

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILES 86/2

188 SCOMM 9: HOUSE SPEC. COMM. ON PERMANENT FUND 1977-78

FIGURE 3-18

EMPLOYMENT ANCHORAGE ELECTION DISTRICT, 1961-1966^a

EMPLOYMENT SECTOR	1961		1962		1963		1964		1965		1966	
	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL
Total Nonagr. Wage & Salary Employment ^b	23,872	100.0	24,741	100.0	25,819	100.0	28,073	100.0	30,678	100.0	31,520	100.0
Mining	328	1.4	423	1.7	470	1.8	425	1.5	371	1.2	448	1.4
Contract Construction	1,908	8.0	2,103	8.5	1,962	7.6	2,906	10.3	3,126	10.1	2,846	9.0
Manufacturing	562	2.4	619	2.5	615	2.4	688	2.4	792	2.6	796	2.5
Trans., Communications & Public Utilities	2,229	9.3	2,328	9.4	2,224	8.7	2,264	8.1	2,618	8.5	2,619	8.3
Trade	3,903	16.3	4,116	16.7	4,316	16.7	4,495	16.0	5,280	17.2	5,696	18.1
Finance, Ins. & Real Est.	860	3.6	968	3.9	1,028	4.0	1,110	4.0	1,295	4.2	1,359	4.3
Services	2,763	11.6	2,718	11.0	3,098	12.0	3,440	12.2	3,800	12.4	4,105	13.0
Government	11,249	47.2	11,466	46.4	12,086	46.8	12,745	45.4	13,396	43.6	13,651	43.3

^aBy old election districts.^bPercentage totals may not add in detail due to rounding.Source: Derived from *Revised Workforce Estimates*, Alaska Department of Labor, Employment Security Division.

factors coupled with Anchorage's well-developed infrastructure including hospitals, college, port facilities that are operative year round, and a major international airport insure Anchorage's position as the growth center for Alaska.

(e) Kenai-Cook Inlet

The Kenai-Cook Inlet Election District is a boom area. The production of oil and natural gas has transformed Kenai into an area of major economic importance to the state. In addition to the direct employment involved in oil exploration and pumping, the industry has led to an increase in shipping and tug activity, a rapid increase in new housing starts, and the introduction of an ammonia-urea plant.

Figure 3-17 indicates that before major oil operations were begun the area was characterized by only moderate growth, with some increase in the 1962-63 period in government employment with the formation of the Kenai Borough and the switch by Wildwood Air Force Base in communication systems. Neither the moderate expansion in 1962 nor the major expansion in 1964 has significantly changed the seasonality of employment or the unemployment rate. The oil and gas industry has, to a large extent, demanded skills that the existing labor force did not have in adequate supply. Thus, many of the workers in the oil and gas, and petrochemical industries have been imported into the Kenai area.

The notion of a boom economy implies that rapid growth is a temporary phenomenon that soon levels off. Kenai is now at the stage where the growth in basic inputs from the oil and petrochemical industries will begin to level off. In the next few years Kenai will experience only the consolidation of recent gains.

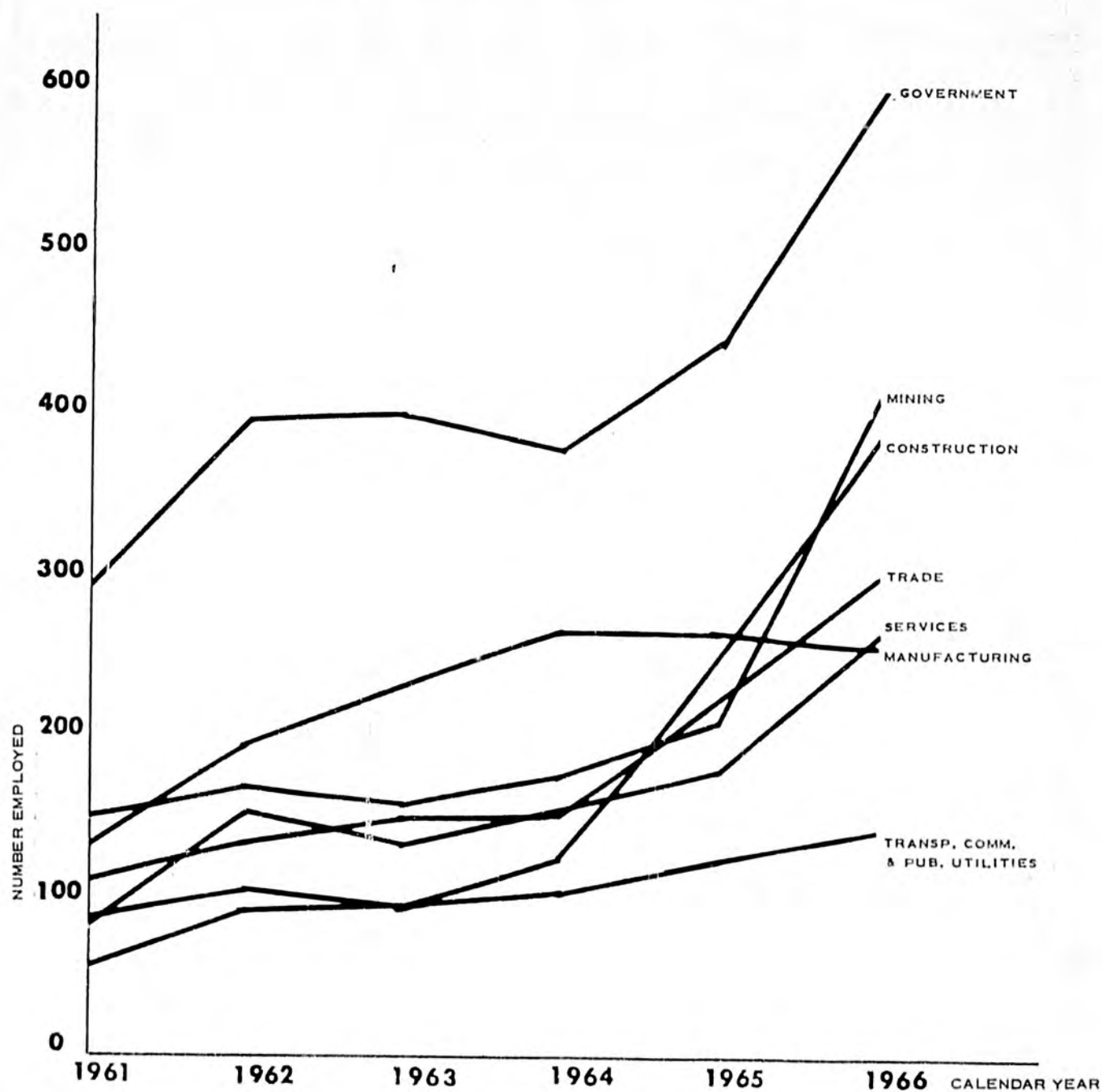
(f) Seward

Seward, in contrast to Anchorage and Kenai, has been in a state of economic decline since 1961. Seward's economy is based on transportation. With the introduction of containerization and the roll-on-roll-off barges in 1961, the Port of Anchorage began to take over much of the business that Seward had previously handled. When the 1964 earthquake destroyed the railway system and the port facilities in Seward, the remaining transportation activity shifted to Whittier and Anchorage. Some logging operations continue in the Seward area and a cant mill may be opened in the near future. Rebuilding of the portions of the Seward highway destroyed in the earthquake has brought an increasing number of tourists to this scenic area.

Seward's potential was not by any means destroyed by the earthquake. Much of the infrastructure remains and the excellent ice-free port

FIGURE 3-19

KENAI - COOK INLET ELECTION DISTRICT NO. 12
EMPLOYMENT BY SECTOR*, 1961-1966



* FIGURE FOR TOTAL NONAGRICULTURAL EMPLOYMENT (NOT SHOWN ON GRAPH) ARE PRESENTED IN FIGURE 3-20.

Source: Figure 3-20.

FIGURE 3-20

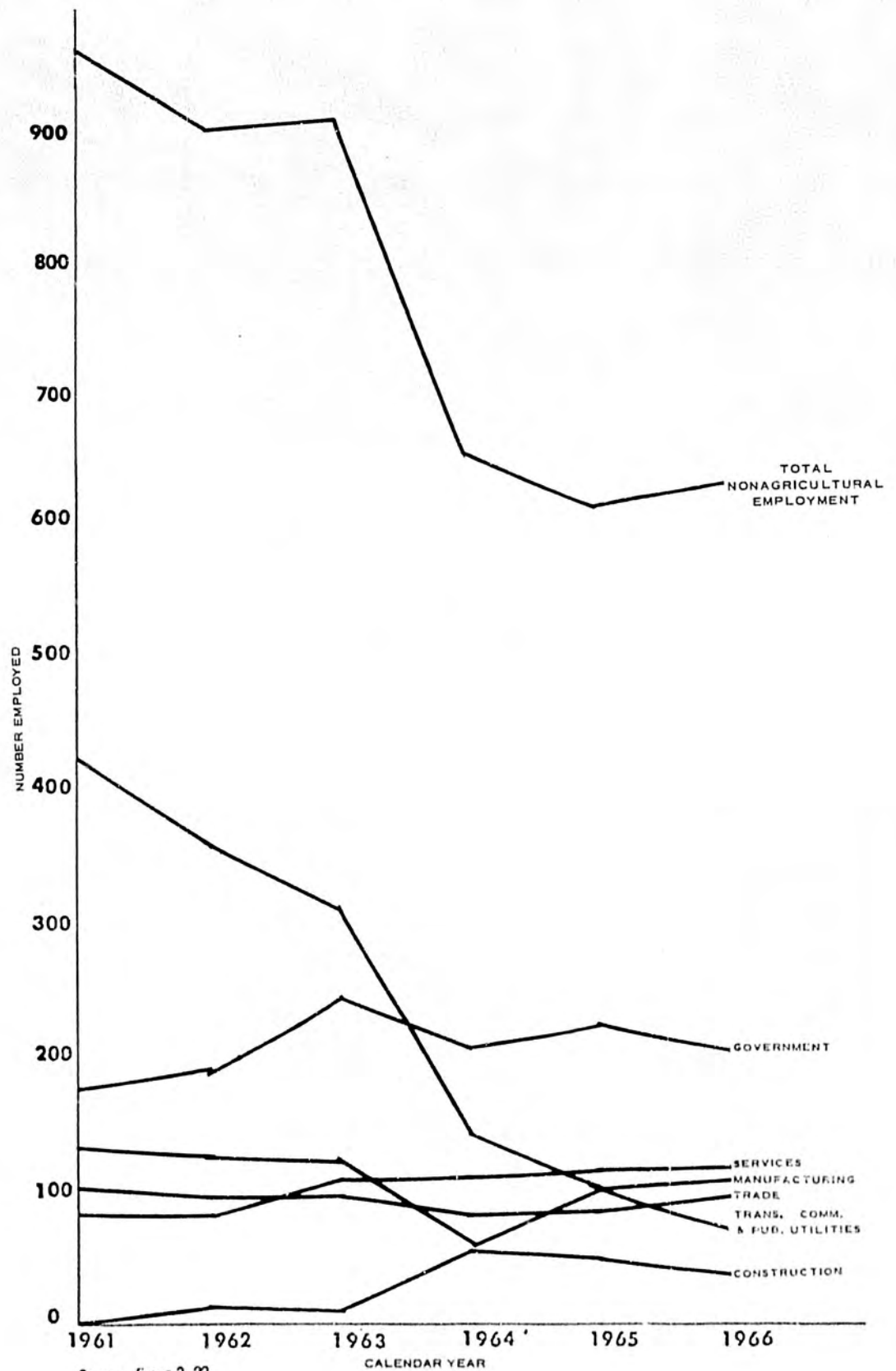
EMPLOYMENT KENAI ELECTION DISTRICT, 1961-1966^b

EMPLOYMENT SECTOR	1961		1962		1963		1964		1965		1966	
	NO. EMP'D	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL
Total Nonagr. Wage & Salary Employment ^c	960	100.0	1,284	100.0	1,322	100.0	1,397	100.0	1,754	100.0	2,423	100.0
Mining	155	15.7	169	13.2	159	12.0	179	12.8	212	12.1	415	17.1
Contract Construction	57	5.9	94	7.3	99	7.5	128	9.2	259	14.7	388 ^a	16.0
Manufacturing	138	14.5	198	15.4	236	17.9	266	19.0	264	15.1	258	10.6
Trans., Communications, & Pub. Utilities	90	9.4	104	8.1	94	7.1	107	7.7	125	7.1	141	5.8
Trade	113	11.8	134	10.4	152	11.5	151	10.8	219	12.5	303	12.5
Finance, Ins. & Real Est.	27	2.8	34	2.6	44	3.3	30 ^a	2.1	50 ^a	2.9	60 ^a	2.5
Services	86	9.0	154	12.0	135	10.2	156 ^a	11.2	180 ^a	10.3	263	10.9
Government	294	30.7	397	30.9	403	30.5	380	27.2	445	25.4	595	24.6

^aEstimated figures necessitated by disclosure regulations.^bBy old election districts.^cPercentage totals may not add in detail due to rounding.Source: Derived from *Revised Workforce Estimates*, Alaska Department of Labor, Employment Security Division.

FIGURE 3-21

SEWARD (ELECTION DISTRICT NO. 11)
EMPLOYMENT BY SECTOR*, 1961-1966



Source: figure 3-22.

FIGURE 3-22

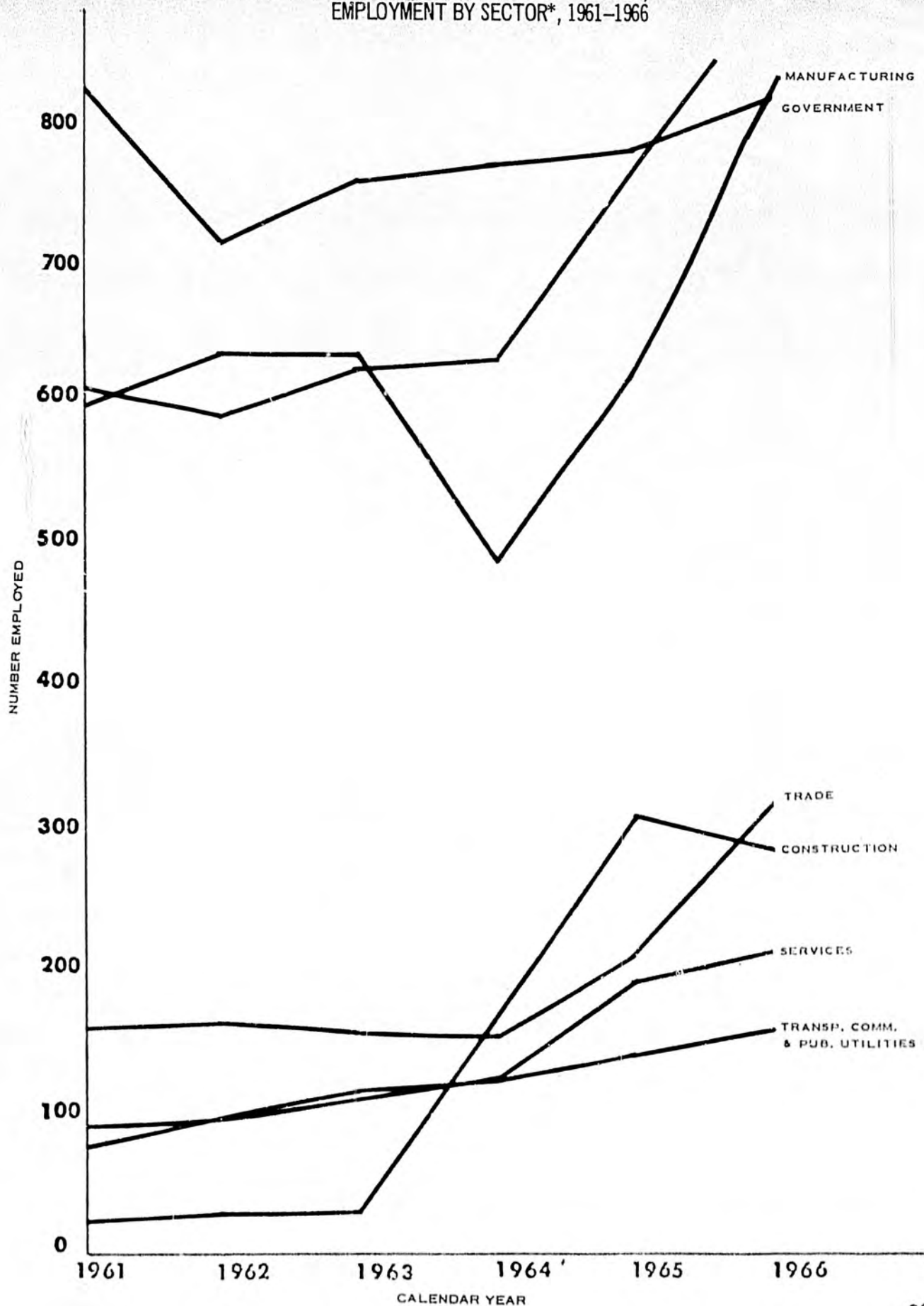
EMPLOYMENT SEWARD ELECTION DISTRICT, 1961-1966^b

EMPLOYMENT SECTOR	1961		1962		1963		1964		1965		1966	
	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL
Total Nonagr. Wage & Salary Employment ^c	969	100.0	910	100.0	914	100.0	670	100.0	623	100.0	641	100.0
Mining	6 ^a	0.6	6 ^a	0.7	6 ^a	0.7	6 ^a	0.9	6 ^a	0.9	6 ^a	0.9
Contract Construction	6 ^a	0.6	14 ^a	1.5	11	1.2	55	8.2	45	7.2	35 ^a	5.5
Manufacturing	135	13.9	129	14.2	123	13.6	60	9.0	100	16.1	109 ^a	17.0
Trans., Communications & Pub. Utilities	432	44.6	365	40.1	316	34.5	146	21.8	42	6.7	70 ^a	10.9
Trade	104	10.7	98	10.8	96	10.5	80	11.9	85	13.6	94	14.7
Finance, Ins. & Real Est.	10 ^a	1.1	10	1.1	7 ^a	0.7	8 ^a	1.2	7 ^a	1.1	10 ^a	1.6
Services	93	9.6	94	10.3	105	11.5	105 ^a	15.7	113	18.1	112	17.5
Government	183	18.9	194	21.3	250	27.4	210	31.3	225	36.1	205	32.0

^aEstimated figures necessitated by disclosure regulations.^bBy old election districts.^cPercentage totals may not add in detail due to rounding.Source: Derived from *Revised Workforce Estimates*, Alaska Department of Labor, Employment Security Division.

FIGURE 3-23

KODIAK (ELECTION DISTRICT NO. 13)
EMPLOYMENT BY SECTOR*, 1961-1966



FIGURES FOR TOTAL NONAGRICULTURAL EMPLOYMENT (NOT SHOWN)
ON GRAPH ARE PRESENTED IN FIGURE 3-24.

FIGURE 3-24

EMPLOYMENT KODIAK ELECTION DISTRICT, 1961-1966^b

EMPLOYMENT SECTOR	1961		1962		1963		1964		1965		1966	
	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL	NO. EMP'D.	% OF TOTAL
Total Nonagr. Wage & Salary Employment ^c	1,824	100.0	1,780	100.0	1,876	100.0	1,890	100.0	2,310	100.0	2,700	100.0
Mining	1 ^a	d	1 ^a	d	4 ^a	0.2	1 ^a	d	0 ^a	0	15 ^a	0.5
Contract Construction	24	1.3	28	1.6	31 ^a	1.7	176	9.3	312	13.5	291	10.8
Manufacturing	606	33.2	643	36.1	643	34.3	492	26.0	630	27.3	832	30.8
Trans., Communications & Pub. Utilities	79	4.3	96	5.4	119	6.3	124	6.6	142	6.1	160	5.9
Trade	164	9.0	167	9.4	160	8.5	157	8.3	211	9.1	324	12.0
Finance	26 ^a	1.4	30 ^a	1.7	38	2.0	45	2.4	36 ^a	1.6 ^a	40	1.5
Services	93	5.1	96	5.4	116	6.2	122 ^a	6.5	196	8.5	215	8.0
Government	831	45.6	719	40.4	765	40.8	773	40.1	783	33.9	823	30.5

^aEstimated figures necessitated by disclosure regulations.^bBy old election districts.^cPercentage totals may not add in detail due to rounding.^dLess than one-tenth of 1 percent.Source: Derived from *Revised Workforce Estimates*, Alaska Department of Labor, Employment Security Division.

has been partially rebuilt. Seward is favored by the University of Alaska as the location for a marine college proposed for Alaska, and shipping operations could begin again on a large scale if a Gulf of Alaska oil field is developed. A scallop industry is just beginning. Finally, if foreign fishing fleets are allowed to use Seward as a rest and recreation and basing point (as has been proposed by a Korean firm), additional economic recovery and growth can be foreseen.

(g) Kodiak

The island economies in the Kodiak group rely on the sea for a good part of their employment. In addition to the Naval and Coast Guard operations that generate some employment, Kodiak's location provides employment in fisheries and seafood processing. The harvesting of shellfish, particularly crab, affords employment in the winter, favoring Kodiak in contrast to most fishing areas with a relatively stable year-round employment.

Kodiak is also favorably endowed with wildlife and forest resources. The Kodiak bear, grouse, ptarmigan, dall sheep and goats attract tourists and trophy hunters. The recent sale of commercial forest land on Afognak Island and the possible future sale on Shuyak Island will add further employment in the forest industries.

The construction activity which increased rapidly after the earthquake has now slackened. The city's urban renewal objectives, however, are still not complete and construction employment continues at an abnormally high level.

(h) Bristol Bay

The economy of Bristol Bay, like that of the Aleutians, depends upon the military and the fishing industry. The summer red salmon runs give the region an exceptionally seasonal and unstable employment picture, leaving local commercial fisherman and cannery workers with virtually no employment opportunities and no money income during the winter months. Some experiments have been made in training natives to harvest whitefish in the winter months, but extreme poverty conditions remain, leaving almost 25 percent of the households with yearly incomes of less than \$300.

Air transportation and tourism provide some employment which may increase slightly in future years.

FIGURE 3-25

BRISTOL BAY ELECTION DISTRICT NO. 15
EMPLOYMENT BY SECTOR*, 1961-1966

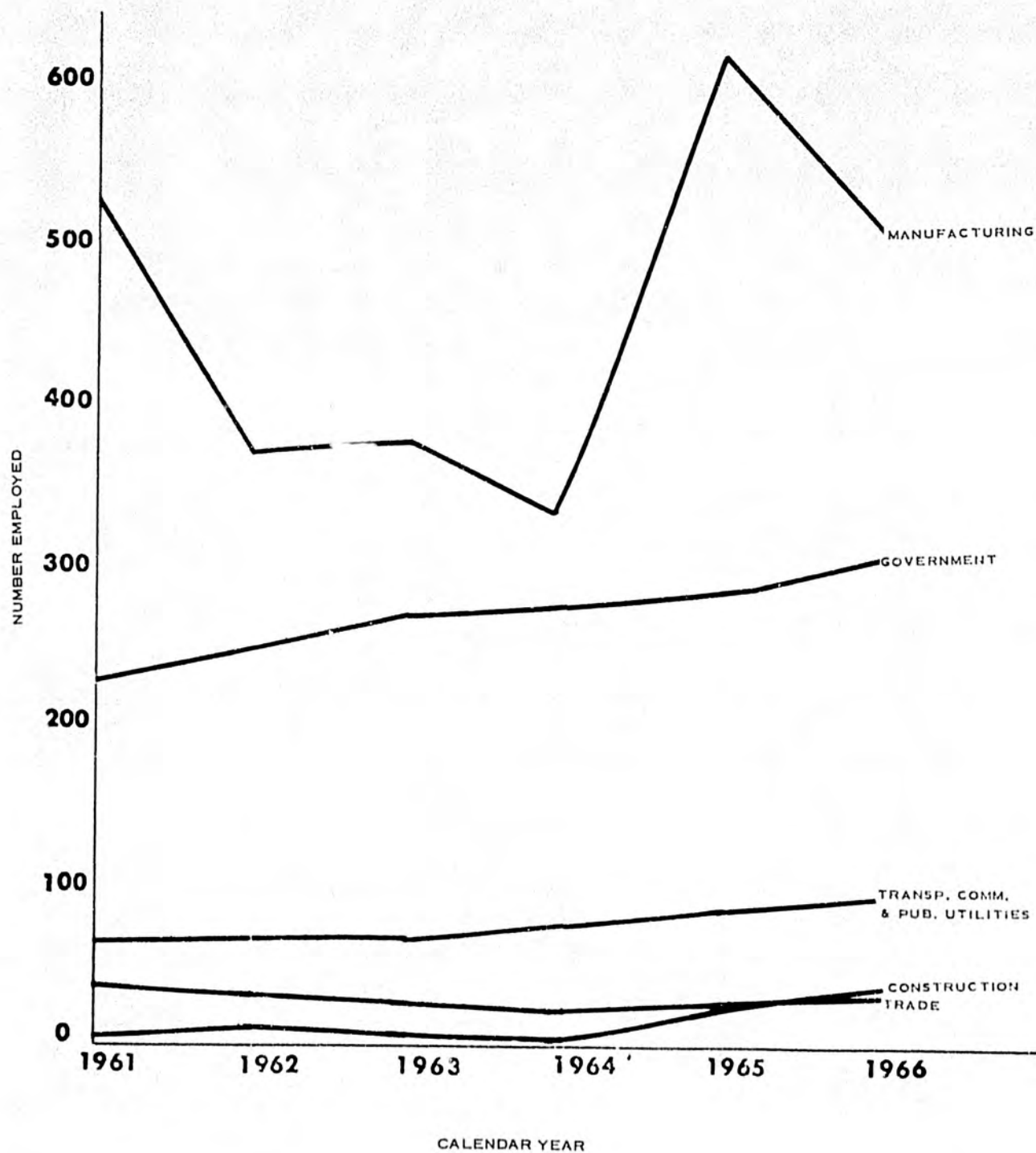


*FIGURE FOR TOTAL NONAGRICULTURAL EMPLOYMENT (NOT SHOWN ON GRAPH) ARE PRESENTED IN FIGURE 3-26.

FIGURE 3-26

EMPLOYMENT BRISTOL BAY ELECTION DISTRICT, 1961-1966^b

EMPLOYMENT SECTOR	1961		1962		1963		1964		1965		1966	
	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL
Total Nonagr. Wage & Salary Employment ^c	897	100.0	765	100.0	780	100.0	743	100.0	1,084	100.0	1,002	100.0
Mining	3 ^a	4.0	4 ^a	0.5	3 ^a	0.4	0 ^a	0	0 ^a	0	0 ^a	0
Contract Construction	8 ^a	6.3	11 ^a	1.4	6 ^a	0.7	6 ^a	0.8	23 ^a	2.1	29 ^a	2.9
Manufacturing	525	32.1	370	48.4	382	49.0	334	45.0	626	57.7	515	51.4
Trans., Communications & Pub. Utilities	65	12.3	67	8.8	68	8.7	73	9.8	89	8.2	94	9.4
Trade	39	11.5	34	4.4	28	3.6	24	3.2	29	2.7	28	2.8
Finance, Ins. & Real Est.	0	0	4 ^a	0.5	1 ^a	^d	0 ^a	0	0 ^a	0	0 ^a	0
Services	28	11.7	24	3.1	22	2.8	31	4.2	31	2.9	27 ^a	2.7
Government	229	21.1	251	32.8	270	34.6	275	37.0	286	26.4	309	31.0

^aEstimated figures necessitated by disclosure regulations.^bBy old election districts.^cPercentage totals may not add in detail due to rounding.^dLess than one-tenth of 1 percent.Source: Derived from *Revised Workforce Estimates*, Alaska Department of Labor, Employment Security Division.

(i) Aleutian Islands

The economy of the Aleutian Islands subregion is based primarily on government (including military activities), construction, and seafood processing. However, in terms of employment and income accruing to permanent residents of the subregion, seafood processing and portions of the government sector have by far the greatest economic impact.

Militarily, the Aleutian Islands are highly strategic, extending as they do like a series of stepping stones reaching towards islands off the Russian coast and the Kamchatka Peninsula. The remains of the American buildup in this area during World War II are everywhere present, ranging from the huge military ghost town at Dutch Harbor down to abandoned quonset huts and junked equipment. Today, in response to the Cold War, DEW line stations are located at Nikolski, Driftwood Bay, Cape Sarichef, and Cold Bay with similar stations further up the Alaska Peninsula at Port Moller and Port Heiden. Two major military installations are located within the subregion: the Adak Naval Station and the Shemya Air Force Station. In addition, a small communication station is maintained at Unalaska and a classified installation on Attu.

Finally, the U.S. Coast Guard maintains stations on St. Paul, Unimak and Adak and Attu Islands. Because of the buildup of military strength in the Aleutians in 1960's, the military population is now more than 50 percent of the total population.

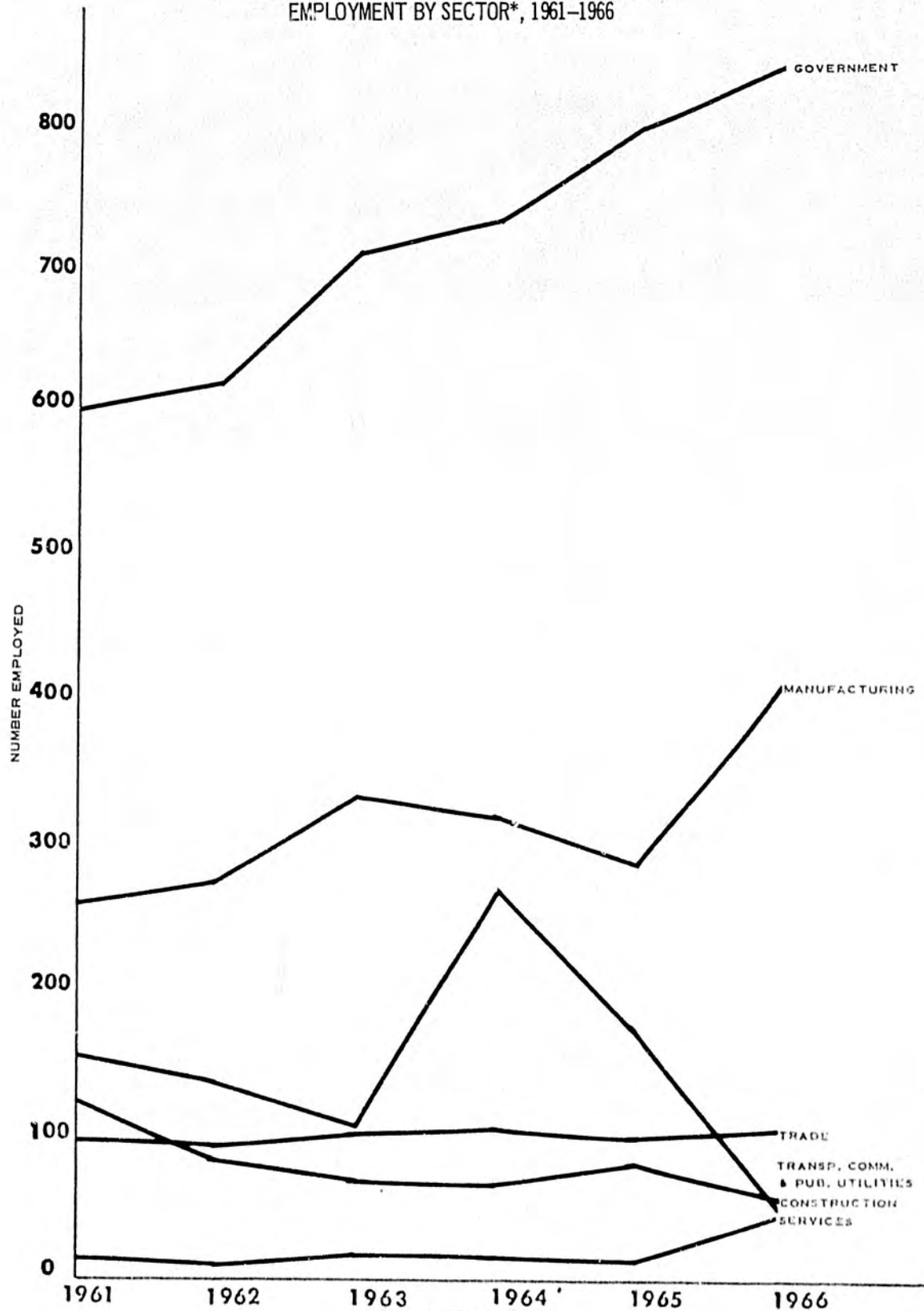
Other government employment falls into "quasi-military" and "domestic" categories. The quasi-military category is dominated by the underground nuclear testing operations being conducted on Amchitka Island under the jurisdiction of the U. S. Atomic Energy Commission, while the domestic category includes the Bureau of Commercial Fisheries' fur seal operations on the Pribilof Islands, the Federal Aviation Agency station at Cold Bay, State-operated schools, and local government operations to service the three small incorporated cities in the Aleutian Chain.

While military and quasi-military activities represent large capital investments by the federal government and sizeable payrolls, they have relatively little economic impact on the Aleutian area. The three major installations--Amchitka, Adak and Shemya--are all located within the Aleutians National Wildlife Refuge, and are remote from any of the civilian communities of the subregion. Relatively few civilians are hired to work on construction projects and those few civilians are frequently hired from Anchorage or from out of state. Supplies are brought in by sea from out of state or by air from Anchorage. As a result, the only significant contribution to the subregion's economy occurs at Adak, where king crab processors take advantage of naval docking and communication facilities.

By contrast, the Bureau of Commercial Fisheries' fur seal operations

FIGURE 3-27

ALEUTIAN ISLANDS (ELECTION DISTRICT NO. 14)
EMPLOYMENT BY SECTOR*, 1961-1966



Source: Figure 3-28.

FIGURES FOR NONAGRICULTURAL EMPLOYMENT (NOT SHOWN) ON GRAPH ARE PRESENTED IN FIGURE 3-28

FIGURE 3-28

EMPLOYMENT ALEUTIAN ELECTION DISTRICT, 1961-1966^b

EMPLOYMENT SECTOR	1961		1962		1963		1964		1965		1966	
	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL	NO.	% OF EMP'D. TOTAL
Total Nonagr. Wage & Salary Employment ^c	1,288	100.0	1,239	100.0	1,375	100.0	1,556	100.0	1,494	100.0	1,526	100.0
Mining	0	0	0	0	0	0	0 ^a	0	0	0	0	0
Contract Construction	159	12.3	140	11.3	110 ^a	8.0	274	17.6	174	11.6	54	3.5
Manufacturing	263	20.4	278	22.4	337	24.5	327	21.0	292	19.5	411	26.9
Trans., Communications & Pub. Utilities	126	9.8	83	6.7	72	5.2	67	4.3	83	5.6	55	3.6
Trade	98 ^a	7.6 ^a	95	7.7	102	7.4	108 ^a	6.9	99 ^a	6.6	108 ^a	7.1
Finance, Ins. & Real Est.	18 ^a	1.4 ^a	4 ^a	0.3	18 ^a	1.3	20 ^a	1.3	25 ^a	1.7	4 ^a	0.3
Services	18	1.4	15 ^a	1.2	20	1.4	20 ^a	1.3	15 ^a	1.0	50 ^a	3.3
Government	606	47.0	624	50.4	716	52.1	740	47.6	806	53.9	844	55.3

^aEstimated figures necessitated by disclosure regulations.^bBy old election districts.^cPercentage totals may not add in detail due to rounding.Source: Derived from *Revised Workforce Estimates*, Alaska Department of Labor, Employment Security Division.

FIGURE 3-29

PERSONAL INCOME REGION II, 1960-1965
(in millions of dollars)

YEAR	TOTAL PERSONAL INCOME	MILITARY INCOME	LABOR INCOME	OTHER INCOME*
1960	361.1	86.3	225.2	49.6
1961	354.1	75.6	220.8	57.7
1962	380.4	14.3	245.5	60.6
1963	396.2	73.9	260.4	61.9
1964	455.4	86.0	305.0	64.4
1965	496.4	87.2	339.9	69.3

*Includes proprietors income, property income, wage and salary income from sources not covered by unemployment insurance programs, and transfer payments (less personal contributions for social insurance.)

Sources: George Rogers *Alaska Regional Population and Employment 1967*, and *Statistical Quarterly (1960-1966)*, Alaska Department of Labor, Employment Security Division.

on the Pribilof Islands and seafood processing have a direct impact on the Aleutian Islands subregion. The harvesting and processing of fur seals is the lifeblood of the Pribilof Islands' economy, while seafood processing is the basic industry of the remaining communities of the subregion.

With the exception of king crab processing operations at Adak, the seafood processing facilities are either based in or operate out of the established communities of the subregion. Unalaska (Dutch Harbor), King Cove, and Sand Point are the other major seafood processing centers; but there are also plants at False Pass, Squaw Harbor, and Akutan. In 1967 the Aleutian subregion was the number one king crab processor in the state, edging out Kodiak for the first time since 1964. An indication of the rapid growth of this industry over the past few years can be seen in the case of Unalaska, which had one crab processing plant in 1964 and, five in 1967. The salmon industry has long been active in the Aleutians subregion; Sand Point is a major halibut port; and shrimp processing operations are underway at Squaw Harbor.

Of the other economic activities represented in the Aleutian subregion, construction and transportation are numerically the most significant. The level of construction employment in the Aleutians subregion is closely tied to the demands of the military and quasi-military agencies. As a result, strong fluctuations in this employment sector have occurred from year to year. Transportation employment declined consistently between 1961 and 1966, from 126 to 55 employees; however, this decrease is more a reflection of the increasing number of transportation personnel being stationed in Anchorage than a decline in the level of transportation services being offered.

Service employment is only lightly represented within the subregion. Outside of the military installations, professional services are almost entirely lacking. Transient facilities are limited to those provided by the Bureau of Commercial Fisheries on St. Paul Island, by the airlines at Cold Bay and by the military at the various bases. The bulk of the small service sector is made up of amusement services, principally in the form of movie theaters. Trade employment has been experiencing limited growth in recent years in response to the increased activity in the seafood processing industry.

(3) Personal Income

Figures 3-29 and 3-30 present the changes in personal income in Region II since 1960. Within the public sector, military salaries represent a considerable but declining portion of the total income in the region. Income from federal government wage and salary disbursements (apart from military salaries) has been increasing at approximately the same rate as total income, so that in 1960 federal government salaries amounted to 19 percent of total personal income and in 1965, 18.4 percent of total income. During the same period, state and local governments have increased in importance and have expanded their share in total personal income. As the result of growing local needs, the state and local government salaries in Region II have grown

from 5.6 percent of total income in 1960 to 9.3 percent in 1966.

The declining importance of military salaries in the Region II economy and the increasing importance of state and local salaries tend to balance each other so that, taken together, total government wage and salary disbursements represent approximately the same percentage of income in 1965 that they did in 1960. The indication, then, is that the Southcentral region is slowly losing its dependence on the federal government and is gradually coming to rely on private employment and state and local government activity as a means of income creation.

Within the private sector, the oil activity in Kenai and the rebuilding efforts after the earthquake have made the largest contributions to the growth of income since 1960. Wage and salary income in the construction industry has more than doubled in the five-year period between 1960 and 1965; total wages and salaries in the commodity-producing industries (including mining) have grown by more than 50 percent. In the distributive sector, growth in the transportation, communication, and public utilities industries has been slow; but activity in finance, insurance, real estate, and services has been rapid so that, taking all distributive industries together, income has grown by over 25 percent in the five-year period.

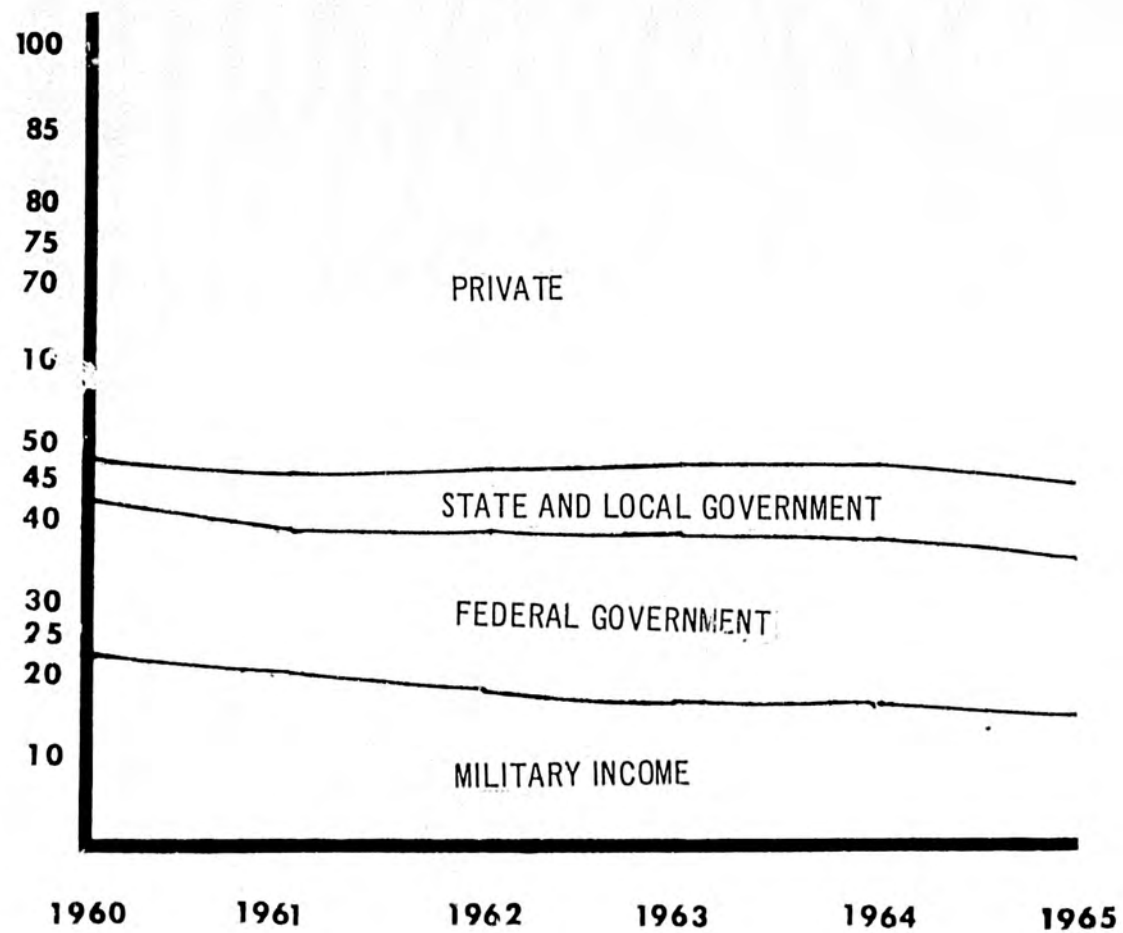
Per capita income in Region II is the highest of any of the five regions in Alaska (Figure 3-32) and higher than the per capita income in the U.S. at large. Deflating the per capita figures to adjust for cost of living differences has the effect of increasing the differential between Region II and all of Alaska, and reducing the differential between Region II and the rest of the U.S.

The cost of living in Anchorage relative to Seattle has declined slightly since 1960 (due mostly to a fall in food, apparel, and rental housing prices). The decline in the still very high prices of rental housing relative to Seattle is due in part to the rapid increase in demand for housing in the Seattle area, but prices of rental housing in Anchorage have risen more slowly than other Anchorage prices indicating that part of the improvement in rental housing is "real" rather than merely a function of the particular base used. The decline in food prices is a result of increased competition in the retail food market and improvements in transportation services between Anchorage and the rest of the country.

One final point: The distribution of income as well as its absolute level is important in describing a region's economy. A distribution of income that violates the community's sense of equity is as deleterious to a society's welfare as a level of income that is so low it prohibits the fulfillment of basic needs. Of concern to Region II is the distribution of income between Natives and non-Natives, which resembles the statewide distribution that puts the income of Natives substantially below that of non-Natives. The low income of the Native groups, their high unemployment rate, and their low level of education are all elements in the cycle of poverty that must be removed.

FIGURE 3-30

INCOME IN REGION II BY SECTOR AS A PERCENT OF TOTAL, 1960-1965



SOURCE: FIGURE 3-31

FIGURE 3-31

INCOME IN REGION 1 BY SECTOR AS A PERCENT OF TOTAL
1960-1965

	Military	Federal Government	State and Local	Private
1960	24%	19%	6%	51
1961	21	18	7	54
1962	20	20	8	52
1963	19	21	9	51
1964	19	20	9	52
1965	18	18	9	55

Source: Percentages derived from George Rogers, *Alaska Regional Population and Employment*, 1967, and *Statistical Quarterly*, 1960-1966, Alaska Department of Labor, Employment Security Division.

FIGURE 3-32

PER CAPITA INCOME REGION II, 1960-1965
(in current dollars)

YEAR	REGION II	ANCHORAGE	ALL ALASKA
1960	3,034	3,381	2,760
1961	2,801	na	2,672
1962	2,958	na	2,731
1963	2,966	na	2,862
1964	3,361	na	3,082
1965	3,438	3,847	3,181

Source: Total personal income for Region II from Figure 3-29 divided by resident population Figure 3-1. Figures for Anchorage are from *Overall Economic Development Plan*, Greater Anchorage Area Borough, Planning Department. Figures for Alaska are from Rogers, Alaska *Regional Population and Employment*, 1967.

C. Statistical Profile

The economic activities of the southcentral and southwestern areas of Alaska (Region II) comprise most of the sectors of the state's economy generally. Accordingly, this section includes a brief sector-by-sector statistical profile of the nature of those activities. These profiles, taken in the aggregate, focus on two other themes--the magnitude of activity in the region as a proportion of total state activity and the demonstration of growth and expansion in every sector. The conclusion is that this region is truly the engine for economic growth in Alaska. The following charts and narratives set out concisely the outlines of this growth.

(1) Oil and Gas

Figure 3-33 includes petroleum production in the Cook Inlet Basin and total local marine tonnage through the Port of Anchorage (including petroleum) for the period 1962 to 1967. Petroleum production almost tripled while port tonnages increased by a factor of 12.

FIGURE 3-33

COOK INLET BASIN PETROLEUM PRODUCTION
AND PORT OF ANCHORAGE LOCAL MARINE TONNAGE
INCLUDING BARRELS OF PETROLEUM

	PETROLEUM PRODUCTION COOK INLET BASIN (Barrels)	PORT OF ANCHORAGE TOTAL LOCAL MARINE TONNAGE (Tonnage Includes Barrels of Petroleum)
1962	10,259,310	97,463
1963	10,739,964	111,410
1964	11,089,626	828,590
1965	11,128,545	922,208
1966	14,361,118	1,106,485
1967	28,917,467	1,337,382

Source: Anchorage Chamber of Commerce, *Statistical Profile*, 1968.

(2) Fisheries

Figure 3-34 presents a summary of the catch of fisheries products in southcentral Alaska and its value to fishermen in 1966. The overwhelming importance of salmon and king crab in both catch size and value is readily apparent.

FIGURE 3-34

CATCH AND VALUE TO FISHERMEN
SOUTHCENTRAL ALASKA, 1966

<u>Species</u>	<u>Catch</u> (lbs;)	<u>Value to Fishermen</u> (\$)
Salmon	188,223,855	29,390,873*
Halibut	9,982,000	3,020,000
Herring	5,575,677	83,635
Sablefish	93,249	13,987
Other	30	6
Total Fish	203,874,811	32,508,501
Crab		
Dungeness	2,557,319	306,878
King	159,095,796	15,658,836
Tanner	217	11
Shrimp	24,407,624	1,098,343
Clams	43,963	8,793
Total Shellfish	186,104,919	17,072,861
TOTAL	<u>389,979,730</u>	<u>49,581,362</u>

*Value to fishermen in Bristol Bay derived from prices paid to fishermen, provided by the Alaska State Department of Fish and Game, Juneau.

Source: Adapted from Alaska State Department of Fish and Game, *Alaska Catch and Production, Commercial Fisheries Statistics*, Statistical Leaflet No. 13, 1966.

Figure 3-35 presents the catch and value of Kodiak-the state's most important fisheries area- for 1965 through 1967. In value to fishermen king crab landings led all other species with salmon second as was the case by wholesale value of products. And while the dungeness crab slacked off, the shrimp catch grew markedly. In terms of aggregates, however, the 1967 value of the catch to all fishermen dropped \$1.5 million from 1966; and the wholesale value of all products dropped \$4 million (or about by one seventh of the 1966 figure).

FIGURE 3-35
CATCH AND VALUE TO FISHERMEN
OF MAJOR KODIAK FISHERIES

1965-1967

Product		Landings (lbs)	Percent of Total Alaska Landings	Value to Fishermen
King Crab	1965	76,586,430	58.2	7,568,643
	1966	90,616,615	57.0	9,500,000
	1967	60,211,744	n.a.	7,500,000
Salmon	1965	16,562,000	6.0	1,744,484
	1966	51,934,591	15.6	6,493,727
	1967	2,469,500	n.a.	668,700
Halibut	1965	4,382,114	15.4	1,148,114
	1966	3,455,117	11.9	1,170,000
	1967	4,200,000	n.a.	760,000
Dungeness Crab	1965	3,311,570	37.2	397,388
	1966	1,416,174	28.0	167,109
	1967	5,912,208	n.a.	769,000
Shrimp	1965	13,810,170	82.1	621,458
	1966	24,097,141	85.5	963,886
	1967	38,014,697	n.a.	1,710,000

Source: Alaska Department of Fish and Game, Division of Commercial Fisheries data.

(3) Forest Products

Figure 3-36 shows the land area of southcentral Alaska forests by survey unit. Of the total forest land of the four survey units of the interior, about 40 percent is classified as commercial forest while almost 50 percent of the six units of coastal forest land is so classified. Note that the greatest remaining stands are the interior forests of the Susitna, Kenai, and Copper River areas. Figure 3-37 graphically sets out the geographic ownership pattern of the timber lands.

FIGURE 3-36

LAND AREAS IN SOUTHCENTRAL ALASKA
BY MAJOR CLASS OF LAND AND SURVEY UNIT
(In Thousands of Acres)

SURVEY UNIT	TOTAL FOREST LAND	COMMERCIAL FOREST	UNPRODUC- TIVE FOREST	NON- FOREST LAND	TOTAL LAND
-- Interior Forest Land --					
Susitna*	4,292	2,023	2,269	12,198	16,490
Kenai	2,070	1,481	589	3,595	5,665
Copper River	4,431	1,060	3,037	11,993	16,424
Bristol Bay	<u>2,741</u>	<u>704</u>	<u>2,037</u>	<u>10,136</u>	<u>12,877</u>
Total	13,534	5,268	8,266	37,922	51,456
-- Coastal Forest Land --					
Cordova	1,177	335	842	1,859	3,036
Kenai	266	190	76	993	1,259
Afognaka*	354	276	78	213	567
Kodiak ^b	81	47	34	2,494	2,575
Yakataga*	243	174	69	3,049	3,292
Public Domain	<u>168</u>	<u>17</u>	<u>151</u>	<u>1,173</u>	<u>1,341</u>
Total	2,289	1,039	1,250	9,781	12,070

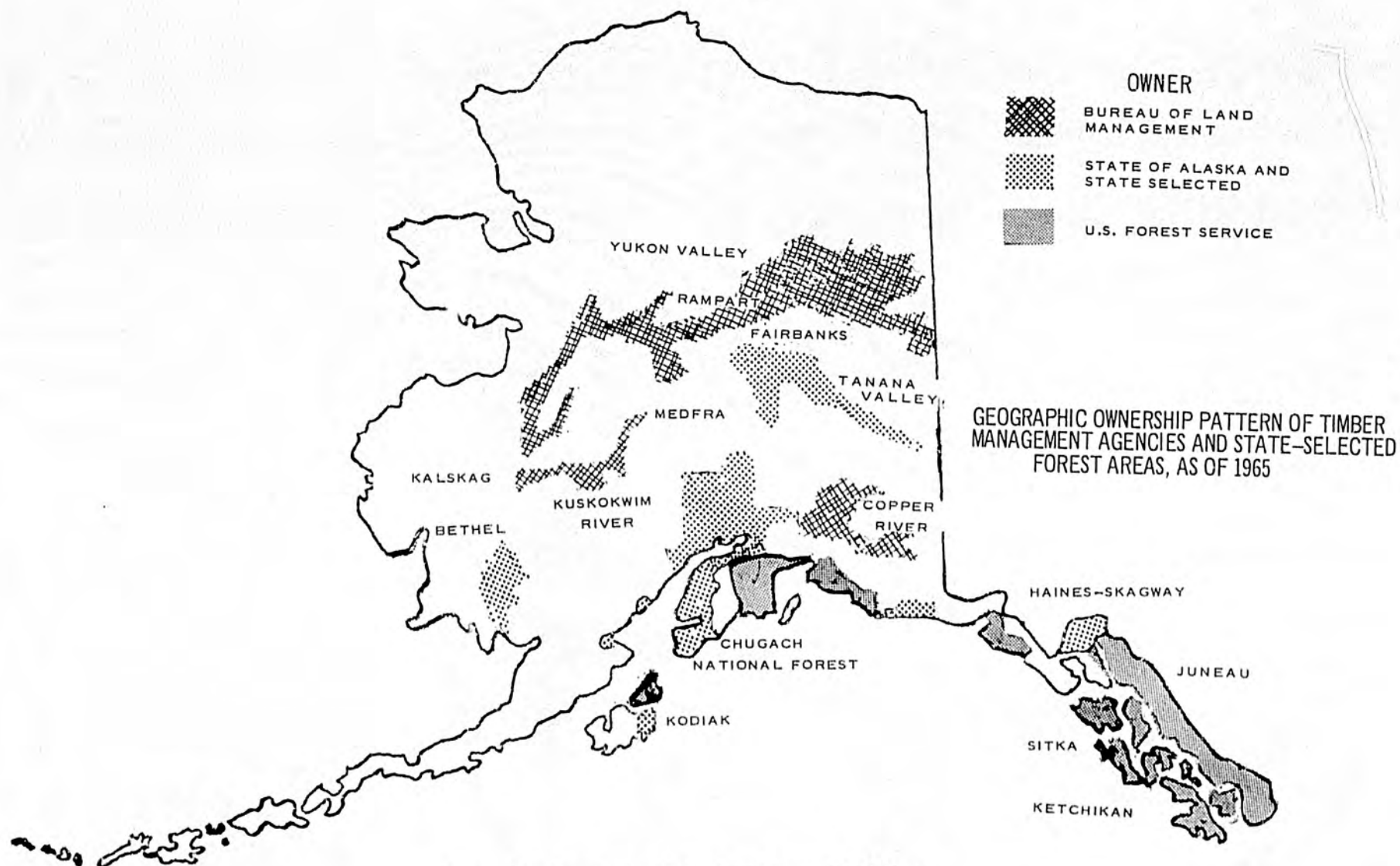
* All or part state owned.

^aIncludes: Afognak, Raspberry, Shuyak, and Marmot Islands.

^bIncludes: Kodiak and adjacent islands.

Source: Derived from U. S. Forest Service, *Alaska's Forest Resource*.

FIGURE 3-37



Source: Tussing, et. al., Alaska-Japan Economic Relations

(4) Agriculture

Figure 3-38 presents the value of agricultural production in Alaska's southcentral regions and the percent this is of the state total. Taken together the three areas make up almost 80 percent by value of all agricultural production in the state.

FIGURE 3-38

VALUE AND DISTRIBUTION OF REGION II AGRICULTURAL PRODUCTION, 1961-1966

	<u>1961</u>		<u>1962</u>		<u>1963</u>		<u>1964</u>		<u>1965</u>		<u>1966</u>	
	VALUE (000) DOLLARS	% OF STATE TOTAL	VALUE (000) DOLLARS	% OF STATE TOTAL	VALUE (000) DOLLARS	% OF STATE TOTAL	VALUE (000) DOLLARS	% OF STATE TOTAL	VALUE (000) DOLLARS	% OF STATE TOTAL	VALUE (000) DOLLARS	% OF STATE TOTAL
Matanuska Valley	3,945	72	3,939	70	3,721	71	4,018	72	3,406	66	3,785	69
Kenai	326	6	334	6	383	7	333	6	481	9	439	8
Peninsula												
Southwest*	<u>138</u>	<u>3</u>	<u>166</u>	<u>3</u>	<u>186</u>	<u>4</u>	<u>204</u>	<u>4</u>	<u>184</u>	<u>4</u>	<u>274</u>	<u>5</u>
TOTAL REGION II	4,509	81	4,439	79	4,290	82	4,555	82	4,071	79	4,498	82

*Figures for Southwest have been adjusted to conform with boundaries of Region II.

Source: Derived from *Agricultural statistics 1953-1966*, Agricultural Task Force Committee Report to the Federal Field Committee for Development Planning in Alaska.

(5) Tourism

Figure 3-39 shows the increasing significance of tourism in the Alaska economy. For the period 1964 to 1967 there was a 49 percent increase in the number of tourists visiting the state, a 61 percent increase in tourist expenditures, a 67 percent increase in primary wages, and a 50 percent rise in primary nongovernment employment. While these figures are for Alaska as a whole, it may fairly be assumed that they are generally indicative of the increases experienced in the tourism sector of Region II.

FIGURE 3-39

INDICATORS OF THE INCREASING SIGNIFICANCE OF
TOURISM IN THE ALASKA ECONOMY, 1964 and 1967

	1964	1967	INCREASE 1964-1967
Number of Tourists	59,200	89,700	27,500
Tourist Expenditures	\$18,200,000	\$29,000,000	\$10,800,000
Primary Nongovernment Employment	1,100	1,650	550
Primary Wages	\$6,600,000	\$10,900,000	\$4,300,000

Source: Cresap, McCormick and Paget. *A Program for Increasing the Contribution of Tourism to the Alaska Economy*, 1968.

Figure 3-40 shows total primary wages paid in selected industry sectors of the Alaska economy in 1964 and 1967. Note that the tourism sector is second only to the oil and gas industry in rate of growth over the four-year period--a remarkable 47 percent increase. These are state-wide figures, but the major participation of Region II in most of these totals can be reasonably inferred.

FIGURE 3-40

TOTAL PRIMARY WAGES PAID IN SELECTED SECTORS OF ALASKA'S ECONOMY
(\$ Millions)

INDUSTRY	1964	ESTIMATED 1967	INCREASE 1964-1967	PERCENT CHANGE
Logging, lumbering and pulp	\$19.8	\$25.1	\$5.3	27
Food processing	18.2	21.0	3.2	12
Oil and gas	8.5	18.7	10.2	120
Tourism	6.6	10.9	4.3	47
Metal and other mining	4.3	4.8	.5	12

Source: Cresap, McCormick and Paget. *A Program for Increasing the Contribution of Tourism to the Alaska Economy*, 1968.

(6) Government and Services

Figure 3-41 shows the impact of oil and gas revenues on state finances for the period 1969 to 1966. Nonvolume receipts averaged \$14 million annually, while volume-related revenues averaged \$4 million from 1963 to 1966 and rose to an estimated \$8.5 million in 1967. One estimate for these latter revenues for 1968 is \$27.5 million.

FIGURE 3-41

ESTIMATES OF OIL AND GAS REVENUES
RECEIVED BY STATE OF ALASKA
1959 to 1966
(In Dollars)

Year	Nonvolume Receipts ^a	Volume Receipts ^b	Total Receipts
1959	8,280,564	17,848	8,298,512
1960	3,069,809	115,973	3,187,782
1961	24,800,922	2,162,226	26,963,148
1962	21,384,077	3,189,860	24,513,937
1963	12,898,570	4,414,404	17,312,974
1964	12,369,681	3,893,657	16,263,338
1965	16,895,544	3,946,130	20,841,674
1966	14,113,852	4,564,068	18,788,920
1967	--	8,500,000(est)	--

^aIncludes bonus payment, rent to state on state land, not related to volume of output, and rent to state via federal leases.

^bIncludes federal revenue payments to the State of Alaska for oil and gas royalties, and state revenues from drilling permits, filing fees, state royalties, and production and conservation taxes.

Sources: Alaska Division of Lands, *1967 Annual Report*, State of Alaska Department of Natural Resources; Joseph Shafer *Alaska's Economy In Case of a National Economic Pause*, prepared for the Federal Field Committee for Development Planning in Alaska, 1968; and Alaska Division of the Western Oil and Gas Association, "Alaska Petroleum Industry Facts", unpublished memorandum, January, 1967.

Figure 3-42 contains area food prices for five cities in Region II based on a Seattle index. In most cases the index indicates food prices to be in excess of 30 points over the base.

FIGURE 3-42

SOUTHCENTRAL AREA FOOD PRICES
(Seattle Prices =100)*

		Anchorage	Kodiak	Seward	Valdez	Palmer
March	1961	129	133	128	n.a.	126
March	1965	132	134	136	n.a.	133
March	1966	141	136	136	148	131
Sept.	1967	133	134	134	146	126
March	1968	127	132	132	n.a.	124

* Compared with Seattle, Washington, which may be as much as 5% higher than the U. S. average.

Source: Alaska Agricultural Experiment Station, Palmer, *Alaska Quarterly Report on Alaska's Food Prices*, 1961-1968.

Figure 3-43 presents one index used by the Corps of Engineers and indicates construction costs in three cities in Region II based on Seattle. The computation takes into consideration materials and supplies, wage rates and productivity, transportation and seasonality, and other factors and has been used as an estimating device.

FIGURE 3-43

CONSTRUCTION COST INDEX FOR ALASKA
FEBRUARY, 1967
(Seattle = 100)*

Anchorage	170
Kenai	210
Kodiak	200

*Use of a Seattle base tends to understate Alaska differential with the U. S. as a whole.

Source: U. S. Corps of Engineers, 1967.

Figure 3-44 presents postal receipts for the Anchorage area office over the period 1962 to 1967. Receipts increased by 76 percent.

FIGURE 3-44
ANCHORAGE POSTAL RECEIPTS
1962-1967

	POSTAL RECEIPTS
1962	1,576,700
1963	1,846,800
1964	2,117,421
1965	2,273,941
1966	2,500,209
1967	2,726,229

Source: Anchorage Chamber of Commerce, *Statistical Profile*, 1968.

Figure 3-45 contains magnitudes of credit union assets and mortgages and deed of trust affecting real estate for the Anchorage area over the period 1962 to 1967. Credit union total assests tripled in five years.

FIGURE 3-45

TOTAL ASSETS, ANCHORAGE AREA CREDIT UNIONS
1962-1967

YEAR	TOTAL ASSETS
1962	7,360,882.37
1963	8,905,016.03
1964	13,492,104.83
1965	19,342,165.00
1966	22,218,640.00
1967	25,351,054.00

Source: Anchorage Chamber of Commerce, *Statistical Profile*, 1968.

Figure 3-46 presents the market-radius population of the Anchorage area, 1964 to 1966. Within the 30-mile radius the market population increased by a third and by about 12 percent for the 100-mile radius for the period cited.

FIGURE 3-46
MARKET-RADIUS POPULATION
ANCHORAGE AREA
1964-1966

	1964	1965	1966
30-Miles Radius Anchorage Area	93,685	117,000	121,000
100 Mile Radius of Anchorage	113,035	121,517	126,114
250 Mile Radius of Anchorage	122,408	132,572	136,549
300 Mile Radius of Anchorage	193,246	203,771	209,368
All Western Alaska	211,221	222,902	228,700
All Alaska	249,904	253,000	271,505

Source: Anchorage Chamber of Commerce, *Statistical Profile*, 1967.

Figure 3-47 summarizes the gross business receipts of the Anchorage area by commercial sector for the period 1962 to 1967. Measured by dollar value the retail, finance and real estate, and services sectors grew by 50 percent.

FIGURE 3-47
ANCHORAGE GROSS BUSINESS RECEIPTS
(in dollars)

	RETAIL	FINANCE & REAL ESTATE	SERVICE
1962	110,091,220.72	24,766,355.09	12,592,334.87
1963	130,159,177.57	31,395,228.14	12,971,902.85
1964	126,288,587.08	32,699,034.30	12,793,644.68
1965	137,159,622.10	36,178,699.50	13,824,553.01
1966	176,406,451.29	44,426,220.34	18,707,937.82
1967	170,611,129.81	37,083,656.68	18,933,315.07
%change since 1962	+54	+49	+50

Source: Anchorage Chamber of Commerce, *Statistical Profile*, 1968.

Figure 3-48 shows school and college enrollments in the Anchorage area for the period 1962 to 1966. School enrollment enlarged by 25 percent and college enrollment by 50 percent.

FIGURE 3-48
ANCHORAGE SCHOOL AND COLLEGE ENROLLMENT

	School Enrollment	Colleges
1962	16,138	1,629
1963	15,188	1,977
1964	17,325	1,908
1965	19,297	2,496
1966	20,185	2,462

Source: Anchorage Chamber of Commerce, *Statistical Profile*, 1967.

(7) Transportation

Figure 3-49 reveals the expansion of air freight and passengers handled at Anchorage International Airport over the period 1959 to 1967. Total tonnages doubled, and a major percentage increase for 1967 over 1965 can be noted. While data for the most recent years are not available statewide, it is fair to estimate that tonnages handled at Anchorage airport presently make up over half the Alaska statewide total. Passenger traffic more than tripled over the nine-year period and showed greater than an 80 percent increase 1967 over 1965.

FIGURE 3-49

ANCHORAGE INTERNATIONAL AIRPORT
PASSENGER AND FREIGHT TRAFFIC
1959-1967

YEAR	PASSENGERS IN	PASSENGERS OUT	THROUGH PASSENGERS	TOTAL PASSENGERS	FREIGHT IN (POUNDS)	FREIGHT OUT (POUNDS)	TOTAL FREIGHT (POUNDS)
1959	108,605	115,164	41,080	264,849	12,544,361	26,377,746	38,922,107
1960	113,786	118,480	54,210	286,476	12,627,502	24,919,794	37,547,296
1961	124,825	130,387	122,483	377,695	14,507,499	26,277,533	40,785,032
1962	135,316	140,881	121,209	397,406	14,926,390	27,530,757	42,457,147
1963	150,667	156,026	171,763	478,456	15,159,422	27,898,062	43,057,484
1964	180,404	185,348	180,900	546,652	22,350,000	33,530,508	55,880,508
1965	202,209	211,001	167,853	581,063	20,373,527	31,935,908	52,309,435
1966	222,209	224,344	359,943	807,056	20,611,961	45,011,663	65,623,624
1967	293,933	300,609	360,631	955,173	24,221,696	55,884,882	80,106,578
Percent Increase 1967 over 1959	170	161	784	260	92	112	106

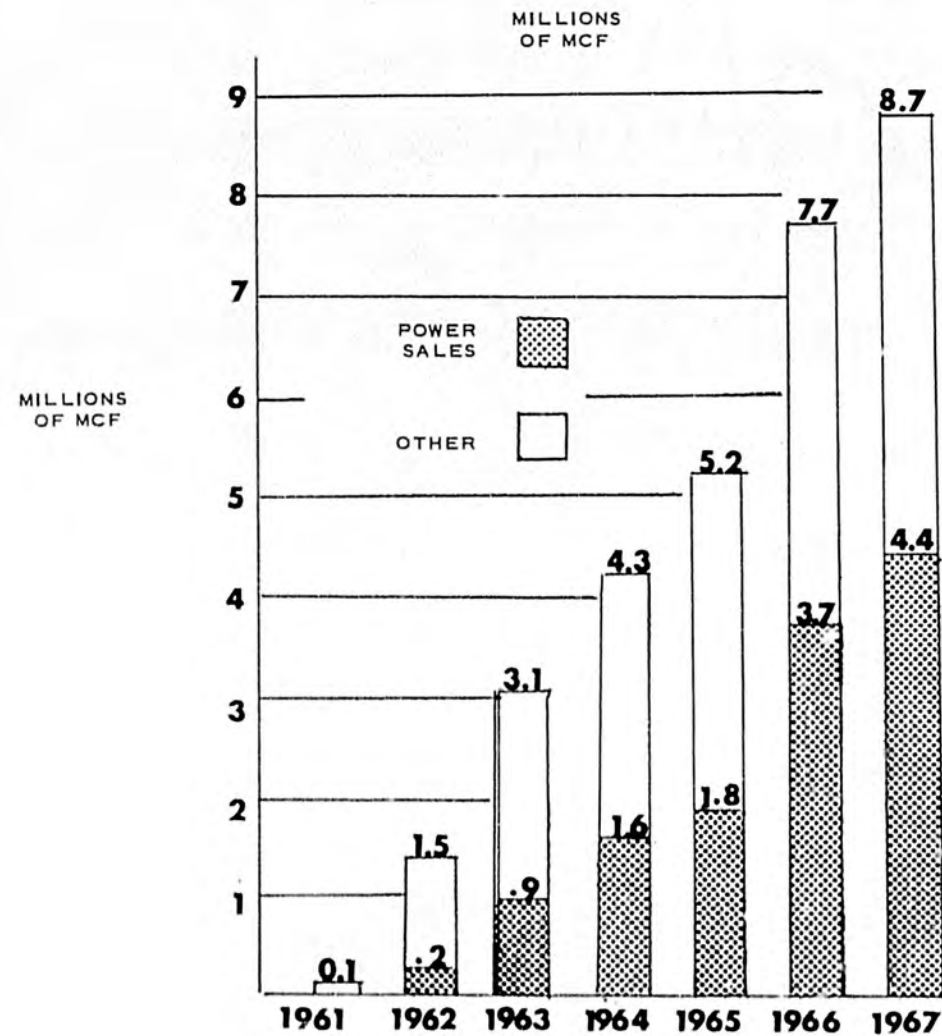
Source: Anchorage International Airport, Accounting Office, 1968.

(8) Power and Communications

Figure 3-50 displays the sustained growth in natural gas sales in Anchorage over the past seven years. Note that power sales doubled from 1965 to 1966, and total sales expanded by 50 percent.

FIGURE 3-50

NATURAL GAS SALES IN ANCHORAGE, 1960-1967

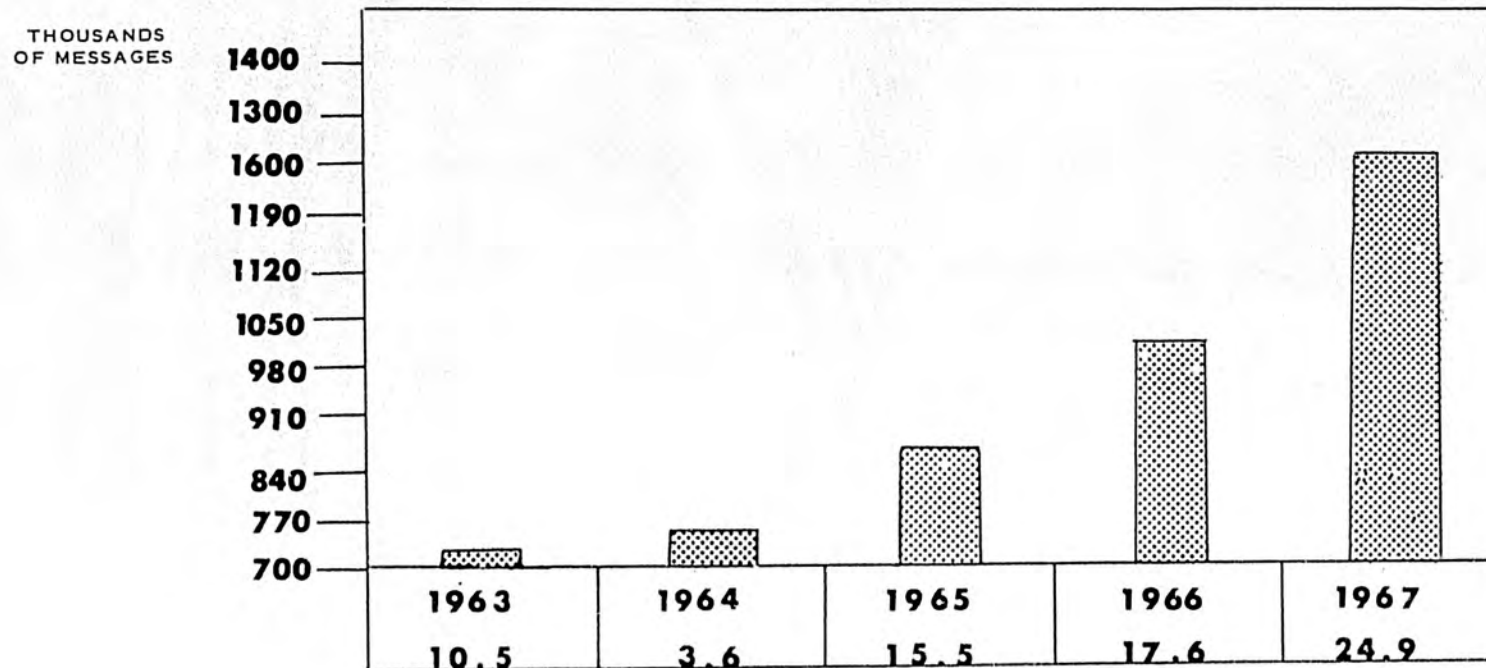


Source: updated from Alaska Review of Business and Economic Conditions;
University of Alaska, Institute of Social, Economic and Government Research
February, 1967.

Figures 3-51 and 3-52 present the number of telecommunication messages attributable to the Anchorage toll center for the period 1963 to 1967 together with the annual growth changes. Long distance telephone messages have climbed steadily and dramatically resulting in 16, 17, and 25 percent growth rates for 1965, 1966, and 1967 respectively. (Length of call also increased though this is not shown here.) Commercial telegraph usage has increased in each year other than 1965 over 1964 with moderate growth indicated as new commercial services (e.g., TELEX) and lower rates come in.

FIGURE 3-51

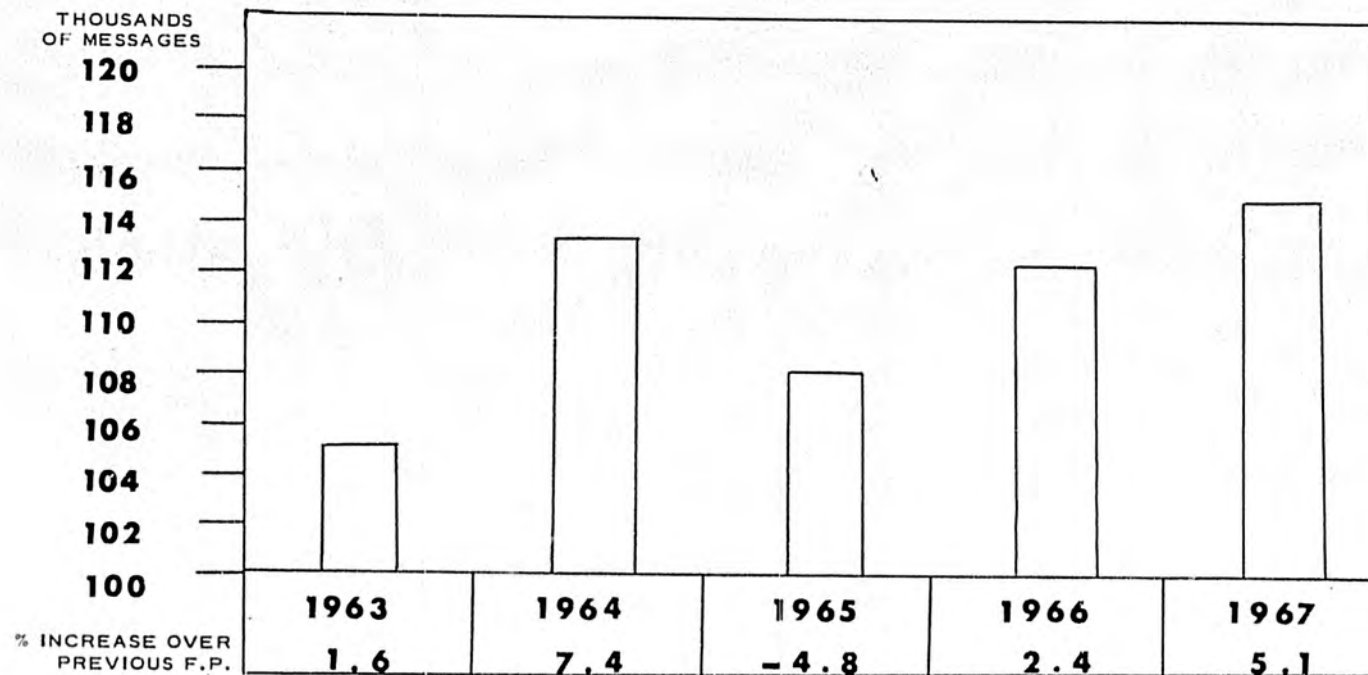
ALASKA COMMUNICATION SYSTEM
ANCHORAGE TOLL SYSTEM
COMMERCIAL TELEPHONE MESSAGES, 1963-1967



Source: ACS Headquarters, Seattle, 1968.

FIGURE 3-52

ANCHORAGE COMMERCIAL TELEGRAPH MESSAGES, 1963-1967



Source: ACS Headquarters, Seattle, 1968.

Figure 3-53 summarizes electrical energy growth in the Anchorage area.

FIGURE 3-53

SUMMARY OF ELECTRICAL ENERGY GROWTH
MATANUSKA ELECTRICAL ASSOCIATION, ANCHORAGE MUNICIPAL
LIGHT AND POWER, AND CHUGACH ELECTRIC ASSOCIATION
1956 to 1965

POWER SYSTEM	KW (1965)	KWH (1965)	AVERAGE ANNUAL GROWTH RATE 1956-1965	
			KW	KWH
Matanuska	7,904	37,648,000	11.2	12.6
Anchorage	31,992	155,678,000	8.8	9.9
Chugach	<u>49,800</u>	<u>220,630,000</u>	<u>15.6</u>	<u>16.4</u>
Total	89,696	413,956,000	10.5	13.6

Source: *Alaska Railbelt Transmission System* U. S. Department of the Interior, Alaska Power Administration Working Paper, 1967.

Figure 3-54 presents the electric energy consumption for Homer and Seward over the period 1956 to 1964. While Homer shows an eight-year average annual growth rate of 36 percent in power consumption, the city of Seward has averaged only 1 percent annually in kwh consumption.

FIGURE 3-54

SUMMARY OF ELECTRICAL ENERGY GROWTH
HOMER ELECTRIC ASSOCIATION, AND CITY OF SEWARD
1956 to 1964

POWER SYSTEM	KW (1964)	KWH (1964)	AVERAGED ANNUAL GROWTH RATE 1956-1964	
			KW	KWH
Homer	3,858	22,098,000	32.9	35.9
Seward	<u>1,500</u>	<u>6,464,000</u>	<u>.9</u>	<u>1.0</u>
Total	5,358	28,562,000	24.7	27.7

Source: *Alaska Railbelt Transmission System*, U. S. Department of the Interior, Alaska Power Administration, Working Paper, 1967.

It is anticipated that the isolated systems at Kenai, Valdez, Cordova, Seldovia, and the Copper Valley Electric Association will ultimately be interconnected with other systems of the area. These systems each have their own generating plants operating at relatively high costs. System generating capacity and 1964 loads are presented in Figure 3-55.

FIGURE 3-55
MISCELLANEOUS ELECTRIC POWER SYSTEMS
OF REGION II

POWER SYSTEM	NAME PLATE RATING	1964 LOAD	
		KW	KWH
Kenai	2,650	800*	3,817,700
Valdez	896	480*	2,000,000*
Cordova	2,100	1,100	4,567,310
Seldovia	1,283	570*	2,300,000
Copper Valley	1,200	560	2,915,836

*Estimated.

Source: *Alaska Railbelt Transmission System*, U. S. Department of the Interior, Alaska Power Administration, Working Paper, 1967.

The two large military installations at Fort Richardson and Elmendorf Air Force Base are interconnected, for emergency service only, with the other systems of the Palmer-Anchorage-Kenai Peninsula area by a 34,500-volt tie at the Bureau of Reclamation's Anchorage Substation. The principal generating station at each base operates in conjunction with a steam generating system. The 1965 load of all military installations was in excess of 31,000 kilowatts and 154 million kilowatt-hours. In total, the installations have over 47,000 kilowatts of operable generating equipment. The past requirements for these systems are shown in Figure 3-56.

FIGURE 3-56

MAJOR MILITARY ELECTRIC POWER SYSTEMS
REQUIREMENTS IN REGION II, 1958-1965

YEAR	ANNUAL PEAK KW	ANNUAL USE KWH
1958	25,300	118,416,000
1959	25,300	134,778,000
1960	28,000	133,542,000
1961	29,800	144,140,000
1962	28,200	154,243,000
1965	31,200	154,705,000

Source: *Alaska Railbelt Transmission System*, U. S. Department of the Interior, Alaska Power Administration, Working Paper, 1967.

Figure 3-57 contains selected economic data for Anchorage over the period 1957 to 1966. Note that vehicle registrations increased 83 percent, telephone services 117 percent, and power consumption 191 percent. All indicators shown demonstrate the substantial growth of this dominant economic center.

FIGURE 3-57

SELECTED ECONOMIC DATA

(Anchorage, Alaska)
1957-1966

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	Percent Change From 1957
Vehicle Registration	34,938	33,880	36,577	41,383	44,208	46,468	47,810	55,102	62,210	64,079	+83
Telephones in Service	15,441	16,900	18,200	21,523	23,214	23,253	25,348	27,098	29,687	33,477	+117
Lighting and Power Customers	18,488	18,310	20,026	21,989	22,733	22,518	23,880	25,356	26,370	26,843	+45
Thousand Kilowatt Hours Consumed	124,958	134,842	147,723	167,918	188,107	218,365	245,242	276,886	310,405	363,313	+191
Municipal Water Customers	6,469	6,325	6,660	7,511	8,827	9,609	9,926	9,836	10,788	10,770	+66

Source: *Alaska Review of Business and Economic Conditions*, University of Alaska, Institute of Social, Economic and Government Research, July, 1967.

Figure 3-58 contains additional selected economic data for Anchorage for the period 1957 to 1966. All indicators demonstrate dramatic growth, with real property values and property taxes tripling, and bank deposits and assets about doubling over the period. These data are shown in current dollars.

FIGURE 3-58

SELECTED ECONOMIC DATA, ANCHORAGE
1957-1966
(in thousands current dollars)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	Percent Change From 1957
Building Permits (Value)	5,677	8,227	15,746	23,375	13,088	18,087	18,080	28,791	19,591	20,079	+254
Assessed Value Real Property	140,158	150,212	139,936	183,981	218,591	243,027	263,273	303,913	474,700	560,156	+300
Assessed Value Personal Property	41,572	45,620	51,418	56,013	55,187	56,528	64,051	82,604	107,537	133,775	+222
Total Assessed Value	181,730	195,832	191,354	239,994	273,778	299,555	327,324	386,517	582,237	693,931	+282
Property Taxes Collected	2,780	3,077	2,139	2,590	3,302	3,657	3,461	5,250	8,076	11,715	+321
Total Bank Assets	n.a.	99,439	102,953	139,696	146,315	184,001	190,312	248,103	275,908	291,714	+193*
Bank Deposits	n.a.	93,334	97,067	130,235	133,625	164,204	174,557	231,282	252,215	263,279	+182*
Bank Loans and Discounts	n.a.	41,150	51,142	64,306	73,320	94,070	100,531	113,020	155,843	157,251	+282*

*Indicates percentage change from 1958.

Source: *Alaska Review of Business and Economic Conditions*, University of Alaska, Institute of Social, Economic and Government Research, July, 1967.

2. ECONOMIC FORCES AND FORECASTS

This section contains a series of analyses of the principal sectors that make up the economy of Region II. These analyses involve both the identification of the key economic forces which will determine the shape of the economic future of the subregion as well as a forecast of their nature and extent in the short-run, intermediate-run, and long-run time frames. As elsewhere in this study the measures of future economic activity are expressed where possible in income, employment, and investment. The sectors (and the discussion of linkages with other regions) are taken up in the order of the previous sections; i.e., Petrochemicals through Power.

A. Oil and Gas

Crude petroleum production in the Cook Inlet Basin reached a daily rate of 175,000 barrels in April, 1968. On an annual basis, this production is worth roughly \$180 million. Production has been increasing month by month. During 1967 it rose from 54,000 barrels per day in January to 144,000 barrels in December. Official industry and state estimates indicate that the daily rate of production from known fields will peak in 1970 at between 275,000 and 330,000 barrels per day. If this projection is realized, the annual value of Cook Inlet petroleum production will range between \$285 million and \$345 million.

Declines in the daily production rate are anticipated after 1970, for the "undersaturated" condition of all the established oil fields normally leads to significant deterioration in the initial production rate of a well shortly after regular production commences. The rate of output from Cook Inlet fields in the years immediately beyond 1970, along with total long-term recovery, will depend upon the magnitude and success of repressurization programs undertaken by the operators.

The major part of development drilling in the known Cook Inlet oil fields will be complete within the next two years. Continuation of development drilling beyond that time will depend on the discovery of new fields. Since the time required to verify the discovery and execute initial stages of new field development probably extends beyond the time required to complete development of the known fields, even the most optimistic projection of such drilling must call for at least a temporary decline to near zero activity in late 1970.

Recent reduction of exploration efforts indicates that this slump may well extend several years beyond 1970. The number of offshore exploration rigs working in Alaska has been markedly reduced, and the acceleration of offshore drilling in California has provided a particular

attraction for rigs formerly available in Alaska. The state's supply of standby stationary rigs is not so acute. Unfortunately, with the one exception of the Swanson River field, on-shore exploration drilling in Southcentral Alaska has been notably unsuccessful.

While production from the known oil fields in the Cook Inlet Basin is confidently expected to peak within several years, the pace of further development of known natural gas fields is more uncertain. Gas demands for power generation, for oil field repressurization, and for domestic purposes will grow; but significant jumps in consumption must come from the addition of petrochemical plants or liquification facilities such as are now under construction north of Kenai. Of the 17 known gas fields in the Cook Inlet Basin, only three are now producing. One inlet platform will be installed this year to develop a gas field for supplying the liquification plant now being built, but no significant development activity on a sustained basis in the gas fields is otherwise anticipated. Discovery of new gas fields at this time should be classified a byproduct of oil exploration rather than a considered objective.

The precise investment by the oil and gas industry is difficult to determine, but the magnitude of the economic impact is not. The State of Alaska's direct income from oil and gas rentals, royalties, taxes and bid bonuses totaled \$176 million for the ten year period ending with 1967.

The oil companies employed close to 700 people during 1967; drilling, geophysical, and supply and service firms closely affiliated with the industry employed an additional 1,800, although an unknown percentage of these jobs are a result of activities unrelated to oil and gas. Payrolls totaled \$11,430,000 that year; affiliated firms paid \$29,925,000. The entire industry paid \$9,061,000 in local taxes and those state taxes not included in direct state revenues reported above. It is estimated that the ten year program of the industry for activities in Alaska (including operating costs as well as investment) approached \$1,300 million.

The percentage of these expenditures actually made in Alaska is subject to question. A substantial portion of the facility investment charged to Alaska is spent in other states for equipment, facility pre-fabrication, and services. There is also a question regarding the local impact of payrolls disbursed to specialized drilling, construction and service crews who are not permanently domiciled in the state and often are provided both housing and board by the employer.

A question should also be raised as to the ultimate economic impact of the State of Alaska's direct income from the oil and gas industry as compared to the impact of the industry's direct injection of monies into the private sector. The decisions as to how the state disburses the direct

revenues will determine, perhaps, the magnitude of total benefits in Alaska from oil and gas development to an extent equal to or greater than the industry's payments to private individuals and firms in the state. The distribution of the state's direct income as between services, public works and indebtedness servicing (and the types of services and public construction selected) can influence significantly not only the immediate well-being of the state's residents but also the possible rate of improvement in their well-being.²

The following discussion of Alaska's oil and gas industry attempts to define more precisely the industry's current status and to project its growth and development. The latter effort is a difficult matter of distinguishing the probable from the possible. The difference appears to be a matter of how many assumptions must be made and the tenability of each assumption. Major assumptions will be explicitly identified, for they relate either to new oil and gas discoveries or to the establishment of new related industry. The primary assumption is that further growth of the oil and gas industry in Southcentral Alaska (Region II) is not only possible but so probable that the characteristics of this growth must be considered not only for the projection of jobs, income and population but also as a basis for establishing wise policy to shape and encourage the growth.

(1) The Oil and Gas History and Location

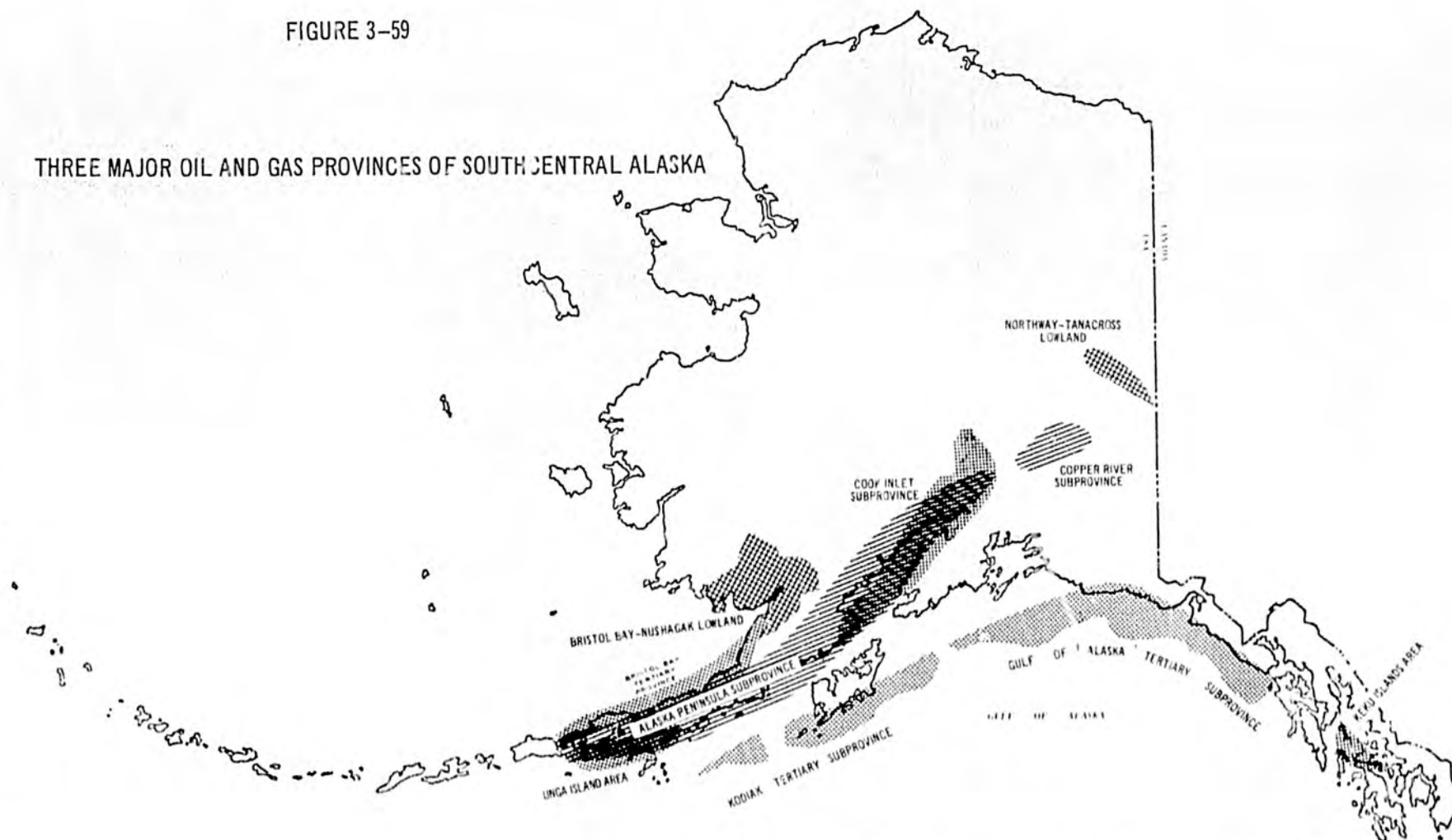
Oil drilling in Alaska was initiated in 1902. Southcentral Alaska's first major commercial field was located 55 years later at Swanson River on the Kenai Peninsula. Oil had been discovered at Katalla, but the entire output over a 31 year period ending in 1934 totaled only 154,000 barrels. Many of the early wildcat wells found traces of oil, gas, or both, but never in commercial quantities. Indeed, Richfield Oil Corporation's discovery well on Swanson River was fortuitously located, for subsequent development of the field proved the well to be on the northernmost margin of the reservoir.

Southcentral Alaska contains three major gas and oil provinces along its coastal areas and one smaller province inland.³ The *Alaska Peninsula-Cook Inlet province* ranges from upper Cook Inlet southwest along the Pacific side of the Alaska Peninsula (Figure 3 - 59). It is a long narrow prism about 900 miles in length varying in width from five to sixty miles. The *Pacific-margin Tertiary province* sweeps from Icy Point in Southeastern Alaska past Chirikof Island southwest of Kodiak Island. The area of land and continental shelf in the Pacific-margin province inferred to be underlain by petroliferous tertiary sedimentary rock is approximately 40,000 square miles. The *Bristol Bay Tertiary province* slopes north from the mountainous backbone of the Alaska Peninsula, extending an unknown distance under the bay itself. The area is at least 250 miles long

FIGURE 3-59

THREE MAJOR OIL AND GAS PROVINCES OF SOUTH CENTRAL ALASKA

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Source: Gates, Grantz and Patton, Geology and Natural Gas and Resources of Alaska.

FIGURE 3-87

and may be more than 20 miles in width; it probably exceeds 7,500 square miles in area. The inland *Copper River province* is considered to be a part of the rock sequence of the Cook Inlet basin. It lies between the Alaska Range and Chugach mountains on the north and south and is bordered by the Wrangell and Talkeetna Mountains east and west. It is approximately 30 to 40 miles wide and 100 miles long.

The *Cook Inlet subprovince* contains all the state's current commercial oil and gas fields with the exception of the small gas field at Barrow. The subprovince area believed to have petroleum possibilities is five to sixty miles wide and about 250 miles long. The 9,500 square mile area lies approximately 45 percent offshore, 15 percent in tidal areas, and 40 percent onshore. Four of the five Cook Inlet oil fields are located offshore, the one exception being the Swanson River field. The more numerous gas fields have been located on both shores of the Inlet, and in the Inlet itself.

Estimates of proved recoverable reserves of petroleum for the five producing fields totaled 682 million barrels as of January 1, 1968.⁴ The comparable figure as of January 1, 1967, was 321 million barrels. These estimates are tied closely to the number of development wells drilled at the time of computation. Completion of scheduled production drilling will further expand these "proved" reserve estimates. Conservative industry estimates of these known fields' ultimate yield range from 1.0 billion to 1.5 billion barrels. Estimates of gas reserves are less meaningful because of the number of shut-in, suspended or abandoned discovery wells. Estimates of just the Kenai gas field's potential yield range up to 3 trillion cubic feet; the ultimate reserve of all gas fields is conservatively placed at five trillion cubic feet.

If future exploration should prove that the northern Cook Inlet oil potential extends from the Forelands to the mouth of the Inlet, the total gas and oil reserves now identified could make up only a fourth of the basin's total reserves; for the relatively unexplored lower Inlet contains roughly three-quarters of the basin's geologically favorable acreage. The chances are favorable that additional large deposits of oil and gas will be discovered when the acreage becomes available for leasing and is subject to intense exploration. An indication of the oil industry's endorsement of this assumption can be found in the record bonus monies received by the state from the 20th competitive oil and gas sale held in 1967. Geologically favorable acreage below the Forelands was bid at very high levels relative to past Inlet experience.

The *Alaska Peninsula subprovince* has been subject to geological study in recent years. Oil and gas seeps are known. Shows of oil, or gas and oil, have been reported from test wells. However, no commercial reserves

have been discovered. It has been suggested that stratigraphic data and exploration experience indicate large accumulations will be relatively difficult to find. Continued investment by the industry in seismic and geophysical work in the Alaska Peninsula subprovince indicates that, despite these lower discovery odds, the prospect of large and prolific reserves being located is still attractive.

The *Bristol Bay Tertiary province* has not yielded to test drilling. Nevertheless, probable petroleum source and reservoir rocks within the province suggest that commercial deposits exist. As in the case of the Alaska Peninsula subprovince, industry has continued its seismic and geophysical exploration. The state's 21st competitive oil and gas sale, held March, 1968, brought \$3 million in bonus bids for approximately 165,000 acres in the Port Moller and Port Heiden offshore areas.

The *Gulf of Alaska Tertiary subprovince* extends from Icy Point on the east to the Copper River delta 300 miles west. The tertiary sedimentary rocks extend inland from 2 to 40 miles and probably out under the Gulf waters to the edge of the continental shelf. The area includes Middleton Island. The land area of the subprovince approximates 1,000 square miles, while the offshore area totals about 18,000 square miles. The subprovince has been the subject of intense investigation in recent years because of the many known oil and gas seeps and petroliferous beds and because of the small, but once commercial, Katalla oil field. Recent exploratory drilling has not been successful, for the tertiary structure is complex. Despite this experience, there is abundant evidence indicating that petroleum exists. It is probable that suitable reservoir rocks in favorable structural positions will be found and that commercial deposits of petroleum will be developed.

The *Kodiak Tertiary subprovince* extends southwest from Middleton Island on past the Kodiak Islands. If the Tertiary rocks of the Gulf of Alaska subprovince extend through the Kodiak subprovince, then the Kodiak subprovince area of the continental shelf and marginal islands could approximate 17,000 square miles. It is difficult to evaluate the subprovince's petroleum possibilities. No test wells have been drilled. Outcroppings on the marginal islands expose only a small portion of the total area and do not provide a comprehensive cross section of the province. The areas of outcropping indicate only limited petroleum potential. The major question, then, is whether or not the rock formations of the large offshore areas are more favorable.

(2) Exploration

A key factor in projecting future exploratory drilling is the rate of current geological and geophysical investigation. A recap of total crew months spent each year in Alaska by exploration crews (Figure 3-60) suggests that there has been some reduction in overall effort during the last several

FIGURE 3-60

INVESTMENT OF OIL EXPLORATION CREW TIME IN ALASKA

YEAR	CREW MONTHS
1957	32-1/2
1958	178
1959	231
1960	103
1961	145
1962	142
1963	183
1964	167
1965	109
1966	127
1967	108

Note: Includes geological field parties and seismic, gravity, and aeromagnetic investigation crews.

Source: *Alaska Petroleum Industry Facts*, Alaska Division, Western Oil and Gas Association, 1968.

years but that the rate of investment in exploration is still significant. More precise data as to the concentration of exploration effort by sub-province would provide a much better insight for evaluating the possibility of wildcat drilling.

Another key to overall exploration effort is the rate of wildcat drilling. A recap of Alaska's drilling (Figure 3-61) shows a steady growth trend in the number of wildcat wells over the past ten years. The highest success ratios were recorded in 1965 and 1966. All the discoveries over this period were in the Cook Inlet basin, and all the oil discoveries with the exception of Swanson River were in the Inlet.

But exploratory drilling in Alaska cannot be considered the product of the oil industry's weighing investment costs and probable returns for this state alone. The decisions to drill wildcat wells in Alaska are made only after the industry has evaluated other exploratory prospects across the globe. (Political considerations may weigh as heavily as geological or economic ones.) Competitive drilling opportunities outside Alaska may have more to say about exploration drilling in southcentral Alaska for the next several years than does the level of local geological and geophysical investigation.

There has been a significant withdrawal of offshore drilling rigs from Alaska in the last several years. The California Santa Barbara Channel sale has undoubtedly been one major factor. Figure 3-62 recaps the change in Alaska's drilling-rig inventory. The reduction in offshore exploratory drilling and drilling capability as opposed to the steady increase in development drilling by stationary rigs on platforms suggests that the oil industry has currently reached a stage of consolidation in southcentral Alaska where the primary effort is concentrated in the development of known Cook Inlet fields. Since the world demands for offshore rigs are increasing, and the standby expense of these rigs is high, it is possible that Alaska may even lose more of its offshore drilling capability unless the rig operators secure contracts soon.⁵

But, if adequate and favorable geological information and the availability of appropriate rigs are prerequisites to exploratory drilling, certainly the availability of favorable acreage for leasing is just as important. The Native land-claims "freeze" (treated in detail in Chapter 9), affecting most of the public domain in Alaska, has constricted the amount of upland now available for leasing. A considerable portion of the upland in Southcentral's oil provinces is in the public domain. The major portions of the provinces' offshore area is continental shelf controlled by the federal government. The tidelands under state jurisdiction do include favorable acreage--the most notable case being the upper Cook Inlet--but tideland leases alone may not meet the industry's needs for sizable blocks of land to assure the operator adequate development protection of a new

FIGURE 3-61

EXPLORATORY DRILLING IN ALASKA

YEAR	TOTAL WELLS DRILLED	SUCCESSFUL OIL WELLS	SUCCESSFUL GAS WELLS	DRY HOLES
1957	2	1	0	2
1958	2	0	0	2
1959	6	0	1	5
1960	9	1	2	7
1961	24	3	5	16
1962	24	0	3	21
1963	15	1	1	13
1964	23	1	4	18
1965	19	7	3	9
1966	36	6	5	25
1967	35	1	3	31

Source: *Alaska Petroleum Industry Facts*, Alaska Division, Western Oil and Gas Association, 1968.

FIGURE 3-62

RIGS IN ALASKA

1965	August 3, 1965	
	4	Floater working
	6	Stationary rigs working (includes one on platform)
	18	Rigs idle and stacked
	28	TOTAL
1966	August 2, 1966	
	11	Floater working
	8	Stationary rigs working (includes three rigs on platforms)
	17	Idle and stacked
	36	TOTAL
1967	August 8, 1967	
	6	Floater working
	17	Stationary rigs working (including eleven rigs on platforms)
	16	Rigs idle and stacked
	39	TOTAL
1968	January 10, 1968	
	5	Floater tied up in Homer (one of these departed for California first week in February)*
	21	Stationary rigs working (includes eighteen rigs on platforms)
	20	Stacked and idle
	46	TOTAL

*As of June 5, 1968, one floater was drilling in Cook Inlet while three remained idle.

Source: Alaska Scouting Service Report as provided by Alaska Department of Natural Resources, Division of Mines and Minerals.

discovery. The amount of lands in private ownership is relatively small, and mineral rights upon patent of the land may have been retained by government. It becomes obvious then that government law and policy regarding and leasing have a major influence on exploratory efforts.

The most attractive acreage in southcentral Alaska is the subject of an ownership dispute between the state and federal government. Until this dispute is finally adjudicated, or some interim escrow provision for lease monies arranged, there will be no test drilling of the large offshore area beyond the three-mile limit which ranges from below Kalgin Island to the mouth of the Inlet. Exploration to determine whether or not "Oil Alley" does extend southwest under the balance of the Inlet is, however, being undertaken on a limited scale. State leases located below the forelands were issued as a result of the 20th competitive sale, which was held in 1967.⁶ The total of the winning bids was the highest in competitive sale history, and the highest bid per acre was also registered at that time, despite the elimination of royalty rate reductions once granted for discovery wells in Cook Inlet and the extension of the lease life for new leases to ten years as compared to five years for earlier leases.

Further upland drilling in the north Cook Inlet basin during the next several years should not be ruled out. Mobilization costs are low relative to those for offshore drilling, and the elapsed time and costs for developing a discovery field are often more favorable than for an offshore discovery.

No immediate exploratory drilling can be anticipated in the Gulf of Alaska tertiary subprovince with the exception of the Middleton Island area where both upland and tideland leases are outstanding. The Department of the Interior has indicated it will call for lease nominations for outer continental shelf tracts in the Gulf late in 1968. A sale is tentatively scheduled sometime in 1969. The Alaska Construction and Oil Report noted in its July-August, 1967, issue that the Gulf of Alaska appeared to be the primary interest of that summer's geological field party activity. One offshore seismic survey effort represented 21 companies. Secretary of the Interior Stewart Udall commented recently while in Anchorage that preliminary geophysical work in the Gulf suggested structures "comparable in size to those in the Middle East." At the same time, the Secretary indicated that the difficult operating conditions combined with relatively limited experience in the area would require a long elapsed time between the call for nominations and the actual sale. A comparable elongation of mobilization time can probably be expected between the sale and exploratory drilling. It appears that the State of Alaska has decided that its best interests dictate withholding tidal acreage in the Gulf from competitive bidding until federal leasing plans are more certain. These federal and state restrictions on available favorable acreage, combined with the difficult physical problems

of operating in the Gulf, make it unlikely that any exploratory drilling will occur other than at Middleton Island for several years.

The spot most likely to see exploratory drilling in the Alaska Peninsula and Bristol Bay provinces is that tidal area covered by the state's 21st competitive sale. While the leased areas offshore from Port Moller and Port Heiden are limited in acreage, the sale appears to have renewed or reinforced interest in the exploration of both adjacent federal offshore areas and uplands (despite the Native claim restrictions on the latter). No permits for drilling have been issued to date. Nor has the Department of the Interior indicated that an invitation for offshore lease nominations will soon be issued. However, the combination of industry interest and relative accessibility of the 21st-sale area suggests that some exploratory drilling can be expected in this Bristol Bay tidal area within the next several years.

No announcements have been made regarding further wildcat operations in the Copper River province. However, leasing activities indicate continued interest in the area. As in the case of upland Cook Inlet lands, the availability of stationary rigs and the often favorable cost factors for drilling and development as compared to offshore work will probably lead to further wildcats. Such upland drilling may be attractive to the small independent operator, for experience in Alaska to date indicates that offshore exploration and drilling is too expensive and risky for one independent or several small operators in joint effort.

Exploratory drilling in the Kodiak tertiary subprovince during the next several years appears the least probable for all southcentral Alaska's oil provinces. There is no public information available at this time that suggests exploratory drilling will be undertaken in the Kodiak subprovince until drilling efforts of considerable magnitude have been completed in more favorable areas.

The above comments on exploratory drilling in southcentral Alaska must, of course, be considered in context with the total state exploratory effort. Prior to the recent Prudhoe Bay discoveries, the total exploration budget of the petroleum industry in Alaska could be considered as relatively fixed in the short run. A successful wildcat in one area could create a competitive demand for funds in another, possibly leading to a reduction of exploratory effort in the latter. However, the magnitude of the Prudhoe Bay petroleum reserves, as estimated by the operators, requires a new perspective when considering the petroleum industry's future exploratory and development investment in the state. If the new field's petroleum reserves are of a magnitude several times that of current "proved" Cook Inlet fields, then the industry might well completely recast its investment plans for Alaska. Because the investment sums for further exploring and developing the North Slope will be of such high magnitude, it is probable that the financial effort to meet the new investment demands will be considered quite aside from the exploratory effort in the balance of the state. Rather than diverting

exploratory funds from other areas of the state, the North Slope discoveries should engender a greater interest in other Alaska petroleum provinces. This may be particularly true for those areas considered to have good oil prospects but where exploratory efforts to date have been very limited.

Prior to the Prudhoe Bay discoveries, the possibility of the federal government's opening the Naval Petroleum Reserve No. 4 for commercial operation could have been viewed as a contingent competitive demand on exploratory funds and efforts otherwise available for southcentral Alaska. The proximity of NPR #4 to the Prudhoe Bay field suggests (among other implications) that any opening of the reserve would now engender exploratory and development plans by the petroleum industry which would be above and beyond the industry's normal short range planning for the state as a whole. Authority for opening the Reserve to leasing can now be expected to be sought more actively.

(3) Current Oil and Gas Activity

Total employment by oil companies and affiliated supply and service firms was 2,525 in 1967 as compared to 1,850 in 1966 and 1,160 in 1965. As may be computed from Figure 3-63, the ratio of the supply and service workers to oil company workers rose rapidly in that three-year period from 1.8 to 2.7. This shift reflects the increase in total industry activity to a level which justifies location in Alaska of permanent quarters and staff for firms catering directly to oil companies. It also reflects the growing importance of development drilling.

The major development drilling effort on the known Cook Inlet oil fields will be completed by late 1970. Swanson River is already developed. Figure 3-64 recaps development to date of all Cook Inlet platforms now in place or under construction.⁷ Development drilling on the Middle Ground Shoal, on Granite Point and from the monopod should be near completion during 1968. The 1968 overall development drilling rate for Cook Inlet should exceed that for the last several years. This higher drilling activity could continue through 1969 but will taper off as total development of known Cook Inlet oil fields is approached. If the elapsed time from field-discovery date to major development drilling is as long as indicated in Figure 3-64 (i.e., three to five years), then it seems evident that even if another major discovery is made in the Inlet during 1968 it is not probable that development drilling on the new field would be accomplished soon enough to offset the decline which will come in 1970 in the drilling of the known Inlet fields.

(4) Cost Commentary⁸

In view of the fact that both American and Japanese petroleum industry spokesmen frequently highlight the high cost of operation in Alaska, and that the former in particular couple this with warnings about the

FIGURE 3-63

OIL INDUSTRY PERSONNEL AND PAYROLLS IN ALASKA
1965-1967

YEAR	<u>PERSONNEL</u>		<u>PAYROLLS</u>	
	OIL COMPANIES	DRILLING, GEOPHYSICAL SUPPLY & SERVICE CO.	OIL COMPANIES	DRILLING, GEOPHYSICAL SUPPLY & SERVICE CO.
1965	414	749	4,865,125	7,872,000
1966	608	1,242	7,976,533	16,342,721
1967	686	1,834	11,430,476	24,319,254

Source: *Alaska Petroleum Industry Facts*, 1967, 1968, Alaska Division,
Western Oil and Gas Association.