

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILES 8672

2240 SCOMM 88: HOUSE TELECOMMUNICATIONS TASK FORCE, 1993

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persons, 44th among the 50 states (the U.S. average is 191 physicians for every 100,000 persons).^{21/} Medical specialists are also in limited supply. There are, for example, 34 physicians in Alaska who are specialists in pediatrics and 7 who are specialists in cardiology.^{28/}

The State has made provision of health care and emergency services to rural areas a priority. It has developed a "State Health Plan" which specifies a recommended level of health and emergency manpower and facilities for every Alaskan community.^{23/} Such a plan is necessary because of the isolation of many Alaskan communities. As the Alaska Department of Health and Human Services has explained:^{20/}

Even hospitals and clinics in smaller communities--most of which are totally isolated by distance, water or roadless wilderness--need to maintain a capability to stabilize emergency patients and to treat certain conditions which would not be necessary if they were close to a large medical center, and which otherwise would not be justified according to the small populations they serve.

The small size and isolation of many Alaskan communities creates two substantial health care problems: lack of local, trained medical personnel, and difficulty or impossibility of

^{21/} Statistical Abstract at 939 (1982 data).

^{28/} American Medical Association, Physician Characteristics and Distribution in the U.S. (1984) at 129.

^{23/} State Health Plan, supra note 1.

^{20/} State of Alaska, Division of Public Health, Emergency Medical Services Section, Alaska EMS Goals (1984) at III-1 ("Alaska EMS Goals").

transporting patients quickly to facilities offering medical care. The State Health Plan attempts to respond to these problems by recommending specific manpower and communications facilities for each community. "Level I" communities, for example, have less than 750 people, have no local physician or hospital, and are located more than 30 minutes of ground transportation from a higher-level community. More than two-thirds of all communities of Alaska are classified as Level I.^{11/} The State's goal is to have at least one "Emergency Medical Technician" in each Level I community. Each EMT has undergone several weeks of health care training, paid for by the State, and has been certified by the State.

Rapid and dependable communications are as important as capable medical personnel because transportation is so difficult and time-consuming:^{12/}

Like the nervous system of the body, communications can provide the tie that will allow all parts of the emergency response system to function to their utmost capability. Adequate and effective communications systems enable accidents and serious illnesses to be reported quickly. They ensure that emergency responders will be called and directed to the scene with a minimum of delay. They allow people at the scene of the incident to receive instructions from physicians or mid-level practitioners in stabilization and immediate care of a critically ill or injured patient. They enable rapid dispatch of planes or helicopters for medical evacuation of victims from remote areas. And, they allow receiving clinics or hospitals to prepare for the patient while he is still enroute so that they

^{11/} Id. at V-4.

^{12/} Health Communications Survey at 1.

can deal with his needs most effectively and efficient upon his arrival. When all these components can talk to each other quickly and clearly, lives are saved. Without adequate communications, hours can be lost; in Alaska and in emergency situations, hours translate into lives.

The State Health Plan contains detailed criteria for communications facilities in each community. Even in the smallest communities, the Plan calls for both primary and backup two-way communications among rescue personnel and between the community's EMT and a regional hospital.^{11/}

AANHS, a part of the Indian Health Services, U.S. Public Health Service, Department of Health and Human Services, is the primary health care provider in many Level I communities. It has constructed or leased clinics in many villages, each staffed by a community health aide, a permanent, local resident who has received basic instruction in administering first aid and dealing with medical problems and emergencies. The health aide is usually a state-certified EMT. Since the health aide is not a trained physician or nurse, often he or she must contact AANHS medical personnel at a regional hospital to arrange transport of the victim or patient out of the community. In many other smaller communities, no other health care is available.^{14/}

The State Department of Health and Social Services, Division of Public Health, supplements the AANHS system with 24 State-constructed and financed health centers throughout the state,

^{11/} Alaska EMS Goals at 1(i)-5.

^{14/} See State Health Plan at 5-26, 5-28.

staffed by Public Health Nurses. Other Public Health Nurses travel to small communities on an itinerant basis, working with community health aides.^{15/}

Health care in Alaska is significantly more costly than in the United States as a whole. The per capita expenditure for health care in Alaska in 1979 was \$1,019; 27% above the national average. Government in Alaska spends almost nine times the amount spent by government on health care on a nationwide per capita basis.^{16/}

^{15/} Id.

^{16/} Id. at 5-168.

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SECTION G

ECONOMIC ENVIRONMENT

I. THE ECONOMIC PATTERN IN THE STATE

This section provides information and data about the economic environment in Alaska. To understand that environment, Alaska's current economic and business status must be evaluated in historical context. As Dr. Goldsmith of the University of Alaska's Institute of Social and Economic Research explained three years ago in a 1983 proceeding, when Alaska's economic picture was considerably rosier, and the petroleum market had not suffered its sharp decline:^{1/}

The economic history of Alaska has been a continuing succession of booms and busts associated with the extraction of natural resources. Each cycle -- furs, gold, copper, timber, fishing -- has brought with it the rapid depletion of one of the territory's resources in a frenzy of activity and left behind little infrastructure or sustainable economic base. Petroleum, the resource currently being extracted from the State, is the latest "boom".^{2/}

^{1/} Prepared Rebuttal Testimony of Oliver Scott Goldsmith, Trans Alaska Pipeline System, Docket Nos. OR-78-1-014 and OR 78-1-016, Federal Energy Regulatory Commission, December 23, 1983 at 6-7 ("Goldsmith").

^{2/} Petroleum is now, however, undergoing a "bust." The price of Alaska North Slope crude oil, has declined radically. Alaska North Slope crude oil sold in 1981 on the U.S. West Coast at \$31.43 a barrel. State of Alaska, Department of Commerce and Economic Development, The Alaska Economy: Year End Performance Report, 1985 (1986) at 12, Table 16 ("Alaska Economy"). In March, 1986 the State issued its most recent revenue projections, based on estimates of prices of Alaska North (Footnote continued)

Petroleum and other parts of the state's economy continue, as discussed in this section, to follow this "boom-bust" pattern.

Alaska's first "boom" was furs. Following the voyage to Alaska by Vitus Bering in 1728, Russian trappers began frequenting the Aleutian Islands for furs. The trappers, or "promyslenniki", moved from island to island, subjugating the natives and methodically stripping each island of its fur bearing animals. When profits declined, Russia could no longer support her colony.^{1/} In 1867, Alaska was sold to the United States for \$7.2 million.^{4/}

The next "boom" was gold. In 1880 Joseph Juneau and Richard Harris discovered gold in Southeastern Alaska, at the site of modern day Juneau. In 1896 gold was discovered along the Klondike River in the Canadian Yukon. One of the quickest routes to the Klondike was via Alaska ports, and prospectors began looking for

^{1/} (continued)

Slope crude oil at Houston, Texas of between \$20 and \$22 and at Los Angeles, California of between \$17.50 to \$19.50. Letter from Mary A. Nordale, Commissioner of Revenue, to the Honorable Bill Sheffield, Governor of Alaska, March 12, 1986, at Table II (prices rounded to nearest dollar or half dollar). One of the major North Slope producers has announced that, effective July 1, 1986, the contract price for Alaska North Slope crude oil is \$10 per barrel on the Gulf Coast and \$9 per barrel on the U.S. West Coast. The Standard Oil Company (Sohio), News Release, July 8, 1986. These prices show a decline in price per barrel of more than 50% from the prices used in the State's March 1986 projections (those projections are being revised), and more than 66% from the 1981 price level.

^{1/} Claus M. Naske, Alaska Oxford University Press (1984) at Introduction ("Alaska").

^{4/} Id.

gold in Alaska and made major finds in Nome and Fairbanks. From 1890 to 1900 the population in Alaska doubled, from 32,052 to 63,592. The non-native population rose from 4,298 to 30,400.^{5/}

Around the turn of the century the salmon industry was born, and what had been the whaling industry died.^{6/}

Commercial fishing for salmon had become important with the establishment of the first canneries at Klawock and Sitka in southeastern Alaska in 1878. Also important were halibut, herring, and cod, as well as shellfish such as king-, tanner-, and Dungeness crabs, butter- and razor clams, scallops, and various species of shrimp. Whaling, although minimal by 1900, had been an important industry as early as 1848, when Yankee whalers passed through Bering Strait and discovered abundant bowhead whales in the northern seas. The end of the industry came in 1907 when the price of baleen, or whalebone . . . fell from five dollars a pound to less than fifty cents, spring steel replacing baleen in corsets, umbrellas, and various other products. Most of the whalers went out of business, while the few remaining devoted their attention to the fur trade.

Shortly after the gold rush, in 1915, the federal government began construction of the Alaska Railroad, which began in Seward and ended in Fairbanks, a distance of 470 miles. The building of the railroad created a new economic boom and led to the founding of Anchorage, but did not attract the hoped-for settlers.^{7/}

^{5/} Id.

^{6/} Id.

^{7/} Id.

During the Great Depression, the administration of Franklin D. Roosevelt decided to resettle in Alaska's Matanuska Valley (northeast of Anchorage) two hundred economically disadvantaged families from areas in Wisconsin, Minnesota and Michigan, in order to demonstrate the Matanuska's agricultural potential. The resettlement was only moderately successful and in the years prior to World War II Alaska's economy was still dependent on a few resources:^{2/}

- In 1931, half of territorial revenues came from direct taxes on just two natural resource industries, a case tax on salmon and a mining license tax. (Alaska Legislative Council, Revenue and Taxation in Alaska 80 (1962)).

- Just before World War II, gold mining was a major industry and fully 40 percent of total payrolls insured by the then-territorial government were paid in the mining industry. By 1944, the gold mining industry had been eliminated by the war. Mining payrolls fell to 3 percent of the total, and mining employment dropped from 3,676 to 705. (Alaska Department of Labor, Statistical Quarterly, Third Quarter 1963).

- The Kennecott Copper mine in Southcentral Alaska once tapped one of the world's richest copper lodes. Between 1911 and 1938, \$200 million in copper was mined from the Wrangell Mountains. Since then, there has been virtually no copper produced in Alaska.

^{2/} Goldsmith at 7-8.

In the 1940s, World War II resulted in another boom for Alaska.^{2/}

In 1940 the population of Alaska was 72,524, of whom 32,458 were native and 39,566 non-native. Then the Japanese bombed Pearl Harbor on 7 December 1941 and America was at war. In 1942 Japanese forces invaded and occupied the islands of Kiska and Attu in the Aleutians. In 1943 there were 152,000 military personnel stationed in Alaska. American troops recovered Attu in that year and after a vast amphibious landing on Kiska discovered that the enemy had previously evacuated the island. The war in Alaska was over, but the military impact altered the territory forever. Billions of dollars poured into Alaska, and workers built many military bases.

Construction increased dramatically during the war but later flattened out. Construction employment grew from 1,368 in 1940 to 10,616 in 1942, but fell to 1,714 in 1946; it rose again to 10,492 in 1951, but again fell, this time to 6,413 in 1955.^{10/}

Alaska became a state in 1959, only 27 years ago. Prior to its (and Hawaii's) admission to the Union, no state had been admitted for almost half a century (New Mexico and Arizona were admitted in 1912). At the time of statehood, Alaska still lacked a financial base or underlying stable economy:^{11/}

^{2/} Alaska at Introduction.

^{10/} Goldsmith at 9 (quoting Alaska Department of Labor, Statistical Quarterly, Third Quarter 1963).

^{11/} Id. at 10, 11.

On becoming a state in 1959, Alaska had a very limited infrastructure^{12/} and a narrow economic base, consisting primarily of fishing, timber, a fledgling petroleum industry, and the federal government -- conditions which caused many critics to argue against statehood. . . .

In 1960, for example, virtually all households in the United States had electric utility access, while only 69 percent of Alaskan households had access to an electric utility hookup.

Since statehood, Alaska's economy has continued to follow the historic pattern. The last (and largest) boom was fueled by petroleum resources.^{13/}

In 1968 the Atlantic-Richfield Company announced the discovery of the giant Prudhoe Bay oilfield on Alaska's North Slope, with recoverable reserves of an estimated 9.6 billion barrels of oil. On 10 September 1969 the state conducted its twenty-third competitive oil and gas lease sale. At the end of the day the state had received \$900,200,590 in bonus monies. Prior to that in the ten years since statehood, Alaska had held a total of twenty-two lease sales, which had netted less than \$100 million

Construction of the [Trans Alaska Pipeline System] got underway in 1974. Thousands of construction workers came north hoping to land high-paying jobs.

^{12/} "Infrastructure is the physical capital stock which ties an economy together internally and makes it capable of providing useful goods and services to the world around it; roads, airports, bridges and communications facilities. The social infrastructure includes the housing stock necessary to shelter a labor force, the medical facilities to care for its health, and the schools to provide education for its children. Broadly defined, it can also include institutional arrangements which provide a stable environment for delivering public and private goods." Goldsmith at 10.

^{13/} Alaska at Introduction. But see note 2, supra.

The impact of these workers on Alaskan towns was considerable -- housing, public services, schools, and shopping facilities became totally inadequate

As suddenly as it had begun, the pipeline boom collapsed once the pipeline was in place.

Although the State has benefitted from the "oil boom", that boom, like the others in Alaska's past, has been followed by what is generally agreed to be a dramatic "oil bust." As noted above, Alaskan North Slope crude oil is now selling at prices less than half of those estimated as bases for State revenue projections as recently as March of this year, and two-thirds less than in 1981.^{14/} (See also discussion in Section H.) But as stated even in 1983, when oil production was high and the oil market was strong, it was clear that Alaska could not continue to rely on petroleum-generated revenues to meet its infrastructure needs:^{15/}

Unlike the renewable industries of seafood and timber, petroleum represents a non-renewable tax base. The depletion of the petroleum tax base -- which at the present consists overwhelmingly of two crude oil fields on the North Slope, Sadlerochit and Kuparuk -- is occurring at a rate in excess of 5 percent of proved reserves annually. Where approximately 9.6 billion barrels of proved reserves of crude oil existed in 1977 at Sadlerochit, only an estimated 6.2 billion remain today. Additional discoveries since 1977, such as Kuparuk, have thus been insufficient to maintain a constant level of proved reserves.

^{14/} See note 2, supra.

^{15/} Goldsmith at 14-15.

Even when booms have been occurring, Alaskan residents have not fully received the benefits of them.^{16/}

Resource extraction activities (and military construction) were all financed by capital from outside the State. The majority of labor was also provided by nonresident, transient workers. The organization of the fishing industry is a good example of this phenomenon -- variously labeled as absentee landlordism, feudalism, or colonialism in the histories of the first half of this century and accounts written at the time. In 1947, only 9 percent of fish traps were owned by Alaskans, and only 34 percent of wages in the fishing industry were paid to Alaskan residents. The non-Alaskan interests which dominated the industry fought continuously against taxation of their Alaskan properties which, together with mining properties, were estimated at more than a half-billion dollars in the 1940s. Naturally, these outside interests had little incentive to support the development of the region by paying taxes.

Many industries continue to hire non-resident workers and thus Alaskans do not always benefit even when an industry is booming. Accordingly, "local hire" is an issue in Alaska. As Governor Sheffield recently stated:^{17/}

Local hire is an issue in all kinds of work in Alaska - restaurants, canneries, construction, you name it. In fact, our Department of Labor has found that 677 million dollars in Alaska wages went to non-residents in 1984, the most recent year we have data for.

^{16/} Id. at 9.

^{17/} State of the State Address by Bill Sheffield, Governor of the State of Alaska, before a Joint Session of the Second Session of the Fourteenth Alaska State Legislature, January 14, 1986, Juneau, Alaska at 9.

In terms of numbers, fish processors are the biggest offenders - more than 12,000 jobs went to non-Alaskans in that year.

But in terms of dollars, the biggest offenders were oil and gas, and construction. Between them, they were responsible for more than a quarter of a billion dollars lost from Alaska.

II. LEADING SECTORS OF THE ECONOMY

As noted above, Alaska's economy is primarily resource based and resource driven. Major sectors at present include oil and gas, timber, fishing, government and tourism.

Oil and gas is by far the state's largest industry. The value of crude oil production in Alaska in 1984 was \$10.8 billion; but was estimated for 1985 to be reduced to \$10.2 billion, assuming a West Coast price per barrel of approximately \$25.^{18/} See Attachment G-1. With oil now selling on the West Coast at \$9 per barrel, actual value will be much less. Attachment G-2 outlines crude oil petroleum production 1959-1984.^{19/} (Production took off upon the completion of the Trans Alaska Pipeline System (TAPS) in the late-1970s. TAPS connects the state's primary oil field at Prudhoe Bay on the Arctic Ocean to the southern port of Valdez.)

The state's economy, in turn, is highly dependent on oil and gas revenues. The oil and gas industry pays severance and

^{18/} "Alaska Economy" at 12.

^{19/} State of Alaska, Department of Education, Division of Libraries, Alaska Blue Book 1985 (1985) at 270 ("Blue Book").

property taxes, royalties, rents and corporate income tax to the state of Alaska.^{20/} For FY 1985 (July 1, 1984 to June 30, 1985) revenues from petroleum accounted for 84% of state government unrestricted general fund revenues.^{21/} (See Section H at 1-8 for further discussion of the role of petroleum revenues in the state.)

On the basis of past history, of necessity, Alaska has sought to prepare for the inevitable post-oil revenue bust. Production at Prudhoe Bay has long been expected to peak and begin declining in 1987. The decline came sooner than expected, however, when world events led to a dramatic decrease in oil prices this year. Selling for as high as \$31.43 a barrel in 1981,^{22/} oil prices started to decline in late 1985 and have plummeted.^{23/} Attachment G-3 provides data on projected daily oil production, 1985-1998, for North Slope fields. It indicates that, as of June 1985, even prior to the present radical decline in oil prices, daily oil production was expected to decline from nearly 1.7 million barrels

^{20/} State of Alaska, Department of Commerce and Economic Development, The Alaska Economic and Statistical Review (1984) at 10 ("Economic and Statistical Review").

^{21/} State of Alaska, Department of Revenue, Revenue Sources FY 1985-88 (1986) at 9; see also State of Alaska, Department of Labor, December 1985 Alaska Economic Trends (1985) at 1.

^{22/} Alaska Economy at 12, Table 16.

^{23/} See note 2, supra.

per day (MMBD) in 1985 to nearly 0.7 MMBD in 1998,^{24/} a decline of 59%.

The effect on the state's economy from the decrease in the price of oil is dramatic and adverse. January 1986 estimates of the likely shortfall for State government revenues for FY 1986 and FY 1987 ranged from \$800 million to \$1.2 billion.^{25/} Reductions in oil and gas employment were expected in January 1986 to range from 10% to 30%.^{26/} The related depressant effect on all of the state's industries was expected to result in a decline in overall personal income from \$432 million to nearly \$1.3 billion, a decrease from 4.7% to 13.8% when compared to 1985 figures.^{27/}

The state's second leading producer is the fishing industry, which had a total wholesale value (including in-state processing) in 1984 of just over \$1 billion.^{28/} (See Attachment G-4, Alaska Fish Production and Value). The leading component of the fishing industry was salmon, accounting for \$752 million in wholesale value.^{29/} The salmon harvest in 1984 hit an all time record high, capping a steady rise from the 1973-1975 period record lows in which the salmon harvest dwindled to a value of \$150 million a

^{24/} State of Alaska, Office of Management and Budget, Executive Budget, Fiscal Year 1987 (January 1986) at 17.

^{25/} Alaska Economy at Addendum 1986 Projections.

^{26/} Id.

^{27/} Id.

^{28/} Alaska Economy at 8.

^{29/} Id.

year.^{10/} In 1984, other leading components of the fishing industry included shellfish (\$160 million) and fin fish other than salmon (\$131.7 million).^{11/} In 1984, however, total production quantity declined from the previous year, as did total wholesale value.^{12/}

Timber, the state's third leading producer, continues to experience a sharp slump. Total timber harvest in Southeast Alaska, where the vast majority of the State's marketable timber is found, fell to 457.2 MBF (million board feet log scale) in 1984, down from levels over 500 MFB in the early 1980s.^{13/} (See Attachment G-5, Timber Harvest in Southeast Alaska). Timber related employment (exclusive of self- and seasonal employment) was estimated to drop 3 percent in 1985 after suffering average declines of about 10 percent each year since 1980.^{14/} (See Attachment G-6, Forestry and Related Employment).

Perhaps the most volatile of Alaska's industries has been construction. During the TAPS construction period, employment in this industry nearly quadrupled within three years (between 1973 and 1976) declining back to a pre-1974 level in the succeeding

^{10/} Id. at 6.

^{11/} Id. at 8.

^{12/} Id. There are, of course, biological limits to expansion of the State's fishing industry, and fluctuations in harvests result in further economic uncertainty. See, e.g., id. at 7, Figures 5-7.

^{13/} Id. at 10. As with fishing, there are natural limits to expansion of the timber industry.

^{14/} Id. at 9.

three years.^{15/} There was a subsequent construction boom in the early 1980's generated by state and local government capital construction, but construction activity dropped off sharply in 1984 and 1985. Housing units authorized in 1985, for instance, plummeted by approximately 40 percent for the second straight year.^{16/} (See Attachment G-7, Total Housing Units Authorized).

While Alaska has significant mineral reserves, the total value of mining activity in 1985 was only \$263.7 million, 5% less than in 1984:^{17/}

Mineral production was dominated by gold (190,000 ounces worth \$61.2 million), coal (1.4 million tons worth \$39.7 million), and sand and gravel (28.6 million tons worth \$112.1 million) which combine to form 93 percent of the gross value of 1985 production. Building stone, mercury, antimony, tin, silver, jade, soapstone, and peat account for the remaining seven percent. . . .

Exploration expenditures in 1985 (\$8.6 million) dropped 62 percent from 1984, which in turn had dropped 35 percent from 1983. Lessened exploration activities reflect continued low base metal prices and severe budget cuts in the exploration arms of major mining companies. Alaska's most active exploration firm over the last decade was dissolved in April 1985. . . .

Expenditures for development projects in 1985 totaled \$28.7 million, a drop of 40 percent from the record \$53.3 million spent in 1984. However, most of this decrease was due to the completion of the \$21 million Seward Coal Terminal, which was responsible for the record level of expenditures. Hence, the more typical development expenditures have remained

^{15/} Economic and Statistical Review at 8.

^{16/} Alaska Economy at 17, 18.

^{17/} Id. at 12.

at about the same level for the last several years.

The industries which have seen steady growth in Alaska are retail trade, transportation, communications and utilities. Because these industries provide essential services to both the household and business sectors of the economy, they have benefited from the growing population base of Alaska. Most professional services, such as health, legal and social services have also experienced steady growth in employment.^{18/}

Tourism, while not a production industry, in terms of revenues generated and jobs created, is an important sector of the Alaskan economy. The most recent estimate of the Alaska Division of Tourism indicates that nearly 740,000 non-resident visitors traveled to Alaska in 1985, an increase of 48,400 over the preceding year.^{19/} (See Attachment G-8, Non-Resident Tourism Statistics of Alaska). It is estimated that this influx results in \$697 million in sales within the state.^{20/} 1986 should also prove a good year for Alaskan tourism, particularly because of the current disinclination for travel abroad due to terrorism.

Federal (exclusive of military), State and local government is collectively the largest employer in the State, and government expenditures for personal services and capital goods provide a

^{18/} Economic and Statistical Review at 6-7.

^{19/} Alaska Economy at 30.

^{20/} Id.

critical input into the State's economy.^{41/} (The need for high levels of state government activity is discussed in this section at 17-19.) Federal (exclusive of military), State and local governments are estimated, in 1985, to have directly provided 29.2% of the jobs in Alaska, and 31.1% of the annual payroll. ^{42/} In addition, many local services and trade businesses depend on the governmental expenditures. Fluctuations in government employment or expenditures are, for these reasons, of great importance to the State's economy.

Alaska ranks first among all states in government employment, both on a percent of total employment and on a per capita basis.^{43/} In 1983 local, state and federal (exclusive of military) government employment in Alaska was 29% of total employment, while such government in the rest of the United States accounted for only 17.5% of total employment.^{44/}

The relative importance of government employment in Alaska has diminished somewhat through the years as other parts of the economy expanded. In 1960, government employment was over 33.8 percent of total employment.^{45/} Moreover, while federal

^{41/} Alaska Economy at 32.

^{42/} Id.

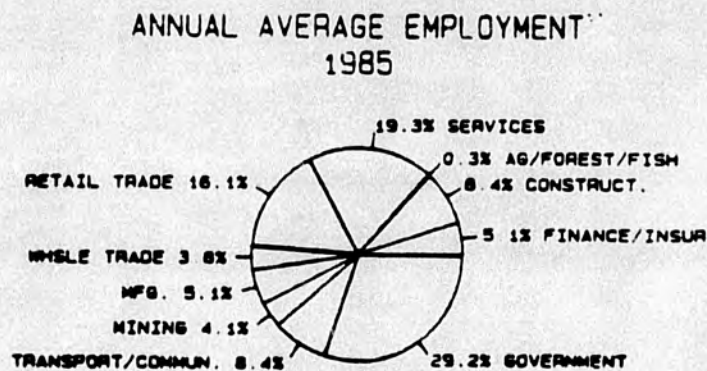
^{43/} Statistical Review (1983 figures) at 5.

^{44/} Id.

^{45/} Alaska Economy at 32.

employment (exclusive of military) constituted the largest sector of all government employment in 1960, today that position is held by local government.^{46/} (Attachment G-9 provides data on federal and state government employment.)

The following chart summarizes estimated employment in 1985 in leading sectors of the State's economy:^{47/}



After civilian federal, state and local government (29.2%), estimated leading employment sectors included services (19.3%), retail trade (16.1%), transportation and communications (8.4%), construction (8.4%), manufacturing (5.1%), finance and insurance (5.1%), mining (which includes oil and gas) (4.1%), and agriculture, forestry and fishing (0.3%). Were federal military

^{46/} Id.

^{47/} Id. at 3. These statistics do not generally include self-employment or seasonal employment, a large proportion of persons employed in agriculture, forestry and fishing.

employment included in these calculations, the percentage of government employment would, of course, be even greater.

III. DEVELOPMENT STRATEGIES

The historic boom-bust pattern in Alaska and in particular Alaska's dependence on petroleum based revenues has required the State to devise extraordinary measures to provide economic stability for its residents. As noted in 1983:^{48/}

Like previous resource extraction cycles in Alaskan economic history, the era of petroleum extraction will be temporary. Unlike other states where agriculture, manufacturing, and other alternative activities provide a reasonably stable and continuing tax base, there is no current economic prospect that might replace petroleum extraction in Alaska as a source of State and local revenues. Rational fiscal planning, consequently, requires maximum conversion of the depleting petroleum tax base into a more permanent form. The State is pursuing this strategy through the Alaska Permanent Fund, a capital investment program, a loan program, and tax incentives. The Permanent Fund is a trust fund for a portion of State royalties -- not tax dollars -- to insure against an economic decline subsequent to the fall in petroleum revenues.^{49/} The investment program is designed to lay an infrastructure base for economic diversification of the private sector. The loan programs and tax incentives are

^{48/} Goldsmith at 30.

^{49/} See Section H, infra, for further discussion of the Permanent Fund.

designed generally to stimulate and promote private sector development.^{50/}

In addition to these development efforts, the State has also enacted tax reforms to spur development.^{51/}

Three taxes -- the personal income tax, gross receipts tax (in part), and school tax -- have been eliminated in recent years. In addition, an exploration incentive tax credit program for petroleum exploration on new leases has been initiated. A major reason for the elimination of the state income tax was to attempt to equalize the combined (federal plus state) personal income tax bite in Alaska with that of other states and, thus, reduce the cost of labor of Alaskan industry and increase its competitiveness. The disproportionately high federal tax bite in Alaska is caused

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The State is investing substantial capital in the infrastructure needed to support economic growth, such as hydropower and port facilities. It is also making capital investments in social infrastructure facilities such as schools, libraries, and hospitals. The purpose of the capital investment program is to continue the State program of infrastructure development. Subsidized loan programs are targeted for selected industries which have further development potential (such as fisheries and agriculture), for student assistance, and for the housing industry. This last program was established partially to raise the quality of housing in the State and to increase the homeownership rate in Alaska, which was 46th in the nation in 1980. Increasing homeownership is important to help overcome the transient, frontier atmosphere of many communities and thus to stimulate permanent settlement, which will help to reduce living costs and spur economic development. These loan programs to industry and individuals are not unique to Alaska.

Goldsmith at 31-32.

^{51/} Id. at 32-33.

by the progressive federal tax schedule being applied to higher nominal incomes in Alaska (to compensate for the higher cost of living). Employers are thus forced to pay higher wages to compensate employees for the disproportionately higher income taxes the employees pay. This situation had placed Alaskan employers at a competitive disadvantage before the repeal of the State personal income tax. Alaska is, of course, again not unique in imposing no personal income tax on its citizens.

The repeal of the personal income tax, the school tax, and the eliminated portion of the gross receipts tax have combined to return close to \$200 million annually to the State's economy. This influx of dollars has helped to stimulate the local economy. In addition, the exploration incentive tax credit program has begun to stimulate development of marginal petroleum prospects.

IV. EMPLOYMENT DATA

Alaska's 1984 labor force, defined as the civilian noninstitutional population ages 16-64 employed and actively looking for work, constituted approximately half of the state's total population.^{52/} The labor force grew from 247,000 in 1984 to 253,000 in 1985.^{53/} Employment and unemployment rate calculations are based on the size of the labor force.

Attachment G-10 shows the trend in employment in Alaska from 1971 through 1983. Employment, paralleling trends in the total

^{52/} Economic and Statistical Review at 5, 51.

^{53/} United States Department of Labor, Bureau of Labor Statistics, State Unemployment in 1985 (March 3, 1986) ("State Unemployment").

population, grew until 1976, leveled off until 1980, then resumed its growth. See Attachment G-10.^{54/} In addition, there are substantial seasonal variations in employment due to climate and the types of employment available in different industries. As shown in Attachment G-10, employment peaks in the summer months, then drops back in winter.^{55/}

Alaska has suffered from high unemployment. The State's unemployment rate has exceeded the rate in the United States for the entire period of 1980-1985.^{56/} During that period the average annual unemployment rate was 7.6% for the U.S. compared to 10.0% for Alaska.^{57/} See Attachment G-11. This pattern is continuing. In the years 1984 and 1985, Alaska unemployment remained 2-1/2 percentage points, approximately 33%, higher than the U.S. rate:^{58/}

	<u>U.S.</u>	<u>Alaska</u>
1984	7.5%	10.0%
1985	7.2	9.7

The most recent available data indicate that Alaska's unemployment rate is increasing, while the national rate is

^{54/} Economic and Statistical Review at 45.

^{55/} State of Alaska, Department of Commerce and Economic Development, Economic Analysis Section, Alaska Economic Indicators (February 1986) at Figure 7.

^{56/} Id. at Figure 9.

^{57/} United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States 1986 (1985) at 409 ("Statistical Abstract"); State Unemployment.

^{58/} State Unemployment. See Attachment G-12.

decreasing. Data for April 1986 show Alaska's unemployment rate at 11.4%, up from 10.7% in April 1985. The national rate in April 1986 was 7.0%, down from 7.1% a year earlier.^{52/} See Attachment G-12.

Alaska had the fifth highest unemployment rate among all states in 1984 (after Alabama, Michigan, Mississippi and West Virginia), the fourth highest rate in 1985 (after Louisiana, Mississippi, and West Virginia), and the second highest rate in April, 1986 (after Louisiana). See Attachment G-12.

Attachment G-13 provides data on Alaska employment and unemployment among the state's 23 census areas for the years 1978-1983. Two facts stand out: First, unemployment rates vary substantially among census areas in the state, some census areas having double the unemployment rate of other areas. Second, unemployment in Alaska excluding Anchorage is substantially higher than statewide data indicate. Almost half of all employees reside in the Anchorage census area, where unemployment averaged 7.4% during the period 1978-1983, 2.5% below the statewide average of 9.9%.^{60/} The average unemployment rate for areas of Alaska outside Anchorage during the 1978-1983 period exceeded 12%

^{52/} United States Department of Labor, Bureau of Labor Statistics, State and Metropolitan Area Employment and Unemployment: April 1986 (June 17, 1986).

^{60/} Economic and Statistical Review at 51. See Attachment G-13.

(compared to a national average rate during this period of 7.6%).^{61/} In four census areas, the average unemployment rate during 1978-1983 exceeded 14%.^{62/}

Alaska's 23 census areas are grouped into six regions.^{63/} Unemployment data on a region-by-region basis provide a similar picture. The region containing Anchorage had the lowest unemployment rate in 1981, 1982 and 1983.^{64/}

<u>Region</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Anchorage-Matsu	7.4%	8.0%	8.3%
Gulf Coast	11.7	13.5	13.2
Interior	11.9	13.3	15.1
Northern	8.7	8.1	8.7
Southeast	10.7	11.3	12.3
Southwest	10.1	10.4	9.6

Unemployment is also higher among native Alaskans. As of 1980, 20% of native Alaskans in the civilian labor force were unemployed (non-native rate: 8.0%).^{65/} This was more than double the overall unemployment rate in Alaska of 9.6%, and almost three times the national unemployment rate of 7.1%.^{66/} The unemployment

^{61/} See Attachment G-13.

^{62/} Id.

^{63/} For a map illustrating the locations of the census areas, see Attachment A-3 to Section A.

^{64/} State of Alaska, Department of Labor, Alaska Planning Information (1985) at 21.

^{65/} United States Department of the Interior, ANCSA 1985 Study (1984 Draft) at E-59 ("ANCSA Study").

^{66/} Id.

rate was particularly high among native males of working age; 25% were unemployed in 1980.^{67/}

The number of employed natives increased 74% from 1970 to 1980, from approximately 9,000 to 15,700.^{68/} At the same time, however, due to an increase in the native labor force, unemployment also increased.^{69/} Government employment was responsible for almost two-thirds (64%) of the increase in native employment.^{70/}

The Alaska Department of Commerce and Economic Development projected in January 1986 that total employment would show zero growth or a decrease in 1986 as the Alaska economy continues the decline begun in 1984. It also projected an increase in unemployment.^{71/}

V. PERSONAL INCOME AND COMPARATIVE COSTS OF LIVING

According to the United States Department of Commerce, per capita personal income in Alaska for 1985 was \$17,756, the highest of the 50 states.^{72/} (Per capita personal income for the

^{67/} Id.

^{68/} Id. at IV-11.

^{69/} Id. at IV-13.

^{70/} Id. at IV-15.

^{71/} Alaska Economy at 36.

^{72/} United States Department of Commerce, Bureau of Economic Analysis, 1985 State Per Capita Personal Income (May 6, 1986) at Table Z ("1985 State Per Capita Personal Income"). Per capita personal income is the total personal income of residents for the year divided by the resident population as of July 1.

District of Columbia was \$17,909.)^{13/} Alaska's per capita personal income was 32% higher than the national average for 1985 of \$13,451.^{14/} When the difference in cost of living in Alaska is taken into account, however, real personal income in Alaska is significantly below the national average. The last quarter 1985 cost of living in Alaska exceeded the national average by about 50%. See discussion on pages 25-29, infra. As a result, Alaskans per capita real personal income was about \$11,800 (\$17,756/1.5), about 12% below the national average of \$13,451.

Moreover, growth in nominal per capita income in Alaska is lower than the national average. Attachment G-14 provides per capita personal income data for the 50 states and the District of Columbia for the four-year period 1982-1985. It shows that while per capita income for the United States as a whole and for Alaska increased each year during this period, Alaska's increases have been less in both absolute dollar and percentage terms. While nationally per capita personal income grew \$2,338 (21%) from 1982 to 1985, Alaska's increase was only \$840 (5%). Alaska had the smallest percentage increase in per capita personal income of all 50 states and the District of Columbia from 1982 to 1985, and the second smallest percentage increase (after Montana) from 1984 to 1985. The most recent trend data (1984 to 1985) continue to show

^{13/} Id.

^{14/} Id.

Alaska's per capita personal income increasing at less than a quarter of the national rate.^{15/}

	<u>United States</u>	<u>Alaska</u>	<u>Difference</u>		<u>% Decrease</u>
			<u>\$</u>	<u>%</u>	<u>from 1982</u>
1982	11,113	16,916	5,803	34	0
1983	11,681	17,380	5,699	33	2
1984	12,772	17,550	4,778	27	18
1985	13,451	17,756	4,305	24	26
% Change '82-'85	21.0%	5.0%			
% Change '84-'85	5.3%	1.2%			

The Alaska Department of Commerce and Economic Development, in January 1986, projected that, in part due to the drop then projected in oil prices (to \$15 per barrel) and related effects, growth in personal income in Alaska would stop entirely during 1986 and thereafter personal income would decrease. It projected a decrease from year-end 1985 to year-end 1986 of between 4.7% and 13.8%.^{16/}

The relatively small annual increases in per capita personal income have meant that the average Alaskan's income has not kept pace with inflation. Measured in constant (1972) dollars, per

^{15/} See Attachment G-14.

^{16/} The Alaska Economy at Addendum, 1986 Projections. A decrease in oil and gas employment of between 10% and 30% was also estimated. Id.

capita personal income in Alaska shows the following trend during the 1980s:^{17/}

1980:	\$7,266
1982:	\$8,182
1983:	\$8,064
1984 (prelim.):	\$7,784

Only three other states, Montana, Oklahoma and Wyoming, showed a decrease in personal income measured in constant dollars from 1982 to 1984.^{18/}

Per capita personal income varies widely among Alaska's communities. Per capita personal income data for 1984, from the U.S. Department of Commerce Bureau of Economic Analysis, for each census area in Alaska, is set forth in Attachment G-15. Income levels in 1984 ranged from a high of \$26,077 in North Slope Borough to a low of \$7,466 in Wade Hampton.^{19/} Even without taking cost of living into consideration, seven of Alaska's twenty-three census areas had per capita income below the national average. See Attachments G-14 and G-15.

As mentioned above, in evaluating nominal per capita personal income information, reference must be made to comparative costs of living. In this regard, some background points may be useful. First, there is now almost no governmentally collected or

^{17/} Statistical Abstract at 440.

^{18/} Id.

^{19/} United States Department of Commerce, Bureau of Economic Analysis Per Capital Personal Income, For Counties And Metropolitan Areas, 1979-1984 (1986) ("1984 Census Area Per Capita Personal Income").

published source of data to measure geographic (national, state or city) differences in costs of living.^{80/} For this reason, many analysts agree that the only and best source of overall data is the "Inter-City Cost of Living Index" compiled and published on a quarterly basis by the American Chamber of Commerce Researchers Association ("ACCRA COL Index"). See Attachment G-16.^{81/} Second, there are no federally or nationally generated indices which measure the relative over-all cost of living throughout Alaska.^{82/} The State of Alaska, in 1985, however, published the largest and most comprehensive statewide cost of living study conducted in the

^{80/} The Bureau of Labor Statistics of the U.S. Department of Labor stopped compiling and publishing such statistics as of 1981. The University of Alaska/U.S. Department of Agriculture Cooperative Extension Service compiles a "Cost of Food at Home For a Week" survey designed to measure a low cost food basket for low income families, but this is not an overall cost of living study and even with respect to the data compiled relates only to Alaska. The Census Bureau publishes housing prices for 60 cities, but not data for other living costs. The McDowell Group and Alaska Attitudes, Inc., Alaska Geographic Differential Study (1985) at Volume II at 3 ("Alaska Geographic Differential Study"). Some COL data can be found in the Blue Book, at 259-261. These data are limited to the cost of living at home for a week.

^{81/} While ACCRA recognizes that state and local taxes are part of the cost of living and that taxes vary between and within states, such taxes are excluded from the ACCRA COL Index because there is "no adequate method to calculate the total tax burden for either inter-state or inter-city comparison, involving the whole range of state and local taxes levied on real and intangible property, retail sales, income and the excise taxes levied directly or indirectly on commodities." ACCRA COL Index, Fourth Quarter 1985 (1986) at ii.

^{82/} See Goldsmith at 17; Alaska Geographic Differential Study, Volume II at 3.

State since statehood.^{83/} See Attachment G-17. This study provides the most current in-state cost of living data. Third, the Consumer Price Index (CPI) is sometimes -- and incorrectly -- thought of as a differential index. "The CPI measures only inflation over time at each individual location and it is calculated for only one Alaska location -- Anchorage -- on a bi-monthly basis. The CPI reports that it is more expensive to live in Anchorage today than last year. It does not tell whether it is more or less expensive to live in Anchorage than in Fairbanks, Juneau, Kotzebue, Seattle or San Francisco."^{84/}

Of the 249 cities participating in the ACCRA COL Index for Fourth Quarter 1985, on the All-Items index, Anchorage ranks second, at 139.4, behind only New York City, at 142.5.^{85/} (The national average for all participating cities is set at 100.) Anchorage ranks first for grocery items, health care, miscellaneous goods and services, and second for transportation, housing and

^{83/} Alaska Geographic Differential Study, at Volume II at 1.

^{84/} Id. at 3.

^{85/} ACCRA COL Index, Fourth Quarter 1985, Section 1 at 1 and 5. Anchorage is the only participating Alaska community. It is not included in the ACCRA COL Index for the First Quarter 1986. The ACCRA COL Index measures relative price levels for consumer goods and services in participating areas as compared with the national average of 100 for all participating cities; it does not measure inflation. Each quarterly report is a separate comparison at a single point in time and both the number and mix of cities may change from one quarter to the next. Because of limitations in the number of items priced, spreads of three or fewer whole numbers in the All-Items index do not correctly show which cities are more expensive, but spreads of more than three do represent actual inter-city differences in costs. Id., Section 1 at 1.

utilities.^{86/} For the First, Second and Third Quarters of 1985, Anchorage was the most expensive of all cities surveyed, scoring 142.8, 139.2 and 139.1 on the All-Items index.^{87/} When, in 1983, Anchorage was first included in the ACCRA studies, it ranked as the third most expensive city.^{88/}

Even though Anchorage is shown by the ACCRA data to be one of the two most expensive cities in the United States, the other being New York City, and costs of living in Anchorage exceeded the national average of 249 cities by nearly 40%, it is one of the least expensive places in Alaska to live.^{89/} The Alaska Geographic Differential Study indicates that of the 19 Alaska districts surveyed, with Anchorage as a base of 1.00, two districts had differentials less than 1.00 (Petersburg/Wrangell, in the Panhandle, (0.98), and Palmer/Wasilla, just north of Anchorage, (0.94)), fifteen had differentials greater than 1.00, and one (Seward, in the Kenai Peninsula) had a differential of 1.00.^{90/} (Seattle had a differential of 0.86, lower than any

^{86/} Id., Section 1.

^{87/} ACCRA COL Index, Third Quarter 1985, Section 1; ACCRA COL Index, Second Quarter, 1985, Section 1; ACCRA COL Index, First Quarter 1985, Section 1.

^{88/} ACCRA COL Index, Fourth Quarter, 1983, Section 1.

^{89/} As discussed below, only Petersburg, in the southern part of the State, and Palmer, close to Anchorage, have lower living costs.

^{90/} Attachment G-17; Alaska Geographic Differential Study at 7.

Alaska district.)^{21/} The three districts with the highest differentials were Barrow/Kotzebue (1.44), Bethel (1.39), and Nome (1.32).^{22/}

While the numbers are not strictly comparable, a rough measure of the cost of living differential between other areas of the State and the 249 cities in the ACCRA COL Index can be determined. Since the COL in all of the State except Anchorage is 108% of the COL in Anchorage, and the COL in Anchorage is 139.4% above the COL in the Fourth Quarter 1985 249 city sample, the Alaskan COL outside Anchorage is roughly 150% that of the 249 U.S. city sample. For some districts in the State it is much higher. For example, the COL in Barrow/Kotzebue is roughly 200% of the COL in the 249 ACCRA surveyed cities. It is apparent that the COL for the State as a whole is higher than the highest city, New York City, in the Fourth Quarter 1985 ACCRA study.

Other indices present a comparable picture of the high Alaskan cost of living. The Bureau of Labor Statistics report on urban family budgets in 1981 (the last year for which these data are available) (Attachment G-18) for typical hypothetical requirements of goods and services for an urban family of four at three relative standards of living (lower, intermediate and higher)

^{21/} Id.

^{22/} Id.

shows Anchorage costs of living at all levels to be significantly above the national urban averages.^{23/}

	<u>U.S. Average</u>	<u>Anchorage</u>	<u>% Difference</u>
<u>Lower Budget</u>	\$15,323	\$22,939	46%
<u>Intermediate Budget</u>	\$25,407	\$31,890	26%
<u>Higher Budget</u>	\$38,060	\$45,119	19%

A 1977 study done by the University of Alaska Institute of Social and Economic Research calculated a statewide average cost-of-living index 11 percent above Anchorage for the year 1977.^{24/} Further, as of 1983:^{25/}

A military construction cost index showed construction costs for ordinary facilities in Anchorage to be 90 percent above comparable costs in Washington, D.C. Non-urban Alaskan

^{23/} U.S. Department of Labor, Bureau of Labor Statistics, Autumn 1981 Urban Family Budgets and Comparative Indexes for Selected Urban Areas, at Tables 1-6 (Attachment G-18). The index includes personal income taxes for estimated 1981 federal, state and local tax payments. Because of the progressiveness of the federal income tax, Alaskans pay more federal income taxes on a per capita basis than the average U.S. citizen. In fact, Alaskans' federal personal income tax burden is greater than the average federal, state and local income tax burden of other citizens. According to the U.S. Bureau of Labor Statistics 1981 study, Anchorage families at the high, moderate and low standards of living, respectively, paid 13 percent, 24 percent and 83 percent more in personal income taxes than did families at the same standards of living in other states. Id. at Tables 2, 4, 6.

^{24/} Goldsmith at 17.

^{25/} Id. at 18.

locations have considerably higher construction costs. The index for Barrow, on the North Slope, for example, was 290 percent higher than for Washington, D.C. These construction cost differentials mean that a school costing \$10 million to construct in Washington, D.C., costs \$19 million to construct in Anchorage and \$39 million to construct in Barrow. According to this index, the range of costs to build the same school within the contiguous United States is \$8.6 million to \$16 million.

In addition, a private engineering consulting firm knowledgeable about Alaskan construction conditions has developed an index using Anchorage as a base. Construction cost estimates range from a low of 10 percent above Anchorage for a 50-mile range outside the city to a high of 194 percent above Anchorage for Arctic Slope coastal villages.

Primary reasons for the higher cost of living in Alaska than in the lower-48 include "Alaska's distance from producers, its small market size, differentially high federal income tax rates which drive up wage rates, harsh climate, primitive infrastructure, and significant regional inflation generated by large projects such as the TAPS construction."^{26/}

An accurate picture of Alaskans' income levels can be obtained by adjusting per capita income by costs of living. This can be done by dividing per capita income for each census area by

^{26/} Id.

cost of living indexes derived from the ACCRA and Alaska

Geographic Differential cost of living studies:

Census Area	1984 Per Capita Income (PCI) ^{21/}	PCI Adjusted for Cost of Living ^{22/}	% Above or Below 1984 U.S. Average PCI ^{23/}
Aleutian Islands	\$16,715	\$ 9,516	-25%
Anchorage	19,188	13,765	+8
Bethel	10,050	5,187	-59
Bristol Bay	20,472	11,384	-11
Dillingham	10,852	6,035	-53
Fairbanks-North Star	20,764	14,461	+13
Haines	17,250	11,785	-8
Juneau	21,253	14,802	+16
Kenai Peninsula	13,237	9,402	-26
Ketchikan Gateway	18,138	12,756	0
Kobuk	11,822	5,931	-54
Kodiak Island	11,826	8,003	-37
Matanuska-Susitna	14,197	10,834	-15
Nome	14,265	7,752	-39
North Slope	26,077	12,991	+2

^{21/} See Attachment G-15.

^{22/} Because no 1984 in-state COL data are available, 1985 COL indexes were used. The 1985 ACCRA COL Index (139.4) is used as the adjustment factor for Anchorage. (In this regard, it should be noted that in the four quarters of 1984, the ACCRA COL Index for Anchorage was 134.5, 133.9, 141.8, and 136.5.)

The census areas defined by the U.S. Census Bureau and the geographic districts used in the Alaska Geographic Differential Study are not congruent. There are, for example, 23 census areas, but only 19 geographic districts. For the purposes of this table, each census area is treated as having the differential COL index of the geographic district in which all, or most, of it falls.

^{23/} The U.S. average PCI for 1984 was \$12,772. See Attachment G-14.

Prince of Wales - Outer Ketchikan	14,460	10,170	-20
Sitka	16,090	11,428	-11
Skagway- Yakutat- Angoon	16,114	11,016	-14
Southeast Fairbanks	12,685	8,835	-31
Valdez- Cordova	17,536	11,333	-11
Wade Hampton	7,466	4,251	-67
Wrangell- Petersburg	15,812	11,574	-9
Yukon- Koyukuk	9,573	5,323	-58

Only four census areas have a real per capita personal income (adjusted for cost of living) above the 1984 national average. Twelve of the twenty-three areas have real per capita personal income (adjusted for cost of living) more than 15 percent below the 1984 national average.^{100/} These twelve areas comprise almost one-third of the State's population.^{101/} Four census areas have real capita income of less than half the national average.

Per capita income varies not only geographically, but, of course, among individuals as well. The most recent distribution of income data, taken from the 1980 U.S. census, shows that in Alaska, 10.7% of the population for which poverty status is determined had income below the poverty line.^{102/} In Wade Hampton, 38.1% of that population fell below the line.^{103/}

^{100/} Id.

^{101/} See Attachment G-15.

^{102/} 1980 U.S. Census Report for Alaska, Blue Book at 255-259.

^{103/} Id.

The U.S. government sets poverty lines. Because of their higher cost of living, the poverty line for Alaska and Hawaii is set at a level 25% higher than the level of the lower 48. In Alaska, almost 15% of the persons for whom poverty status is determined lived below the U.S. government-set Alaskan poverty line.^{104/}

<u>Census Area</u>	<u>Percent of Persons for Whom Poverty Status is Determined</u>	
	<u>Below National Poverty Line</u>	<u>Below Alaskan Poverty Line</u>
Statewide	10.7%	14.4%
Aleutian Islands	12.4	15.5
Anchorage	7.4	10.2
Bethel	31.3	39.9
Bristol Bay	4.1	6.0
Dillingham	22.7	29.0
Fairbanks-North Star	9.5	13.7
Haines	14.0	17.4
Juneau	4.1	5.9
Kenai Peninsula	11.7	16.3
Ketchikan Gateway	7.4	8.8
Kobuk	27.0	34.2
Kodiak Island	10.6	14.6
Matanuska-Susitna	13.8	15.5
Nome	28.4	36.1
North Slope	11.2	13.7
Prince of Wales-Outer Ketchikan	11.0	13.9
Sitka	4.9	7.2
Skagway-Yakutat-Angoon	13.1	20.1
Southeast Fairbanks	16.5	26.4
Valdez-Cordova	12.1	15.6
Wade Hampton	38.1	49.0
Wrangell-Petersburg	6.5	8.8
Yukon-Koyukuk	29.2	38.6

^{104/} Id.

In seven of the twenty-three census areas, more than 25% of the population falls below the Alaskan poverty line. Even this adjustment provides a conservative measure of the percentage of the Alaska population actually living below a cost of living adjusted poverty line. As discussed above, the cost of living differential between Alaska and the rest of the U.S. is almost 50%, not 25%.

H

SECTION H

STATE OF ALASKA REVENUES AND EXPENDITURES

I. REVENUES

The State receives three major classes of income: Unrestricted, Restricted, and Special Fund (including Permanent Fund) Revenues.^{1/} From these three sources, the State's FY 1985 actual total revenue was \$4,382,900,000.^{2/} In March 1986, the State projected its FY 1988 revenue would be \$2,310,800,000, a decline from FY 1985 of \$2,172,100,000 or 50%.^{3/}

While a 50% decrease in state revenue would be extreme, it now appears that the March, 1986 projections over-estimated FY 1988 revenues. The March, 1986 projections assumed a sales price for Alaska North Slope crude oil at Los Angeles, California of \$17.50 to \$19.50 per barrel, and at Houston, Texas of \$20 to \$22.^{4/} In fact, as of July 1, 1986, one of the largest producers of Alaska North Slope crude oil lowered the contract price of North Slope crude oil to \$9 per barrel on the West Coast and \$10

^{1/} State of Alaska, Department of Revenue, Revenue Sources FY 1985-88 (1986) at 1 ("Revenue Sources").

^{2/} Id. at 3, 4-5, 10 and 11. Fiscal Year 1985 ran from July 1, 1984 to June 30, 1985.

^{3/} Id. Figures rounded to the nearest whole number.

^{4/} Letter from Mary A. Nordale, Commissioner of Revenue, to the Honorable Bill Sheffield, Governor of Alaska, March 12, 1986 at Table II ("March 12, 1986 Letter"). Prices rounded to nearest dollar or half dollar.

per barrel on the Gulf Coast.^{5/} These oil prices are therefore about one-half the prices which were used for the March 1986 projections. Since a very substantial portion (more than half) of state revenue is tied to oil sales,^{6/} the drastic decline in North Slope oil prices will cause significant declines in state revenue even beyond those projected in March 1986.

The State is in the process of revising its revenue projections to reflect these (and other) developments. The new projections will be provided as soon as they are available. In any event, projections and estimates in this Section must be read with the recent dramatic decline in oil prices in mind.

Unrestricted Revenues are paid into the General Fund and may be appropriated for any purpose. These receipts are listed in Attachment H-1 by type; e.g., taxes, licenses and permits, etc.^{7/} In FY 1985 unrestricted revenues were \$3.26 billion,^{8/} 74% of revenues from all sources. Attachment H-2 shows that since 1980, between 83% and 90% of General Fund Unrestricted Revenues have been derived from petroleum revenues.^{9/}

Attachments H-1 and H-2 show that both petroleum and non-petroleum based unrestricted revenues were projected, even as of

^{5/} The Standard Oil Company (Sohio), News Release, July 8, 1986. Prices have not been rounded.

^{6/} See discussion on Unrestricted Revenues, infra.

^{7/} Revenue Sources at 4-5.

^{8/} Id.

^{9/} Id. at 9.

March, 1986 to decline dramatically in each fiscal year through 1988. Total Unrestricted General Fund revenues were estimated (as of March 1986) to decrease \$538.9 million from FY 1985 to FY 1986, \$643.5 million from FY 1986 to FY 1987, and \$463.4 million from FY 1987 to FY 1988, a total decrease from FY 1985 to FY 1988 of \$1,645,800,000 or 50%.^{10/}

The State's Commissioner of Revenue noted, however, even prior to the more than 50% decline in the price of Alaska North Slope crude oil (noted at page 1-2, supra) that the March 1986 forecast was "on the optimistic side, i.e. the downside risk is much greater than any perceived upside potential."^{11/} Reasons for downside risk included, for example, Saudia Arabian strategies for driving the price of oil down, the steadily deteriorating oil market, institution of conservation measures and general declines in economic growth.^{12/} Accordingly, while no "price collapse" was built into the State's March, 1986 projections,^{13/} the Commissioner of Revenue said that "the oil revenue outlook for

^{10/} Id. In evaluating these estimates it should be noted that: (1) the FY 1986 estimate was based on a mean case; (2) the FY 1987 and FY 1988 estimates on a 30% case (usually recommended for budgetary purposes), meaning there is a 70% chance the numbers will be greater and a 30% chance the numbers will be less than the estimates; and (3) the FY 1986, FY 1987 and FY 1988 estimates did not include revenues anticipated (on a one-time only basis) from settlement of litigation (with ARCO, \$243 million, and over the Trans Alaska Pipeline System (TAPS), \$216 million). March 12, 1986 Letter at 1.

^{11/} Id.

^{12/} Id. at 2.

^{13/} Id. at 3.

Alaska, in any case, is potentially devastating."^{14/} The recent decline in oil prices below even projected low levels indicates that the revenue consequences may be worse than predicted.

Restricted Revenues are those received for specific purposes, primarily from the federal government.^{15/} In FY 1985, total restricted revenues were \$366.3 million,^{16/} 8.3% of revenues from all sources. Attachment H-3 sets forth areas which receive restricted revenues.^{17/} The three areas receiving the highest level of restricted revenues in FY 1985 were transportation, social services, and education, and this pattern was projected to continue in FY 1986 - 1988.^{18/}

Special Fund Revenues are those received into statutorily established funds, such as the International Airports Revenue Fund.^{19/} Attachment H-4 sets forth the various Special Funds.^{20/} Of the \$756.6 million of special funds in FY 1985, 17.2% of revenues from all sources, \$668 million (or 88%) were funds derived by the Alaska Permanent Fund.^{21/}

^{14/} Id. at 2.

^{15/} Revenue Sources at 1.

^{16/} Id. at 10.

^{17/} Id.

^{18/} Id.

^{19/} Id. at 1.

^{20/} Id. at 11.

^{21/} Id. at 11.

Established in 1976, the "Alaska Permanent Fund is a savings account, restricted as to usage, which belongs to all of the people of Alaska."^{22/} The purpose of the Fund was and is to provide resources for the time when oil field production and revenues, on which the State is dependent, decline.^{23/}

The Permanent Fund was created by public referendum in which Alaskan voters approved the following amendment to Article IX of the Constitution of the State of Alaska:^{24/}

Section 15. ALASKA PERMANENT FUND. At least twenty-five percent of all mineral lease rentals, royalties, royalty share proceeds, federal mineral revenue sharing payments and bonuses received by the State^{25/} shall be placed in a permanent fund, the principal of which shall be used only for those income producing investments specifically designated by law as eligible for permanent fund investments. All income from the permanent fund shall be deposited in the general fund unless otherwise provided by law [Effective February 21, 1977].

"To manage the investments of the Permanent Fund, the Alaska legislature, in 1980, created the Alaska Permanent Fund Corporation as a public corporation, separate from state government."^{26/}

^{22/} Alaska Permanent Fund Corporation, 1985 Annual Report at 5 ("Annual Report").

^{23/} See, e.g., Annual Report at 6.

^{24/} Annual Report at 5.

^{25/} A 1982 statute raised the contribution to the Permanent Fund to 50 percent of subsequent mineral leases, but the 25 percent rate still applies to the Prudhoe Bay oil field. State of Alaska, Department of Education, Division of Libraries, Alaska Blue Book 1985 (1985) at 15 ("Blue Book").

^{26/} Annual Report at 5. ". . . Corporate policy is formulated independently by a board of six trustees. Four are members (Footnote continued)

By statute, the Alaska Permanent Fund Corporation has three goals: "to (1) save a portion of the wealth created by development of the state's non-renewable natural resources to benefit all generations of Alaskans; (2) protect those savings from loss of value; and (3) invest those savings to produce income for uses provided by law."^{27/}

As of May 31, 1986, the Permanent Fund contained \$7.757 billion.^{28/} The Permanent Fund has two parts: principal and undistributed income. Expenditures of the principal (oil royalties from constitutional dedication, funds from legislative appropriations, and income transferred back to principal pursuant to statute for inflation-proofing) is constitutionally prohibited.^{29/} There is no constitutional prohibition on expenditure of undistributed income.^{30/} Undistributed income has, however, been designated by the Fund's trustees as "reserves", to be used in future years when "either poor earnings or high inflation leave

^{26/} (continued)

of the public with recognized competence and wide experience in finance, investments, or other business management-related fields. They are appointed by the governor for four-year terms. The other members are the commissioner of the Department of Revenue and one cabinet officer of the governor's choice". Id.

^{27/} Id. at 6; (A.S. 37.13.020).

^{28/} Alaska Permanent Fund Corporation, Monthly Financial Report, May, 1986 at 3 ("May Report").

^{29/} Annual Report at 8.

^{30/} Id. Undistributed income is all net income -- from current and prior years -- which has not been paid out as dividends or transferred to principal for inflation-proofing. Id.

insufficient funds to pay the full portion of dividends and inflation-proofing (the two currently authorized uses for Fund earnings)."^{11/}

In FY 1985, the Fund's net income totalled \$657.8 million.^{12/} Roughly a third of that income was transferred back to principal for inflation-proofing, one-third was added to Undistributed Income Funds as a reserve, and one-third was paid out in dividends.^{13/}

In 1975, when former Governor Jay S. Hammond proposed the dividend program, legislators returning from their districts had compiled a set of spending recommendations that far outstripped revenues, creating pressure on the Legislature to spend revenues immediately from non-renewable petroleum resources. The dividend was Governor Hammond's solution to the problem of giving Alaskans a personal stake in the preservation of the Fund. Each year since 1982 a part of the earnings of the Permanent Fund has been paid out to each Alaska resident as a dividend.^{14/}

^{11/} Id. See also Alaska Permanent Fund Corporation, Monthly Financial Report (April 1986) at 9 ("April Report") and May Report at 9.

^{12/} Annual Report at 7.

^{13/} Id.

^{14/} The yearly dividends have been as follows:

FY 1982	\$1000
FY 1983	\$386.15
FY 1984	\$331.29
FY 1985	\$404.00

The importance of preserving the Permanent Fund (and the significance to the future of Alaska of the restrictions on expenditure of its principal) are graphically demonstrated in Attachment H-5, which compares what were in March 1986 projected state oil revenues to Permanent Fund earnings, 1980-2005.^{15/} According to these March, 1986 projections, fund earnings will overtake oil revenues (which since 1980 have accounted for between 83% to 90% of the State's Unrestricted Revenues) and become the number one producer of state income between 1995 and 1996. Whether the Permanent Fund will be sufficient is in question in light of (a) March, 1986 data which indicated that, even prior to the recent decline in oil prices, by 1988, the Fund would have an inflation-proofing shortfall (\$198.2 million for 1988), with a shortfall projected each year through 2005 (\$294.6 million for 2005);^{16/} and (b) the absence of alternative revenue sources to replace declining petroleum derived revenues.^{17/}

II. EXPENDITURES

In the 1985 legislative session, the Fourteenth Alaska Legislature appropriated for FY 1986 \$3,950.1 million in total funds, nearly 17% less than in the preceeding session.^{18/}

^{15/} Annual Report at 26.

^{16/} May Report at 10.

^{17/} See Attachment H-1.

^{18/} State of Alaska, Office of Management and Budget, 1985 Alaska State Appropriation Digest (1985) at 1.

Unrestricted General Funds amounted to \$2,838.3 million.^{39/} (Total appropriations included \$2,967.5 million for operations, \$902.8 million for capital appropriations and \$79.8 million for loan programs).^{40/} To offset declining revenues, \$114.4 million in prior Unrestricted General Fund appropriations held by state loan programs and \$56.2 million in prior appropriations to capital projects were repealed.^{41/} See Attachment H-6 for summaries of 1985 session appropriations (Unrestricted General Funds) and comparisons to 1983 and 1984 session appropriations. Appropriations by department for FY 1985 are set forth in Attachment H-7. Descriptions of the responsibilities of each department are provided in Attachment H-8.

Of the appropriations enacted in the 1986 legislative session, \$2,121.6 million were signed into law for FY 1987 (\$1,845 million in operating funds, \$215.6 million in capital funds, and \$61 million for loan programs).^{42/} These appropriations are \$1,828.5 million less than the preceding year, a 46% decline.

^{39/} Id.

^{40/} Id.

^{41/} Id.

^{42/} Telephone interview with Tomas Boutin, State of Alaska, Department of Revenue, July 2, 1986. Several reappropriation measures were also passed: \$123.6 million was reappropriated by separate reappropriation act; a budget reserve fund with an initial balance of \$427 million was established, which by law can be drawn down by no more than 25% in any year of need; and an additional \$280 million was set aside in a Railbelt Energy Fund to provide for future energy needs. Id.

According to the United States Bureau of the Census, Alaska ranked first among the states in per capita state and local government revenues and expenditures in 1983.^{43/} Alaska, however, also ranked first in state debt per capita in 1983, with an outstanding debt of \$17,649 per person.^{44/}

High costs of living contribute to the numerically high level of public expenditures in Alaska. But there are a number of reasons why, even with adjustments for cost differentials (measured by price and and construction cost indices), the "level of government expenditures necessary to attain a reasonable standard of public service delivery will be higher in Alaska than elsewhere. . . ." ^{45/} These include:

(1) "[A] large amount of capital spending over many years is necessary to bring the level of public infrastructure up to a level commensurate with other states and regions;" ^{46/}

(2) "[T]he size of the State and its diversity preclude many of the economies of scale in the provision of

^{43/} United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States 1986 (1985) at 272 ("Statistical Abstract").

^{44/} Id.

^{45/} Prepared Rebuttal Testimony of Oliver Scott Goldsmith, Trans Alaska Pipeline System, Docket Nos. OR 78-1-014 and OR 78-1-016, Federal Energy Regulatory Commission, December 23, 1983 at 19 ("Goldsmith").

^{46/} Id.

government services which can be obtained in more densely populated states;"^{47/}

(3) [S]ubstantial expenditures are necessary to provide for the rapidly growing population;"^{48/} and

^{47/} Id.

The large number and small average size of Alaskan communities means that economies of scale which can be achieved in larger population centers do not exist for many state-funded services.

Second, the size of the State in conjunction with its climatic and geographic diversity creates a vast range of conditions in which public services must be delivered; for example, about 1,400 miles separate Ketchikan in the South from Barrow in the North, the equivalent of the north-south distance between Miami and Boston. The variation of climatic conditions alone over that distance makes it expensive, if not impossible, to develop standard policies and facility designs and programs (often federally mandated) which will apply appropriately to all regions.

Third, the great distance between population centers increases the cost of transportation and communication, further contributing to the costs of providing public services to all communities. Indeed, a majority of Alaskan communities are not served by roads at all; for instance, all traffic into the capital city of Juneau moves either by air or sea.

Id. at 20-21.

^{48/} Id. at 19.

Between 1960 and 1980, the population of Alaska nearly doubled, growing at an annual rate of 2.9 percent. Over the same period, the U.S. population as a whole grew at an average rate of 1.0 percent annually. Roughly half of the increase in the Alaskan population was the result of in-migration from other states. The rapid population growth has gen-
(Footnote continued)

(4) "[T]he boom-bust nature of the economy places special demands on the public sector."^{43/}

Generally, the combined effect of these "cost-escalating factors has been to compel Alaska, since statehood, to spend as much or more per capita than the national average, even when adjusted for the higher cost of living -- both for capital outlay and other-than-capital outlay. Alaska's high expenditure level, therefore, is not a recent [as of 1983] phenomenon, although the

^{48/} (continued)

erated a need, over and above . . . 'catching up' . . . to invest in public capital facilities at a rate considerably above the national average.

Id. at 21. (Alaska's population between 1980 and 1985 grew approximately 5% annually, while the U.S. annual population growth rate was 1%. See Section A, infra, at 7).

^{49/} Goldsmith at 19.

Economic booms like the one that resulted during construction of the Trans Alaska Pipeline System generate regional demand-driven inflation which temporarily inflates prices. In addition, when there is rapid expansion, the resulting uncertainty about the duration of extent of future demand causes higher costs of providing services. For example, the two alternative ways to deal with a sudden and short-term influx of school children are to use temporary classrooms or to construct new schools. Either alternative results in substantial costs to the community -- the former through decreased quality of education; the latter in the form of future excess capacity and debt service costs.

Id. at 22.

ratio between Alaska and U.S. average expenditures was at its highest in 1981."^{50/}

In addition, "the ratio of capital expenditures in Alaska to the U.S. average has always exceeded the ratio of operating expenditures (other-than-capital outlay) in Alaska to the U.S. average, and by a wide margin. This wide disparity illustrates both that construction costs in Alaska are relatively higher than consumer prices in Alaska and that large capital outlays are essential to develop the State's infrastructure and to meet the needs of its rapidly expanding population."^{51/}

The State Department of Revenue has estimated that reinsti-
tution of the personal income tax for FY 1986 would raise \$308.9
million.^{52/} Elimination of the FY 1986 Permanent Fund dividend
distribution (which has been made) would have yielded \$210.6
million, a total for FY 1986 of \$519.5 million.^{53/} Even if these
revenues were available, they would be inadequate to make up for
the March, 1986 projected general fund revenue decrease for either
FY 1985 to FY 1986 (\$538.9 million) or the FY 1986 to FY 1987

^{50/} Id. at 22.

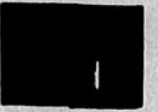
^{51/} Id. at 23.

^{52/} Memorandum on Alternative Means of Raising Revenues, from
Department of Revenue, Division of Research and Economics, to
Vincent D. Wright, Chief of Research, Department of Revenue,
January 10, 1986.

^{53/} Id.

decrease (\$643.5 million). See p. 3, infra. Similar conclusions are reached in a March 1986 study.^{14/}

^{14/} Scott Goldsmith, The Impact of the Collapse of the World Oil Market on the Alaska Economy, Institute of Social and Economic Research, University of Alaska, Working Paper 86.3 (1986).



SECTION I

THE STATE OF ALASKA AS PROVIDER AND CONSUMER OF TELECOMMUNICATIONS SERVICES

The State has had two roles in telecommunications: (1) as a provider of telecommunications services to promote the education, safety, health and well-being of its citizens; and (2) as a consumer of telecommunications services provided by others. Part I of this section identifies each telecommunications service the State provides or assists in providing, describes the State's role, and, where available, provides data with respect to cost. Part II supplies data with respect to the State's purchase of telecommunications services.

The importance of telecommunications to Alaska has long been recognized in the State. In 1975, four years after the Alaska telecommunications system had been transferred from military to private ownership and operation, the State legislature found that "Communications planning and policy are of vital and continuing interest to the public of the state, affecting the lives and personal welfare of the citizens at all levels of activity, in both urban and rural areas."^{1/} Former Governor Jay S. Hammond stated in 1981:^{2/}

I find that adequate telecommunications facilities and services available at reasonable and affordable rates are essential to the

^{1/} State of Alaska House of Representatives, Concurrent Resolution No. 60 (1975).

^{2/} Executive Order No. 50 (1981).

conduct of government, commerce and private life In addition, the future development of the state's public and private sectors will depend greatly on the innovative use of new telecommunications services and techniques now becoming available.

The late Lisa Rudd, former Commissioner of the State's Department of Administration, testified at a Congressional hearing in 1983:^{1/}

Modern communications are not a convenience in Alaska. Communications are often essential to life itself and to the continuing economic development of the State. Rural areas simply do not develop where adequate telephone service does not exist. . . . Due to the lack of adequate road infrastructure and severe weather conditions, we must rely on telecommunications to an extraordinary extent. We must carefully coordinate the delivery of supplies and resources and use telecommunications more extensively than travel to communicate with one another.

Earlier this year, the Alaska House of Representatives Special Committee on Telecommunications, noting "the importance that electronic communication plays in eliminating the problem of distance and isolation", declared that "The state's telecommunications system is essential for citizen participation in education and the political process as well as to receive basic telephone service, health care and entertainment. Telecommunications provide the necessary structure for Alaska's economic development."^{2/}

^{1/} United States Senate Committee on Commerce, Science and Transportation and House of Representatives Committee on Energy and Commerce, Joint Hearings, Universal Telephone Service Preservation Act of 1983 (1983) at 136.

^{2/} State of Alaska House of Representatives, Special Committee on Telecommunications, Interim Report (1986) at 2, 8 ("Interim Report").

As these and other State officials have recognized, while the development of communications services in Alaska has been limited by the climate and terrain, the huge distances between communities, and the sparse population, these characteristics have also increased the importance of telecommunications. See pp. 1-2, infra.

I. THE STATE AS PROVIDER OF TELECOMMUNICATIONS SERVICES

Alaska has actively sought to develop telecommunications services for the benefit of residents of (and visitors to) the State. The State began with a system in its infancy. Limited intrastate and interstate telephone service had been provided until 1971 by the U.S. Air Force when the telephone system was sold to RCA Alaska Communications Inc., the predecessor in interest to Alascom, Inc.^{5/} Most Alaska communities lacked a local exchange service; many had no phone service at all. In 1975, the State legislature appropriated funds for the construction of earth stations to bring telephone service to more than 100 remote communities, declaring that State involvement in this effort was "necessary and in the public interest."^{6/} Since then the State's efforts have continued and expanded as it seeks to

^{5/} The transfer of the telephone system into private hands was authorized by the 1967 Alaska Communications Disposal Act, 40 U.S.C. § 771 et seq.

^{6/} State of Alaska House of Representatives, Concurrent Resolution No. 60 (1975). See State of Alaska, Department of Administration, Division of Telecommunications Services, Telecommunications in Alaska: A Brief Overview (1984) at 1 ("Telecommunications Overview").

find new ways to meet diverse needs of its citizens through telecommunications.

The State's telecommunications functions were consolidated in 1981 in the Department of Administration under a Deputy Commissioner for Telecommunications. The Department's Division of Telecommunications Services handles planning, technical assistance, and design, specification and procurement of all State office telephone systems. The Division of Telecommunications Operations is responsible for engineering, installation, licensing and maintenance of the telecommunications systems owned and operated by the State.^{1/} Attachment I-1, "Inventory of Communications Facilities Serving Alaska Communities, 1986 Edition," compiled by the Division of Telecommunications Services, lists communications facilities and services in Alaska communities as of December, 1985.

Attachment I-2 provides a summary of the State's capital and operating expenditures for certain telecommunications programs, and gives a breakdown of expenditures for the last two fiscal years. Since 1975, exclusive of purchase of conventional telephone equipment and services, the State legislature has appropriated \$217.6 million for telecommunications, an average of \$19.8 million annually. Over the last two fiscal years covering the

^{1/} The two divisions employ 61 persons and have a combined operating budget for fiscal year 1986 of \$9.5 million. State of Alaska, Department of Administration, Telecommunications: Fifth Annual Report (1986) at 6-7 ("Annual Report").

period from July 1, 1984 through June 30, 1986, \$60.0 million was appropriated.^{1/}

State telecommunications services and programs fall into two categories: (1) video services, intended for direct benefit to the public; and (2) other telecommunications services.

A. Video Services

Because of Alaska's vast size, privately-owned television stations can reach only small sections of the State and its people over the air. In the many small Alaskan communities isolated by distance and terrain, however, video programming offers instruction, entertainment, news, a means of bringing Alaskans together, and a link to the outside world. Satellite delivery systems provided the technology to bring television to Alaska's communities. The State provided the funds. Implementing the legislative finding that "Satellite television services will promote the general public health and well-being of Alaska citizens,"^{2/} the State has financed delivery of multiple video services to as many communities as possible. The State's efforts include:

1. Satellite Television Project (TVP). In 1976, the Alaska legislature appropriated funds for a project to demonstrate the feasibility of delivering television via satellite through a system of low power television (LPTV) transmitters in 24

^{1/} See Attachment I-2.

^{2/} See State of Alaska Senate, Resolution No. 5 (1979).

communities. The transmitters were to be operated in conjunction with earth stations which had recently been installed in those communities to bring telephone service via satellite. The first LPTV transmitter went on the air in January, 1977.^{10/} In subsequent years TVP grew to provide one channel of television service to approximately 240 Alaskan communities, 18 hours per day, 365 days per year.^{11/} Applications to bring service to additional communities are pending at the FCC. TVP is unique; no other state has committed itself to providing a state-wide low power television system.

The TVP system operates as follows: Programming for TVP is selected by the Rural Alaska Television Network Council (comprised primarily of representatives of the regional native corporations) from programming offered by the Anchorage commercial network affiliates and independent stations. As the programs are aired in Anchorage, the TVP Tape Delay Center receives them simultaneously via microwave links. The Center either relays the programs, via microwave link, to Alascom's earth station at Talkeetna for uplink to Alascom's satellite, "Aurora," or records them for later relay, according to the TVP program schedule. At times, programming originated in Juneau is included in the schedule. Such

^{10/} Telecommunications Overview at 4.

^{11/} Annual Report at 9.

programming is relayed to Alascom's Lena Point earth station for uplink to Aurora.^{12/}

In the communities which are part of the TVP system, earth stations receive the program feed from the satellite and relay it to low-power transmitters for broadcast. Many earth stations are owned by Alascom and also provide long-distance telephone service. In those communities which have terrestrial long-distance telephone service, the State purchases and installs its own television receive-only (TVRO) earth stations. The Division of Telecommunications Operations of the Department of Administration acquires, licenses, installs and maintains all transmitters, microwave relays, and earth stations used in the TVP system, except those earth stations owned by Alascom.^{11/}

2. Learn/Alaska Instructional Television (ITV). Begun in 1981, this program provides educational and instructional television programming to approximately 240 Alaska communities.^{14/} Applications to expand service to additional communities are pending at the FCC. ITV operates its own Operations Center in Anchorage and a TVRO earth station in Eagle River, from which it obtains educational and instructional programs. From the

^{12/} State of Alaska, Department of Administration, Division of Telecommunications Services, History and Current Management of State-Provided Television Service (1985) at 3-6 ("Television Service").

^{11/} Id. at 4.

^{14/} Annual Report at 10.

Operations Center programming is relayed to Alascom's Talkeetna earth station for uplink to Aurora. The program feed is relayed from the satellite to community earth stations and then to low-power TV transmitters (separate from the TVP transmitters) for broadcast.^{15/}

ITV is programmed and managed by the University of Alaska and the State Department of Education. The State's Division of Telecommunications Operations acquires, licenses, installs and maintains the necessary equipment.

ITV programs are exclusively educational and instructional; many have been formally integrated into the curricula of local schools. A State Department of Education survey found that 64% of the State's primary and secondary school teachers used ITV and that public school students watched a total of 125,000 ITV programs in 1984-85.^{16/} ITV helps the State implement its commitment to provide a quality education to children in their own communities. It enables students in small rural schools to receive instruction in subjects other than those subjects their teachers specialize in, increasing the breadth and depth of education.^{17/} ITV also transmits instructional programs for adults and continuing education courses.

^{15/} Television Service at 5-6.

^{16/} State of Alaska, Alaska House of Representatives, Special Committee on Telecommunications, Draft Interim Report (1985) at 26 ("Draft Report"); Learn/Alaska Network Annual Report 1984-85.

^{17/} Learn/Alaska Network Annual Report 1984-85.

The expense to the State to provide two channels of television service to approximately 240 communities scattered across Alaska has proved substantial. In fiscal year 1986, the costs for operation and maintenance of the two television systems, including payments for the use of two satellite transponders, uplink and downlink facilities, was approximately \$6 million.^{18/} This year the State determined that, given declining revenues, it could no longer continue to provide two channels. Beginning July 1, 1986, the TVP and Learn/Alaska programs began to share a single satellite channel. The division of time between the programs is in the process of being finalized.

3. Television Microwave Service. The State, through the Division of Telecommunications Operations, has constructed and operates a four-channel microwave distribution system serving the Kenai peninsula in southcentral Alaska. It retransmits the signals of Anchorage commercial and public television stations to eleven communities, instead of the TVP channel. These communities also receive the Learn/Alaska channel.^{19/} In addition, the State leases microwave facilities owned by Alascom to retransmit Juneau's public television station to six communities in the southeastern panhandle. These communities also receive the TVP and Learn/Alaska channels.^{20/}

^{18/} Television Service at 2. This figure does not include the State's costs of producing educational and instructional programming. Id.

^{19/} Id. at 7.

^{20/} Id.

4. Public Broadcasting. Alaska has four public television stations which provide educational, instructional, public affairs and entertainment programs. While the State is not involved in operating these stations, State funds are appropriated as grants to the stations through the Alaska Public Broadcasting Commission, a State agency.^{21/} In fiscal year 1986, \$8.2 million was appropriated to the Commission.^{22/} The State's contributions to public television are the highest of the 50 states on a per capita basis.^{23/}

B. Other Telecommunications Services

1. Emergency Medical Communications. Alaska's size, scattered population, lack of roads, and climate make universally available and dependable telecommunications critical. See Section F, supra. In developing what is known as the "Emergency Medical Services Plan" for Alaska, the State has accordingly made fast, reliable communications a priority goal.^{24/} Rescue workers, fire and police personnel, community health aides, emergency medical technicians, physicians and hospitals must be able to communicate

^{21/} Telecommunications Overview at 4. Grants are also made to the State's 15 public radio stations.

^{22/} Attachment I-2.

^{23/} National Association of Public Television Stations, Public Television and Radio and State Governments, Vol. I (1984) at xxix; Interim Report, Comments of State Department of Education.

^{24/} Alaska Statewide Health Coordinating Council, State Health Plan for Alaska No. 5 (1984) at 2-7, 2-8.

among each other immediately. Telecommunications permits rapid dispatch of emergency and rescue vehicles and planes, allows receiving hospitals to prepare for patients, and enables provision of instructions to emergency care providers at the scene. Even where an emergency is not present, effective health care in remote communities depends on communications. As the State Legislature has found, "Providing effective health care to rural areas requires dependable communications with hospitals and physicians."^{25/}

There is no single State-operated emergency or health communications network. The State's primary role has instead been to develop standards for emergency and medical communications systems on a community-by-community basis and to encourage the acquisition of these systems by localities. Many communications systems, such as those used to connect local ambulance services with hospitals and dispatchers, have received direct funding from the State.^{26/}

In addition, the State has financed radio systems on highways to enable rescue workers to learn of and respond to accidents promptly. Alaska's highways cover isolated distances, often across mountainous terrain. Without frequent microwave radio facilities, large sections of the State's highway network would

^{25/} State of Alaska House of Representatives, Joint Resolution No. 23 (1977).

^{26/} State of Alaska, Department of Administration, Division of Telecommunications Services, Analysis of State of Alaska Emergency Medical and Health Communications (1983) at 2-3 ("Emergency Communications").

have no radio service. This means that state troopers and rescue workers may be out of radio contact with dispatchers, hospitals, and other rescue services for substantial distances and periods of times. Despite the State's efforts, major sections of the State's highway system remain completely isolated from radio communication.^{21/}

With the expansion of telephone service across the State, most medical communications among health care personnel occur on the public telephone system. An exception has been the Public Health system of "health phones" in more than 100 village clinics, operated and financed by the Alaskan Area Native Health Service (AANHS), a division of the Indian Health Service, United States Public Health Service, Department of Health and Human Services. These phones are connected to a transmit/receive earth station which provides two-way voice communications with the Alaska Native Health Center in Fairbanks. Medical personnel at the Center can, by health phone, advise personnel located in these communities on health emergencies including, for example, stabilization and immediate care of a critically ill or injured patient. The health phones are being phased out.

2. Teleconferencing. The State's recognition of the educational potential of telecommunications, which led to the Learn/Alaska-ITV television network, has also been the force

^{21/} Id. at 17-26; Interior Region Emergency Medical Services Council, Inc., Rural Health Communications Survey (1984) at 1.

behind rapidly expanding use of teleconferencing.^{28/} The State has actively promoted this technology as a cost-effective way to bring education to citizens in remote communities and as an alternative to costly, time-consuming and sometimes infeasible travel by teachers and state officials. As an official of Learn/Alaska testified earlier this year, "In a state with the characteristics of Alaska, teleconferencing is an efficient, effective and essential telecommunications service."^{29/} The State has created and currently finances two separate teleconference systems.

The Learn/Alaska Teleconference Network, operated by the University of Alaska and the State Department of Education, is intended primarily for educational and instructional applications by school districts and the University of Alaska. It held 5,800 teleconferences during the 1984-85 school year. 340 sites have teleconference facilities for use with the Learn/Alaska network.^{30/} 4,360 University of Alaska students enrolled during the 1984-85 academic year in courses delivered by teleconference, three times the number enrolled during 1983-84.^{31/} The State's

^{28/} "Teleconferencing" is often used to refer to interactive audiovisual communications systems. The State's systems are exclusively audio. Because, however, the systems' users often employ the term "teleconferencing", that term is used here.

^{29/} Interim Report, Comments of Margery Benning, Learn/Alaska.

^{30/} Learn/Alaska Annual Report 1984-85.

^{31/} Learn/Alaska Annual Report 1984-85.

public schools use teleconferencing for a variety of academic and extracurricular courses, projects and programs.^{12/}

The University of Alaska's Rural Education department is the largest single University user of teleconferencing. In fall 1984, 160 students located in 30 communities were enrolled in Rural Education's courses that were offered with a teleconference component. In fall 1985, 424 students located in 63 communities were enrolled.^{13/} Teleconferencing is essential to the growth of this program. As its director has stated:^{14/}

Without regularly scheduled audioconferences, many students quickly lose the rhythm of attending class, drop behind in their assignments, and eventually drop out. This unhappy result is a common occurrence among village students in isolated circumstances who take correspondence courses but are unsupported by direct contact with instructors and other students. Audioconferencing provides both the vital element of personal contact between instructor and student or students communicating with each other, as well as the sense of pacing which many students find necessary to their remote circumstances. . . .

In summary, Rural Education's mission is predicated on the University of Alaska's commitment to provide universal and equal access to degree programs for adults in their own rural communities. For the majority of Rural Education's students there is simply no alternative to the opportunity of being a part-time student in one's own community. And so long as the State's commitment to this clientele remains in force, the most cost-effective

^{12/} Id.

^{13/} State of Alaska House of Representatives, Special Committee on Telecommunications, Hearings, January 13-14, 1986, Remarks by Charles A. Blood, Jr., Director, Associate of Arts Degree Program, Rural Education.

^{14/} Id.

system for providing both universal access and consistently high quality degree offerings is one which must include an audioconference component.

Telephone line charges are a substantial part of the costs of this program. Rural Education's budget for these costs is \$127,000 for the 1985-86 academic year. This assumes a per-hour charge of \$40 per site.^{15/} Increases in line charges would, without additional funding, force cutbacks in the program. As the Dean of Rural Education stated in hearings before the Alaska House Telecommunications Committee earlier this year:^{16/}

We are facing a telecommunications crisis in terms of the costs of the audioconference. . . . I am dismayed that we may have to curtail the program that is demonstrating the efficacy of distance delivery to rural Alaska, at the very moment it is proving itself to the participants.

The Legislative Teleconference Network, operated by the Legislative Affairs Agency, Division of Public Services, is a three-point dedicated network linking Anchorage, Fairbanks and Juneau; other sites can be dialed in as necessary. This network is designed to promote and increase public participation in the legislative process. It is used for public hearings by the Alaska legislature across the State and for discussions between legislators and their constituents. The network is also available to State and Federal agencies for public hearings. 709

^{15/} Interim Report, Comments of Margery Walker, Dean, Rural Education; Hearings, Presentation of Margery Walker.

^{16/} Id.

teleconferences were held in 1985 at an estimated cost of \$545,000.^{17/} Recognizing that teleconferencing is a cost-effective way to conduct its business, in 1985 the State legislature enacted legislation permitting teleconferencing to establish quorums, take testimony, and vote.^{18/}

3. Data Communications and Electronic Mail Services.

Four independent computer networks serve 15 executive branch departments through two data centers located in Anchorage and Juneau. In addition, the University of Alaska and the Legislative Affairs Agency operate computer networks.

The executive branch computer network serves over 1,000 terminals in 30 locations statewide using 54 dedicated data circuits. The Legislative Affairs Agency computer network serves 20 locations statewide using 6 dedicated data circuits. The University of Alaska Computer Network serves 13 statewide locations using 17 dedicated data circuits. All data circuits are leased and operate via landlines, microwave or satellite. In communities not served by leased circuits, data communication is accomplished via dial-up telephone.^{19/}

The Departments of Education and Administration, the University of Alaska and the Legislative Affairs Agency support

^{17/} Telecommunications Overview at 5; State of Alaska, Department of Administration, Annual Report on Teleconferencing (March 1986 Draft) at 3.

^{18/} An Act Relating to the Use of Teleconferencing Under the Administrative Procedures Act, S.L.A. 1985, Chapter 54.

^{19/} Telecommunications Overview at 7.

individual computer-based electronic mail services. The Department of Education electronic mail service links the administrative offices of the State's school districts with the Department's offices and the University of Alaska. The Department of Administration electronic mail service supports users of the four executive branch computer networks. The Legislative Affairs electronic mail services support the Alaska Legislature, Legislative Information Offices and the Legislative Teleconference Network. The University of Alaska electronic mail service is accessible to faculty, staff and students on all University campuses.^{40/}

4. Two-Way Radio Services. Many State agencies have requirements for two-way radio communications in remote areas, at seasonal field operations locations and along major highway corridors. Two-way radio services are used extensively by the Departments of Transportation and Public Facilities, Public Safety, Marine Highways, Fish and Game, Health and Social Services, Natural Resources, Corrections, and Military and Veteran Affairs. Over 2,000 pieces of radio equipment are used by these Departments for such diverse purposes as marine communications and navigation for state ferries and fisheries enforcement vessels, tracking wildlife, and navigation at state operated airports.^{41/}

The Division of Telecommunications Operations is responsible for all radio communications, engineering, procurement, licensing,

^{40/} Telecommunications Overview at 8.

^{41/} Id. at 6; Draft Report at 31.

installation, maintenance and service improvements. It maintains and services approximately 7,500 pieces of two-way radio equipment worth approximately \$17 million, and is responsible for more than 2,000 FCC radio licenses.^{42/}

5. Telephone Service. The State's commitment in 1975 to use new satellite technology bring telephone service to more than 100 remote communities marked its first involvement in telecommunications. Isolation of Alaska's remote communities has been one of the principal impediments to social and economic development.^{43/} In part, availability of satellite-based telephone service, inclusion of Alaska in the nationwide settlements pool, and the availability of low-interest financing through the Rural Electrification Administration has helped promote development of local exchange service.^{44/} As a result, one study concluded, "There can be little doubt from the early data that telecommunications has provided significant benefits to the Alaskan bush."^{45/} It has expanded educational opportunities, improved health care by linking village clinics with medical centers, eliminated the need for certain travel, often hazardous and

^{42/} Annual Report at 10.

^{43/} Interim Report at 2, 8.

^{44/} Id., Comments By Alaska Telephone Association.

^{45/} Goldschmidt, "The Benefits of Satellite Telecommunications in Alaska," reprinted in Pacific Telecommunications Council, Telecommunications in Alaska (1982).

expensive, reduced the costs of economic transactions, and stimulated economic activity.^{46/}

The State does not itself provide telephone service. The earth stations originally financed by the State are now owned by Alascom either alone or jointly with the local exchange carrier.^{47/} In 1985 local exchange telephone service was provided by 26 telephone operating companies to over 250 communities.^{48/}

II. THE STATE AS CONSUMER OF TELECOMMUNICATIONS SERVICES

The State has not constructed its own telephone system. Instead, all state departments and agencies purchase telephone equipment and services from the private sector.^{49/}

A. Telephone Equipment

As of 1981, most telephone systems, instruments, wiring and PBX's in state offices were telephone company property furnished under tariff. Since deregulation of customer premises equipment, however, the State has had to buy or lease equipment.^{50/} The

^{46/} Id.

^{47/} Policies Governing the Ownership and Operation of Domestic Satellite Earth Stations in the Bush Communities in Alaska, 96 F.C.C.2d 522 (1984), on reconsideration, FCC 86-68 (released Feb. 25, 1986).

^{48/} See Attachment I-1 for information as to types and providers of telephone service in each community.

^{49/} Interim Report at 11-12.

^{50/} Id., Comments of Ted McIntire, Director, Division of Telecommunications Services.

Division of Telecommunications Services assists in the procurement of telephone equipment for State departments and agencies. It does not itself budget for the procurement, but instead writes specifications, issues requests for proposals, evaluates proposals and approves contracts. The specific department or agency involved then purchases the equipment. Since 1983 the State has expended nearly \$2 million for new office telephone systems. In 1985, 42 systems were procured at a total cost of \$763,500.^{51/}

B. Telephone Service

Although the State increasingly owns its own telephone equipment, it depends on the public switched telephone network for interfacility telephone communications.^{52/} As with equipment, there is no centralized procurement of telephone service for State offices. The 19 State departments, and often divisions within a department, budget for and procure their own telephone service. Where a choice of interstate carrier is available, the governmental unit responsible for procuring telephone service makes the choice.^{53/}

^{51/} Id.; Annual Report at 11.

^{52/} Interim Report, Comments of Ted McIntire, Director, Division of Telecommunications Services.

^{53/} Telecommunications Overview at 5.

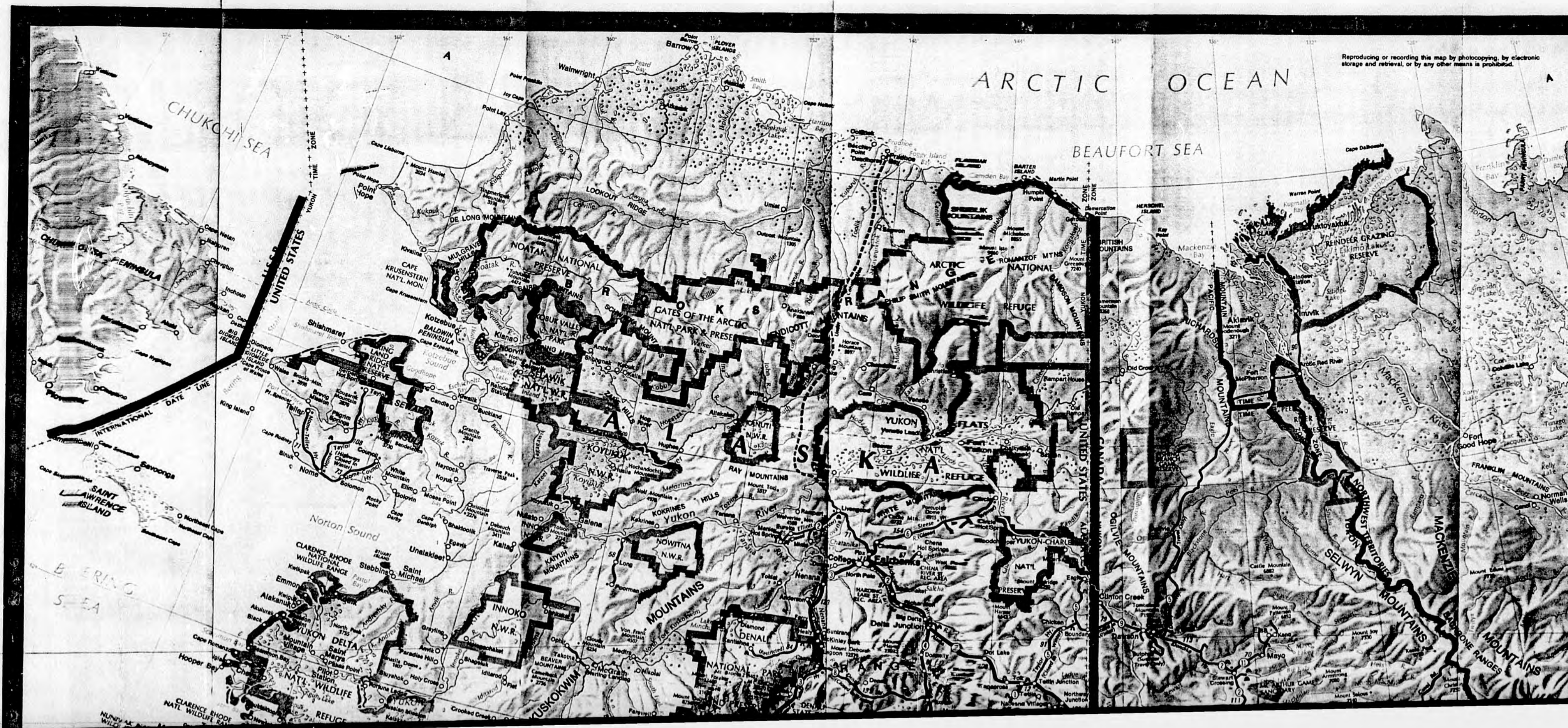
Annual expenditures for long distance and local telephone service for each of the three last fiscal years (rounded to the nearest thousand dollars) have been as follows:^{54/}

	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>
Long distance	\$5,855,000	\$ 8,478,000	\$10,066,000
Local	<u>3,678,000</u>	<u>5,280,000</u>	<u>6,667,000</u>
Total	\$9,533,000	\$13,758,000	\$16,733,000

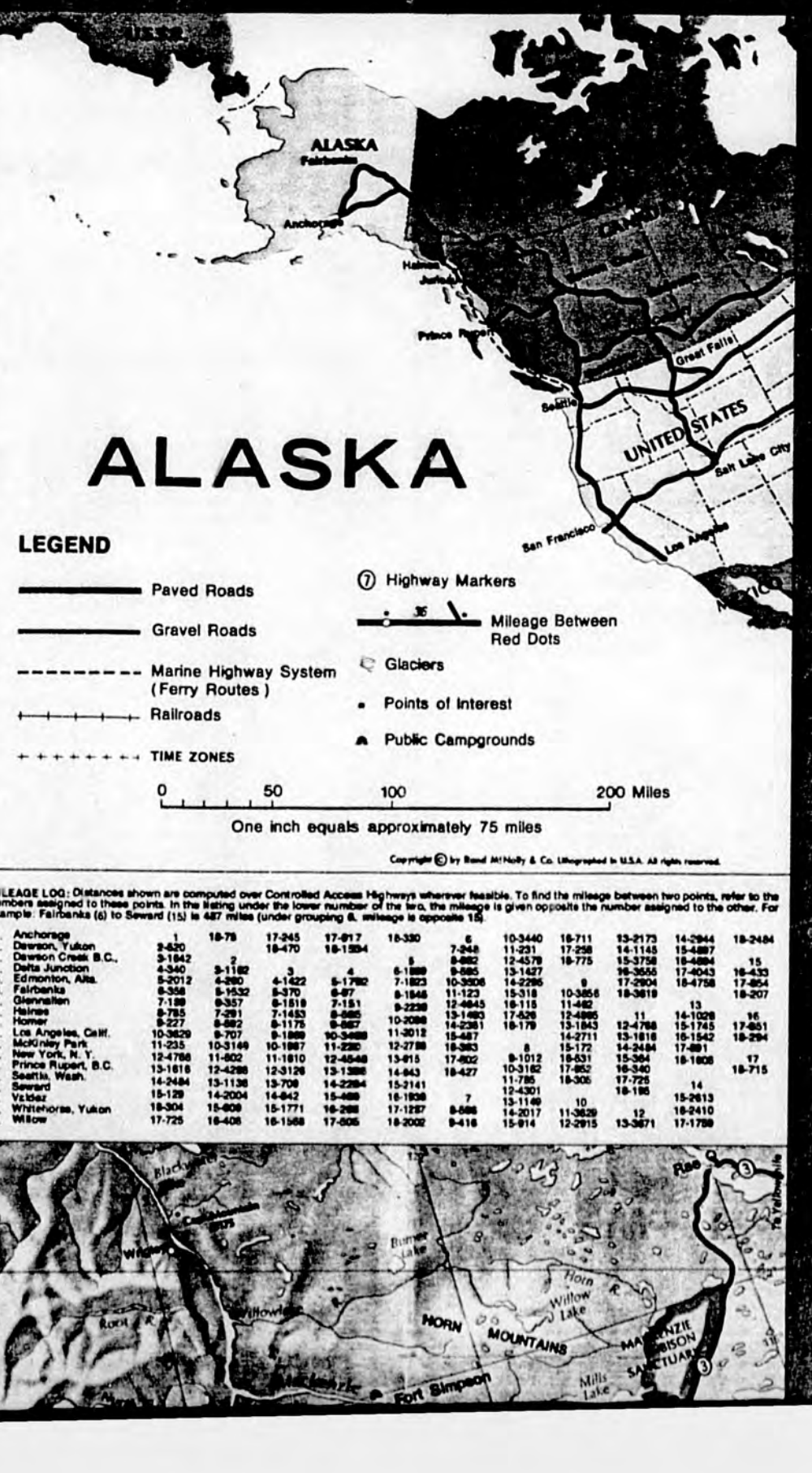
Although the State records do not separate interstate from intrastate toll costs, the Department of Administration has estimated that in 1984 approximately 62% of all long-distance calling time by State departments and agencies was intrastate. (Its estimate was based on a review of call detail records for fiscal 1984 for the SL-1 Center switch in Juneau, which handles calls from numerous State offices.) The Department also estimated that in 1984 intrastate calls accounted for 80% of the State's long distance telephone costs.^{55/}

^{54/} Estimates of the State of Alaska, Department of Administration, Division of Telecommunications Services (December, 1985). These figures do not include costs for private leased lines used for data transmission, teleconferencing charges, installation costs, or payments in connection with the satellite television services.

^{55/} Memorandum from Ted McIntire, Acting Director of Telecommunications Services, to Lisa Rudd, Commissioner, Department of Administration, Nov. 14, 1984.



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LEGEND

- Paved Roads
- Gravel Roads
- Marine Highway System (Ferry Routes)
- Railroads
- Highway Markers
- Mileage Between Red Dots
- Glaciers
- Points of Interest
- Public Campgrounds

One inch equals approximately 75 miles

Anchorage			16-78	17-245	17-917	18-330	8	10-340	16-711	18-2173	18-2484	18-2484
Dawson, Yukon				18-470	18-1384	8	7-248	11-21	17-258	14-1145	14-887	14
Fairbanks, Alaska			1-340	1-340	1-340	5	6-189	8-1427	11-258	14-1145	14-887	14
Delta Junction			3-340	3-340	3-340	5	6-189	8-1427	11-258	14-1145	14-887	14
Eagle, Alaska			3-340	3-340	3-340	5	6-189	8-1427	11-258	14-1145	14-887	14
Oymyakon, Alaska			5-1552	5-370	9-47	6-189	11-123	13-138	13-065	17-403	18-2173	18-2484
Oymyakon, Alaska			5-1552	5-370	9-47	6-189	11-123	13-138	13-065	17-403	18-2173	18-2484
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