OCS Study
MMS 91-0084

Hope Basin Socioeconomic Baseline Study Volume I

Social and Economic Studies

U.S. Department of the Interior
Minerals Management Service
Alaska Outer Continental Shelf Region

CONTRACT NO. 14-12-0001-30492

TECHNICAL REPORT 148

FINAL TECHNICAL REPORT

HOPE BASIN SOCIOECONOMIC BASELINE STUDY

Volume I

Submitted to
Minerals Management Service
U.S. Department of the Interior

by

Kevin Waring Associates

in association with

Ernest Burch, Jr.
Edward Busch
Robert Gal
Lee Gorsuch
Teresa Hull
Steven McNabb
Paul Ongtooguk
Linda Rinaldi

Judith Brogan, Editor
Report Production by Scott's Office Services

This study was funded by the Minerals Management Service, U.S. Department of the Interior, Washington, D.C. under contract number 14-35-0001-30492.

April 1992

Technical Report 148 consists of three volumes:

Final Technical Report
Hope Basin Socioeconomic Baseline Study Volume I

Final Technical Report Summary
Hope Basin Socioeconomic Baseline Study Volume II

NANA Elders Conference and Interview Transcripts
Hope Basin Socioeconomic Baseline Study Volume III

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

CHAPTER 5. INSTITUTIONAL ANALYSIS

LIST OF TABLES

CHAPTER 1

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF TABLES (continued)

CHAPTER 2

LIST OF TABLES (continued)

CHAPTER 3

LIST OF TABLES (continued)

CHAPTER 4

CHAPTER 5

LIST OF TABLES (continued)

LIST OF FIGURES

CHAPTER 1

LIST OF FIGURES (continued)

CHAPTER 2

LIST OF FIGURES (continued)

CHAPTER 3

CHAPTER 4

FOREWORD

The Hope Basin Socioeconomic Baseline Study comprises three separate documents:

1. this Final Technical Report;
2. the Final Technical Report Summary, which is a summary of the full Technical Report; and
3. the NANA Elders Conference and Interview Transcripts, a set of ten transcripts of NANA Elders Conference meetings and interviews with selected elders. Under Steven McNabb's direction, these transcripts were developed from audiotapes that were translated from the original Iñupiat mainly by Rachel Craig, assisted by Bertha Jennings and Barbara Armstrong.

The Final Technical Report was prepared by a multi-disciplinary team of social scientists under the overall direction of Kevin Waring as project manager. The lead authors and support task for the individual chapters of the Final Technical Report were:

Chapter 1. Analysis of the Regional Economy - Kevin Waring.

Chapter 2. Education and Employment - Lee Gorsuch and Paul Ongtooguk who also conducted field interviews, Linda Rinaldi who evaluated field interviews and historical materials, Teresa Hull who researched the statistical database, and Linda Leask who edited this chapter.

Chapter 3. Subsistence - Robert Gal, assisted by Steven McNabb.

Chapter 4. Iñupiat Values, the Elders Council, and Economic Development - Steven McNabb, assisted by Ernest Burch, Jr., Rachel Craig and Ed Busch.

Chapter 5. Institutional Analysis - Ed Busch, assisted by Steven McNabb and Kevin Waring.

CHAPTER 1. ANALYSIS OF THE REGIONAL ECONOMY[1]

I. HISTORIC OVERVIEW OF POST-1900 REGIONAL ECONOMIC DEVELOPMENT

The Northwest Arctic Borough's[2] present economy is the culmination of a lengthy and faltering process of economic modernization that began at the end of the nineteenth century. Earlier, Russian and Euro-American explorers gave the region its first passing introduction to western economic interests and goods. Whalers followed in the last decades of the nineteenth century. Though not so well situated as Port Clarence, Wales, Point Hope for whaling outposts, the region's coastal and upriver settlements supplied labor for the whaling enterprise (Ducker, 1985).

Near the end of the nineteenth century, the Kobuk Valley saw a mining stampede come and go, just before Nome's great 1889 gold rush. Hundreds of goldseekers, as many as two thousand according to some sources (Heiner, 1968), flooded into the Kobuk Valley. When the region failed to yield major gold deposits and when more promising discoveries soon surfaced in the Nome region, most interest quickly dissipated. Nevertheless, gold mining continued as a minor industry, producing some wealth and cash employment for indigenous workers, particularly

---

1. This chapter was written by Kevin Waring and critically reviewed by Gunnar Knapp.

2. After the 1970 decennial census and until the Northwest Arctic Borough's June 2, 1986 incorporation, most federal and state statistics for the region were compiled under the Kobuk census division or the Kobuk labor area. The borough's boundaries are practically coterminous with these earlier regions. For the sake of uniformity, we have referred to the region as the Northwest Arctic Borough, even when treating data series that predate borough incorporation. This anachronism seemed harmless and clearer than fastidious adherence to different regional terms favored by different sources at different times. The term "NANA region" has been reserved for contexts related to NANA Regional Corporation's interests and activities.

on the northeast Seward Peninsula and near Kiana and Shungnak. A few Natives even ran their own gold mining operations (Ducker).

James H. Ducker (1985) documented the region's early economic development in his encyclopedic study of historic uses of the region's navigable waterways. His study was undertaken to assist navigability determinations for land conveyances under the Alaska Native Claims Settlement Act. He focussed on historic use of waterways for travel and commerce, exhaustively describing the travels and activities of Native hunters, explorers, travellers, miners, trappers, traders, shippers, roadbuilders and trailclearers, herders and churchmen throughout the region.

Ducker (p. 39) describes a busy era of thriving, enterprising Alaska Native adaptation during the first two decades of this century.

> Many of the Natives at Deering worked at the mines up the Inmachuk. Clarence Andrews, who taught at the village, reported that, "some of the best (hydraulic) nozzle men were Eskimos. Natives were most closely involved in mining in the Kobuk drainage. Brooks of the USGS observed in 1908 that Eskimos in the valley were "very largely employed, and are said to make very good workmen." Shungnak Natives were among those who rushed to the Squirrel River placers in 1910. In that year one native in the village cleared $1,400 from his own claim. Seven years later there were three Shungnak native-owned mining companies operating much like those of neighboring white firms.
>
> Whites also hired Natives for non-mining jobs. Winter freighting and wood-cutting were common occupations which drew Natives to the white settlements. Others served as pilots on boats working out of Kotzebue, or provided a variety of service for the Bureau of Education, including cutting lumber and building schoolhouses as that agency expanded into numerous villages between 1907 and 1910. Villagers learned to make western goods, including boats, which some sold to whites. White traders hired Natives as clerks at some outposts, while other Natives maintained their own stores.

> The Eskimos also partook in the western economy through fur trapping. The market in the first three decades of this century motivated Natives to expend greater effort in gathering furs. Prices rose so that a white fox skin brought $1 in 1900, $10 in 1910, and over $50 in 1929. Natives eagerly sought furs which could yield them annual incomes into the thousands of dollars. The teacher at Shungnak in 1919 noted that many villagers left the community earlier than usual after breakup so they could kill a maximum number of muskrat which were bringing very good prices. . .
>
> Between 1907 and 1910 the Bureau of Education instituted schools in scores of Alaskan Native villages and took over teaching responsibility from mission schools. When the agency decided on a school site, it often determined the location of a village. Natives, especially those living on the region's rivers, led peripatetic lives. However, Native families quickly congregated around the schools to afford their children an education. Eli M. Myers, who built the log schoolhouse at Shungnak in October 1907, reported that thirty to forty families quickly converged on the area and built cabins. Similarly , Noatak owed its origins to a Bureau school placed at the site in 1908, as was the case with Noorvik, where the government put a school in 1915. The schoolhouses placed on the Buckland and Shaktoolik rivers prompted Natives to build a cluster of cabins around them. . .
>
> Missions, paid employment, and government schools altered Natives' lives in a variety of ways. The Eskimos generally adopted Christianity readily. Wages permitted purchase of more white goods. Not only did Eskimos acquire such basic trade items as flour, tobacco, firearms, and ammunition, they also bought stoves, furniture, and sewing machines. By 1919 nearly every family in Shungnak had a sewing machine and one had an organ. With these innovations, the Native women adopted the new techniques of bread-baking and sewing. . .

Ducker also notes that, "for all the changes brought on by the intrusion of white society in the wake of the gold rush, most Natives continued to gain a large measure of their livelihood from traditional sources."

The imprint of this first decade of intensive economic interaction is evident in early census data. Information compiled for the 1910 decennial census revealed that Alaska Natives of the Kobuk River Valley and Kotzebue Sound perimeter ranked among the highest of all Alaska Native tribal groups outside

southeast Alaska in rates of school attendance, English fluency and literacy (U.S. Bureau of the Census, 1915). It is also noteworthy that the region's indigenous population gravitated toward stable, permanent settlements earlier perhaps than any other region of western Alaska and much sooner than peoples of the Lower Yukon and Kuskokwim rivers and coasts.

The developmental impetus prevalent in the opening years of the century did not last. Mining and trapping were the foundation of the region's incipient commercial economy. When those industries slumped, the region's private economic development lapsed. Gradually, the basis for the region's economic evolution shifted from commercial enterprise toward reliance on governmental services. Ducker (p. 43), citing Foote and Williamson (1966), writes that,

> (A)fter 1910 there was a shift in the role of whites in the Eskimo communities of Northwest Alaska. The white population which depended upon Natives to supply commercial commodities for market was gradually replaced by one dedicated more to servicing Native needs. The whalers vanished and the mining forces shrank. In their stead were teachers, missionaries, and a number of traders and shippers who brought goods to the villages.

Thereafter, government steadily became the dominant economic force exclusive of traditional subsistence. The region's economic fortunes fluctuated according to the stimulus of governmental domestic and defense activities, plus its access to short-term seasonal employment in other regions with busier economies. Thus, Ducker (p. 42) writes that,

> Wage employment, especially that outside the villages, rose in the 1950s. Even in the depression years of the thirties, Noatak men got longshoring work late in the summers at Kotzebue. In the fifties construction of the Distant Early Warning defense sites provided nearly every able-bodied man in Point Hope with seasonal work at good wages. Noatak men took jobs in the canneries of southern Alaska as well as construction and interior mining employment. In 1960, over 80 percent of physically capable Noatak men pursued wage labor. Roughly equal numbers worked in the canneries; in Fairbanks, primarily in the mines; and in Kotzebue. Most of the latter worked

for B&R Tug and Barge, which at times during the summers of the 1960s employed over 250 Natives in northern Alaska. . .

This pattern of seasonal or temporary work away from home is still a vital element of the region's work habits. Firefighting and many business activities of the NANA Regional Corporation perpetuate the pattern. The expected economic benefits of the Red Dog Mine to the region depend in part on the willingness of resident workers to commute to mine work on a rotation schedule.

A key feature of the region's economic development was the post-World War II emergence of Kotzebue as its administrative, commercial and transportation hub (Kevin Waring Associates, 1988). Kotzebue is now the center of the regional governmental apparatus and dominates the region's commercial economy.

II. STRUCTURE OF WAGE EMPLOYMENT AND INDUSTRY

This section summarizes trends in wage work and cash income for the Northwest Arctic Borough from 1970 to the present. Economic statistics are used to illustrate the region's developing economy and how its economic status has changed compared to the state's other regions and to Alaska and the nation as a whole.

The year 1970 represents a statistical benchmark for charting the Northwest Arctic Borough's contemporary economic development. The subsequent era reflects a momentous series of events that transformed the state and regional economies, including:

- Alaska Native Claims Settlement Act established private land ownership and modern management techniques through Native regional and village corporations;
- Trans-Alaska pipeline construction boom and ongoing development and production of North Slope oil fields;
- Development of the rural secondary school system;
- State of Alaska's oil income boom/bubble/bust;
- Massive federal and state investment in community infrastructure and human resources; and
- "Nativization" of political and administrative control of rural governmental institutions.

Regional employment and income statistics from 1970 to the present show increasing reliance on wage work and the cash economy in the Northwest Arctic Borough as these events unfolded. Following is an analysis of wage employment trends and cash income components.

1. Wage Employment Trends, 1970-1987

Data from the Alaska Department of Labor and the U.S. Census Bureau have been combined to chart gross trends in wage employment for the Northwest Arctic Borough. Table 1-1 relates the post-1970 growth of wage employment to total population, working age population, and number of households. (Several post-1970 revisions in estimation procedures invalidate longitudinal comparisons of official figures for labor force size and unemployment rates.[3] This is

3. The Statistical Abstract 1988, p. 362, explains the nature of and reasons for these highly technical revisions.

unfortunate, since historic comparisons of labor force and employment trends would be instructive.)

Table 1-1 shows that wage employment growth in the Northwest Arctic Borough substantially exceeded the growth of population, working age population, and number of households. Between 1970 and 1987:

- Wage employment grew 170 percent;
- Population grew 47 percent;
- Working age population up 70 percent; and
- Number of households increased 73 percent.

During this same period the disparities in wage employment conditions between the Northwest Arctic Borough's developing economy and the more mature state and national economies narrowed. Table 1-2 and Figures 1-1 through 1-3 compare several wage employment indicators for the Northwest Arctic Borough, state, and nation: persons per job; working age (16 years+) persons per job; and jobs per household. In each category the Northwest Arctic Borough lagged far behind state and national percentages in 1970, but during ensuing years each employment ratio for the Northwest Arctic Borough improved markedly. By 1987 the figures for the Northwest Arctic Borough show that compared to 1970:

- More residents worked for wages; the ratio of persons per job fell from 6.3 to 3.4 persons.
- More working-age people joined the wage labor force; the ratio of working-age persons per job fell from 3.4 to 2.2 persons.
- Wage work contributed to the livelihood of more households; the ratio of wage earners per household rose from .8 to 1.2 wage earners.

TABLE 1-1
POPULATION AND EMPLOYMENT, 1970-1987
NORTHWEST ARCTIC BOROUGH

Year	Population	Working Age[1] Population	Households	Wage Employment
1970	4,048	2,205	814	641
1975	4,549	n.a.	n.a.	1,042
1980	4,831	3,053	1,140	1,437
1985	5,705	3,643	n.a.	1,823
1987	5,962	3,756	1,407	1,732
Percent Change 1970-1987	+47%	+70%	+73%	+170%

1. Noninstitutional population 16+ years of age.

NOTE: After the 1970 decennial census and until the Northwest Arctic Borough's June 2, 1986 incorporation, most federal and state statistics for the region were compiled under the Kobuk census division or the Kobuk labor area. The borough's boundaries are practically coterminous with these earlier regions. For the sake of uniformity, we have referred to the region as the Northwest Arctic Borough, even when treating data series that predate borough incorporation. This anachronism seemed preferable to fastidious adherence to different regional terms favored by different sources at different times.

Sources: U.S. Bureau of the Census; Alaska Department of Labor.

TABLE 1-2
POPULATION AND EMPLOYMENT RATIOS, 1970-1987
NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA, AND UNITED STATES

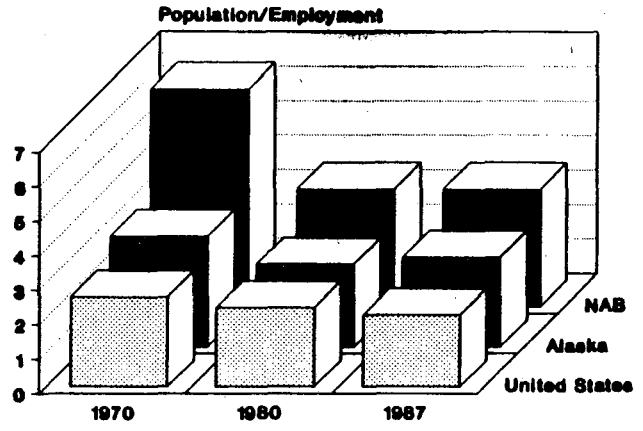
	Population/Employment		
Year	NAB	State of Alaska	United States
1970	6.3	3.2	2.6
1975	4.4	NA	2.5
1980	3.4	2.4	2.3
1985	3.1	2.4	2.2
1987	3.4	2.6	2.1

	Working Age Population/Employment		
Year	NAB	State of Alaska	United States
1970	3.4	2.1	1.8
1975	NA	NA	1.8
1980	2.1	1.7	1.7
1985	2.0	1.7	1.7
1987	2.2	1.9	1.6

	Employment/Households		
Year	NAB	State of Alaska	United States
1970	.8	1.2	1.2
1975	NA	NA	1.2
1980	1.3	1.3	1.2
1985	NA	NA	1.2
1987	1.2	1.2	1.3

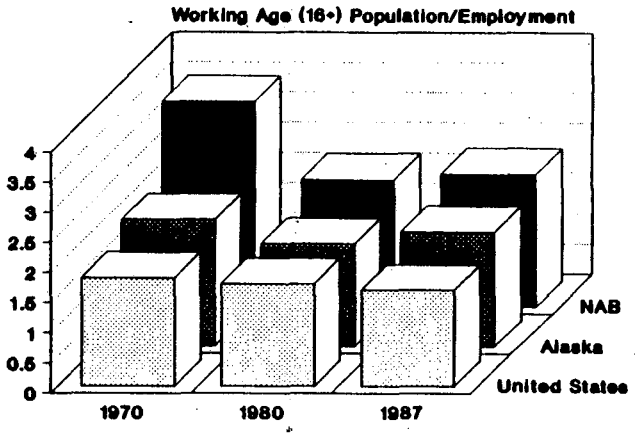
Sources: Statistical Abstract; U.S. Bureau of the Census;
Alaska Department of Labor.

FIGURE 1-1
POPULATION/EMPLOYMENT
NAB, ALASKA AND U.S., 1970, 1980, 1987



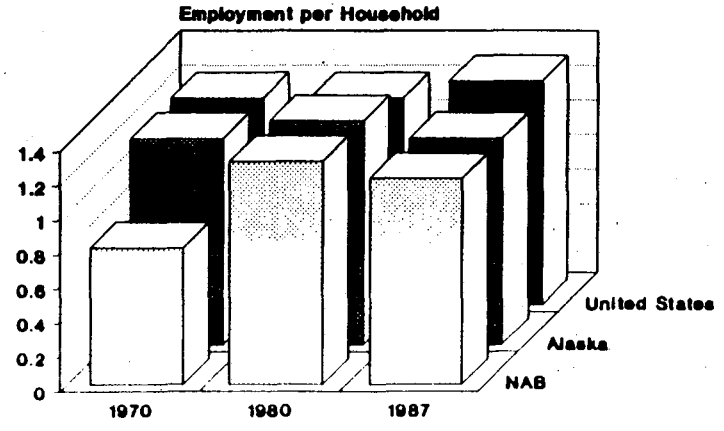
Source: U.S. Bureau of the Census; Ak. Department of Labor.

FIGURE 1-2
WORKING AGE POPULATION/EMPLOYMENT
NAB, ALASKA AND U.S., 1970, 1980, 1987



Source: U.S. Bureau of the Census; Ak. Department of Labor.

FIGURE 1-3
EMPLOYMENT PER HOUSEHOLD
NAB, ALASKA AND U.S., 1970, 1980, 1987



Source: U.S. Bureau of the Census; Ak. Department of Labor.

These figures confirm three related trends in the Northwest Arctic Borough's economy: more wage work, more active participation in the wage economy, and more households dependent upon wage income. In comparison these wage employment indicators were relatively static at the state and national levels.

By 1987 the Northwest Arctic Borough's ratio of wage earners per household approximated state and national figures. Because of its youthful population and much larger households, however, the Northwest Arctic Borough still trailed state and national norms in other respects. Its ratio of working-age population per job was somewhat higher than state figures and higher still than the national level, and its ratio of total persons per job was much higher than state and federal figures. In other words in the Northwest Arctic Borough more people depend on fewer jobs for cash income, at least through the late 1980s.

2. Employment Trends by Industry

Despite overall growth in wage employment, the basic composition of the Northwest Arctic Borough's economic structure changed little between 1970 and 1989. In particular, government was the dominant employer through this era, consistently accounting for about two-thirds of all wage work. Before examining detailed employment statistics, a digression on a potentially misleading quirk of Alaska Department of Labor official employment data is advisable.

The Alaska Department of Labor classifies employers and employees according to the Standard Industrial Code (SIC). The SIC classifies nonprofit public service corporations as service firms, not as governmental agencies. For rural Alaska, where many public services once provided by governmental agencies have been transferred to administration by nonprofit corporations, this practice produces

statistics that invite misinterpretation. It skews trend analysis of service sector employment and of the split of private/governmental employment.

The two largest nonprofit corporations in the Northwest Arctic Borough are Maniilaq Association and the Northwest Inupiat Housing Authority (NIHA). Since Maniilaq Association and NIHA are almost totally funded by state and federal governments, we think their employees are more aptly classified as government workers for purposes of this report's economic analysis. This adjustment permits more accurate analysis of the region's economic structure, particularly in regard to the split of private/governmental employment.

Therefore, we requested and got the approval of Maniilaq Association and NIHA to obtain the employment and payroll data they reported to ADOL during 1980-1989. We then adjusted ADOL published employment figures by reclassifying these agencies' employment from the service sector to the local governmental sector. The adjusted employment statistics were then used for sectoral analysis of NAB employment trends. (However, for regional, state and national comparisons, it was necessary to continue use of unadjusted figures, since it was not feasible to make comparable adjustments to reflect the role of quasi-public service corporations in other economic jurisdictions.)

Table 1-3 shows the growth in average annual employment and payroll for these two agencies over 1980-1989. In 1980, Maniilaq Association and NIHA had 85 and three employees respectively, with a combined payroll of $1.6 million. By 1989, they had 260 and 41 employees, with a combined payroll of $7.7 million. Together, they provided almost 15 percent of the region's total payroll and about three-fourths of all service employment. Indeed, Maniilaq Association is

now the region's largest "service" employer and second largest employer overall, exceeded only by the Northwest Arctic Borough School District.

TABLE 1-3
EMPLOYMENT AND PAYROLLS, 1980-1989
MANIILAQ ASSOCIATION AND NORTHWEST INUPIAT HOUSING AUTHORITY

	Maniilaq Association		Northwest Inupiat Housing Authority		Total
Year	Employment	Payroll	Employment	Payroll	Employment
1980	85	$1,476,636	3	$ 87,469	88
1981	108	1,932,231	8	214,058	116
1982	134	2,606,920	9	264,073	143
1983	161	3,237,730	9	278,620	170
1984	172	3,696,118	13	388,239	185
1985	188	4,357,388	13	438,415	201
1986	201	4,291,996	11	342,296	212
1987	208	4,297,375	22	590,951	230
1988	214	5,019,495	30	587,410	244
1989	260	6,822,052	41	891,759	301

Source: Alaska Department of Labor confidential data, released by permission of Maniilaq Association and Northwest Inupiat Housing Association.

Tables 1-4 and 1-5 compare sectoral employment data, as compiled by standard SIC classifications and as adjusted[4] to reflect reclassification of Maniilaq Association and NIHA employment. The adjusted figures show the public sector continuing to dominate wage employment in 1988, as it has since 1970. The public sector accounted for 63 percent of wage employment in 1970 and held near that level through 1989. Public sector employment peaked in 1985 at 73 percent, falling off to 65.8 percent by 1989. The adjusted data show a temporary loss of about 200 public jobs between 1985 and 1987, likely due to a drop in intergovernmental transfer payments supporting local government.

4. Several tables, figures and text passages in this chapter present data that has been "adjusted" from the original source data for analytic purposes. These adjustments are always noted in the appropriate tables, figures and text.

TABLE 1-4
PERCENT DISTRIBUTION OF EMPLOYMENT BY INDUSTRY SECTOR
NORTHWEST ARCTIC BOROUGH, 1970, 1980, 1985, 1989

Industry Classification	Unadjusted[1]				Adjusted[1]			
	1970	1980	1985	1989	1970	1980	1985	1989
Mining	*	*	*	*	*	*	*	*
Construction	*	5.6	*	1.7	*	5.6	*	1.7
Manufacturing	0	*	0	0	0	*	0	0
Transportation, Communication and Public Utilities	16.6	8.7	6.6	8.4	16.6	8.7	6.6	8.4
Trade	15.6	9.4	10.3	9.2	15.6	9.4	10.3	9.2
Finance, Insurance and Real Estate	*	1.3	4.4	*	*	1.3	4.4	*
Services	2.7	11.7	13.8	20.7	2.7	5.6	2.8	5.6
Government	63.0	61.5	62.0	50.7	63.0	67.6	73.0	65.8
Federal	46.7	15.2	7.5	4.5	46.7	15.2	7.5	4.5
State	16.3	4.2	5.1	4.3	16.3	4.2	5.1	4.3
Local	NA	42.2	49.4	41.9	NA	48.3	60.4	57.0
Miscellaneous	*	*	*	*	*	*	*	*
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	N=641	N=1,437	N=1,823	N=1,991	N=641	N=1,437	N=1,823	N=1,991

*Figures withheld to comply with disclosure regulations.

1. Unadjusted figures are based on actual ADOL employment data. Adjusted figures for 1980, 1985 and 1989 reflect reclassification of employment reported by Maniilaq Association and Northwest Inupiat Housing Authority from service to local government sector.

Source: Alaska Department of Labor.

TABLE 1-5
PUBLIC AND PRIVATE SECTOR EMPLOYMENT
NORTHWEST ARCTIC BOROUGH, 1970, 1975, 1980-1989

Unadjusted[1]

Year	Employment by Sector Private	Public	Total	Percent Public	Public Employment as Percent of Total Population
1970	236	405	641	63.2%	10.0%
1975	455	587	1,042	56.3	12.9
1980	554	883	1,437	61.4	18.3
1981	770	983	1,753	56.1	19.1
1982	774	1,106	1,880	58.8	20.6
1983	780	929	1,709	54.4	16.6
1984	732	1,047	1,779	58.9	18.4
1985	693	1,130	1,823	62.0	19.3
1986	719	1,104	1,823	60.6	18.8
1987	832	900	1,732	52.0	14.9
1988	853	932	1,785	52.2	15.3
1989	982	1,009	1,991	50.7	16.7

Adjusted[1]

Year	Employment by Sector Private	Public	Total	Percent Public	Public Employment as Percent of Total Population
1970	236	405	641	63.2%	10.0%
1975	455	587	1,042	56.3	12.9
1980	466	971	1,437	67.6	20.1
1981	654	1,099	1,753	62.7	21.4
1982	631	1,249	1,880	66.4	23.2
1983	610	1,099	1,709	64.3	19.7
1984	547	1,232	1,779	69.3	21.6
1985	492	1,331	1,823	73.0	22.7
1986	507	1,316	1,823	72.2	22.4
1987	602	1,130	1,732	65.2	18.7
1988	609	1,176	1,785	65.9	19.4
1989	681	1,310	1,991	65.8	21.7

1. Unadjusted figures are based on actual ADOL employment data. Adjusted figures for 1980, 1985 and 1989 reflect reclassification of employment reported by Maniilaq Association and Northwest Inupiat Housing Authority from service to local government sector.

Source: Alaska Department of Labor.

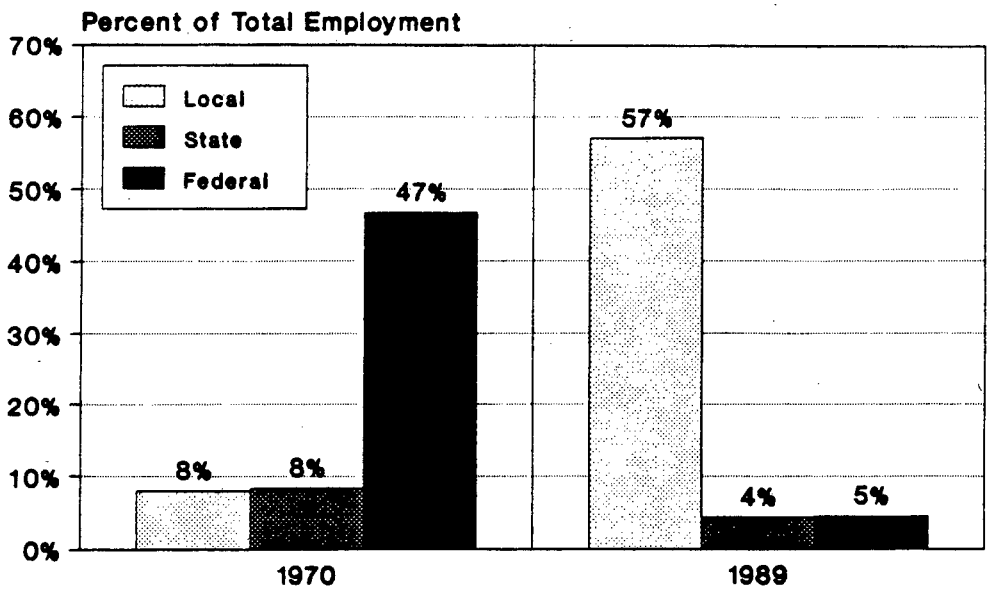
The unadjusted "official" figures in Table 1-5 suggest that the overall share of public sector employment shrank after 1980. The adjusted figures show that this decrease mostly reflects transfer of certain public functions from governmental to nonprofit corporation administration. The adjusted figures show essentially no change in government's share of employment. Since 1980, public sector employment has held virtually constant at two-thirds of all employment and at about 20 percent of total population.

In sum, though wage employment nearly tripled from 1970 to 1988, the public sector continued to dominate the job scene. Nearly two decades of unprecedented public investment in community infrastructure, human resources and economic development did not stimulate emergence of a private economy.

At the beginning and end of this period, private employment in the basic industries of mining and manufacturing was noteworthy mainly for its virtual absence. Relatively minor shifts occurred in the private sectors of transportation/communications/public utilities, trade and finance/insurance/real estate, despite massive investment of public funds in the 1970s and early 1980s to stimulate economic development in the region. Operation of the Red Dog Mine, however, made feasible in part by state finance of transportation facilities, does hold potential to stimulate substantial basic and support sector growth in the private economy.

The most prominent structural change from 1970 to 1988 occurred within the public sector. Federal and local governments reversed their relative employment roles. In 1970 the federal government accounted for nearly 47 percent of all wage employment and nearly 75 percent of all public sector employment (Figure 1-4).

FIGURE 1-4
LOCAL, STATE & FEDERAL PUBLIC EMPLOYMENT NORTHWEST ARCTIC BOROUGH, 1970 AND 1989



Source: Alaska Dept. of Labor, adjusted data, see Table 3.

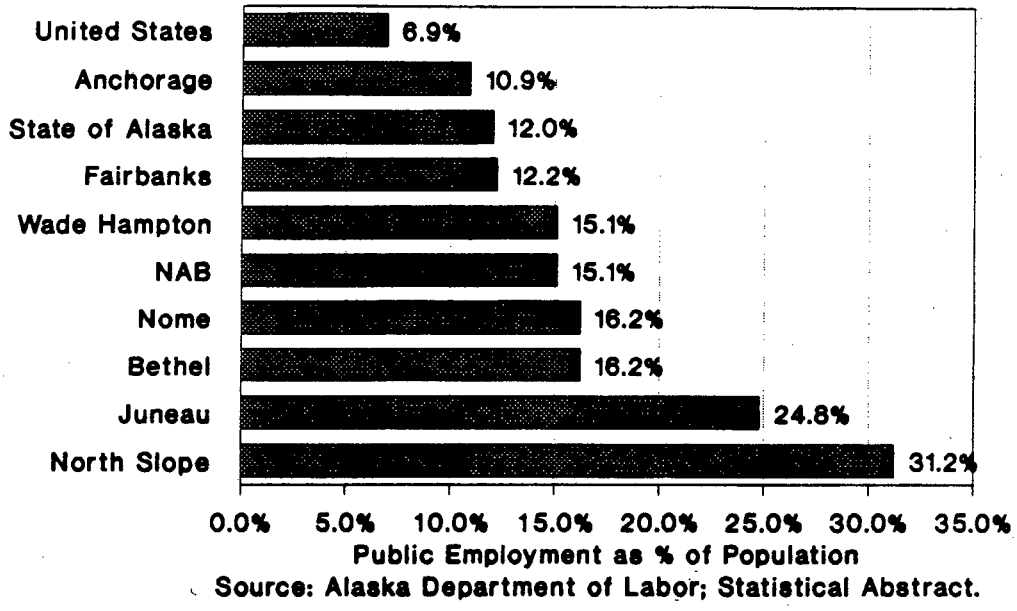
By 1989 the federal government provided only about 4 percent of all employment and less than 7 percent of governmental employment.

Meanwhile, local government employment jumped from an estimated 8 percent of the total in 1970 (the combined figure for state/local government employment was 16 percent, of which perhaps half was local government) to about 57 percent of total employment in 1989. By then, local government (counting nonprofit corporation staff performing public functions) accounted for seven-eighths of all public sector employment.

These economic statistics exemplify three fundamental politico-administrative changes that have transformed federal/state/local governmental relationships over the past two decades: more state and federal funds to support local government; transfer of educational authority first to state, then to local administration; and shift of numerous programs once managed by federal and state agencies to local or regional administration with grant or contract funds.

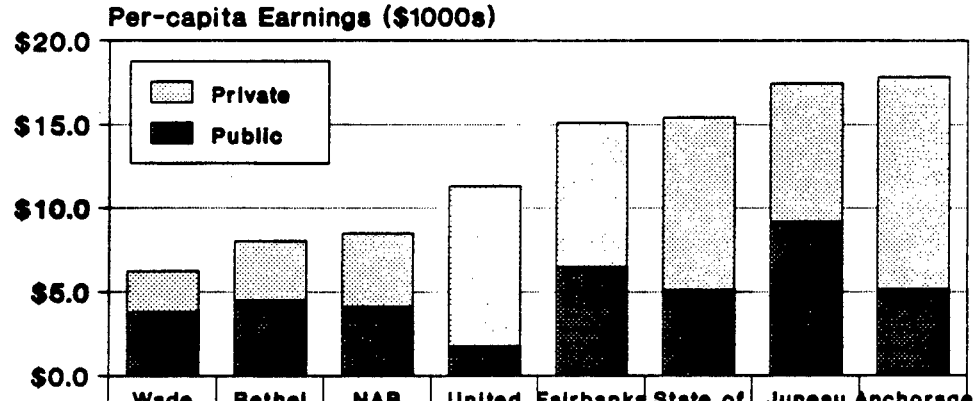
The public sector dominated the region's wage employment during this entire period (Table 1-5). Nevertheless, compared to the population base it serves, the percentage of governmental workers is actually below some other urban and rural regions of the state. (Note that the following geographic comparisons are based on unadjusted ADOL employment data, since it would be misleading to compare adjusted NAB data with unadjusted data for other jurisdictions.) For example, the Northwest Arctic Borough's total public employment in 1987 amounted to 15.1 percent of its population (Figure 1-5). This figure exceeded the statewide average (12.0 percent) but was typical of western Alaska census divisions and well below percentages for the North Slope Borough (31.2) and Juneau (24.8).

FIGURE 1-5
PUBLIC EMPLOYMENT AS % OF POPULATION NAB, SELECT ALASKA REGIONS & U.S., 1987



Source: Alaska Department of Labor; Statistical Abstract.

FIGURE 1-6
PER-CAPITA EARNINGS BY SECTOR, 1987 NAB, SELECT ALASKA REGIONS & U.S.



	Wade Hampton	Bethel	NAB	United States	Fairbanks	State of Alaska	Juneau	Anchorage
Total	$6.2	$8.0	$8.5	$11.3	$15.1	$15.4	$17.4	$17.8
Private	$2.4	$3.5	$4.4	$9.5	$8.6	$10.4	$8.3	$12.7
Public	$3.8	$4.5	$4.1	$1.8	$6.5	$5.1	$9.2	$5.1

Source: Bureau of Economic Analysis.

After allowance is made for its youthful population and that group's need for labor-intensive educational and health services, public service employment in the Northwest Arctic Borough resembles the statewide profile.

Figure 1-6 supports the conclusion that the region's public sector is not inflated compared to other Alaska regions. It shows that the region's per-capita public sector earnings ($4,100) lags behind the statewide average ($5,100) and well behind the figure for such urban regions as Fairbanks ($6,500) and Juneau ($9,200). But the region lags even further behind these jurisdictions in private sector earnings, again reflecting the relative dominance of its public sector The gross imbalance in public/private employment (Table 1-5), however, is not because government jobs are so abundant, but because private jobs are so exceedingly scarce. Post-1970 public sector growth did not stem from private sector growth and prosperity within the region. Rather, the region's public sector, supported by governmental fund transfers from wealthier regions, drove private sector growth.

3. Cash Income Trends, 1971-1987

The federal Bureau of Economic Analysis's (BEA) personal income data series provides another record of the emergence of a cash economy in the Northwest Arctic Borough. Whereas ADOL data discussed above cover only wage employment and earnings, BEA data encompass all sources of personal cash income, including earned and unearned cash income and transfer payments.

Generally, BEA income data paint a mixed picture of the Northwest Arctic Borough's economic progress over the past two decades.[5] Table 1-6 shows that the region's per-capita personal income nearly doubled (+87 percent) from $5,761 to $10,800 between 1971 and 1987.[6] Progress was by no means steady or cumulative. Most of the real income gain actually occurred in the early 1970s, when per-capita personal income rose from $5,761 in 1971 to $9,723 in 1975 with irregular gains and losses thereafter. According to BEA statistics, real per-capita personal income peaked in 1985 at $11,924, then fell to $10,800 by 1987, a drop of nearly 10 percent in two years.

Since 1971 the income gap between the Northwest Arctic Borough and the state and nation has narrowed (Figures 1-7 and 1-8). In 1971 Northwest Arctic Borough per-capita personal income levels lagged well behind state (47 percent) and national

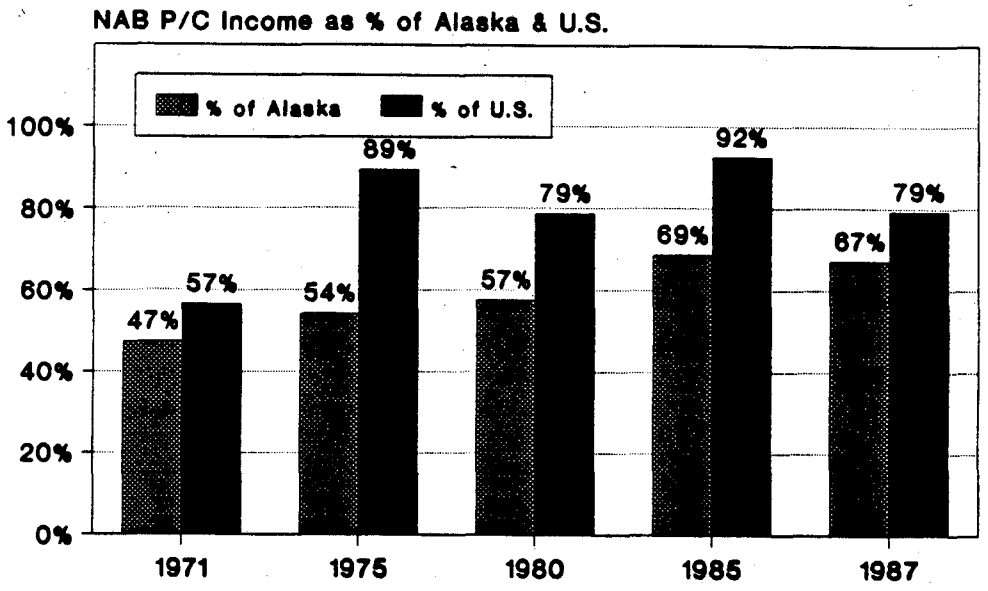
---

5. Note that payroll data compiled according to federal standards by ADOL is the main source for the wage earnings component of BEA personal income data. Thus, these are not independent data series. BEA, however, covers all sources of earned (including non-wage earnings) and unearned income and is more comprehensive than ADOL payroll data in that respect.

6. The personal income figures in this section have been adjusted to discount national inflation. According to the U.S. Bureau of Labor Statistics' Consumer Price Index (1982-1984=100), the inflation-adjusted value of a 1970 dollar ($2.57) was triple a 1987 dollar ($0.88). These adjustments do not, however, take into account the level or rate of regional inflation in the Northwest Arctic Borough. Clearly, the region's higher cost of living depresses the purchasing power of cash income compared to state and national markets, but it is not known whether the region's rate of inflation has been higher or lower than state and national rates.

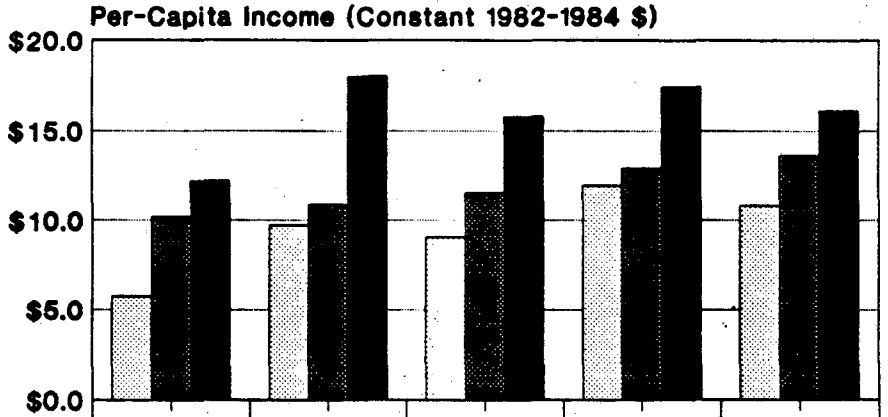
Here and in later discussions of regional inflation, it is essential to distinguish between national price inflation over time, measured by the U.S. Department of Labor's Consumer Price Index (CPI), and regional inflation, measured by instant place-to-place comparisons in regional cost-of-living differentials. For a explanation of how these different measures of inflation apply to Alaskan regions, see Wilson and Rae, " A Guide to Measuring Alaska's Cost of Living", Alaska Department of Labor (1990). The true importance of consumer price inflation in rural Alaska and the Northwest Arctic Borough is badly clouded by the large volume of in-kind goods and services supplied by government.

FIGURE 1-7
NAB PER-CAPITA INCOME, 1971-1987
AS PERCENT OF ALASKA & U.S.



Source: Bureau of Economic Analysis.

FIGURE 1-8
PER-CAPITA INCOME, 1971-1987
NAB, ALASKA & UNITED STATES



	1971	1975	1980	1985	1987
NAB	$5.8	$9.7	$9.1	$11.9	$10.8
U.S.	$10.2	$10.9	$11.5	$12.9	$13.8
Alaska	$12.2	$18.0	$15.8	$17.4	$16.1

Source: Bureau of Economic Analysis.

TABLE 1-6
PERSONAL INCOME TRENDS, 1971-1987
NORTHWEST ARCTIC BOROUGH

Year	Total Personal Income		Per Capita Personal Income	
	Nominal $	Constant $[1/]	Nominal $	Constant $[1/]
1971	9,635	23,760	2,336	5,761
1975	24,904	46,297	5,230	9,723
1980	36,241	44,033	7,472	9,078
1985	69,270	64,283	12,849	11,924
1987	72,622	63,907	12,273	10,800
Percent Change 1971-1987		+169%		+87%

[1/]To discount national inflation, the nominal personal income figures were adjusted according to the U.S. Bureau of Labor Statistics' Consumer Price Index (1982-1984=100) to yield a real or constant dollar equivalent.

Source: Bureau of Economic Analysis.

(57 percent) averages (Figure 1-7). The region's income rose steadily to about 67 percent of the state figure by 1987. But regional income moved fitfully compared to the national figure, up to 89 percent of the national average by 1975, dropping to 79 percent by 1980, surging to 92 percent by 1985, ebbing again to 79 percent by 1987. These inconsistent trends simply reflect that the Northwest Arctic Borough's economy resounds more to the uneven beat of the state economy's erratic pulses (pipeline construction, pump-priming expenditures of state petrodollars) than steadier national economic trends.

The Northwest Arctic Borough, along with other rural regions of Alaska, is often characterized as "in transition" from a subsistence to a cash economy. This notion is belied by the fact that in 1985 the Northwest Arctic Borough ranked in the 43rd percentile (1,784th of 3,139) of U.S. counties in per-capita cash income (U.S. Bureau of the Census, County and City Data Book, 1988). Subsistence may be a vital element of this rural region's socioeconomy, but the statistics

indicate that the region can no longer be meaningfully characterized as "in transition" to a cash economy.

In summary, since 1971 the region's personal cash income has risen in real terms and in comparison to state and federal income norms, but a substantial cash income gap persists.

4. Sources of Cash Income

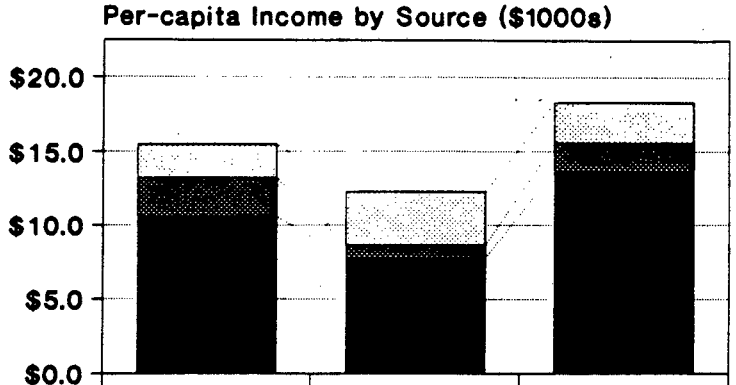
Analysis of the sources of the region's income growth exposes certain basic features and trends in its economy. Figure 1-9 presents a comparative snapshot of the importance of three sources of personal cash income (earnings, transfer payments, and dividends and interest) at the regional, state, and national level in 1987. In each jurisdiction, earnings are far the most important income source. In the Northwest Arctic Borough, transfer payments are relatively more important; dividends and interest relatively less important.

Table 1-7 shows changes in the composition of personal income between 1971 and 1987 by type of income (earnings, transfer payments, and dividends and interest), the distribution of earnings by sector (public or private), and the distribution of earnings by component (wages and salaries, proprietors' income and other labor income), as reported by the Bureau of Economic Analysis.[7]

---

7. BEA data are the most comprehensive historic income data available at the census division level, however, certain data items are statistical estimates, not empirical findings.

FIGURE 1-9
PER-CAPITA INCOME BY SOURCE
NAB, ALASKA & U.S., 1987



	United States	NAB	Alaska
Total	$15.5	$12.3	$18.3
Transfer Payments	$2.3	$3.7	$2.8
Dividends, Interest	$2.6	$0.9	$1.9
Earnings	$10.6	$7.7	$13.7

Source: Bureau of Economic Analysis.

TABLE 1-7
DISTRIBUTION OF PERSONAL INCOME, BY SOURCE, 1971-1987
NORTHWEST ARCTIC BOROUGH

Type of Income

	Net Earnings	Divi-dends	Transfer Payments
1971	73.8%	2.0%	24.2%
1975	63.6	2.6	33.8
1980	73.4	5.1	21.5
1985	66.9	7.0	26.1
1987	62.9	7.1	30.0

Earnings by Sector[1]

	Private	Public
1971	32.5%	67.5%
1975	45.7	54.3
1980	41.4	58.6
1985	45.7	54.3
1987	52.0	48.0

Earnings by Component

	Wages & Salaries	Other Labor Income[2]	Prop-rietors' Income
1971	93.1%	3.3%	3.7%
1975	92.6	4.8	2.6
1980	93.3	4.7	2.0
1985	86.8	6.4	6.8
1987	84.2	6.7	9.1

1. See explanation in text of division of earnings by sector.
2. Other labor income is estimated at the census division level.

Source: Bureau of Economic Analysis.

- With regard to type of income, earnings throughout contribute most, though a shrinking share of personal income. This is complemented by relative increases in transfer income (e.g., State of Alaska Permanent Fund dividend program) and dividend and interest income (largely from NANA Regional Corporation stock dividends).
- With regard to earned income by sector, BEA data show an apparent reversal in the relative importance of public and private sectors. BEA income data, however, derives partly from ADOL employment and payroll data which, according to SIC definitions, classifies employees and payrolls of nonprofit corporations (e.g., Maniilaq Association) as service workers/earners. Thus, the transfer of several important public services from governmental to nonprofit corporate administration seriously distorts the allocation of income between public and private sectors.
- With regard to the components of earnings, the most significant change is the abrupt fourfold increase in proprietors' income reported since 1980. This change may signal that independent small trade and service enterprises are starting to play a stronger role in the region's commercial economy. If so, this is a particularly positive trend when operation of the Red Dog Mine boosts resident incomes and purchasing power and creates opportunities for new local commerce. (Other labor income, which consists mainly of employer contributions to private pension and welfare funds, is estimated for census divisions and is not reliable.)

Table 1-8 records the distribution of earned income by each industrial sector.[8] These earnings data, like ADOL employment data previously examined, suggest that the region's economic structure has been relatively static since 1971.

In 1971 and 1987 government earnings dominated. Government employment's total contribution to personal earnings appears to have declined, but the confusion of governmental and service earnings inherent in ADOL source data obscures reality. Unquestionably, the composition of governmental payrolls has shifted radically. In 1971, the federal government dominated civilian employment, and federal military employment accounted for another important sector. By the late 1980s the federal share had shrunk to about one-fifth its former share, and federal military employment had nearly vanished.

Meanwhile, the state's governmental system developed and matured. In 1971, barely a decade from statehood and financially struggling, Alaska was on the verge of unprecedented economic and governmental expansion. During the next 15 years, state and local governments (backed by state funding) supplanted the federal government as the mainstay of the Northwest Arctic Borough's governmental sector.

Support sector industries (trade, services, transportation/public utilities, finance/insurance/real estate) show modest payroll growth, but that partly reflects nonprofit public service agency payrolls recorded in the service sector.

---

8. The BEA "earnings by industry" data are partly derived from ADOL employment and payroll data. The BEA earnings data is more comprehensive than ADOL payroll data. It covers some sources of earned income omitted by ADOL, plus unearned income and estimates the net inflow/outflow of earnings. BEA earnings data trends coincide with ADOL findings.

TABLE 1-8
PERCENT DISTRIBUTION OF EARNED INCOME, BY INDUSTRY, 1971-1987
NORTHWEST ARCTIC BOROUGH

Industry	1971	1975	1980	1985	1987
Agriculture, Forestry & Fisheries	(L)	(L)	(D)	(D)	(D)
Mining	(L)	(L)	(D)	(D)	(D)
Construction	0.0	(D)	8.5	1.3	0.8
Manufacturing	(D)	(D)	(L)	0.0	0.0
Transportation & Public Utilities	18.3	21.0	14.0	11.2	15.1
Trade	5.7	6.8	7.4	7.6	8.4
Finance, Insurance & Real Estate	(D)	(D)	(D)	3.8	5.3
Services	6.6	9.1	9.5	14.7	17.3
Government & Government Enterprises	67.5	54.3	58.6	54.3	48.0
Federal Civilian	(35.8)	(31.1)	(15.8)	(7.5)	(7.1)
Federal Military	(10.2)	(6.7)	(1.5)	(0.5)	(0.7)
State & Local	(21.5)	(16.4)	(41.3)	(46.4)	(40.2)
Subtotal[1]	98.1	91.2	98.0	92.9	94.9
TOTAL	100.0	100.0	100.0	100.0	100.0

1. Subtotal omits amounts not disclosed (D) or less than $50,000 (L).

(L) Less than $50,000.
(D) Not shown to avoid disclosure of confidential information.

Source: Bureau of Economic Analysis.

The negligible role of private sector basic activities (agriculture/forestry/fisheries, mining and manufacturing) throughout the period evidences the long-standing fundamental weakness of the region's market production economy. Basic private sector production of goods for export, the wealth-producing activity which sustains the support sector and creates a tax base for local government was inconsequential before the Red Dog Mine project.

Tables 1-9 and 1-10 and Figures 1-10 and 1-11 show the extent to which the region, as late as 1987, lacked industries that produce goods for export. Table 1-9 and Figure 1-10 compare the distribution of 1987 earnings by four industrial groups (commodity-producing, distributive, service, and government and government enterprises) for the Northwest Arctic Borough with five other arctic and western Alaska census divisions, the State of Alaska, and the United States. The commodity-producing industry is a rough proxy for market sector export production. The Northwest Arctic Borough's share of personal earnings from commodity-producing industry totalled about one-quarter the statewide average, about one-fifth the national average and much less than any other Alaska census division.

Table 1-10, which compares per-capita earning by industry group for many of the same geographic areas, is even more telling. Per-capita earnings in 1987 from commodity-producing industry for the Northwest Arctic Borough was $502, the lowest figure for any of Alaska's 23 census divisions and less than half the level for Alaska's poorest census division (Wade Hampton).

TABLE 1-9
PERCENT DISTRIBUTION OF EARNINGS BY INDUSTRY GROUP, 1987
UNITED STATES, ALASKA & SELECT CENSUS DIVISIONS

Industry Group	State of Alaska	Bethel	Dillingham	Nome	North Slope Borough	Northwest Arctic Borough	Wade Hampton	United States
Commodity-producing industry[1]	25.4%	11.4%	43.0%	15.7%	55.5%	5.9%	16.9%	30.3%
Distributive industries[2]	20.4	12.9	12.1	19.3	11.1	23.5	13.0	22.8
Service industries[3]	21.2	19.9	20.7	20.2	12.8	22.6	9.3	31.1
Government & government enterprises	33.0	55.8	24.3	44.8	20.5	48.0	60.8	15.7
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

1. Comprises agriculture, forestry, fisheries, mining, construction and manufacturing.
2. Comprises transportation; communication; electric, gas,and sanitary services; and trade.
3. Comprises finance, insurance, and real estate; and services.

NOTE: Minor statistical interpolations, based on historic BEA income data and ADOL payroll data, were necessary to estimate undisclosed data.

Source: Bureau of Economic Analysis.

TABLE 1-10
PER-CAPITA EARNINGS BY INDUSTRY GROUP, 1987
UNITED STATES, ALASKA & SELECT CENSUS DIVISIONS

Industry Group	State of Alaska	Bethel	Dillingham	Nome	North Slope Borough	Northwest Arctic Borough	Wade Hampton	United States
Commodity-producing industries[1]	$ 3,927	$ 915	$ 5,119	$ 1,655	$38,792	$ 502	$1,048	$ 3,438
Distributive industries[2]	3,158	1,034	1,437	2,042	7,784	1,993	811	2,587
Service industries[3]	3,269	1,600	2,465	2,127	8,948	1,921	578	3,520
Government & government enterprises	5,093	4,482	2,895	4,728	14,350	4,081	3,779	1,783
TOTAL	15,447	8,031	11,916	10,552	69,873	8,497	6,215	11,328
Population (1,000's)	525.3	12.7	5.8	7.7	5.3	5.9	5.4	243,396

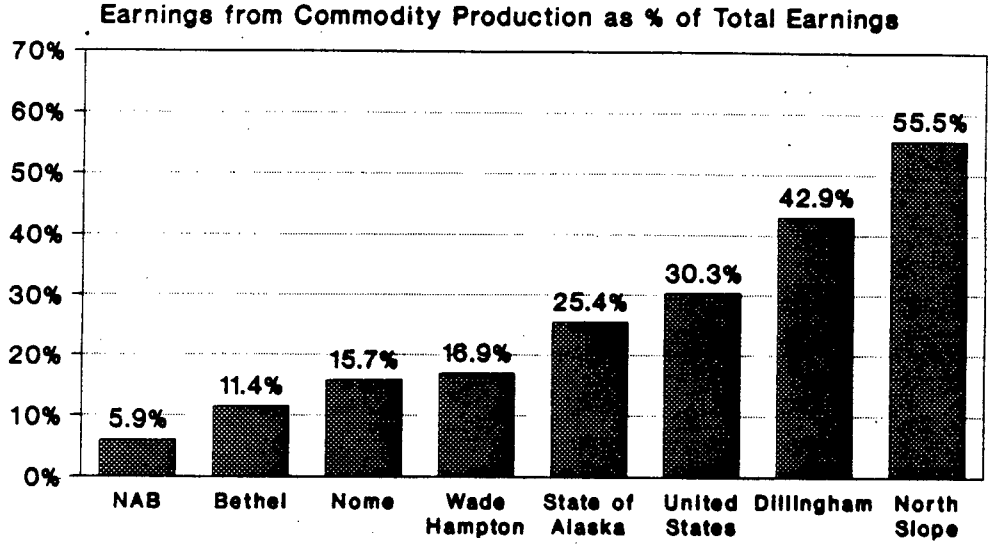
[1] Comprises agriculture, forestry, fisheries, mining, construction and manufacturing.
[2] Comprises transportation; communication; electric, gas,and sanitary services; and trade.
[3] Comprises finance, insurance, and real estate; and services.

NOTE: Minor statistical interpolations, based on historic BEA income data and ADOL payroll data, were necessary to estimate undisclosed data.

NOTE: North Slope Borough per-capita earnings are greatly inflated by nonresident earnings in oil and oil-related industries.

Source: Bureau of Economic Analysis.

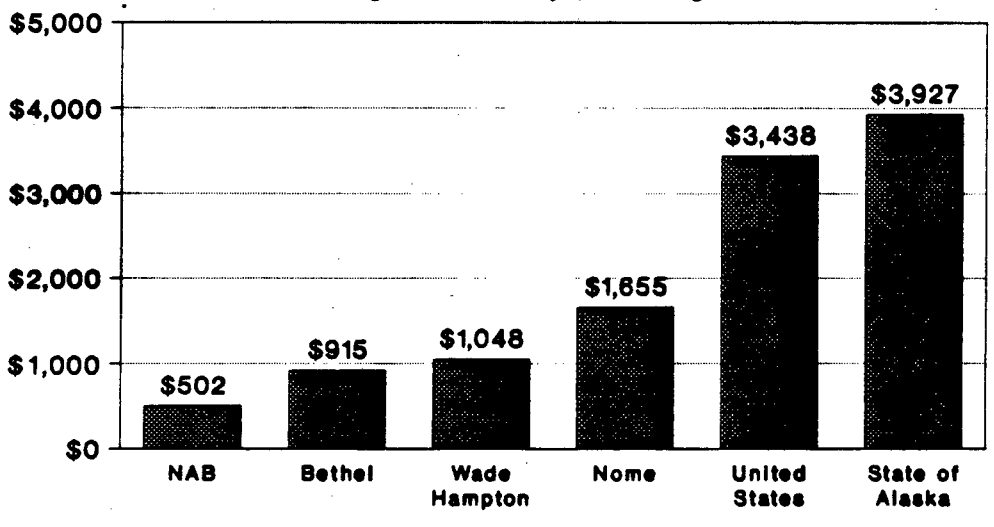
FIGURE 1-10
EARNINGS FROM COMMODITY PRODUCTION, 1987
U.S., ALASKA & SELECT CENSUS DIVISIONS



NOTE: Commodity-producing industries include agriculuture, forestry, fisheries, mining, construction and manufacturing.

Source: Bureau of Economic Analysis.

FIGURE 1-11
P/C EARNINGS, COMMODITY PRODUCTION, 1987
U.S., ALASKA & SELECT CENSUS DIVISIONS



NOTE: Commodity-producing industries include agriculuture, forestry, fisheries, mining, construction and manufacturing.

Source: Bureau of Economic Analysis.

These comparative regional figures on wealth-producing industry illustrate the struggling status of the Northwest Arctic Borough's private basic economy before development of the Red Dog Mine. Southwest coastal Alaska has its modest-to-prosperous salmon industry, Nome has tourism and its reviving mining industry, the North Slope Borough has its prodigious oil and gas industry. As of 1987 the Northwest Arctic Borough had none of these and little else. If the Northwest Arctic Borough had to depend upon basic private sector industry for its livelihood, it would have been Alaska's cash-poorest region.

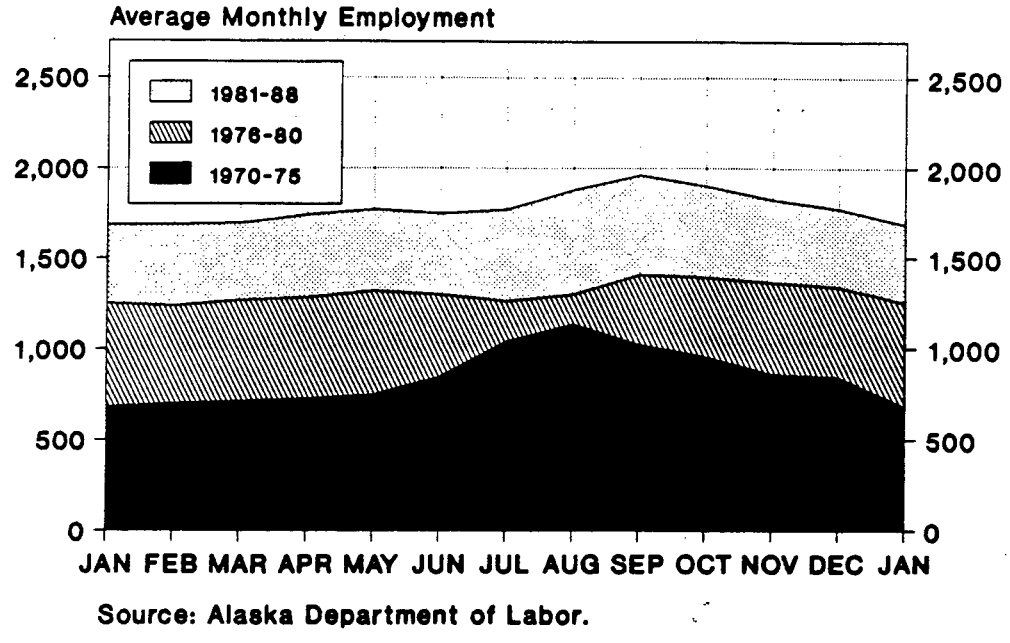
5. Seasonality of Employment

In 1970 the region's economy showed a pronounced seasonal rhythm, partly from the late summer pulse of longshoring/water transportation work (at that time, most goods were still delivered and intraregionally trans-shipped by water), partly from busy summertime trade. Full-time, year-round jobs were scarce at that time.

The region's monthly employment figures hold relatively level throughout the year (Figure 1-12). In fact, the region's annual employment cycle is now more stable than the state's and much flatter than the decidedly seasonal cycle of Bristol Bay/Lower Kuskokwim/Lower Yukon commercial fishing communities or Nome's mining and tourist economy.

But the monthly employment levels are not the whole story. In the Northwest Arctic Borough, mid- to late summer peaks in transportation, construction, trade, and service sector employment coincidentally offset the summertime drop in school district employment. For the most part, the former sectors employ different segments of the workforce than the school district. Thus, relatively stable

FIGURE 1-12
SEASONALITY OF EMPLOYMENT
NORTHWEST ARCTIC BOROUGH, 1970-1988



Source: Alaska Department of Labor.

overall employment figures hide substantial seasonal turnover of jobs and workers in specific employment sectors. For many unskilled workers summer still provides the seasonal "window of opportunity" for wage employment.

6. Recent Employment Trends

The Alaska Department of Labor's latest employment data (Tables 1-5, 1-11 and 1-12) indicate that the region's economic recession bottomed out in 1987 and then rebounded strongly. Figure 1-13 compares employment and payrolls for 1987, 1988, and 1989.[9] Compared to the regional employment level (1,732 employees) in 1987, employment rose slightly to 1,785 in 1988, then jumped to an all-time high of 1,991 employees in 1989, a rise of 15.0 percent over two years. Similarly, regional payrolls rose from $40.7 million in 1987, to $45.4 million in 1988, to $52.0 million in 1989, a two-year increase of 27.7 percent.

Employment figures (Table 1-11) indicate broad-based economic revival. Data show employment growth in every sector except, puzzlingly, retail trade. Strongest growth registered in the service sector (+22.9 percent) and in government (+11.0 percent), where local government employment growth more than offset losses in federal and state employment. Table 1-11 figures doubtless reflect Red Dog Mine construction, transfer of administration of the Kotzebue Hospital from the Alaska Area Native Health Service to Maniilaq Association, staffing of the newly formed Northwest Arctic Borough, City of Kotzebue staff increases, and state government employment cutbacks. Note that the adjusted employment figures

---

9. ADOL employment and payroll figures for 1988 and 1989 do not appear to reflect fully construction and other employment related to Red Dog Mine development. Some nonlocal contractors and subcontractors may not have made separate report of their local employment.

TABLE 1-11
EMPLOYMENT BY INDUSTRY
NORTHWEST ARCTIC BOROUGH, 1987-1989

Industry Classification	1987	1988	1989	Percent Change 1987-89
Mining	*	*	*	--
Construction	*	*	33	--
Manufacturing	0	0	0	--
Transportation, Communication and Public Utilities	153	153	167	+9.2%
Trade	209	171	184	-12.0%
Finance, Insurance and Real Estate	86	84	*	--
Services[1]	336	354	413	+22.9%
Government[1]	909	932	1,009	+11.0%
Federal	(111)	(101)	(89)	(-19.8%)
State	(93)	(88)	(86)	(-7.5%)
Local[1]	(705)	(743)	(834)	(+18.3%)
Miscellaneous	*	*	*	--
TOTAL	1,732	1,785	1,991	+15.0%
Payrolls	$40,691,136	$45,438,750	$51,976,768	+27.7%

*Figures withheld to comply with disclosure regulations.

1. After ADOL statistics are adjusted to reclassify Maniilaq Association and NIHA employment from "services" to "local government", the following figures result.

Classification	1987	1988	1989	% Change 1987-89
Services	106	110	112	+5.7%
Government	1,139	1,176	1,310	+15.0%
(Local)	(935)	(987)	(1,135)	(+21.4%)

Source: Alaska Department of Labor.

TABLE 1-12
LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT
NORTHWEST ARCTIC BOROUGH, 1987-1989

	1987	1988	1989
Labor Force	2,193	2,195	2,135
Employment	1,853	1,910	1,923
Unemployment	340	285	212
Unemployment Rate	15.5%	13.0%	9.9%

Note: The employment figures in this table were developed according to federal guidelines and are definitionally different from the figures that appear in the ADOL Statistical Quarterly employment data series. ADOL does not regard comparisons of this table's employment numbers for different time periods to be as meaningful as other time series published by ADOL.

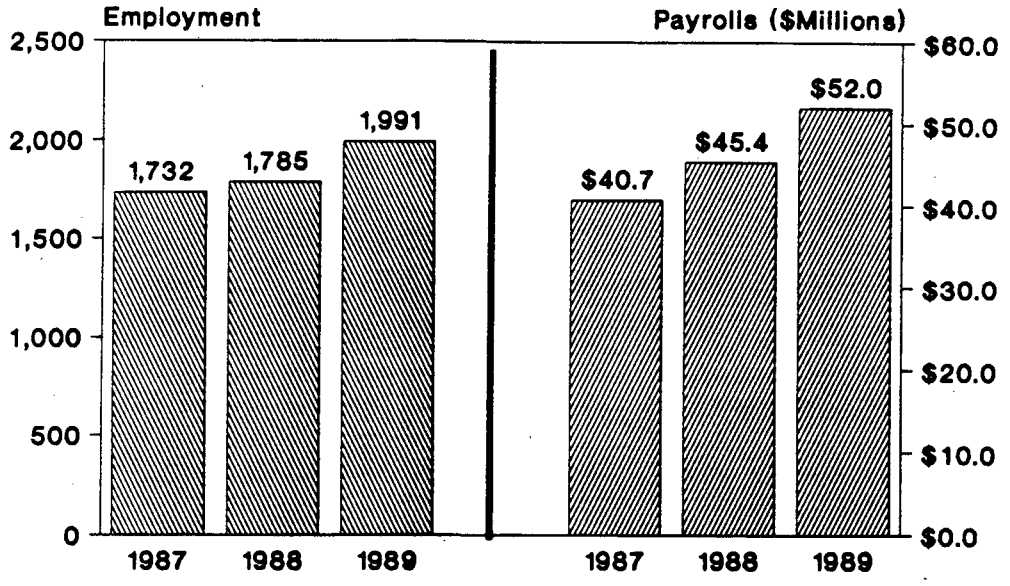
Source: Alaska Department of Labor, Alaska Economic Trends.

in Table 1-11 show only modest service employment growth (5.7 percent) but much stronger local government growth (18.3 percent).

Overall, the region's employment and payroll trends since the onset of the state's economic recession in 1986 indicate surprising resilience. The recession affected the Northwest Arctic Borough less severely than Anchorage or Fairbanks and the region rebounded sooner and stronger than those regions, partly thanks to the stimulus of the Red Dog Mine project (Alaska Department of Labor, 1989a).

ADOL labor force data are consistent with this picture of a reviving regional economy. Table 1-12 reports official labor force, employment and unemployment figures for the Northwest Arctic Borough for 1987 through 1989. It shows a drop in labor force size (from 2,193 to 2,135) and a modest gain in employment (from 1,853 to 1,923), which together produce a substantial drop in unemployment (340

FIGURE 1-13
EMPLOYMENT AND PAYROLLS
NORTHWEST ARCTIC BOROUGH, 1987-1989



Source: Alaska Department of Labor.

to 212) and unemployment rate (15.5 percent to 9.9 percent). Overall, thesefigures also suggest a positive trend in the regional economy, though not so positive as the employment and payroll data cited just previously. The figures in Table 1-12, however, are derived from sample data according to federal guidelines. They cannot be directly compared to other ADOL employment series and may be less reliable. Also, these official labor force and unemployment figures exclude discouraged workers and tend to understate effective unemployment rates. (See later discussion in Section IV.1).

Table 1-13 lists occupational classifications for which employers filed five or more job orders to the Alaska Department of Labor's Kotzebue Alaska Employment Service office in FY 1986-1989. This table covers only employers recruiting through the local Alaska Employment Service office and does not indicate positions actually filled by local workers. Thus, the figures only suggest occupational labor demand in the region.

Generally, the figures in Table 1-13 coincide with the notion that labor demand picked up in the region after 1987. Construction trades and laborer occupations dominate the occupational mix of FY 1988-1989 job orders, as did managerial and administrative positions. This demand pattern suggests that Red Dog Mine construction and, perhaps, ongoing governmental growth were strong sources of labor demand during that time.

III. SOURCES OF PERSONAL AND HOUSEHOLD INCOME

1. Introduction: Types of Earned and Unearned/Cash and Non-cash Income

Personal and household cash income statistics surprisingly are plentiful and detailed for the Northwest Arctic Borough and its communities, especially

TABLE 1-13
JOB OPENINGS AND AVERAGE WAGE RATES
KOTZEBUE JOB SERVICE OFFICE, FY 1986-1989

Occupation	Number of Openings 1986	1987	1988	1989
Administrative Services Manager	8	*	14	8
Amusement & Recreation Attendants	*	*	*	6
Bookkeeping, Acctg & Auditing Clerks	*	*	9	18
Carpenters	5	13	*	18
Cooks: Institutional & Cafeteria	*	*	7	7
Cooks: Restaurant	*	*	*	12
Earth Drillers, Ex. Oil & Gas	*	*	10	*
Electricians	*	*	5	8
General Office Clerks	8	*	11	13
Hand Packers & Packagers	*	*	*	7
Helpers: All Other Construction Trades	*	*	10	*
Hoist & Winch Operators	*	*	*	6
Industrial Production Manager	*	*	*	6
Janitors/Cleaners Ex Maids/House Cleaners	11	*	5	11
Maids & Housekeeping Cleaners	*	*	*	8
Maintenance Repairers: General Utility	*	*	*	5
Meat/Poultry/Fish Cutters/Trimmers:Hand	107	7	*	*
Mechanics: Mobile Heavy Equip, Ex Engine	*	*	15	7
Nurses: Registered	*	*	*	8
Nursing Aides, Orderlies & Attendants	*	*	5	10
Operating Engineers	*	*	64	26
Paving/Surfacing/Tamping Equip Operators	*	*	5	*
Plumbers,Pipefitters, & Steamfitters	*	5	*	7
Receptionists	*	*	*	6
Recreation Workers	*	*	7	*
Reinforcing Metal Workers	*	*	*	9
Salespersons: Parts	*	*	*	5
Secretaries	9	*	7	22
Social Service Technicians	*	*	5	*
Social Workers, Ex Medical/Psychiatric	*	*	5	*
Stock Clerks: Sales Floor	*	5	*	*
Structural Metal Workers	*	*	*	22
Supervisors: Construction/Extractive Workers	*	*	*	5
Supervisors: Production/Operating Workers	*	*	*	5
Supervisors: Trans/Mtl Moving Machs	*	*	6	*
Truck Drivers: Heavy or Tractor Trailer	*	*	*	21
Vocational & Educational Counselors	8	*	*	*
Welders & Cutters	*	*	*	10

(table continued on next page)

TABLE 1-13 (continued, page 2)
JOB OPENINGS AND AVERAGE WAGE RATES
KOTZEBUE JOB SERVICE OFFICE, FY 1986-1989

Occupation	Number of Openings FY1986	FY1987	FY1988	FY1989
All Other Agriculture/Forestry/Fishing	3	*	1	7
All Other Clerical/Admin Support Workers	17	16	28	34
All Other Construction Trades Workers	13	9	34	79
All Other Crafts, Operators, & Laborers	15	14	19	40
All Other Freight/Stock/Mtl Movers: Hand	7	5	14	*
All Other Helpers/Laborers/Mtl Movers: Hand	24	8	95	*
All Other Managers & Administrators	8	6	8	11
All Other Prof/Technical/Paraprof Wkrs	29	9	33	55
All Other Sales Workers	2	4	*	8
All Other Service Workers	19	11	21	30
All Other Teachers & Instructors	*	*	*	5
Total Job Openings Listed	293	112	492	576
Total Job Openings	294	133	492	577
Average Hourly Wage: Total Listed	$10.71	$12.67	$18.02	$14.75
Total Openings	$10.68	$12.36	$18.02	$14.72

* Less than five employer job orders.

Source: Alaska Wage Rates, 1986-1989.

considering their population and remoteness. Nonetheless, cash income data fall short of representing all major sources of livelihood in this region's mixed economy. Noncash in-kind income (goods and services supplied by nonlocal governments) and in-kind subsistence income are each vital as well to the region's households.

This mix of cash income supplemented by in-kind goods and services in the Northwest Arctic Borough is not unique even within the contemporary U.S. economy, but the portion of livelihood comprised by in-kind transfers and subsistence production is highly unusual. Data presented later in this report show that the cost of noncash benefits delivered by state and federal governments nearly

equals residents' total personal cash income. Official figures for cash income and market consumption generally ignore these sorts of in-kind income.[10]

This analysis of household and personal income attempts to account for both cash income and non-cash, or in-kind, income. The analysis further subdivides these two broad types of income into earned (e.g., wages) and unearned (e.g., transfer payments, dividends) cash income and earned (e.g., subsistence production) and unearned (e.g., subsidized health, educational, and housing services) in-kind income. The analytic approach is broadly comparative. Income conditions in the Northwest Arctic Borough are frequently compared with and evaluated by reference to statewide and national conditions.

Before the empirical analysis, we identified four technical points that tend to muddle measurement and interpretation of household or personal income data for Northwest Arctic Borough households.

---

10. Over the past decade, federal economists have become increasingly aware that cash income, excluding noncash governmental benefits, is an incomplete measure of economic and poverty status. The U.S. Bureau of the Census has sponsored a pioneering theoretical and statistical research into the net effect (less income and payroll taxes) of such noncash benefit programs as food stamps, school lunch subsidies, rent subsidies, Medicaid coverage, employer contributions to employee health programs and home equity on the distribution of income and the prevalence of poverty. This topic abounds with conceptual and technical difficulties, most particularly, about the definition and valuation of noncash benefits. These issues, along with recent empirical research, are informatively discussed in Measuring the Effect of Benefits and Taxes on Income and Poverty: 1989 (U.S. Bureau of the Census, 1990).

Generally, empirical research has found that nationally, the net effect of noncash programs was to redistribute income and reduce poverty. This research also underlined the economic vulnerability of the border-line poor to cutbacks in noncash benefit programs.

First, the in-kind transfers of goods and services provided or paid for by non-local governments contribute greatly to personal consumption of goods and services (in other words, income) by rural Alaska households. Such personal consumption, though income, is not recorded in official ledgers of household income or expenditures or national income accounts. As with subsistence income, affixing a monetary value to in-kind income is difficult. Perhaps the foremost issue concerns whether to value specific goods and services at government's cost, their worth to recipients, or by some other measure.

Second, subsistence production of goods and services for household consumption amounts to a significant part of earned, albeit non-cash income. By definition, subsistence is the antithesis of commercial production for market distribution. Though subsistence indisputably produces income, gross national product figures exclude activities that occur outside the cash marketplace.[11]

Though economists find subsistence income difficult to monetize, subsistence itself is commonplace. Many American families still hunt and fish for the dinner table, harvest backyard gardens, fell and chop firewood, fabricate clothes, service their own cars, and make home repairs and additions. These are everyday examples of contemporary subsistence. More and more households, however, willingly pay cash for these goods and services and similar time-saving

---

11. The Bureau of Economic Analysis gives a slight conceptual nod to subsistence income. Its personal income tabulations allow for selected types of nonmonetary income, for example, the imputed cash value of food and fuel produced and consumed on farms. Akin to subsistence, these items are defined as "production of goods and services for household consumption." In this way, official statistics tacitly acknowledge that subsistence generates real income but, not surprisingly, flinch at the technical and practical problems of tracking and valuing nonmarket subsistence production. The BEA collectively valued all forms of nonmonetary income, of which subsistence was a small part, at less than one-half of one percent of total national personal income in 1986.

conveniences (prepared and fast foods, child care, mail-order shopping, etc.) to buy time away from household chores. These tradeoffs are backhand proof that subsistence goods and services have genuine cash worth, even in a modern market economy. (Chapter 3 covers the role of subsistence in the regional economy.)

Third, the cost-of-living differential for the Northwest Arctic Borough severely deflates the purchasing power of cash income. Interregional comparisons are complicated, since local consumer preferences and personal expenditures tend to fit living conditions in the Northwest Arctic Borough, not national consumption norms. This regional cost-of-living differential is distinct from nationwide consumer price inflation as measured by the U.S. Bureau of Labor Statistics Consumer Price Index.

Fourth, some household income in the Northwest Arctic Borough, as elsewhere, eludes official income statistics. Typically, elusive income includes off-books employment; illegal activity like bootlegging and drug sales, gambling, sales of ivory and artifacts; sale of handicrafts; and barter or sale of subsistence production. These forms of income are near-universal but are especially prevalent in loosely structured, developing economies where many transactions take place in informal settings outside any bookkeeper's view. Unfortunately, no data exist to show whether the underground economy in the Northwest Arctic Borough is more or less extensive than in the national economy.

2. Earned Cash Income

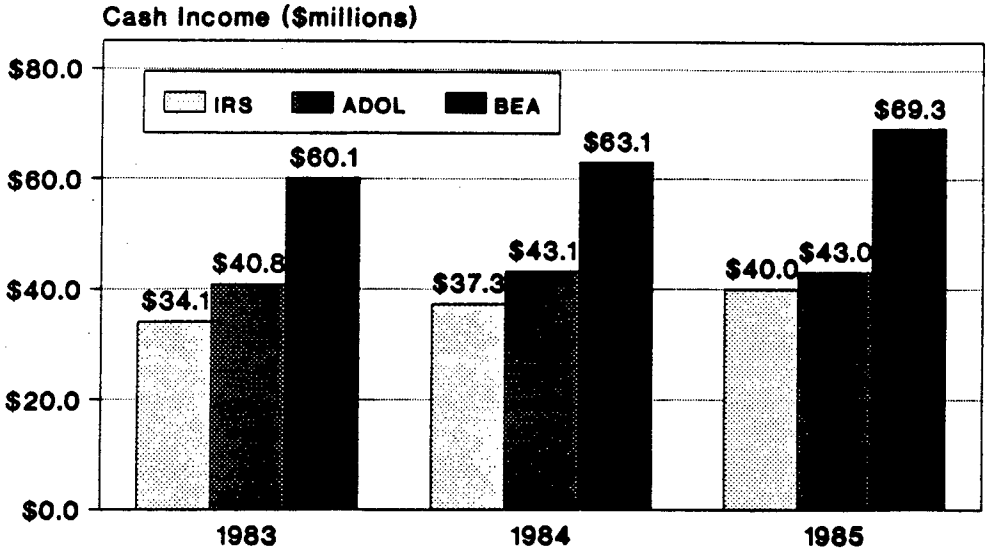
Three basic sources of historical data on cash income for persons and/or households have been published about the Northwest Arctic Borough: the Alaska Department of Labor's Statistical Quarterly, the Alaska Department of Revenue's

Federal Income Taxpayer Profile by Alaska Community and Income Level and Filing Status, and the federal Bureau of Economic Analysis's Local Area Personal Income. Each serves a distinct purpose and adopts its own data coverage, technical definitions, statistical methods, and data aggregation formats. As a result, cash income data usually are not directly comparable. This lack of comparability has advantages and disadvantages. On one hand it qualifies the usefulness of different data series for complementary analyses or direct cross-checks, but on the other hand each data series yields a different perspective on regional income conditions.

All three data series produce aggregate statistics that combine data for Native and non-Native persons and households. Nineteen-eighty census data (see Table 2-3) show that non-Native incomes are much higher than Native incomes. Aggregated IRS statistics gloss over this difference, making Native income levels appear higher than the actual case, especially in villages where non-Natives hold a disproportionate share of permanent well-paid jobs. This shortcoming qualifies interpretation of all the cash income data presented below.

Figure 1-14 compares cash income for 1983-1985 as reported for the Northwest Arctic Borough by the Bureau of Economic Analysis (total personal income), the Alaska Department of Labor (payroll wages), and the Internal Revenue Service (wages, interest, dividends, capital gains, pensions, taxable social security income, and unemployment compensation). The data in Figure 1-14 indicate that: (1) the BEA's income figures are higher and, therefore, probably more complete than ADOL or IRS figures and (2) the three data series (and the differences among them) are consistent from year to year.

FIGURE 1-14
CASH INCOME INDICATORS
NORTHWEST ARCTIC BOROUGH, 1983-1985



Sources: Bureau of Economic Analysis; Alaska Department of Labor; Internal Revenue Service. .

Alaska Department of Labor Statistical Quarterly.

The Alaska Department of Labor compiles wage earnings data as reported by employers. The data exhibit several limitations--some minor, some important. For example:

- Payroll earnings data omit self-employment earnings.
- Disclosure restrictions sometimes prevent publication of certain data.
- Employers maintaining several places of work within a region may submit a single report covering several job sites. For example, in the Northwest Arctic Borough, several major region-wide employers headquartered in Kotzebue (Northwest Arctic Borough School District, Maniilaq Association) regularly attribute payrolls for all their employees throughout the region to Kotzebue, regardless of their actual places of work. This results in reporting errors that distort the intraregional distribution of wage employment and earnings.[12]
- Payrolls are reported by place of work, not place of worker residency. Consequently, ADOL payroll data include wages earned locally by nonresidents or transients but omits wages earned in other venues by Northwest Arctic Borough residents. Thus, the payroll data represent wages earned in the region rather than wages earned by the region's residents.

---

12. The Minerals Management Service commissioned the Alaska Department of Labor to disaggregate employment and payroll data for 1980-1986 for the seven census subareas (and eleven settlements) comprising the Northwest Arctic Borough: Candle (Buckland, Deering), Kivalina, Kobuk River (Ambler, Kiana, Noorvik), Kotzebue, Noatak, Selawik and Shungnak (Kobuk, Shungnak). These subarea data were examined for information about the intraregional distribution of wage work and payrolls. We found that the disaggregated subarea data were badly distorted by omissions and reporting errors and were unreliable for intraregional labor analysis. Therefore, these subarea data were not included in this analysis.

On the positive side, the ADOL data are published more promptly than other employment and income data series. They are more timely for recent economic trend analysis. Table 1-14 presents ADOL employment and wage (in constant dollars) figures for the Northwest Arctic Borough region from 1970 through 1988. In real terms annual payrolls tripled from $12.6 million in 1970 to $38.4 million by 1988, while average annual employment almost tripled from 641 in 1970 to 1,785 in 1988.

The figures in Table 1-14 show clear signs of a post-oil boom slump. By 1987 employment, annual payrolls, and average monthly wage had dipped below the levels of a few years earlier. Table 1-14 also shows a recent retreat in real wage levels almost to 1970 levels. The average monthly wage rose from $1,639 in 1970 to peak at $2,168 in 1977 and had fallen to $1,723 in 1987. The employment, payroll, and monthly wage figures for 1988 all moved up, suggesting a new positive trend in the regional economy.

Figure 1-15 charts regional payrolls from 1980 through 1988 in constant dollars adjusted according to the U.S. Department of Labor's Consumer Price Index (CPI: 1982-84 = 100). Figure 1-15 shows the steady decline in real total payroll earnings after 1984, falling to a pre-1981 level by 1987. This retreat parallels the general economic downturn that beset southcentral, interior, and much of western Alaska after the early 1980s drop in state petroleum revenues and the ensuing cutback in state outlays for pump-priming public expenditures.

TABLE 1-14
WAGE EMPLOYMENT, ANNUAL PAYROLLS, AND AVERAGE MONTHLY WAGE
NORTHWEST ARCTIC BOROUGH, 1970-1988

Year	Average Monthly Employment	Annual Payroll[1/]	Average Monthly Wage[1/]
1970	641	$12,609,320	$1,639
1971	724	13,757,291	1,583
1972	875	16,575,071	1,579
1973	970	18,329,850	1,575
1974	894	19,589,406	1,826
1975	1,042	23,392,578	1,871
1976	1,075	26,324,049	2,041
1977	1,274	33,149,032	2,168
1978	1,402	34,063,360	2,025
1979	1,364	30,458,656	1,861
1980	1,437	33,040,160	1,916
1981	1,753	39,680,991	1,886
1982	1,880	40,380,313	1,790
1983	1,709	40,888,238	1,994
1984	1,779	41,452,723	1,942
1985	1,823	39,936,988	1,826
1986	1,823	38,231,762	1,748
1987	1,732	35,808,200	1,723
1988	1,785	38,395,743	1,793

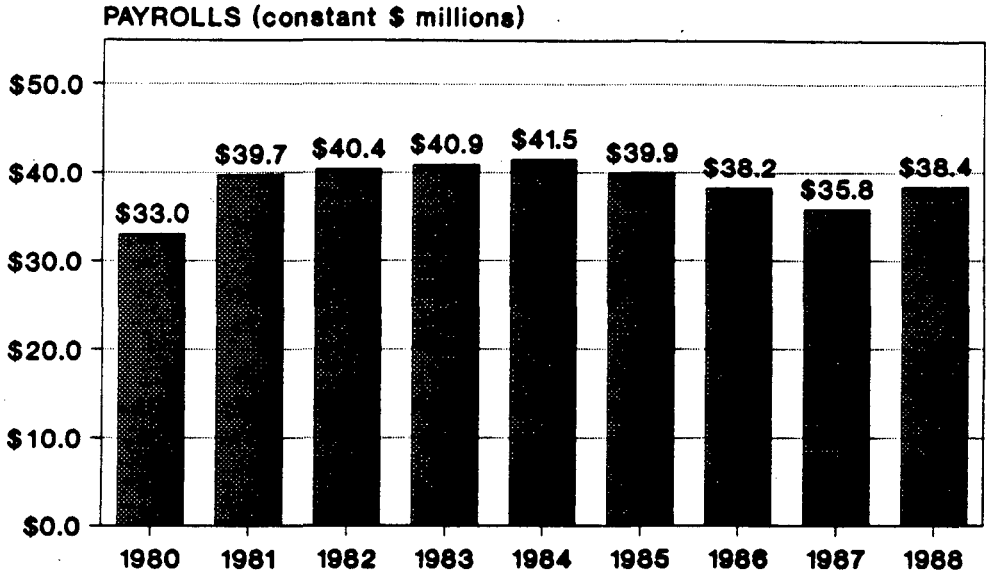
1. Constant dollars, as per Bureau of Labor Statistics' Consumer Price Index (1982-1984=100).

Source: Alaska Department of Labor.

Bureau of Economic Analysis.

The Bureau of Economic Analysis' annual Local Area Personal Income publication provides the most comprehensive data on total personal cash income, including locally earned income, for the Northwest Arctic Borough. The BEA earned income data include wages and salaries derived from ADOL payroll data, plus other labor income and non-farm proprietors' income. The BEA earnings data also provide estimates of employee contributions toward retirement, medical and social insurance programs and a "residence adjustment" for income earned locally by persons residing outside the Northwest Arctic Borough.

FIGURE 1-15
ANNUAL PAYROLLS, 1980-1988
NORTHWEST ARCTIC BOROUGH



Source: Alaska Department of Labor.

Table 1-15 displays earned income for the Northwest Arctic Borough for 1982 through 1987. These income figures support several points about recent trends in earnings. Even though total personal income rose every year, earned income flattened out after 1984 and wage and salary income actually declined. Meanwhile, earnings contributed a shrinking share of total personal income from 81 percent in 1982 down to 69 percent in 1987, even as unearned income, mainly from transfer payments and dividends, continued to grow. In each year there was a modest net drain of earned income from the region.

Internal Revenue Service/Alaska Department of Revenue.

The Internal Revenue Service reports select federal income taxpayer data to the Alaska Department of Revenue. The Department of Revenue compiled and published this IRS income data for 1978 and 1981-1985 in two reports (Alaska Department of Revenue, 1985; 1988).[13] The reports summarize total and average figures for every community in the state for: number of returns and exemptions; main sources of taxable income, including wages, interest, dividends and pensions and annuities; and adjusted gross income, taxable income, and income tax paid.[14] For larger communities such as Kotzebue the reports also publish data on the distribution by income group of the total number of returns, exemptions, taxable income, and tax paid.

13. Due to budgetary constraints, the department discontinued publication of this IRS taxpayer data after 1985.

14. These data categories conform with federal income tax reporting requirements. They are not congruent with the standard definitions employed by BEA or ADOL. Also, the detailed IRS data on sources of income do not itemize self-employment income but included it in adjusted gross income.

TABLE 1-15
EARNED INCOME ($1,000s)
NORTHWEST ARCTIC BOROUGH, 1982-1987

	1982	1983	1984	1985	1986	1987
Total Personal Income	$55,888	$60,085	$63,144	$69,270	$71,431	$72,622
Earnings by Place of Work	45,172	47,315	49,518	50,879	50,552	50,132
Wages and Salaries	40,297	41,848	44,201	44,141	43,035	42,198
Other Labor Income	3,480	3,463	3,498	3,256	3,004	3,370
Non-Farm Proprietors' Income	1,395	2,004	1,819	3,482	4,513	4,564
Less Personal Contributions for Social Insurance	2,807	2,794	3,038	3,170	2,967	3,082
Plus Adjustment for Residence	(2,177)	(1,809)	(1,294)	(1,371)	(1,588)	(1,364)
Equals Net Earnings by Place of Residence	40,188	42,712	45,186	46,338	45,997	45,686

Source: Bureau of Economic Analysis.

These taxpayer income data constitute a comprehensive and authoritative body of standardized data on sources of taxable income for residents of Alaska communities. The IRS data have two useful advantages over ADOL and BEA data.

First, IRS taxpayer income data are aggregated by community of residence as indicated by filer's mailing address at the time of filing. Thus, the community aggregate income is apt to include earnings and other taxable income of bona fide residents, regardless of where earned, but omit local earnings of transients who most likely filed as residents of their home communities. Additionally, the data can be used for "snapshot" comparisons of intraregional and interregional income levels. (Unfortunately, revisions in federal income tax statutes and regulations and changes in reported data items erode year-to-year comparability).

Second, IRS data itemizes taxable income by main income sources (but earnings from self-employment and proprietors' income are unaccountably not separately itemized).

The IRS taxpayer data best reflect taxable income actually accruing to regional and community residents, regardless of where earned. IRS taxpayer income data understate total cash income for two reasons. Some low-income persons fall

below the minimum income reporting threshold and are omitted from the data.[15] This omission lowers reported total income but boosts per-return income figures. Further, self-reported taxable income is apt to err on the side of omission.

Table 1-16 shows the 1985 distribution of taxable cash income by source for Northwest Arctic Borough communities. These data embody four noteworthy points. First, wages are by far the main source of taxable cash income for Northwest Arctic Borough taxpayers, accounting for more than 90 percent of their taxable income. The balance is comprised mainly of dividends[16], interest, capital gains, and taxable pension and unemployment compensation payments (and self-employment income which is not itemized in the IRS data, but see discussion of "proprietors' and self-employment income below). In this respect the personal income profile for the region and its communities closely resembles the statewide average, notwithstanding minor differences in the share of cash income obtained from lesser sources (Figure 1-16).

Second, Kotzebue leads the region's wage/cash economy, capturing about two-thirds of the region's wage income with only 44 percent of its population.

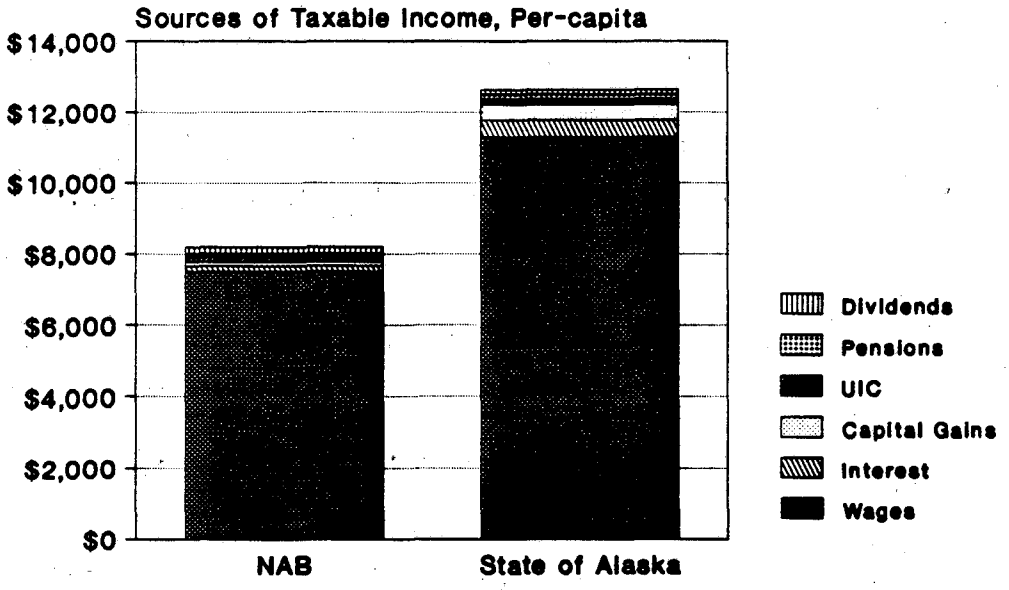
---

15. The minimum income level for required filing of federal income tax returns changed between 1978 and 1985 as follows:

Status	1978	1981-84	1985
Single	$2,950	$3,300	$3,430
Single, 65 or over	3,700	4,300	4,470
Married, filing jointly	4,700	5,400	5,620
Married, filing jointly (one over 65)	5,450	6,400	6,660
Married, filing jointly (both over 65)	6,200	7,400	7,700
Surviving spouse	3,950	4,400	4,580

16. In 1985, NANA Regional Corporation paid a dividend of $2.00 per share or $200 per each original corporate shareholder. This accounts for the relatively high proportion of dividend income among Northwest Arctic Borough region residents.

FIGURE 1-16
SELECT SOURCES OF TAXABLE INCOME
NAB AND STATE OF ALASKA, 1985



Source: Federal Income Taxpayer Profile.

TABLE 1-16
DISTRIBUTION OF MAIN SOURCES OF TAXABLE INCOME[1]
NORTHWEST ARCTIC BOROUGH REGION COMMUNITIES, 1985

Community	Wages	Interest	Divi-dends	Capital Gains	Pens-ions	Taxable SSI[2]	UIC[2]	Total
Ambler	86.8%	3.0%	4.9%	0.1%	0.6%	0.0%	4.7%	100.0%
Buckland	83.9%	3.2%	4.5%	3.0%	0.5%	0.7%	4.2%	100.0%
Deering	94.4%	0.3%	2.3%	0.0%	0.0%	0.0%	2.9%	100.0%
Kiana	90.3%	0.7%	4.0%	0.3%	0.2%	0.1%	4.4%	100.0%
Kivalina	90.6%	0.6%	3.3%	0.0%	1.1%	0.1%	4.4%	100.0%
Kobuk	87.0%	2.1%	2.5%	0.0%	4.0%	0.0%	4.4%	100.0%
Kotzebue	92.1%	2.3%	1.5%	1.9%	1.1%	0.1%	1.0%	100.0%
Noatak	93.2%	0.1%	2.8%	0.0%	0.3%	0.0%	3.5%	100.0%
Noorvik	90.2%	1.5%	3.4%	-0.2%	1.4%	0.2%	3.4%	100.0%
Selawik	92.3%	0.4%	4.0%	0.0%	0.6%	0.1%	2.6%	100.0%
Shungnak	93.1%	0.6%	2.3%	0.4%	0.2%	0.0%	3.4%	100.0%
NAB TOTAL	91.6%	1.9%	2.2%	1.4%	0.9%	0.1%	1.9%	100.0%
STATE TOTAL	89.3%	3.8%	0.9%	3.5%	1.1%	0.2%	1.3%	100.0%

1. Self-employment income not included.
2. SSI represents Supplemental Security Income; UIC represents Unemployment Insurance Compensation.

Source: Federal Income Taxpayer Profile, 1983-1985 by Alaska Community and Income Level and Filing Status. Alaska Department of Revenue, February 1988.

Third, the per-capita and per-household levels of wage income and adjusted gross income vary widely among the region's communities. Kotzebue exceeds village income levels, coming closer to the statewide norm than to even the most prosperous of the region's other villages (Table 1-17 and Figure 1-17). Figure 1-17 profiles the per-capita adjusted gross income of the borough's communities for 1985.[17] These data document the income disparity between the communities,

17. With qualifications noted, "adjusted gross income" (defined by IRA as the gross income received during the tax year by the taxpayer minus specified business and personal deductions) is the best approximation of overall cash income obtainable from the IRS data. Per capita adjusted gross income was calculated by dividing total adjusted gross income by the number of exemptions reported for federal income tax returns filed from each community. The per-capita figures may be systematically skewed upward inasmuch as an unknown number of low-income persons with dependents fell below the income threshold for tax return filing or simply did not file.

TABLE 1-17
PER-CAPITA AND PER-HOUSEHOLD WAGES AND ADJUSTED GROSS INCOME
NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1985

	Per Capita		Per Household	
Community	Wages	Adjusted Gross Income	Wages	Adjusted Gross Income
Ambler	$3,669	$4,251	$11,131	$12,898
Buckland	4,641	4,852	15,515	16,221
Deering	6,182	6,451	15,230	15,891
Kiana	5,626	6,253	13,621	15,140
Kivalina	4,290	4,417	12,930	13,310
Kobuk	3,942	5,103	12,523	16,210
Kotzebue	10,348	10,598	24,775	25,373
Noatak	5,318	5,851	13,450	14,795
Noorvik	4,877	5,407	11,940	13,238
Selawik	4,712	4,981	12,770	13,499
Shungnak	6,159	6,102	13,629	13,503
NAB TOTAL	$7,502	$7,826	$18,917	$19,735
STATE TOTAL	$11,297	$12,358	$25,931	$28,367

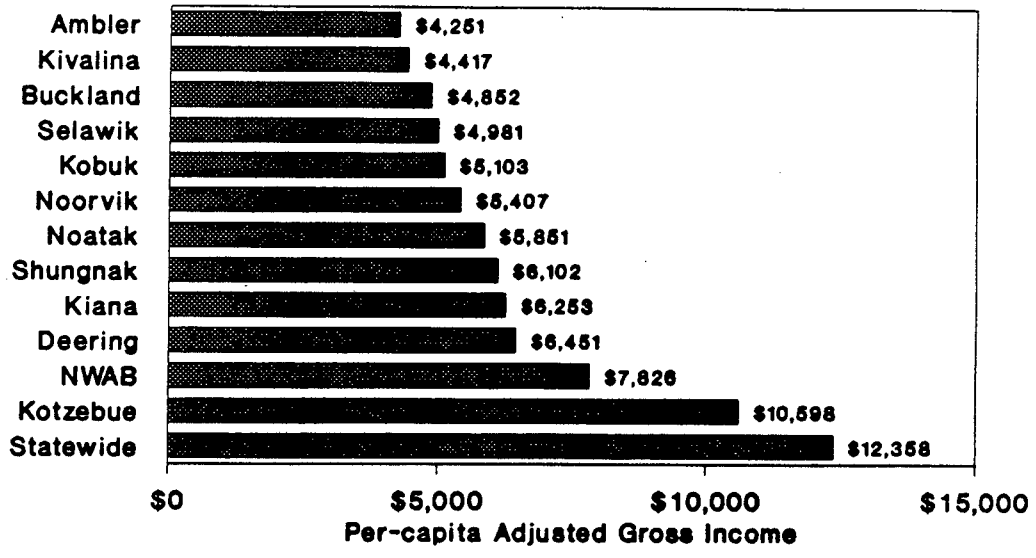
NOTE: More detailed data is presented in Appendix Tables 1 and 2.

Source: Federal Income Taxpayer Profile, 1983-1985 by Alaska Community and Income Level and Filing Status. Alaska Department of Revenue, February 1988.

especially Kotzebue and some of the villages. Kotzebue's per-capita cash income ($10,598) ranges from 65 percent to 150 percent higher than its satellite villages. Figure 1-17 also shows the spread between per-capita cash incomes within the region's communities and the statewide average. No geographic pattern to community income levels emerged; that is, upriver communities were not consistently poorer or better off than coastal communities.

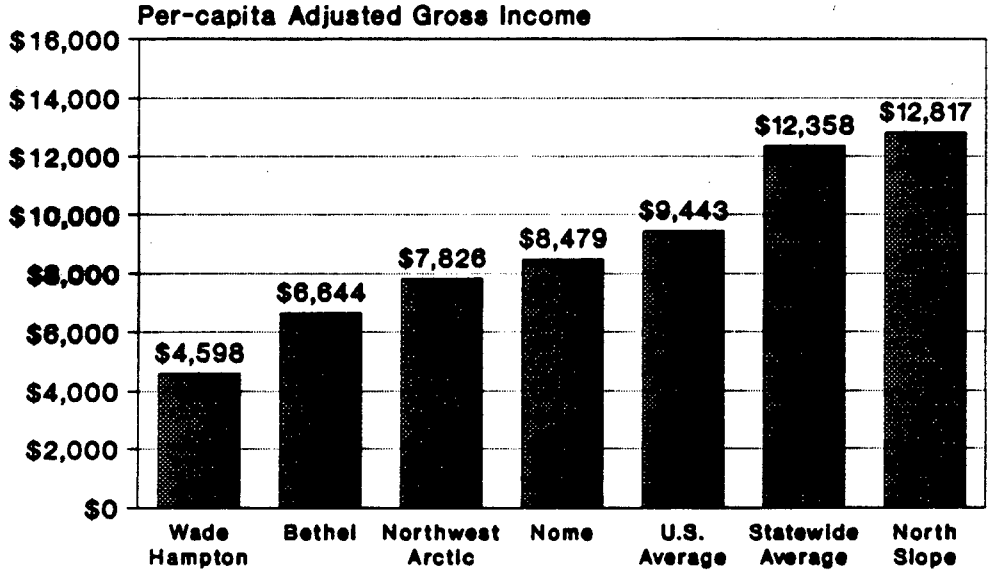
Fourth, all Northwest Arctic Borough communities fall below statewide income norms as measured by per-capita adjusted gross income (Table 1-17) and all but

FIGURE 1-17
PER-CAPITA ADJUSTED GROSS INCOME
NAB COMMUNITIES, 1985



Source: Federal Income Taxpayer Profile.

FIGURE 1-18
PER-CAPITA ADJUSTED GROSS INCOME
SELECT ALASKA CENSUS DIVISIONS, 1985



Sources: Federal Income Taxpayer Profile; Statistical Abstract.

Kotzebue fall below national norms. The Northwest Arctic Borough as a whole ranks near the bottom of the state's census areas, surpassing only the Wade Hampton, Bethel, and Dillingham regions. Table 1-18 and Figure 1-18 compare per-capita adjusted gross income for the Northwest Arctic Borough and other western Alaska regions with statewide and national norms.

TABLE 1-18
PER-CAPITA ADJUSTED GROSS INCOME[1]
BY SELECT CENSUS DIVISION, STATE OF ALASKA, 1985

Census Division	Dollars	Percent of Statewide Average
Highest Four Census Divisions		
1. Juneau	14,147	114.5%
2. Anchorage	14,031	113.5%
3. North Slope	12,817	103.7%
4. Fairbanks North Star	12,126	98.1%
Lowest Four Census Divisions		
20. Northwest Arctic	**7,826**	**63.3%**
21. Dillingham	7,096	57.4%
22. Bethel	6,644	53.8%
23. Wade Hampton	$ 4,598	37.2%
STATE AVERAGE	$12,358	100.0%
U.S. AVERAGE	$ 9,443	76.4%

1. Per-capita adjusted gross income calculated by dividing total adjusted gross income by number of exemptions.

Source: Federal Income Taxpayer Profile, 1983-1985 by Alaska Community and Income Level and Filing Status, Alaska Department of Revenue, February 1988; 1988 Statistical Abstract.

Exported and Repatriated Income.

The Northwest Arctic Borough is not a closed labor market or income pool. Many residents periodically or temporarily work outside the region, returning to their home communities to spend their earnings. The region's export of labor in this manner is in effect a form of basic industry. Conversely, transient or temporary workers fill some local job openings, taking part of their earnings elsewhere. To complicate matters further, career residents (i.e., persons whose local residency is tied to their professional occupation or career) often export part of their surplus income as savings for investment or later spending, eliminating this income from the region's economy. Money remitted to residents by relatives and friends living elsewhere may partly offset this drain.

Exported Income. Income leakage commonly occurs in developing regions, especially where seasonal industries draw transient workers. The development process often calls for skilled workers in numbers beyond those found in the indigenous labor force. This shortage partly can be filled with imported labor temporarily for short-term work and permanently for long-term professional and semiprofessional positions.

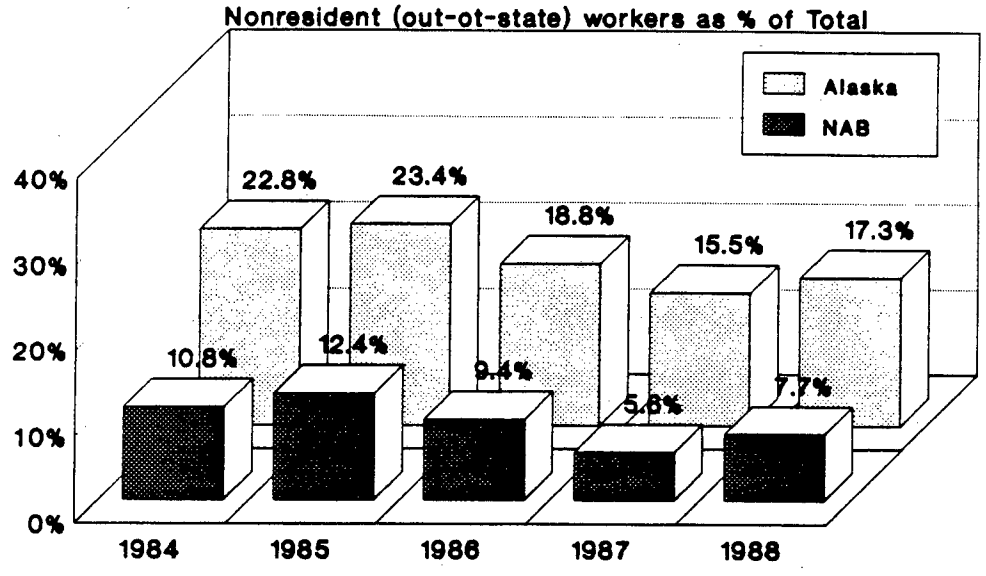
Data from BEA and ADOL help quantify the extent of income leakage from the Northwest Arctic Borough's economy. BEA reports earned income aggregated by region of work and (estimated) by region of residence. The difference comprises the estimated net (but not gross) flow of earnings to or from the region. ADOL also publishes information about the relative scale of nonresident (that is, of Alaska) earnings in the Northwest Arctic Borough.

For 1987 BEA estimated a modest net outflow (-2.7 percent) of earnings from the Northwest Arctic Borough. This percentage places the Northwest Arctic Borough near the middle of the state's census divisions and well below the statewide average outflow of -5.4 percent. BEA data also show a positive trend in the region's net outflow of earnings during the past six years, down from -4.8 percent in 1982. In sum, these BEA data indicate that nonresidents collect a relatively small and, through 1987, diminishing share of the Northwest Arctic Borough's wages.

Comparison with other regions reveals wide variation among Alaska census divisions. For example, in 1987 the net outflow of earnings from the North Slope Borough amounted to 70.9 percent of in-region earnings, mainly due to itinerant oilfield workers. The income outflow from Bristol Bay Borough was 27.3 percent because of nonresident seasonal workers in commercial fishing and fish processing plants. At the other extreme, the Matanuska-Susitna Borough enjoyed a net inflow of earnings amounting to +59.9 percent of in-region earnings. Many Matanuska-Susitna Borough residents either commute daily to Anchorage or rotate through schedules in North Slope and Kenai oil fields or other out-of-region jobs.

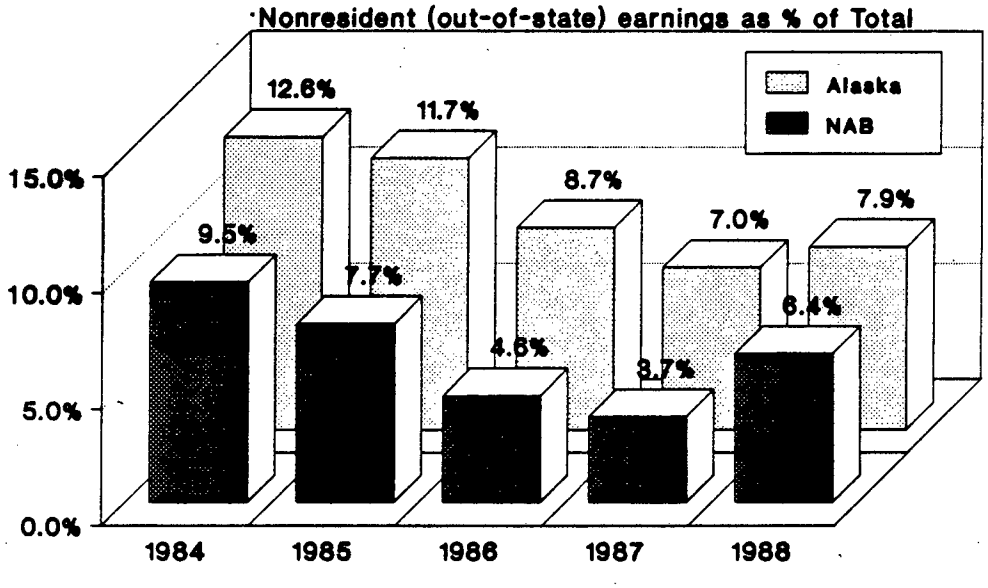
Since 1984, state law has required ADOL to submit an annual report (Nonresidents Working in Alaska) to the legislature on resident and nonresident employment and earnings. Where BEA defines nonresidents as out-of-region residents, ADOL defines nonresidents as out-of-state residents. According to the ADOL reports the Northwest Arctic Borough's rates of nonresident employment and nonresident earnings have consistently been lower than the statewide average (Figures 1-19 and 1-20). In 1987 and 1988 the region had the lowest rate of nonresident workers of the state's 23 census areas and third (1987) and seventh (1988) lowest

FIGURE 1-19
NONRESIDENT EMPLOYMENT, 1984-1988
NAB & STATE OF ALASKA



Source: Alaska Department of Labor.

FIGURE 1-20
NONRESIDENT EARNINGS, 1984-1988
NAB & STATE OF ALASKA



Source: Alaska Department of Labor.

rate of nonresident earnings (Appendix Tables 3 and 4). Unfortunately, the ADOL figures do not address income leakage to other regions of the state, but the ADOL figures are consistent with the BEA data that indicate the region has an unusually low rate of income leakage, whether to nonresidents of the region or state.

The share of jobs and earnings captured by nonresidents fell by half between 1984 and 1987 (Table 1-19). Unfortunately, this statistic is not altogether positive. This decline in the region's extrastate income leakage may be due as much to its stagnant and remote job market as to intensive local efforts to boost local resident hire. Note that the decline in nonresident earnings and employment coincided closely with the post-1984 drop in total employment, payrolls, and average wages (Table 1-14).

TABLE 1-19
NONRESIDENT WORKERS AND EARNINGS
NORTHWEST ARCTIC BOROUGH, 1984-1988

Year	Nonresident Workers as % of Total	Nonresident Earnings as % of Total	Average Nonresident Earnings
1984	10.8%	9.5%	$11,587
1985	12.4	7.7	8,128
1986	9.4	4.6	5,764
1987	5.6	3.7	7,946
1988	7.7	6.4	9,717

Note: Wages paid to state government employees are excluded.

Source: Nonresidents Working In Alaska, 1984. Alaska Department of Labor.

All these trends reversed in 1988 when the regional economy was quickened by Red Dog project construction. Some project contractors kindled controversy by hiring

numerous nonlocal workers. These hiring practices were the key to the 1988 jump in earnings that went to out-of-state workers. Table 1-20 shows 1988 nonresident earnings and employment by industry. The construction industry had by far the highest rate (31.3 percent) nonresident earnings[18] and accounted for nearly half of all nonresident earnings. This suggests that high-wage construction booms are especially apt to draw nonlocal workers into the local labor market.

ADOL also published data on the residency status of employees of all major employers (at least 20 workers during any month) in the state for 1987 and 1988. Table 1-21 reports the residency status of employees of 22 major employers in the Northwest Arctic Borough. The figures in Table 1-21 confirm that the region's major employers are public employers. Sixteen of the 22 major employers listed are local public agencies (state and federal agencies were not listed), with three employers (Northwest Arctic Borough School District, Maniilaq Association, City of Kotzebue) accounting for more than half the major employers' total workforce. The figures also show that local public employers hire few out-of-state workers. Five of the six listed private firms were among the six firms with the highest rate of nonresident workers. The private business with the fewest nonresident workers was the Nullagvik Hotel, a NANA Regional Corporation subsidiary. (Table 1-27 shows employment for NANA Regional Corporation and its various subsidiary operations).

Repatriated Income. Numerous observers have commented that Northwest Arctic Borough residents have a long-time habit of taking seasonal and temporary employment outside their home region. Unfortunately, only anecdotal evidence

---

18. Note that these nonresident figures refer only to out-of-state residents. Were figures on out-of-region earnings available, we believe they would show that income leakage for the construction industry was actually much higher.

TABLE 1-20
RESIDENT AND NONRESIDENT TOTAL EARNINGS AND WORKERS
BY MAJOR INDUSTRIAL GROUP
NORTHWEST ARCTIC BOROUGH, 1988

Industrial Group	Earnings				Workers			
	Resident		Nonresident		Resident		Nonresident	
	($1,000)	Percent	($1,000)	Percent	Number	Percent	Number	Percent
Agriculture [1]	$ 0	0.0%	$ 0	0.0%	0	0.0%	0	0.0%
Mining	(D)	92.4	(D)	7.6	(D)	88.9	(D)	11.1
Construction	2,217	68.7	1,012	31.3	272	78.8	73	21.2
Manufacturing	(D)	0.0	(D)	0.0	(D)	0.0	(D)	0.0
Transportation	2,045	94.2	126	5.8	191	91.4	18	8.6
Retail Trade	1,948	92.5	157	7.5	272	91.6	25	8.4
Fin./Ins./Real Est.	1,422	95.9	61	4.1	121	94.5	7	5.5
Services	7,223	96.3	276	3.7	818	94.8	45	5.2
Nonclassifiable	(D)	93.9	(D)	6.1	(D)	90.0	(D)	10.0
Local Government	14,195	97.6	352	2.4	1,469	95.6	67	4.4
TOTAL	$32,495	93.6%	$2,235	6.4%	2,740	92.3%	230	7.7%

Source: Nonresidents Working in Alaska, 1988. Alaska Department of Labor.

Note: (D) indicates that information is nondisclosable.

1. Data includes only nonagricultural wage and salary workers covered by unemployment insurance. Consequently, data provided for this industry may not represent the industry as a whole.

TABLE 1-21
EMPLOYEE RESIDENCY STATUS
MAJOR EMPLOYERS, NORTHWEST ARCTIC BOROUGH, 1988

Employer	Industry	Total Employees	Resident Employees	Nonresident Employees
Ambler, City of	Public Administration	96	87 (90.6%)	9 (9.4%)
Baker Aviation	Trans., Comm., Util.	56	46 (82.1%)	10 (17.9%)
Buckland City Council	Public Administration	66	61 (92.4%)	5 (7.6%)
Cominco American Inc.	Mining	77	70 (90.9%)	7 (9.1%)
Deering City Council	Public Administration	38	37 (97.4%)	1 (2.6%)
Hanson Trading Co./KDC	Retail Trade	95	85 (89.5%)	10 (10.5%)
Kiana, City of	Public Administration	84	80 (95.2%)	4 (4.8%)
Kivalina City Council	Public Administration	50	48 (96.0%)	2 (4.0%)
Kotzebue, City of	Public Administration	201	186 (92.5%)	15 (7.5%)
Kotzebue/KIC/RS Store Inc.	Construction	69	60 (87.0%)	9 (13.0%)
Maniilaq Association Inc.	Services	481	458 (95.2%)	23 (4.8%)
Noatak Village Council	Services	48	47 (97.9%)	1 (2.1%)
Noorvik, City of	Public Administration	100	97 (97.0%)	3 (3.0%)
Northwest Arctic Borough	Public Administration	36	36 (100.0%)	0 (0.0%)
Northwest Arctic Bor. SD	Services	775	758 (97.8%)	17 (2.2%)
Nullagvik Hotel	Services	100	96 (96.0%)	4 (4.0%)
NW Inupiat Housing Authority	Finance, Ins. and R.E.	83	79 (95.2%)	4 (4.8%)
OTZ Telephone Coop. Inc.	Trans., Comm., Util.	43	41 (95.3%)	2 (4.7%)
R S Store Inc.	Retail Trade	67	61 (91.0%)	6 (9.0%)
Selawik City Council	Public Administration	138	129 (93.5%)	9 (6.5%)
Selawik IRA Council	Services	40	40 (100.0%)	0 (0.0%)
Shungnak City Council	Public Administration	45	45 (100.0%)	0 (0.0%)
TOTAL		2,788	2,647 (94.9%)	141 (5.1%)

Source: Residency Analysis of Alaska's Workers by Firm 1988. Alaska Department of Labor, 1990.

NOTE: "Major" defined to include employers who employed at least 20 workers during any month of 1988. All employees of major firms were counted, regardless of duration of employment. Employees were considered residents if they received a Permanent Fund Dividend in 1988 or applied for a dividend in 1989. Employees not filing for a Permanent Fund Dividend were presumed to be nonresidents of Alaska.

and spotty statistics exist to document this practice. For example, the U.S. Census Bureau reported that 3.6 percent of Northwest Arctic Borough residents who worked during the 1970 census week worked outside their region of residence and 2.1 percent during the 1980 census week. These rates were somewhat higher than average for other western and arctic census divisions.

Lacking comprehensive data on out-of-region employment and earnings, we collected data on resident or NANA shareholder earnings for several historically important out-of-region employment sources: pipeline construction, fire-fighting, North Slope oilfield employment, Red Dog Mine construction, and Exxon Valdez oil spill cleanup operations.

Though spotty, these data suggest a consistent and plausible picture of the regional workforce's mobility. Cumulative data show that part of the region's labor pool has been exceptionally willing, mobile, and versatile in pursuit of cash employment outside their home towns and home region. This labor mobility has helped offset the local deficit of job openings.

a. Trans-Alaska Pipeline Construction Project. Of the seven ANCSA corporate regions wholly outside the pipeline corridor, NANA Regional Corporation had the highest percentage of shareholders employed at some time on the pipeline construction project. Five regions (CIRI, Doyon, AHTNA, Chugach, and Arctic Slope) exceeded NANA's percentage, six others fell below (Table 1-22). The rate of project employment varied widely among the region's communities. Kivalina (16.8 percent) had the highest participation rate. Ambler (1.9 percent), Deering (2.5) and Shungnak (3.7) were lowest; and the other communities were bunched around the region-wide average.

TABLE 1-22
ALASKA NATIVE TAPS PIPELINE WORKERS
AS A PERCENT OF ANCSA CORPORATION MEMBERSHIP

ANCSA Corporations	Percent of Membership Employed on TAPS
Cook Inlet	20.1%
Doyon	18.7
Ahtna	14.6
Chugach	10.1
Arctic Slope	6.5
NANA	6.3
Sealaska	5.4
Bering Straits	4.5
Calista	2.2
Koniag	2.1
Bristol Bay	1.9
Aleutian	1.0
AVERAGE	7.3

Source: Alaska Native Hire on the Trans-Alaska Oil Pipeline Project, ISER, 1978.

b. Alaska Fire Service. The Bureau of Land Management's Alaska Fire Service has employed residents of many rural Alaska Native villages over the years. Table 1-23 gives annual wages for the period 1985-1988 for the NANA region village fire-fighting teams. Firefighters' wage levels have risen steadily, perhaps because of fluctuating demand for these services. For the peak year of 1988, firefighter payrolls for this highly seasonal activity amounted to nearly 3 percent of the region's total payroll earnings ($45,438,750).

Table 1-24 summarizes 1988 Alaska Fire Service firefighter payrolls by region. Despite their distance from Alaska Fire Service administrative headquarters in Fairbanks, the region's residents that year earned higher wages fighting fires than any region except the Yukon-Koyukuk region.

TABLE 1-23
ALASKA FIRE SERVICE ANNUAL PAYROLL
NANA REGION, BY VILLAGE, 1985-1988

Village	1985	1986	1987	1988	TOTAL
Ambler	$ 44,972	$ 2,214	$ 76,875	$ 86,384	$ 210,445
Buckland	35,764	34,135	89,718	162,762	322,379
Dahl Creek	671	0	0	0	671
Kiana	64,317	113,323	105,969	235,456	519,065
Noorvik	36,102	35,257	173,318	258,826	503,503
Selawik	35,344	80,024	0	322,157	437,525
Shungnak	72,281	77,118	51,193	179,562	380,154
TOTAL	$289,451	$342,071	$497,073	$1,245,147	$2,373,742

NOTE: These payroll earnings are not included in ADOL payrolls for Northwest Alaska Borough.

Source: Alaska Fire Service, Bureau of Land Management, unpublished data.

TABLE 1-24
ALASKA FIRE SERVICE ANNUAL PAYROLL BY REGION, 1988

Region	Payroll
Yukon-Koyukuk	$3,702,163
Northwest Arctic	1,245,146
Fairbanks North Star	1,231,929
Southeast Fairbanks	1,222,209
Wade Hampton	816,306
Bethel	452,409
Ahtna	382,124
Bering Straits	245,115
Dillingham	131,567
Haines	105,762
Matanuska-Susitna	86,238
TOTAL	$9,620,968

NOTE: These payroll earnings are not included in ADOL payrolls for Northwest Alaska Borough.

Source: Alaska Fire Service, unpublished data.

c. NANA Regional Corporation. The NANA Regional Corporation and its subsidiaries have become major employers of NANA shareholders, both within

the region and in their diverse operations outside the region. The corporation's own operations are concentrated in businesses that can provide employment opportunities to shareholders. Similarly, NANA has used its participation in joint ventures to facilitate shareholder access to wage employment. It aggressively brokered employment for shareholders in the Exxon Valdez oil spill cleanup program. And shareholder employment was a fundamental goal of its Red Dog mine development strategy. (Exxon Valdez cleanup and Red Dog Mine employment are discussed in detail in succeeding subsections.) As a result, corporate business activities regularly generate cash wages for shareholders far in excess of its dividend distributions.

The corporation's annual reports show how NANA has used its corporate resources to improve employment opportunities for its shareholders. In its regional operations, NANA has favored local shareholder employment opportunities over profit considerations. Thus, NANA has continued its local business operations in the face of persistent losses. Table 1-25 shows that NANA's regional operations have lost money every year since 1980, while its statewide (i.e., out-of-region) operations have regularly shown profit.

Apart from their profitability, NANA's statewide and joint-venture operations also have been an important source of employment for many shareholders living in or outside the region. These businesses help offset the shortage of in-region employment.

Table 1-26 summarizes NANA shareholder employment and payrolls in its own and subsidiary operations between 1982 and 1989. Part of shareholder employment in NANA's own operations (in 1989, almost half), and most shareholder employment

TABLE 1-25
NANA REGIONAL CORPORATION
NET INCOME, REGIONAL AND STATEWIDE OPERATIONS, 1980-1990

Year	Regional	Statewide	Total
1980	($43,992)	$1,485,883	$1,441,891
1981	(1,018,435)	2,125,134	1,106,699
1982*			
1983	(1,252,683)	3,674,637	2,421,954
1984	(1,514,045)	6,058,907	4,544,862
1985	(1,323,149)	2,312,466	989,317
1986	(2,187,631)	3,802,402	1,614,771
1987	(1,038,374)	829,579	(208,795)
1988	(688,319)	1,646,905	958,586
1989	(1,344,679)	2,759,331	1,414,652
1990	(1,075,504)	5,997,666	4,922,162
TOTAL 1980-90	($10,411,307)	$30,692,910	$19,206,099

* Detailed breakdown not published in 1982 Annual Report.

Source: NANA Regional Corporation annual reports.

TABLE 1-26
NANA REGIONAL CORPORATION SHAREHOLDER EMPLOYMENT & PAYROLL, FY 1982-1989

	1982	1983	1984	1985	1986	1987	1988	1989
NANA Operations	587	450	392	389	265	249[1]	471	399
Subsidiaries	147	92	112	124	105	226	160	276[2]
Joint Ventures	98	68	76	86	93	99		276
Cominco-Red Dog	39	14	24	30	7	26		
NANA-Coates	10	10	12	8	5			
Endicott Project						101		
Total Employment	734	542	504	513	370	475	631	675[2]
Payroll($million)	$4.3	$5.1	$4.5	$5.0	$4.2	$4.2	$5.3	$7.4[2]

1. Includes 167 employees in region-based operations and 82 employees in Anchorage-based operations.
2. Includes only joint venture subsidiaries. Full total would be higher.

Source: NANA Regional Corporation Annual Reports and unpublished corporate data.

in subsidiaries is based outside the NANA region. During the seven-year period 1982-1989, NANA provided an average of 556 job opportunities annually for shareholders. To put this figure in perspective, note that NANA has about 4,571 active shareholders, many of whom are not in the workforce, and that total wage employment for the Northwest Arctic Borough averaged 1,815 jobs annually over this period.

In 1989 NANA strengthened the region's economy and workforce in several specific ways. Within the region, NANA's business enterprises had 264 employees, of whom 194 were shareholders[19], and a gross payroll of $1.7 million. Its most important regional operations were its corporate offices and the Nullagvik Hotel. Additionally, NANA's subsidiaries and joint ventures, most of which are based outside the region, provide employment opportunities for NANA shareholders, most but not all of whom live in the region (Table 1-27). NANA subsidiaries had 917 employees, of whom 205 were shareholders, and a gross payroll of $16.2 million, of which shareholders earned $3.1 million. Subsidiaries with the largest gross payrolls were NANA Development Corporation, Purcell Services, Inc. and NANA Oilfield Services. Lastly, NANA's joint ventures (NANA/Marriott, Alaska United Drilling and Chugach-NANA Marriott[20]) had 1,555 employees, of whom 276 were shareholders, and a gross payroll of $24.3 million of which shareholders earned

---

19. The count of shareholder employees includes some nonNative spouses of shareholders. The employment count, which includes seasonal and temporary jobs and employee turnover, is not directly comparable with data on average annual employment. Information on how many regional residents worked in NANA's out-of-region enterprises may be available for the Final Report.

20. Chugach-NANA Marriott, formed to provide support services to the Exxon Valdez oil spill cleanup, employed 92 NANA shareholders for a payroll of $1.0 million. Purcell Services, Inc. also provided some security services for cleanup operations. These subsidiaries' cleanup employment and payrolls were in addition to Veco's direct employment cited in Table 25.

$3.2 million. With the addition of Red Dog mine-related employment, NANA's combined enterprises produced 745 jobs and $9.1 million in payroll earnings for region residents and other shareholders in 1989. Shareholder stock dividends that year totalled $917,625.

TABLE 1-27
SHAREHOLDER EMPLOYMENT AND PAYROLLS
NANA REGIONAL CORPORATION & SUBSIDIARIES, 1989

	Total Employment	Shareholder Employment	Percent Shareholder	Shareholder Payroll
Regional Operations				
Ambler Fuel	7	6	86%	$ 12,217
Buckland Fuel	2	2	100	14,464
Deering Fuel	2	2	100	14,588
Jade Mountain	5	5	100	140,683
Museum of the Arctic	33	32	97	55,166
NANA Regional Corp.	23	19	83	349,276
NANA Seafood	14	12	86	32,713
Nullagvik Hotel	178	121	68	508,942
Subtotal	264	194[1]	73	1,123,377[1]
Statewide Operations				
American Meat Shop	1	1	100	23,911
Arctic Caribou Inn, Ltd.	13	7	54	30,276
Arctic Utilities	6	3	50	93,212
NANA Development Corp.	101	71	70	828,440
NANA DMTS Services, Ltd.	33	29	88	355,206
NANA Oilfield Services	59	20	34	439,775
Purcell Services	693	64	9	1,224,552
Tour Arctic	11	10	91	54,650
Subtotal	917	205	22	3,050,022
Joint Ventures				
Alaska United Drilling	241	38	16	621,439
Chugach-NANA/Marriott	503	92	18	1,028,305
NANA/Marriott	811	146	18	1,591,473
Subtotal	1,555	276	18	3,241,217
GRAND TOTAL	2,736	675[1]	21%	$7,414,616[1]

1. There are minor unreconciled discrepancies in original data totals.

Source: NANA Regional Corporation.

Shareholder jobs and wages are not the same as resident hire because many NANA shareholders live outside the region. Table 1-28 lists shareholders by place of 1989 residence. Almost one-third of NANA's 4,571 active shareholders dwelled outside the region--many (892) elsewhere in Alaska and some (575) outside Alaska.

TABLE 1-28
NANA REGIONAL CORPORATION SHAREHOLDERS
BY PLACE OF RESIDENCE, 1989[1]

Residence	Number	Percent
Ambler	150	3.3%
Buckland	142	3.1
Deering	77	1.7
Kiana	223	4.9
Kivalina	170	3.7
Kobuk	41	.9
Kotzebue	1,279	28.0
Noatak	224	4.9
Noorvik	316	6.9
Selawik	342	7.5
Shungnak	140	3.1
Subtotal	3,104	67.9
Elsewhere in Alaska	892	19.5
Outside Alaska	575	12.6
Subtotal	1,467	32.1
TOTAL	4,571	100.0

1. Does not include 541 inactive (deceased or unknown whereabouts) shareholders. Total number of shareholders is 5,112.

Source: NANA Regional Corporation.

Based on the location of its various business activities, shareholder residency patterns, and partial information on the residency of shareholder employees in certain NANA business activities (Table 1-29), we estimate that in 1989 NANA activities generated about 465 jobs and $5.5 million in wages, plus other payroll benefits for resident shareholders, with the balance of jobs (280) and wages ($3.6 million) accruing to shareholders dwelling outside the region.

Beginning in 1990, the figures for resident employment and wages should jump as Red Dog Mine moves into full operation.

TABLE 1-29
NANA REGIONAL CORPORATION SHAREHOLDER HIRE
EXXON VALDEZ OIL SPILL CLEAN-UP
THROUGH AUGUST 10, 1989

Residence	Chugach NANA-Marriott	Purcell Security	VECO	Total	Percent
Ambler	6	5	7	18	6.5%
Buckland	5	5	6	16	5.8
Deering	1	2	1	4	1.4
Kiana	4	2	7	13	4.7
Kivalina	1	2	5	8	2.9
Kobuk	1	0	1	2	.7
Kotzebue	29	12	12	53	19.1
Noatak	6	1	3	10	3.6
Noorvik	7	5	7	19	6.9
Selawik	4	14	9	27	9.7
Shungnak	5	6	5	16	5.8
Subtotal	69	54	63	186	67.1
Anchorage	50	8	1	59	21.3
Fairbanks	17	1	1	19	6.9
Other	9	2	2	13	4.7
Subtotal	76	11	4	91	32.9
TOTAL	145	65	67	277	100.0%

Source: NANA Regional Corporation.

NANA's 1989 Annual Report noted the corporation's achievements in shareholder hire, but also expressed the its concern about high turnover among shareholder employees.

> Although shareholder hire is increasing overall, high turnover among shareholder employees continues to be a concern to the Board of Directors; in the last fiscal year, 37 percent terminated within the year.
>
> High turnover among shareholders is also evident in length of employment at NANA. Only three shareholders have been employed

continuously for 15 years or more. Of the 35 employees who have been with NANA 10 to 15 years, only seven are shareholders. Of the 156 NANA employees with five to 10 years of continuous employment, only 16 are shareholders.

During 1990, the corporation instituted several new policies and programs to improve shareholder hire and retention, including:

- creation of a human resources department;
- initiation of a plan to train, place and promote shareholders in hotel, camp and food service management;
- development of improved employee orientation materials;
- stronger substance abuse policies for employees;
- provision of accounting training; and
- on-going management training.

As part of its operations, NANA Regional Corporation maintains a computerized Talent Bank System. NANA's personnel department uses this system to match job applicants with employment positions in the corporation or its affiliated businesses, including the Red Dog Mine. The original Talent Bank is currently being converted to an enhanced system to be operational by summer 1990.

The new system's database consists of coded job classifications and a set of individual personnel files containing name, residence, sex, shareholder status, education, work history, union affiliation, coded job preference(s), and phone number. On request, the Talent Bank can retrieve all personnel files that match a specific job code and related criteria (job preference, minimum experience, residence, sex, shareholder status, etc.) or all files that satisfy the criteria of a general inquiry.

Overall, these data on Northwest Arctic Borough resident employment at out-of-region enterprises confirm that this region's workforce has been more willing than most rural Alaska workers to travel outside its home region for work. Out-of-region work has helped make up for the scarcity of at-home employment opportunities. This mobility is a positive feature of the workforce, inasmuch as it suggests that at least some workers are accustomed and willing to adapt to job opportunities away from home such as the Red Dog Mine project.

d. Exxon Valdez Oil Spill Cleanup. The 1989 Exxon Valdez oil spill cleanup program employed an estimated 10 thousand workers at various cleanup related activities. NANA Regional Corporation aggressively pursued spill cleanup employment opportunities for its shareholders through several channels. NANA actively sought to recruit shareholders to work directly for Veco, Inc., the chief spill cleanup contractor. Additionally, several NANA Regional Corporation subsidiaries and joint ventures were engaged as subcontractors to Veco. These subcontractors hired many NANA shareholders.

NANA reported a total of 277 NANA shareholders worked at catering/camp support, security and beach cleanup activities for the oil spill through early August 1989. Table 1-29 shows the number of shareholders, by place of residence, employed in spill-related work. It is noteworthy that the percentage of shareholders who worked on the spill and were resident in the region (67.1 percent) matched the percentage of shareholders who lived in the region (67.9 percent--see Table 1-28). Within the region, villagers were slightly over-represented in the spill workforce, Kotzebue somewhat underrepresented. These figures indicate that NANA region residents, including villagers, were very

successful at obtaining spill-related employment, despite their remoteness from the spill scene.

Other data released by Veco, Inc. confirm that a disproportionate number of NANA region residents held oil spill cleanup jobs. Veco's employment records (Table 1-30) appear less complete than NANA's records, but show that the Northwest Arctic Borough supplied it with more employees (44) than the North Slope Borough, Bering Straits, Wade Hampton, Bethel, Dillingham, Bristol Bay and Aleutian Island regions combined (34).

In sum, these spill cleanup employment data demonstrate again the ability of NANA and large numbers of its shareholders to respond opportunistically and effectively to unexpected job openings far outside their home region.

Red Dog Mine.

NANA Regional Corporation selected the Red Dog Mine property under terms of the Alaska Native Claims Settlement Act.[21] First discovered in 1953 in a remote, undeveloped area of northwest Alaska about 82 miles north of Kotzebue and 47 miles inland from the Chukchi Sea coast, only Red Dog's size (proven ore reserves of 85 million tons) and high ore grade (17 percent zinc, 5 percent lead) made development economically feasible. In 1982 NANA and Cominco Alaska Incorporated agreed on the terms under which the mine would be developed and have released its key features.

---

21. The Red Dog Mine site was actually among lands withdrawn from mineral staking and Native selection by ANCSA. NANA succeeded in obtaining a congressional amendment under the 1980 Alaska National Interest Lands Conservation Act that allowed NANA to select the Red Dog property.

TABLE 1-30
RESIDENCY OF VECO's EXXON VALDEZ OIL SPILL CLEANUP EMPLOYEES
THROUGH AUGUST 13, 1989

Place of Residency	Number of Employees
NORTHWEST AND WESTWARD ALASKA	78
Northwest Arctic Borough	44
Ambler (4), Buckland (3), Kiana (6), Kivalina (4), Kobuk (1), Kotzebue (10), Noatak (1), Noorvik (8), Selawik (4), Shungnak (3)	
Nome	2
Dillingham	22
Bethel	5
Bristol Bay	1
Aleutians	4
SOUTHCENTRAL/PRINCE WILLIAM SOUND (Kenai Peninsula Borough, Matanuska-Susitna Borough, Kodiak Island Borough, Anchorage, Valdez/Cordova)	3,196
INTERIOR (Fairbanks North Star, Southeast Fairbanks, Yukon-Koyukuk)	443
SOUTHEAST (Haines, Juneau, Ketchikan Gateway Borough, Sitka, Skagway/Yakutat, Wrangell-Petersburg)	27
TOTAL ALASKA	3,744
OUT OF STATE	343
GRAND TOTAL	4,087

NOTE: No employees were reported for the North Slope Borough or Prince of Wales census areas.

NOTE: These figures include direct employees of Veco, Inc. as of August 13, 1989. Figures do not include workers hired by Norcon or Veco subcontractors or crews on fishing boats under contract to Veco, Inc. The number of subcontracted employees is about 2,360 and the number of Norcon employees is about 1,150.

NOTE: The totals in this table were retotaled from the breakdowns reported by Veco, Inc. to reconcile a minor discrepancy (three employees) in the original figures.

Source: Veco, Inc., August 25, 1989.

Under the agreement, Cominco leases the property from NANA, operates the mine, and markets the concentrate. The purpose of the agreement is threefold:

-to develop one of the richest zinc deposits in the world
-provide employment
-protect the subsistence lifestyle of the people in the region

Upon signing the agreement, NANA received $1.5 million. Every year thereafter, until the mine goes into production, NANA receives an additional $1.0 million. Once production begins NANA will receive 4.5% of the net smelter return. After Cominco recovers its capital investment, NANA will begin sharing in the net proceeds. This begins at 25 percent and increases by 5 percent every 5 years until NANA and Cominco share equally in the profits.

Another important provision in the agreement deals with employment. First preference on all Red Dog jobs goes to qualified natives in the NANA region. It is the intent of Cominco and NANA that by the twelfth year of the mine's operation the mine will be run 100% by natives from the region. Red Dog Facts, Cominco/NANA.

The partners have estimated development costs at $415 million. This includes $150 million for haul road and port facilities financed by industrial revenue bonds issued by the Alaska Industrial Development Authority under a reimbursement agreement with Cominco. When fully operational, Red Dog will be the nation's premier zinc mine and one of the largest zinc producers in the world.

The partners developed the Red Dog deposit as an open pit mine. Trucks haul product (zinc, lead, and silver concentrates) 52 miles overland to the shallow water port site to be stored for shipment during open water shipping season. Many commodity industries are vulnerable to periodic production shutdowns caused by volatile market prices for their product. Red Dog, however, as a highly efficient, low-cost producer of zinc concentrates, is better positioned to sustain price fluctuations without shutdown or interrupted employment, although profits might suffer. Known reserves will sustain the mine's projected working

life for 50 years at present production levels. The new transportation system opens other highly mineralized areas in the vicinity to potential commercial development, but no other projects are planned at present.

Red Dog Mine development spanned from mid-1987 with construction of the access road to late 1989, when production began. Cominco released data on the residency status of project employees during construction and initial mine operation (Table 1-31). Total project employment and resident employment peaked during the construction phase.[22]

About one-third of construction-phase employees were region residents, but many construction jobs were short-term. Table 1-31 shows the total number of jobs held by different persons rather than employment at any one time or average annual employment. The December 1989 figures are for mine and support positions at start-up of mining operations. Mine operations entail fewer workers but offer permanent full-time positions, more of which (almost 60 percent) were initially held by region residents. In May 1990, by which time the mine was in full operation, resident hire remained at about 60 percent.

Red Dog's resident hire figures approximate original Cominco estimates in the project environmental impact statement (EIS). Cominco anticipated that 124 residents would be employed during construction and 168 for initial production. Residents actually held 475 construction phase jobs in 1988 and 273 in the first

22. Detailed employment tabulations are shown in Appendix Tables 7 through 11.

ten months of 1989. Taking job turnover into account, actual resident employment approximated the EIS projection of 124 full-time equivalent jobs.[23]

TABLE 1-31
NORTHWEST ARCTIC BOROUGH RESIDENT EMPLOYMENT[1]
RED DOG MINE, 1988-1989

Period	Residents		Nonresidents		Total	
	Number	Percent	Number	Percent	Number	Percent
1988[1]	475	33.9%	928	66.1%	1,403	100.0%
Through 10/24/89[1]	273	30.0	636	70.0	909	100.0
December 1989[2]	168	59.2	116	40.8	284	100.0
May 1990[3]	192	60.2	127	39.8	319	100.0

1. Includes port and mine site construction.
2. At start-up of mining operations. Includes Cominco Alaska mine site employees (128 resident of 228 total), Arrow Transportation (13 of 22) and NANA Marriott (27 of 34).
3. At full operation. Includes Cominco Alaska mine site employees (141 resident of 245 total), Arrow Transportation (24 of 38) and NANA Marriott (27 of 36).

Source: Cominco Alaska Incorporated, Red Dog Hi·Lites.

Resident employment (168) at production start-up matched Cominco's projections even though total initial project employment was substantially less than projected (Table 1-32). The EIS estimated an initial production workforce of 392, and Cominco reports that actual employment was 275 workers.[24] The difference is mainly because worker training has not been conducted on-site as the EIS anticipated but elsewhere. Though exact payroll figures are not available, Cominco has estimated an initial annual payroll of about $10 million

23. These employment levels are not fully reflected in ADOL's 1988 and 1989 employment figures for the Northwest Arctic Borough. Presumably, some nonlocal contractors and subcontractors did not separately report their local payrolls.

24. There are minor differences in Cominco's figures for initial production employment because the figures are not simultaneous. Cominco expects that actual employment will fluctuate during initial production.

(pers. com., Parker, 1991). Recent ADOL employment and payroll figures suggest this estimate is conservative.

TABLE 1-32
PROJECTED AND ACTUAL RED DOG MINE EMPLOYMENT

Occupation	EIS[1]	Actual[2]
Management	7	8
Supervisors	30	32
Professionals and Technical/Clerical	60	52
Equipment Operators, Drivers	64	46
Mill Operators	22	24
Tradesmen	69	24
Trainees	84	0
Laborers	16	9
Catering	40	23
Millwrights	0	24
Mechanics	0	15
Floormen	0	6
Powerhouse Operators and Trainees	0	9
Welders	0	3
TOTAL	392	275

1. Projected initial employment for production phase.
2. Actual employment during November/December 1989 start-up.

Source: Environmental Impact Statement, Red Dog Mine Project; Cominco Alaska, unpublished data.

Table 1-33 compares regional employment and payrolls for the first quarters of 1989 and 1990 (the most currently available data), by which date the mine was in full operation. Inferentially, the figures show the Red Dog mine start-up had a dramatic impact on regional earnings. The actual figures for mining and wholesale trade were not released, due to disclosure regulations. But comparisons between the first quarters of 1989 and 1990 (compare the subtotals for undisclosed employment and payroll) suggest that the mine added an estimated 230 new mining jobs with a quarterly payroll of $2,850,000 (prorated annually at $11,400,000). These estimates include mining industry employees only,

exclusive of mine-related transportation and camp support services. The latter would add about 75 more jobs (see Table 1-31) and an annual payroll of perhaps +$3 million. These figures do not include secondary employment generated inside the region by this new basic industry.

TABLE 1-33
EMPLOYMENT AND PAYROLLS, BY INDUSTRY
NORTHWEST ARCTIC BOROUGH, FIRST QUARTER, 1989 & 1990

	Employment		Payrolls	
Industry Classification	1989	1990	1989	1990
Mining	*	*	*	*
Construction	68	33	855,838	195,827
Transportation, Communication and Public Utilities	160	170	966,749	1,462,406
Wholesale Trade	*	*	*	*
Retail Trade	176	160	897,280	922,631
Finance, Insurance and Real Estate	99	87	488,691	603,070
Services	371	395	1,958,148	2,213,921
Government	1,020	1,095	5,943,674	6,711,456
Federal	(81)	(80)	(575,516)	(614,695)
State	(86)	(82)	(824,557)	(887,563)
Local	(853)	(933)	(4,543,601)	(5,209,198)
Miscellaneous	*	0	*	0
(Subtotal: Undisclosed)	(12)	(240)	(142,864)	(3,001,409)
TOTAL	1,906	2,180	$11,253,244	$15,110,720

*Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

As a measure of the mine's contribution to the region's private sector, note that this new permanent mining ($11.4 million) and mine-related ($3 million) basic payroll was almost fivefold the region's total 1987 earnings (about $3 million) from all commodity-producing industry (agriculture, fisheries, mining, construction, manufacturing--see Table 1-10).

Though Cominco fulfilled the resident hire goals set by the NANA/Cominco agreement, legal controversy enveloped the local hire practices of one of the state's major subcontractors on the project. The State of Alaska's 1986 "Regional Preference Law" required contractors on state projects to hire residents for 50 percent of project jobs in regions (census areas) the Alaska Department of Labor determined were economically distressed. The Alaska Industrial Development Authority, a state agency, administered road and port facility construction for Red Dog Mine and ADOL found the Northwest Arctic Borough an economically distressed region. In such cases the state required contractors to implement 50 percent local hire. Enserch Alaska Construction, Inc., the main contractor for road construction, challenged the legality of preferential hire for residents. The State Superior Court struck down the law in 1988. On appeal in December 1989 the State Supreme Court declared that the law violated the equal protection provision of the Alaska Constitution.

The "Regional Preference Law" was the state's third legislated local hire preference attempt to be struck down on constitutional grounds. With construction done and mine hiring policies covered by contractual terms of the NANA/Cominco agreement, the statutory and constitutional issues about local hire became immaterial as far as Red Dog Mine is concerned.

The mine initially operated around the clock in two shifts. At start-up, Cominco established a four-week-on/two-week-off rotation schedule for workers at the mine site. Some region residents reportedly preferred a two-week-on/two-week-off schedule that allowed more time for home life and subsistence. Cominco officials acknowledged that the four-week work period has led some employees to terminate, for example, females with family and home responsibilities. Cominco

maintains that the longer work term is essential for effective worker training during start-up but say they may later revise the work schedule to suit worker preferences.[25] The shorter rotation would reduce annual hours and wages per job by about one-quarter but increase employment by about one-third.

Cominco furnishes transportation between hometown and job site for regional residents or transportation between the mine and Anchorage for others. Some NANA shareholder employees relocated to Anchorage for its greater amenities. Paradoxically, the mine's well-paid jobs plus the free commute available to and from Anchorage may enable some region residents to move away, while other village-based residents choose to stay in their home villages.

As the mine has operated for only a brief period as of December 1990, the long-run net effect of population movements between Kotzebue, the villages, Anchorage, and elsewhere cannot yet be determined.

> (M)any, perhaps most, of the residents hired for the mine would be recruited from other jobs in the region, leading to a period of job shuffling. These vacated positions would become available for other underemployed and unemployed resident workers. If the vacated posts were not readily filled from the resident labor pool, some of the jobs might draw newcomers to the region to replace mine hirees. In this way, resident hire on the mining project would trigger upward job mobility throughout the region's labor pool and might also attract some new residents to the region. Environmental Impact Statement, Red Dog Mine Project, p. V-31.

Local informants report that the employment possibilities created by mine development, the 1989 Prince William Sound cleanup, and mine operation generated substantial turnover in the staff of local public agencies, siphoned off many

---

25. Two articles in the Anchorage Daily News (Arctic Yields Buried Treasure, December 24, 1989; A New Living Off the Land, January 7, 1990) provide anecdotal information on resident and company attitudes on mine labor policies.

good employees, and left behind hard-to-fill vacancies. Here, too, how the region's workforce will ultimately adjust to the series of job openings originated by the mine remains unclear.

Speculation that it might be economically advantageous to backhaul fuels and bulk freight to Kotzebue or to the port site for redistribution within the region has not materialized in a concrete plan to implement the process.

In 1987 the Northwest Arctic Borough and Cominco agreed by contract that the company would pay $1 million annually, rising by steps to $3 million, in lieu of all other borough taxes for 14 years. This agreement provided funds to the newly incorporated borough in advance of mine development. If the borough terminates the agreement, Cominco is entitled to a credit against any borough taxes levied upon it.

3. Unearned Cash Income

The BEA personal income data series is the only source of detailed long-term information on unearned cash income for the Northwest Arctic Borough. BEA defines transfer payments and dividends, interest, and rent as the two broad categories of unearned cash income.

Transfer Payments.

As defined by the BEA, "transfer payments" consist of income payments to persons for which they do not render current services. Governments issue virtually all transfers as cash payments for social security and other retirement benefits; medical and unemployment insurance benefits; income assistance such as Aid to Families with Dependent Children, food stamp and Supplemental Security Income

benefits; and veterans benefits. Payments under Alaska's Permanent Fund Dividend and Longevity Bonus programs are also classified as transfer payments.

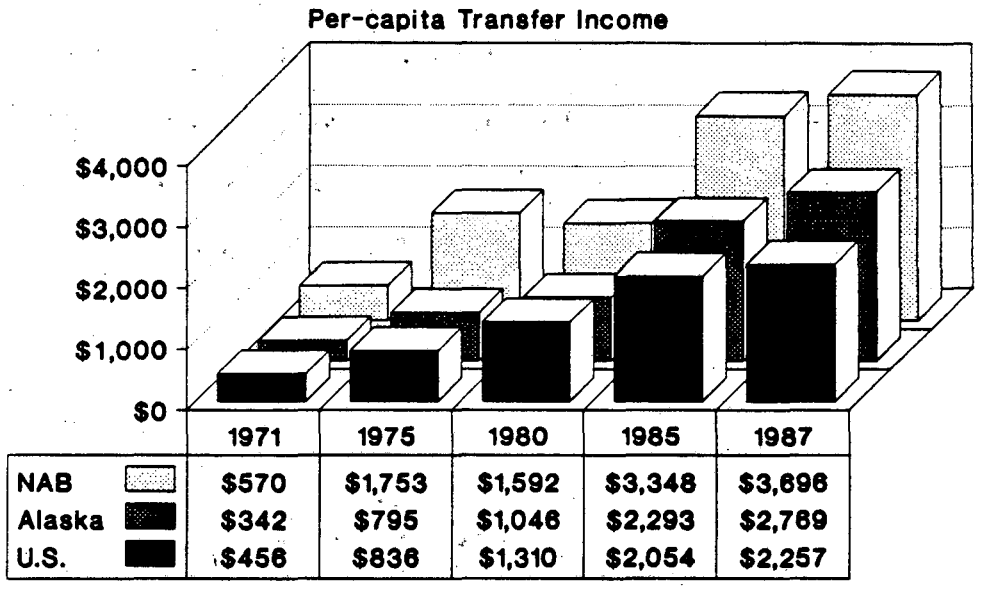
Table 1-34 and Figures 1-21 and 1-22 compare growth in transfer payment income for the Northwest Arctic Borough, state of Alaska, and United States from 1971 to 1987. Transfer payments provided a fluctuating but substantial share of Northwest Arctic Borough personal cash income during this period. In 1987 transfer payments amounted to 30.1 percent of total personal income compared to 24.2 percent in 1971. The most rapid rise in per-capita transfer income for Northwest Arctic Borough residents occurred during the 1971-1975 period.

TABLE 1-34
TRENDS IN TRANSFER INCOME, 1971-1987
NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA AND UNITED STATES

	Per-Capita Total Transfer Payments	Transfer Payments as % of Total Personal Income
Northwest Arctic Borough		
1971	$ 570	24.2%
1975	1,753	33.8
1980	1,592	21.5
1985	3,348	26.1
1987	3,696	30.1
State of Alaska		
1971	$ 342	6.9%
1975	795	8.2
1980	1,046	8.0
1985	2,293	12.2
1987	2,769	15.1
United States		
1971	$ 456	11.0%
1975	836	14.3
1980	1,310	13.8
1985	2,054	14.8
1987	2,257	14.6

Source: Bureau of Economic Analysis.

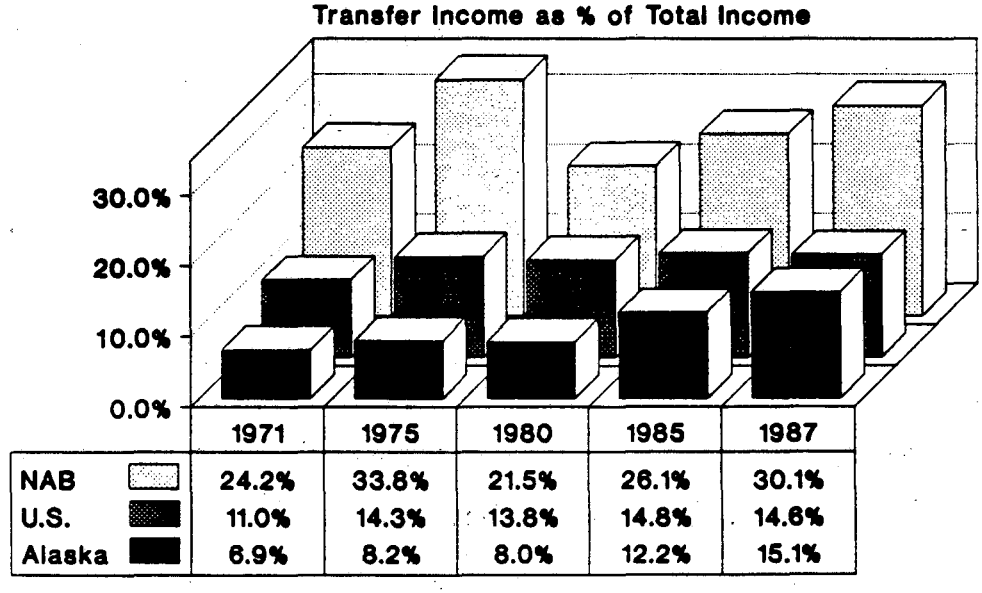
FIGURE 1-21
PER-CAPITA TRANSFER INCOME
NAB, ALASKA & U.S., 1971-1987



	1971	1975	1980	1985	1987
NAB	$570	$1,753	$1,592	$3,348	$3,696
Alaska	$342	$795	$1,046	$2,293	$2,769
U.S.	$456	$836	$1,310	$2,054	$2,257

Source: Bureau of Economic Analysis.

FIGURE 1-22
TRANSFERS AS % OF TOTAL INCOME
NAB, ALASKA & U.S., 1971-1987



	1971	1975	1980	1985	1987
NAB	24.2%	33.8%	21.5%	26.1%	30.1%
U.S.	11.0%	14.3%	13.8%	14.8%	14.6%
Alaska	6.9%	8.2%	8.0%	12.2%	15.1%

Source: Bureau of Economic Analysis.

Indeed, after adjustment for inflation the 1975 figure ($3,259 per-capita in constant 1982-84 dollars) actually was slightly higher than the 1987 figure ($3,243). Since 1975, residents also appear to have become less dependent on cash transfer payments, measured as a percent of total cash income.

Nevertheless, in absolute and relative terms, Northwest Arctic Borough residents have for many years depended on transfer payments as a source of cash income more than state and national residents. Northwest Arctic Borough per-capita cash transfer payments were higher and transfer payments comprised a larger share of personal cash income. In 1987, total per capita transfer payments reached $3,697 in current dollars for the Northwest Arctic Borough, $2,769 for the state, and $2,368 for the nation.

Two Alaska transfer programs (Alaska Permanent Fund Dividend Program, Alaska Longevity Bonus Payment Program) preclude direct comparisons with national norms. These unique programs distribute cash payments to all eligible Alaskans, regardless of income status. In 1987 their combined cash benefits, counted as transfer payments in the category "Other Governmental Payments to Individuals" in Table 1-35, surpassed all other categories of transfer payments to Alaskans.[26]

---

26. Since its inception in 1982, the Alaska Permanent Fund Dividend Program has disbursed annual payments as follows: 1982: $1,000.00; 1983: $386.15; 1984: $331.29; 1985: $404.00; 1986: $556.26; 1987: $708.19; 1988: $826.93; and 1989: $873.16. We estimate 1989 payments to Northwest Arctic Borough residents totaled about $5,000,000.

The Alaska Longevity Bonus Payment Program pays $250 monthly to eligible persons 65+ years old. Based on Alaska Department of Administration data, estimated payments to Northwest Arctic Borough residents in FY 1989 totaled $716,500. This estimate is prorated from aggregate data for the election district, which includes the North Slope Borough, according to the Northwest Arctic Borough's share of the district's residents 65+ years of age.

They account for most of the difference between transfer payment totals for the Northwest Arctic Borough and national figures.

TABLE 1-35
GOVERNMENT TRANSFER PAYMENTS TO INDIVIDUALS (PER CAPITA)
NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA, AND UNITED STATES, 1987

Category of Payment	Northwest Arctic Borough	State of Alaska	United States
Income Assistance Programs			
Retirement & Disability Ins. Benefits	$ 714	$ 831	$1,258
Medical Payments	739	344	579
Income Maintenance Benefits	676	214	202
Unemployment Insurance Benefits	372	191	64
Veterans Benefits	20	44	71
Federal Education & Training Assistance	5	10	22
Subtotal	**2,526**	**1,635**	**2,197**
Other Gov't Payments to Individuals[1]	812	781	3
Total Gov't Payments to Individuals	3,338	2,416	2,200
Other Transfer Payments[2]	359	353	168
Total Transfer Payments	$3,697	$2,769	$2,368

1. Mainly includes Alaska's unique Permanent Fund Dividend and Longevity Bonus payments, plus trivial amounts from the Bureau of Indian Affairs and several other minor sources. Note that outside Alaska the category "Other Government Payments to Individuals" is negligible.

2. Includes payments to nonprofit institutions and business payments to individuals.

Source: Bureau of Economic Analysis.

Review of the detailed data on types of transfer payments (see Table 12 and Table 13 in Appendix) refutes the notion that Northwest Arctic Borough residents inordinately depend on government income assistance programs. Table 1-35 breaks down 1987 governmental transfer payments to individuals by category of payment for the Northwest Arctic Borough, the state, and the nation. Northwest Arctic

Borough residents received higher payments for some programs (medical payments, income maintenance, and unemployment benefits) than the national average; in other program categories, payments were lower (retirement, disability, and veterans benefits). Most of the differences reflect economic conditions in a region that historically lacked the jobs that qualify workers for social security benefits. That meant fewer claimants for social security benefits but more for income assistance and unemployment benefits. Even so, the overall disparity in per-capita payments under income assistance programs for the Northwest Arctic Borough ($2,526) and the nation ($2,197) was modest. The data show that income maintenance programs (supplemental security income, aid to families with dependent children, food stamps, et al.) collectively provided only about 5.5 percent--one-twentieth--of total personal income in the borough in 1987.

Data compiled from Alaska Department of Health and Social Services records show estimated payments made in FY 1986 to Northwest Arctic Borough residents under aid to families with dependent children and food stamps, the two major income assistance programs administered by the state (Table 1-36). These state data were cross-checked with BEA transfer payment data. The state figures for FY 1986 are lower than the corresponding 1987 BEA figures.

Discrepancies in population and period of coverage may partly explain the difference, but state data confirm that income assistance payments are a relatively minor source of cash income to Northwest Arctic Borough residents. State data also show that program payments varied widely from community to community. This variation may not be a reliable barometer of local need since the level of program payments is strongly influenced by the local effectiveness of program delivery.

TABLE 1-36
AFDC AND FOOD STAMP PAYMENTS
NORTHWEST ARCTIC BOROUGH COMMUNITIES, FY 1986

Community	AFDC	Food Stamps	Total	Total Per Capita
Ambler	$ 32,280	$ 40,500	$ 72,780	$ 269
Buckland	66,060	72,660	138,720	536
Deering	N/A	N/A	N/A	N/A
Kiana	101,292	76,140	177,432	409
Kivalina	69,564	101,376	170,940	589
Kobuk	5,064	2,532	7,596	88
Kotzebue	294,960	372,952	667,912	253
Noatak	98,820	57,000	155,820	456
Noorvik	197,940	30,256	228,196	526
Selawik	144,768	86,628	231,396	366
Shungnak	63,348	19,488	82,836	338
TOTAL	$1,074,096	$859,532	$1,933,628	$ 337

Note: Community data were not available for state-administered medical assistance payments. Per-capita totals based on Alaska Department of Labor provisional population figures for July 1, 1986.

Source: Alaska Department of Health and Social Services, as reported in Memorandum dated February 27, 1987, by Brad Pierce, Alaska State Legislature, House of Representatives Research Agency.

Dividends, Interest and Rent.

As defined by the BEA, "dividends" comprise payments in cash or other assets by profit-making corporations to shareholders. "Interest" consists of cash or imputed interest payments to persons. "Rent" comprises personal cash income from rental of real property, the imputed net rental income of owner-occupants, and royalties to persons from patents, copyrights, and natural resource rights.

Table 1-37 compares personal income from "Dividends, Interest and Rent" between 1971 and 1987 for the Northwest Arctic Borough, State of Alaska, and United States. This income source has become steadily more important to Northwest Arctic Borough residents, rising from $47 to $866 per capita and from about 2.0

percent to 7.1 percent of total personal income. Shareholder dividends by NANA Regional Corporation ($917,625 or $125 per shareholder in 1987) and Kikiktagruk Inupiat Corporation ($505,250 or $250 per shareholder) helped boost dividend income. Notwithstanding these gains, Northwest Arctic Borough residents' income from "dividends, interest and rent" falls well below state averages and even further below national averages in both per-capita and percentage terms.

TABLE 1-37
DIVIDENDS, INTEREST AND RENT, 1970-1987
NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA AND UNITED STATES

	Per Capita Dividends, Interest, & Rent					
	NAB		State of Alaska		United States	
	(Amount)	(Percent)[1]	(Amount)	(Percent)[1]	(Amount)	(Percent)[1]
1971	$ 47	2.0%	$ 280	5.7%	$ 545	13.2%
1975	134	2.6	787	8.1	797	13.6
1980	376	5.1	1,362	10.5	1,560	16.4
1985	906	7.0	1,816	9.7	2,371	17.5
1987	866	7.1	1,886	10.3	2,605	16.8

1. Dividends, interest and rent payments as percent of total personal cash income.

Source: Bureau of Economic Analysis.

4. Distribution of Household Cash Income

Statistical distribution of households along the income scale shows relative economic equality and concentrations of wealth and poverty. Analysis of household income distribution may suggest hidden economic and class structures as well as the dynamics of economic class changes. Statistical tests can track the persistence of a large cash-poor underclass, the emergence of a middle-income class, or concentration of income in a wealthy elite. For example, a bimodal distribution of households at the extreme ends of the income spectrum suggests a highly stratified society that is split into two unequal income groups or

classes. On the other hand, a pronounced normal distribution with few households at either income extreme suggests a relatively egalitarian economic society.

The IRS/Department of Revenue taxpayer data publication provides some income distribution information for Kotzebue but none for the region's smaller communities. Table 1-38 compares Kotzebue's 1985 distribution of households by income group to the city of Nome, the state of Alaska, and the United States.[27] It shows that distribution of Kotzebue's households across the income scale generally resembles the pattern in Nome and the state as a whole, once allowance is made for Kotzebue's lower median household income. Kotzebue's distribution is slightly skewed toward the lower end of the scale, as might be expected given overall lower household incomes; but otherwise statistical differences between Kotzebue, Nome, and the state are minor. Unfortunately, IRS data do not discriminate between incomes of Native and non-Native households and so does not shed light on disparities in household income distributions by race.

Two noteworthy discrepancies exist between national and Alaska distributions. The proportion of low-income households is strikingly lower nationally compared to the Alaska areas, and the proportion of upper-middle income ($25,000-$50,000) households nationally is substantially broader.

---

27. The national data (distribution of households by income) and Alaska data (distribution of federal income tax returns by adjusted gross income) are not perfectly congruent. The differences do not seem to significantly distort geographic comparisons. Further, analysis of the distribution of persons (instead of households) by per-capita income would yield different results since rural Alaska's households are typically larger, so a per-capita analysis of their incomes would skew income distributions downward relative to most other regions.

TABLE 1-38
DISTRIBUTION OF INCOME BY HOUSEHOLD[1]
KOTZEBUE, NOME, STATE OF ALASKA & UNITED STATES, 1985

Income Group	Kotzebue	Nome	State of Alaska	United States
Under $5,000	18.7%	17.5%	14.9%	7.5%
5,000 - 10,000	12.9	12.2	12.4	12.2
10,000 - 15,000	9.3	8.6	10.5	11.3
15,000 - 20,000	8.3	8.1	9.1	10.8
20,000 - 25,000	9.6	10.0	8.0	9.9
25,000 - 35,000	13.5	13.7	13.6	16.9
35,001 - 50,000	14.4	14.2	14.5	16.0
50,000 +	13.3	15.6	17.1	15.4
TOTAL	100.0%	100.0%	100.0%	100.0%
Median Household Income	$20,484	$21,793	$22,438	$25,387

1. U.S. figure is for median household income. Figures for Kotzebue, Nome, and state of Alaska are distribution of federal income tax returns by adjusted gross income.

Source: Statistical Abstract; Federal Income Taxpayer Profile, 1983-85.

5. Unearned In-kind, or Noncash, Transfer Income

In-kind, or noncash, transfer income consists mainly of goods and services provided or subsidized by nonlocal governments. Important examples of in-kind transfer income in the Northwest Arctic Borough include public education; health and housing services; subsidized energy; and most public works and services.

Net in-kind transfer income is the value (cost) of goods and services provided or funded by federal/state governments minus payments to federal/state governments. Costs of goods and services collectively provided by all levels of government are offset by taxes and other revenues collected (or borrowed) by governments. Within the Northwest Arctic Borough:

- Federal expenditures exceed receipts many times over (Table 1-39), insuring a large net inflow of federal funds.

- State expenditures are funded largely by resource revenues, not by taxes and charges levied on persons, households and businesses resident in the Northwest Arctic Borough. Virtually all state expenditures for goods, services, and transfer payments represent a net gain to the region.
- Local government and service agency programs primarily depend on intergovernmental revenue transfers from federal and state governments rather than locally raised revenues. Even most goods and services provided by local government represent net transfers of in-kind income.[28]

TABLE 1-39
FEDERAL PERSONAL INCOME TAX RECEIPTS, EXPENDITURES, AND OBLIGATIONS
NORTHWEST ARCTIC BOROUGH, 1983-85

Year[1]	Federal Personal Income Tax Receipts	Federal[2] Expenditures & Obligations
1983	$4,891,713	$16,940,000
1984	5,276,016	18,137,000
1985	5,552,868	23,181,000

1. Tax receipts are for calendar year; expenditures and obligations for federal fiscal year.
2. Includes only federal expenditures and obligations reported in Consolidated Federal Funds Report. Does not include expenditures for housing and health care programs, shown in Tables 1-45 and 1-46 to exceed $10 million annually.

Source: Alaska Department of Revenue, U.S. Department of Commerce.

This section of the report attempts to document (1) nonlocal governmental expenditures for in-kind goods and services in the Northwest Arctic Borough and

28. For example, according to the 1988 County and City Data Book, intergovernmental revenues comprised about 72 percent ($9.3 million) of FY 1982 general revenues ($13.0 million) for all local governments within the Northwest Arctic Borough. That year, locally levied tax revenues amounted to $143 per capita or less than $1 million in all.