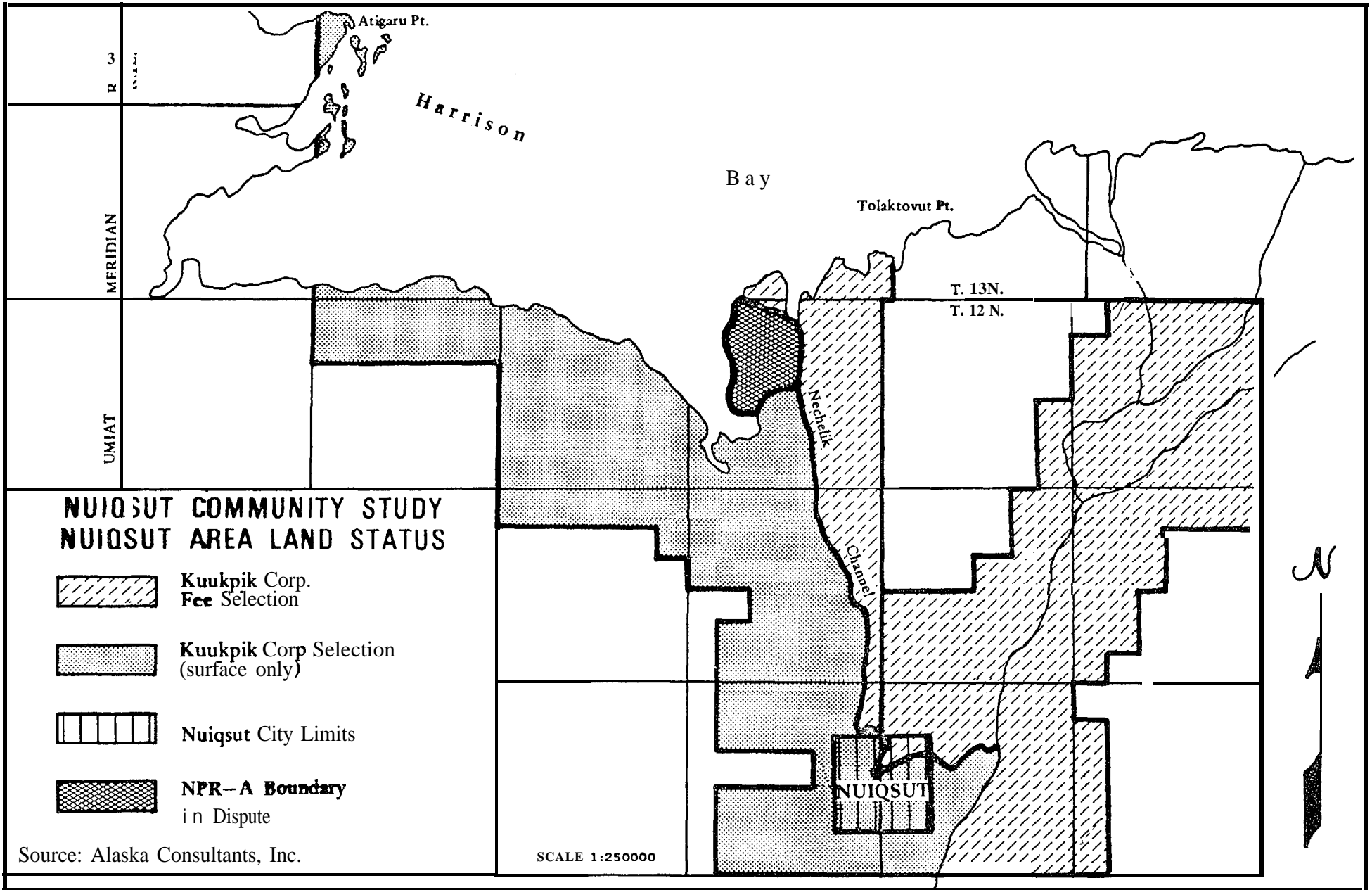
The Kuukpik Corporation's enrollment of 210 persons entitled it to select surface rights to 46,620.8 hectares (115,200 acres) of land surrounding the community under Section 12(a) of the Claims Act. The Corporation is also entitled to receive surface title to lands from the Arctic Slope Regional Corporation under the terms of Section 12(b) of the Act. The Arctic Slope Regional Corporation has determined the Kuukpik Corporation's entitlement to be 3,360.58 hectares (8,304 acres). Thus, all told, the Nuiqsut village corporation's total land entitlement is 49,981.4 hectares (123,504 acres). Normally, the regional corporations receive title to the subsurface estate of lands selected by village corporations. However, since no subsurface rights were selectable from NPR-4, the Arctic Slope Regional Corporation was given alternative lands outside NPR-4 from which to make its selections.

As of January 1, 1978, the **Kuukpiik** Corporation had received none of its land entitlement under either Sections 12(a) or (b) of the Claims Act. However, according to the Bureau of Land Management, an interim conveyance of 17,410 hectares (43,020 acres) under Section 12(a) and 3,035.2 hectares (7,500 acres) under Section 12(b) was imminent but further conveyances will not be made until the status of lands in remaining areas selected by the **Kuukpiik** Corporation has been determined.

There are two land disputes in the **Nuiqsut** area which are holding up conveyance of the remainder of the **Kuukpiik** Corporation's lands. The first of these relates to the boundaries of NPR-A and the second is a question of the navigability of the **Colville** River.

The **Colville** River forms the eastern boundary of NPR-A in the **Nuiqsut** area and lands on the eastern side of the river have been selected by the State of Alaska and tentatively approved by the U.S. Department of the Interior. However, the precise eastern boundary of NPR-A has been variously defined by the Navy, the Department of the Interior and the State of Alaska. This dispute has been in arbitration for several years and should be settled in Federal Court in Juneau in the near future.

A second dispute relates to the navigability status of the **Colville** River. If the river is determined to be navigable, ownership of the riverbed and water area rests with the State of Alaska and is not included in Native entitlements. If it is determined non-navigable, on the other hand, the riverbed and water area do not go to the State and



some portions will become the property of the **Kuukpik** Corporation. The Bureau of Land Management has determined the **Colville** River to be non-navigable while the State disputes this finding.

Section 14(c)(1) of the Claims Act requires that the village corporation must, upon receipt of title to its land, reconvey surface title to lands occupied by Natives or non-Natives at the time of the Act's passage as a primary place of residence or business or as a subsistence campsite.

(This places no legal obligation on the **Kuukpik** Corporation to transfer title to lots within the **Nuiqsut** townsite since the present **village** was not established until after the Act was passed). In addition, Section 14(c)(3) requires that the corporation turn over at least 518 hectares (1,280 acres) of its land to the City of **Nuiqsut** for purposes of municipal expansion, rights of way for public use and other foreseeable **community** needs. However, none of these transfers of land ownership can take place until the village corporation receives title to its land.

Community Facilities and Services

PUBLIC SAFETY

Police

The North Slope Borough is responsible for providing police protection services in **Nuiqsut** but has no personnel stationed permanently in the community at the present time. When required, Borough police are

brought to Nuiqsut from Barrow or a State trooper is called from Deadhorse or Fairbanks.

There were no jail facilities in Nuiqsut in December 1977, but the Borough plans to construct a simple 6.1 by 12.2 meter (20 by 40 foot) structure for this purpose during 1978 using LEAA (Law Enforcement Assistance Administration) funds, if possible. In addition, the Borough plans to station a senior officer full-time in Nuiqsut during 1978 and to hire a local trainee.

Fire Protection

Fire protection is a municipal power retained by the City of Nuiqsut but this service is not currently provided in the community nor is it planned to be added in the near future. According to village spokesmen, there has not yet been a serious fire in Nuiqsut. Furthermore, because of the extremely wide separation between structures, there would be no likelihood of a fire destroying more than one building. However, since the village presently has no water storage facility (water must be hauled individually from a fresh water lake outside town during the summer months or ice is cut from the lake in the winter), once a fire took hold in an individual structure virtually nothing could be done to save it.

Nuiqsut will acquire an emergency water source for firefighting when a planned new high school with a pool is constructed in 1979. In

addition, the development of a central community water source is presently **being considered by the Borough. If a system requiring the hauling** of water is selected, a village water truck could possibly be equipped for firefighting purposes as **well** as for delivering water.

B. HEALTH AND SOCIAL SERVICES

The North Slope Borough operates the **Nuiqsut** health clinic which occupies half of the village corporation building in space leased by the Public Health Service. The clinic is staffed by a primary health aide and an alternate, one of whom is on call at all times. In addition, a Public Health Service doctor and dentist hold clinics in **Nuiqsut** twice yearly and the community is periodically visited by a State public health nurse. Patients requiring hospital care or special treatment are flown to Barrow or Fairbanks.

The North Slope Borough is currently developing a Boroughwide health program to supplement local services. This will not involve the establishment of additional facilities in **Nuiqsut** but it will provide **more visits to the community by medical and dental personnel.**

Furthermore, **Nuiqsut** residents will have access to planned Borough health facilities in Barrow as well as to services already provided by the U.S. Public Health Service.

C. EDUCATION

Education services in Nuiqsut are provided by the North Slope Borough School District. The School District is responsible both for hiring teachers and for maintaining the school plant, while the Borough is responsible for the construction of new school facilities, as required.

At the present time, most Nuiqsut schoolchildren are housed in two separate buildings connected by a multi-purpose room. These buildings are located immediately south of the town's developed area. The two school buildings were constructed in 1974 and contain six classrooms while the multi-purpose room, which functions as a gymnasium, auditorium and lunch room, was added in 1976. The school uses power provided by the village but has its own back-up generating capacity.

Kindergarten through the 12th grade classes are presently taught in five general classrooms while the sixth classroom houses woodworking classes and two small engine shops. However, because of the lack of space and facilities available at the school, cooking and sewing classes are presently taught in village homes. Additional classes are held in the home of one of the teachers and in the Presbyterian church.

Special programs provided by the school include Headstart, special education and vocational education. Instruction in the Inupiat language is also offered. Beginning January 1978, a part-time teacher will hold classes in Native arts and crafts.

TABLE 58

ENROLLMENT TRENDS
 FINAL ENROLLMENT, NUIQSUT, ALASKA
 1972-73 - 1976-77 a/

| <u>Year</u> | <u>Grades K - 8</u> | | <u>Grades 9 - 12</u> | | <u>Total</u> |
|-------------------|---------------------|------------|----------------------|------------|--------------|
| | Number | % of Total | Number | % of Total | |
| 1972-73 <u>b/</u> | | | | | |
| 1973-74 <u>b/</u> | | | | | |
| 1974-75 <u>b/</u> | | | | | |
| 1975-76 | 60 | 93.8 | 4 | 6.2 | 64 |
| 1976-77 | 68 | 79.1 | 18 | 20.9 | 86 |

a/ School not operating prior to 1972-73.

b/ Information not available.

Source: Alaska Department of Education.

During the 1977-78 school year, eight full-time teachers and three teacher aides taught a total of 80 students, with class sizes ranging between 4 and 27 students per room. During the 1976-77 school year, 68 students were enrolled in kindergarten through grade 8, and 18 students were enrolled in grades 9 through 12. In 1975-76, the only previous year for which information is available, 60 students were enrolled in elementary grades (kindergarten through grade 8) and 4 students were enrolled in high school classes.

The school plant is reportedly in good condition, but has several operating problems. There is no running water, storage space is limited to an unheated shed and the lack of space requires that a number of classes be held outside the main school plant. However, these problems should be surmounted in 1979 when the Borough plans to build a new school in the community. Two alternatives have thus far been proposed. The first involves the moving of the present school and adding about 789.65 square meters (8,500 square feet) of floor space. The second proposes the construction of a completely new school facility with a 3,352.58 square meter (36,088 square foot) floor area. Under the second alternative, the present school buildings would be retained for general community use. However, if this alternative is selected, the new facility will probably have to be substantially re-designed as it greatly exceeds space criteria established by the Department of Education.

D. RECREATION

Formal recreation facilities in **Nuiqsut** are presently limited to the multi-purpose room in the school. Dances and movies sponsored by the student council are held here once a week and the room can be converted for half-court basketball. The facility is open to the community during non-school hours.

Nuiqsut's range of recreation amenities should be significantly enhanced in 1979 with the construction of new school facilities by the North Slope Borough. Both alternative plans for the new **Nuiqsut** school include the addition of a swimming pool although the "new school" alternative envisages a much larger facility. The "new school" alternative also includes a larger amount of multi-purpose space whereas the combined old/new alternative would retain the existing half-court gymnasium.

In addition to formal recreation facilities, a great deal of informal recreation activity takes place in **Nuiqsut**, as it does in other communities of the region. These activities include snowmobile driving, walking for pleasure and a very **large** amount of visiting. Hunting and fishing, while primarily undertaken for subsistence purposes, also have a recreational **value**.

UTILITIES

Water

Until very recently, **Nuiqsut's** summer water source was a creek which originates in a lake about 2.4 kilometers (1.5 miles) south of the village and passes between the village and the airstrip before flowing into the Colvine River. In August, the creek is only a few meters wide near its source while the average depth of the lake is about 3.66 meters (12 feet). However, the village dump was located too close to the slough to ensure a continued safe water supply and a new source has now been developed further away from town. A road to the new source is scheduled to be completed in the spring of 1978. In winter, villagers cut ice from a 6.1 meter (20 foot) deep lake about 5 kilometers (3 miles) away across the **Colville** River. Water from both sources is hand carried individually.

According to a study conducted by the University of Alaska (June 15, 1977), the water supply appears adequate for present use and the quality meets most U.S. Public Health Service standards but not the recommended limits for iron, turbidity and color. Per capita consumption of water is very low, about 3.785 liters (1 gallon) per day, probably because of the difficulties involved in obtaining it. According to the University of Alaska (June 15, 1977), the resulting drawdown in the lake south of the village was negligible. Additional information on the capacity of **Nuiqsut's** water sources is not available.

The Public Health Service and the North Slope Borough recently funded a water and waste water feasibility study for **Nuiqsut** which was undertaken by **CH₂M-Hill** (December 1976). The study has been completed and transmitted to the Borough but, as of December 1977, no action had been taken on the study findings.

The report proposed three alternatives for the village based on a present population of 200 people and 50 homes and a projected population of 400 people, 122 homes and a school. (According to Borough estimates, **Nuiqsut** had a population of 157 in July 1977. Alaska Consultants, **Inc.** counted only 34 occupied housing units in the community in December 1977, plus 2 more about to be occupied).

- Full Service System. This would provide running water at each house and vacuum toilets flushed by water, with water for firefighting available at adjacent homes. Average **percapita** consumption was estimated at 170.32 liters (45 gallons) per day. Monthly operation and maintenance costs could run as high as \$300 per household (based on service to 50 homes). Initial capital costs would be approximately \$4.5 million.
- Community Haul System. With this system, per capita consumption and costs would be considerably lower than with the full service system. (Daily per capita consumption rates were estimated at 113.55 liters [30 gallons] per day). A village truck would replenish individual water tanks from water piped to a central location, carry away waste water and could be regulated to eliminate the need for full service

waste disposal. The truck could also be used for firefighting. Honeybuckets or humus toilets would be used for sanitary waste disposal.

- Individual Haul System. With the individual haul system, per capita consumption was estimated at only 18.92 liters (5 gallons) per day, not much higher than current rates of use. Water for general household use and firefighting would be hand carried from a central point in buckets, and either humus toilets or honeybuckets would be used for sanitary waste disposal. This alternative assumes provision of **public** shower and laundry facilities in the school. Operation and maintenance costs were projected **at** between \$70 and \$80 per month per family. Initial capital outlay would be about \$2.27 million.

Sewage and Solid Waste Collection and Disposal

Sewage and solid waste collection and disposal services in **Nuiqsut** are provided by the North Slope Borough. Funds for the service are funneled through the Borough coordinator to the village corporation director who hires local residents to perform the service. Both sewage and **solid** wastes are collected in 208.18 liter (55 gallon) drums and hauled by snowmachine in winter or truck in summer to a dump site about 2.4 kilometers (1.5 miles) west of the village. Haulers are paid at the rate of \$7.50 per drum. The capacity of the dump is unknown.

Village officials reported to Alaska Consultants, **Inc.** in December 1977 that the City dump was located too close to a slough running into the community water source. **Because** of a resulting danger of contamination, a new water source further removed from the village is now used. Another problem is year-round access to the dump. Transportation outside the townsite is difficult in the summer when the ground thaws as the road does not have a gravel base and occasionally becomes impassable. In turn, this situation results in trash and sewage accumulating in the village.

As mentioned in the previous discussion of water, the North Slope Borough is currently studying the feasibility of constructing a water and waste water disposal system at **Nuiqsut**. Adoption of the full service system, already described, would eliminate the requirement to haul sewage to a dump site whereas adoption of either the community haul or individual haul system would not. However, regardless of which sewage disposal system is selected by the Borough, the collection and disposal of solid waste would remain essentially the same as it is today.

Like dumps in other traditional villages of the region, the **Nuiqsut** facility does not meet EPA standards since permafrost conditions prohibit the development of adequate sanitary landfills. Furthermore, low temperatures inhibit the decomposition of organic wastes. According to the U.S. Public Health Service, individual communities would need incinerators to meet EPA standards for solid waste disposal but the cost

of these facilities makes their use impractical in the region's villages.

Electric Power

The North Slope Borough owns and operates the electric power system in Nuiqsut. In December 1977, the system consisted of an 18 month old diesel-powered, 100 kilowatt generator and an older, non-operational 75 kilowatt generator. The Nuiqsut school has a third generator which is reserved for back-up in the event that the main generator breaks down. All houses and public buildings in the village are hooked into the system. Currently, the Borough charges consumers \$.25 per kilowatt hour.

Normal usage consumes three-quarters of Nuiqsut's present firm generating capacity while peak power consumption overburdens the system. Furthermore, the generator is subject to intermittent breakdowns and there is extreme voltage variance along the distribution system. All of these problems should be eliminated during the summer of 1978 with the installation by the North Slope Borough of an insulated generator structure, three new diesel generators (two 100 kilowatt and one 50 kilowatt), a new distribution system and street lighting. Total cost of the project is estimated by the Borough to be between \$600,000 and \$700,000.

The new power system will enable a doubling of **Nuiqsut's** firm power demand (from the present 75 kilowatts to 150 kilowatts). However, a major portion of this added capacity may be utilized by the new school, especially if the more elaborate of the two alternatives is selected.

Communications

Telephone service in **Nuiqsut** was initiated in 1976 and is provided by RCA **Alascom's** bush communications system. One telephone located in the village corporation office serves the entire village. A "radio patch" connects the **Nuiqsut** school with the North Slope Borough School District offices in Barrow, and is available to village residents in emergencies.

Transportation

REGIONAL TRANSPORTATION

Because the extremely short ice-free season limits marine transport throughout the Arctic Coast region and because there is no regional highway system, both freight and passenger traffic to **Nuiqsut** is almost exclusively by air. As of December 1977, scheduled air service from Barrow was provided three times weekly (Monday, Wednesday, Friday) by Arctic Air Guide under a postal agreement. Traffic is generally light, and the operator normally utilizes a Cessna 185 which has a 5 passenger or 408 kilogram (900 pound) freight capacity or a **Dornair** which can carry 7 passengers or 816 kilograms (1,800 pounds) of freight. The

round trip air fare **Barrow/Nuiqsut** and return is \$97.20. Packages under 27.22 kilograms (60 pounds) and within the required cube specifications can be shipped at postal rates significantly lower than the **46.3¢** per kilogram (**21¢** per pound) charged by Arctic Air Guide.

In addition to its scheduled service, Arctic Air Guide provides charter service from Barrow to **Nuiqsut**. Available aircraft range from the company's 5 passenger Cessna 185 to a DeHavilland Twin Otter which can accommodate 19 passengers or 1,588 kilograms (3,500 pounds) of freight. Two other operators, **Fel-Air** and **Jen-Air**, provide charter service to **Nuiqsut** with similar aircraft. The current cost for chartering a Cessna 185 from Barrow to **Nuiqsut**, for example, is \$320 one way or \$640 round trip if a layover of more than several hours is required.

Sea-Airmotive and ERA Helicopters, **Inc.** currently provide charter service from Deadhorse to **Nuiqsut** with a variety of aircraft. A typical rate for an eight passenger Turbo Beaver is \$560 per hour plus fuel. In November 1977, **Sea-Airmotive** initiated twice weekly scheduled air service from Deadhorse to **Nuiqsut** on a trial basis using its Turbo Beaver or Twin Otter, depending upon demand. One way passenger fare from Deadhorse to **Nuiqsut** is \$45.00, with a rate of **.55¢** per kilogram (**25¢** per pound) charged for freight. According to **Sea-Airmotive**, this service will be continued if demand is sufficient.

There is presently no marine transportation service to **Nuiqsut** but one could conceivably be initiated if traffic ever warranted. According to

the U.S. Coast Pilot, the **Colville** River is probably navigable by vessels with a draft of .91 meters (3 feet) approximately 120 kilometers (75 miles) upriver to its confluence with the Anaktuvuk River. Situated as it is, 24.14 to 32.19 kilometers (15 to 20 miles) upstream from the mouth of the **Colville**, however, any barge operation to **Nuiqsut** would require lightening from barges anchored offshore in Harrison Bay.

Although there is no conventional road system connecting **Nuiqsut** to any other community, a system of winter trails exists which permits some overland travel by **snowmachine** and other tracked vehicles when the ground is frozen and snow covered. There is some **winter** travel by **snowmachine** from **Nuiqsut** to Barrow, for example. In an annual report on Title V of the Rural Development Act of 1972 activity, Dr. Fred Milan of the University of Alaska at Fairbanks noted on the move from Barrow to **Nuiqsut** that "according to local informants . . . men from Barrow, having left their jobs, drove their snow machines, tractors, and weasels across the snow covered terrain. Their families then moved over." Most overland travel, however, is limited to individual trips by **snowmachine** for hunting and fishing purposes.

LOCAL TRANSPORTATION

The **Nuiqsut** airport is owned by the **village** but is operated and maintained by the State. It is a sand strip of 304.8 by 22.86 meters (1,000 by 75 feet), and is capable of handling small aircraft such as the Twin Otter. There are currently no navigational aids or runway

lighting which limits service in bad weather. Service is further impaired during break-up when flooding sometimes closes the strip for as much as three weeks. This is a major problem in a community which relies entirely on air transportation.

Because of the flooding problem, village residents have expressed a need for a new and longer airstrip built on higher ground south of town. The North Slope Borough has requested that the State fund the project under the Federal Aviation Administration's Airport Development Assistance Program, but the project has not been included in the current State **six-**year capital improvement program nor, according to the State Division of Aviation, are there indications that it will be in the near future. Total estimated cost of the project is \$1.84 million, with \$43,000 in North Slope Borough general obligation bond funds being available for the required **local** match (North Slope Borough 1977 Capital Improvements Program Amendments).

A local road construction program, for an estimated total cost of \$815,000 to the Borough and scheduled for completion in 1978, will provide access to all existing homes, the new community service center site and the equipment storage facility. Funded under the State Local Service Roads and Trails program, 914.4 meters (3,000 linear feet) of 4.88 meter (16 foot) wide road were constructed in 1976, including the road to the airport, 365.8 meters (1,200 feet) of Anaktuvuk Street, 183 meters (600 feet) along Second Avenue and 122 meters (400 feet) of access to the new school site. The 1977 program will construct

another 1,067 meters (3,500 linear feet) of road with \$216,000 in Local Service Roads and Trails funds. An additional \$233,000 has gone into the construction of two bridges, one on the route to the present airstrip and the other on that to the proposed airstrip and water source (North Slope Borough 1977 Capital Improvements Program Amendments).

The 1977 North Slope Borough capital improvements program, as amended, includes three future road projects in **Nuiqsut**. A road to the proposed new airport will widen the existing 3.4 meter (11 foot) wide road to the water source to 6.7 meters (22 feet) for about .8 kilometers (1/2 mile). Estimated at a total cost of \$280,000, this project assumes construction of the new airport. A second project will build a road to the new water source for an estimated cost of \$550,000. However, if a water transmission line is constructed, development of this road will not be required. A third road which does not have high priority would provide improved access to the dump. This project has an estimated cost of \$435,000.

Local Government Organization

The City of **Nuiqsut** was incorporated as a second class city on June 24, 1975. State law provides that second class cities shall have a seven member council selected by voters at large which must meet at least once a month. A mayor elected by the council serves as the chief administrative officer.

As a second class city within an organized borough, **Nuiqsut** may exercise all municipal powers except those of assessment and collection of taxes, education, and planning and zoning which are mandatory areawide powers granted to boroughs under Alaska law. Although the City can in theory exercise a wide variety of municipal powers, nearly all of them have been transferred to the Borough. In addition to the three mandatory areawide borough powers, the following municipal powers were transferred to the Borough as the result of an election held April 30, 1974:

- sewer and sewage treatment facilities
- watercourse and flood control facilities
- health services and hospital facilities
- telephone systems
- light, power and heat
- water
- transportation systems, including airport and aviation systems and streets and sidewalks
- libraries
- garbage and solid waste collection and disposal services and facilities
- housing and urban renewal, rehabilitation and development
- preservation, maintenance and protection of historic sites, buildings, and monuments

The police power was transferred to the Borough in an election held July 1, 1976.

The two municipal powers retained by the City of **Nuiqsut** are recreation and fire protection although no fire protection facilities or services are presently provided in the village. To pay for municipal services, the City may levy a sales and use tax upon all sources taxed by the Borough in the manner provided by the Borough. The property tax **may** not exceed 5 mills or one-half of one percent and it must be approved by referendum. The sales and use tax must also be approved by referendum and may not exceed 3 percent. **If Nuiqsut** chose to exercise this authority, the tax would be assessed and collected by the Borough and then remitted to the City.

Although it has the power to do so, the City of **Nuiqsut** does not levy either a sales tax or a property tax. State revenue sharing funds are available for both recreation and fire protection but **Nuiqsut** did not apply for these in 1976.

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