TRANS-ALASKA GAS PIPELINE PROJECT


FOWLER

The trans-Alaska gas pipeline project: an analysis of its impact on Alaska's workforce and population

STATE OF ALASKA

DEPARTMENT OF LABOR
Research and Analysis Section

ACKNOWLEDGEMENTS

This project was the result of fine co-ordination between several parties. The entire staff of Human Resources Planning Institute are to be thanked for their valuable cooperation. Because of their interest, Mike Taylor, the Department of Labor's principal Manpower Economist assigned to this project, was able to train and become acquainted with the operation of the sophisticated econometric model. Marc Reiderer, technical advisor on the Institute's staff, is specifically mentioned for the extensive consultations he provided on this effort.

Human Resources Planning Institute in association with Urban and Rural Systems Associates of San Francisco are doubly thanked for their development of the model itself as well as their assemblance of the projected input data to 1980.

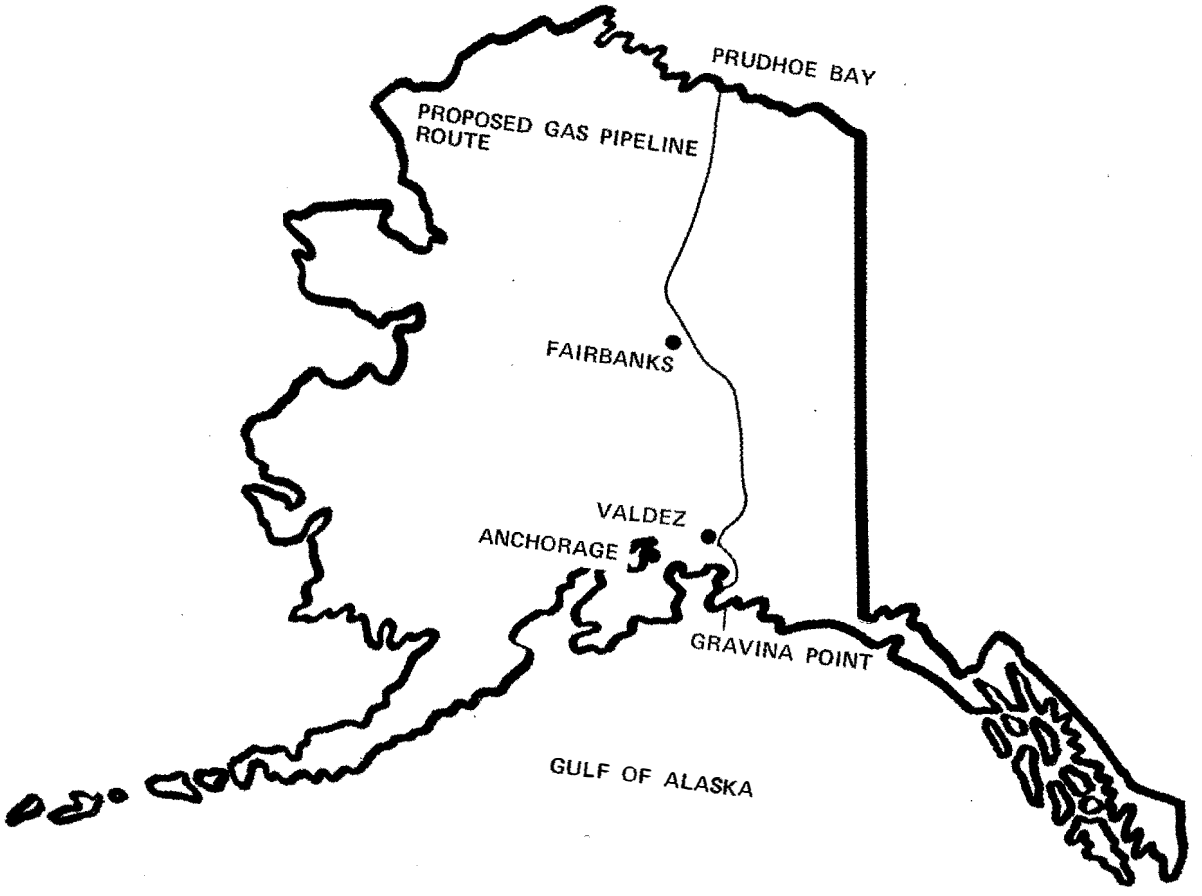
Gratitude is warmly extended to the El Paso Alaska Company for providing their estimated manpower requirements for the construction and operation of the trans-Alaska gas pipeline system. Mike Holland, the key contact person from El Paso Alaska, is especially thanked for making sure that the data provided actually fit the industrial and regional needs of the model. Without the timely and expert help of all those mentioned above, this project could not have been efficiently accomplished.

Jim Fowler, graphic artist of the Research and Analysis Section, is commended for the drawings, sketches and graph work he contributed to make this otherwise plain data report visually appealing.

Other Research and Analysis staff members assigned to portions of this project were Peter Keating and Bruce Hart, Manpower Economists; Sheri Peters, Statistical Technician; Bertha Brooks and Gwenn Davies, MT/ST & Composer Typists; and Brenda Donohue and Judy Jones, Clerk Typists.

Mike Taylor, also with the Research and Analysis staff, was responsible for writing the narrative, compiling the data, organizing the format for presentation and overseeing every aspect of this effort to its completion.

TABLE OF CONTENTS


PRUDHOE BAY
PROPOSED GAS PIPELINE ROUTE
FAIRBANKS
VALDEZ
ANCHORAGE
GRAVINA POINT
GULF OF ALASKA

Study in brief

There are, at the time of this writing, applications before the Federal Power Commission concerning two routes for moving natural gas from Prudhoe Bay to the contiguous United States. Each proposal would be a mammoth undertaking roughly comparable to the trans-Alaska oil pipeline. Both plans would require the expenditure of billions of dollars on construction materials, equipment and the employment of thousands of workers. Obviously, because of the vast sums of money and the large number of people to be employed, either gas pipeline will greatly effect the economic growth in the areas through which it passes.

One of the proposed routes roughly parallels the path of the trans-Alaska oil pipeline. At Gravina Point the natural gas would be liquified for shipment via super tankers to southern California from where demand markets can be reached. The other route would transport the natural gas via pipeline easterly from Prudhoe Bay to Canada and through a Canadian pipeline to the contiguous United States.

The Canadian route, because of the relatively shorter construction time frame and lower employment levels in the Alaska portion, would not have as major an impact on Alaska's economy. What employment and population growth rates will be, induced by the construction of a trans-Alaska gas pipeline and related facilities, is the subject of this report. (See map.)

THE GAS PIPELINE IN PERSPECTIVE

Comparing the construction of the trans-Alaska gas pipeline to the trans-Alaska oil pipeline construction project reveals many similarities. Both projects will involve the expenditure of billions of dollars and the employment of thousands of workers. Both projects, because of their size relative to Alaska's total economy, will cause a "boom" economic period of rapid workforce and population growth, followed by a "bust" period of little or no workforce and population growth.

Some indications of the actual impact on Alaska's economy primarily caused by the trans-Alaska oil pipeline construction project are already known. For example, in comparing the average employment, average weekly wage, and total wages of calendar year 1973 with 1974, the year when construction began, it was found that the average employment increased by 23%, the average weekly wage rose by 26% and total wages expanded by 55%. These figures were derived from the Alaska Department of Labor. The data reflects only workers covered by Alaska's Unemployment Insurance System which makes up approximately 70% of Alaska's labor force.

Construction of the trans-Alaska gas pipeline system will not have this great of an effect on Alaska's economy. Not only will the state be already in a "boom" period (especially if the trans-Alaska oil pipeline project is not finished by the end of 1976) but also, as can be seen from chart, the gas pipeline project will require lower levels of employment over a longer time frame. Because of the latter, the gas pipeline "boom" period will therefore be more stable and predictable than the oil pipeline induced "boom". Likewise, the "bust" period following gas pipeline construction will be less intense than the "bust" following the oil pipeline project (assuming no gas pipeline is constructed).

TRANS-ALASKA GAS PIPELINE PROJECT DESCRIPTION

As the intent of this report is to study the impact on Alaska's workforce and population of a trans-Alaska gas pipeline project, the single most important part of this study is the basic assumptions concerning the project; its route, facilities, and projected employment requirements. The following description of assumptions concerning the trans-Alaska gas project are taken from El Paso Alaska Company's application to the Federal Power Commission for a Certificate of Public Convenience and Necessity, and from correspondence with the El Paso Alaska Company.

The natural gas transportation system as envisioned by the El Paso Alaska Company consists of a 809 mile pipeline, a liquefied natural gas (LNG) plant, eleven LNG ships and regasification and transportation to market areas in the lower 48 states.

The 42 inch pipeline will originate in Alaska's North Slope, and will run roughly parallel to the trans-Alaska oil pipeline through the utility corridor (except for the southernmost section) to the LNG plant located near Gravina Point. Because most of the pipeline will be buried, the natural gas will be refrigerated to prevent permafrost degradation. Twelve compressor stations will be located along the pipeline, as well as four maintenance camps, microwave communication equipment, gas metering equipment and other associated equipment.

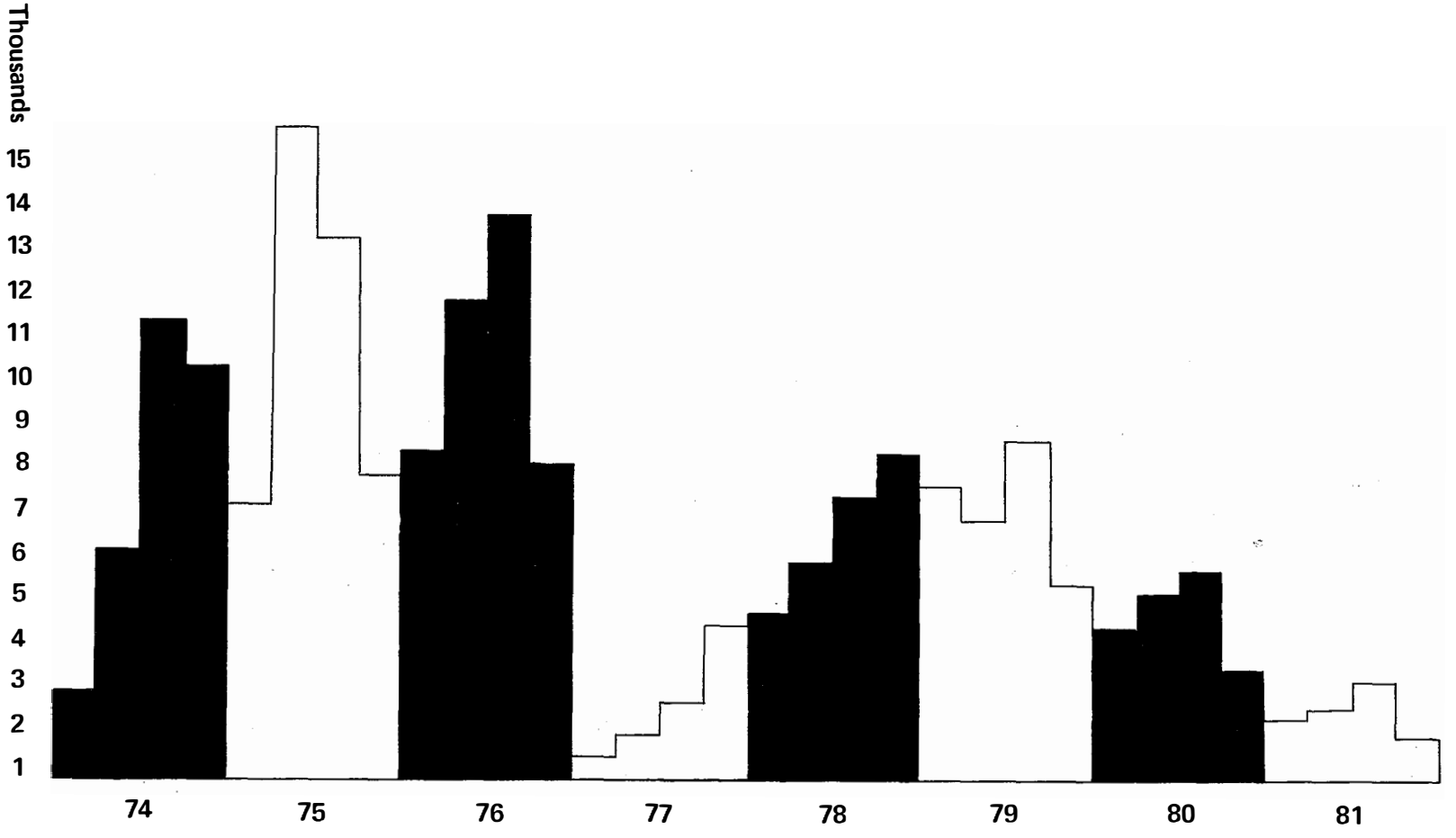
At the LNG plant, the natural gas will be treated to remove carbon dioxide, dehydrated to remove water vapor, refrigerated and compressed to condense the gas to a liquid form and stored for shipment. Eight "processing trains" will treat, dehydrate, and liquefy the gas. Four 550,000 barrel storage tanks will store the LNG for transfer to the LNG carrier fleet.

A marine terminal will be built to provide facilities for loading and servicing two LNG carriers simultaneously. The terminal arranged is a "t" configuration and will consist of a trestle, two berths and a small boat harbor.

The LNG carrier fleet, consisting of eleven tankers, will transport the LNG 1,902 nautical miles to a regasification plant marine terminal located in the Santa Barbara Channel of California. The regasified LNG will then be transported, principally by means of existing pipelines, to the market areas. Each LNG tanker will be 1002 feet in length and will have a capacity of 165 thousand cubic meters of LNG. A double reinforced steel hull will provide added protection to the LNG cargo. Fifty-five thousand shaft horse power transmitted through twin propellers, and a bow thruster will provide speed and maneuverability to these supertankers.

The entire system is expected to transport an average daily volume of 2.8 billion cubic feet of gas, with a total energy equivalent of approximately 3.26 trillion BTU's per day. The system was

AVERAGE QUARTERLY MANPOWER REQUIREMENTS FOR THE CONSTRUCTION OF THE TRANS-ALASKA OIL PIPELINE PROJECT – (1974–1976) AND THE TRANS-ALASKA GAS PIPELINE PROJECT (1977–1981)



expected to cost $5.6 billion (fourth quarter 1973 prices) which includes $1.9 billion for the trans-Alaska pipeline, $1.6 billion for the LNG plant, $58 million for the Alaskan Marine terminal and $2.0 billion for the carrier fleet.

Trans-Alaska Gas Project Employment Requirements

The Trans-Alaska gas pipeline project will require an estimated 17.7 thousand man-years for the construction of the gas pipeline, LNG plant, and Alaskan Marine terminal. The construction phase of this project is expected to begin during the first quarter of 1977, and will take 5 years to complete. Upon completion, 624 workers will be required to operate and maintain the gas pipeline, LNG plant, and Alaskan Marine terminal facilities.

Approximately 38% of the workforce will be involved in the construction of the 809 mile gas pipeline. The major portion of the pipeline construction will occur during the 1977-1978 and 1978- 1979 winters, (4th and lst quarters) with pipeline related construction (eg. pump stations) occuring during the summers (3rd quarter) of 1978 to 1981. Employment requirements for the pipeline will peak in 1978 when an average of 2,657 workers will be employed. Upon completion of the pipeline construction, 268 operating and maintenance personnel will be employed.

Employment requirements for the Alaskan Marine terminal are quite low. The three year project will have an annual average employment of 31, 86 and 83 in 1977, 1978 and 1979 respectively. Employment will peak at an average of 120 during the second and third quarter of the years 1978 and 1979. Forty seven workers will operate and maintain the terminal upon its completion.

The remaining 61 percent of the projected construction workforce will work at the LNG plant. Most of the construction will occur during the years 1978 to 1980, with peak employment occuring in 1979 when an average of 4,306 workers will be required. Employment requirements will be slightly higher during the 2nd and 3rd quarters than during the lst and 4th quarters for the years 1978, 1979 and 1980. The operation and maintenance requirements for the LNG plant will be 309.

The construction workforce requirement for the gas pipeline LNG plant and Alaskan Marine terminal taken together gradually build up to a peak in 1978 and 1979 and then, except for yearly peaks occuring in the 3rd quarter, gradually decreases as the construction project ends in 1981. In 1979 the workforce requirements will peak at an annual average of 6,355. At the end of the construction phase of this project, 624 workers will be required to operate and maintain the Alaskan part of the gas system.

SCOPE OF STUDY

This is a report on the economic impact expected to result from the construction of a trans-Alaska gas pipeline project. This study includes projections to 1983, two years after the project is expected to be completed. The data provided is limited to yearly industrial employment, workforce, and population projections both statewide and by seven regions within the State. (See map.)

In the following pages of this report a more detailed account will be given in three parts. Part I will summarize the forecasted impacts on industries, unemployment rates, workforce levels and population. Part II will detail the forecasts provided by the model broken out by region and industry. Part III will elaborate on the methodology used in preparing the projections. The projected workforce and population date for the study's three assumptions: no Trans-Alaska Gas Pipeline, Trans-Alaska Gas Pipeline construction starting in 1977, and Trans-Alaska Gas Pipeline construction starting in 1978 are contained in Appendices I, II, and III respectively. As in all studies of this nature, data should not be taken out of context.

MACRO METHODOLOGY

The purpose of this study is to project the employment and population impact of a gas pipeline built along the proposed trans-Alaska route. The tool used to make these projections was an economic base model of Alaska built by Human Resources Planning Institute of Seattle. The HRPI model is a disaggregated economic base model. As such, it explains the level of economic activity within Alaska as a function of the aggregate demand for the region's products. This demand can be disaggregated into two parts: that portion of demand which comes from within the region, endogenous demand, and that portion which comes from outside the region, exogenous demand.

The level of exogenous demand is unrelated to the economy of the region. Thus, this portion of demand will dictate the general level of economic activity within the region. An increase in exogenous demand would directly boost the output and income of the region thus indirectly stimulating endogenous demand. The level of endogenous demand in this model is a function of general economic activity within the region. This would mean that an increase in economic activity would cause an increase in income which would stimulate demand for products, most of which would be supplied by industry within the region.

Using these basic assumptions, the HRPI model works like this. The state's economy is broken down into twelve industries. Those industries supplying products to satisfy exogenous demand were classified as basic, those supplying endogenous demand were non-basic. Two industries, construction and transportation were divided into two parts, a basic part associated with the pipeline and a non-basic part. The service industry also had a basic part arising from the Native Claims Settlement Act.

The basic industries produce goods in response to forces outside the state's economy. These industries are the key to the general level of activity within the state, as they are the source of outside income to the state. The non-basic industries respond to changes in the level of activity within the basic industries. They are "support" industries producing goods and services for use within the basic industries or by the resident population.

Four industries are classified as entirely basic in the HRPI model. They are mining, manufacturing, communications and utilities and federal government employment. Non-basic industries are construction, transportation, services, state and local government, finance, insurnce and real estate (FIRE), wholesale trade, retail trade and non-categorized. The economic activity in each industry is measured by the number of employees in that industry. Employment data was obtained for each industrial division going back to 1960. By comparing relative changes within each industry using regression analysis, it is possible to estimate the impact a change in employment in a basic industry may have on employment levels in other industries throughout the economy. It is assumed that these relationships will not change during 1974-1983.

This model was run three times. Each run incorporated a different assumption in pipeline construction. Run 1 assumed no gas pipeline. Run 2 assumed a Trans-Alaska gas pipeline with construction beginning early in 1977. Run 3 assumed a beginning construction date early in 1978. The differences in the employment and population projections of the three runs are a measure of the impact of each assumption. In this report emphasis is placed on the difference between employment estimates obtained by assuming either no pipeline or a pipeline begun in 1977.

SUMMARIZED STUDY FINDINGS

In this study, it was found on a statewide basis that, although the trans-Alaska gas pipeline construction project will cause immediate and substantial growth in Alaska's population and workforce, a long term effect of this construction project will be minimal. That is, if the gas construction project starts in 1977, Alaska's population by 1983 will be 55,000 only 8,500 higher than projected levels assuming that no gas pipeline is to be built.

The immediate population and workforce growth rates will, however, be greatly effected by the trans-Alaska gas pipeline construction project. The net effect of building the trans-Alaska gas pipeline will be to continue through 1979 at a lesser degree, the "boom" started by the trans-Alaska oil pipeline, and break up the four year "bust" period projected to follow the oil pipeline construction and replace it by a three year 1980 to 1982 "bust" period.

Part I Statewide analysis of projections

The following analysis is of the statewide employment projection for Alaska's major industry classifications, statewide unemployment, civilian workforce projections and statewide population projections. The annual projections are an average of quarterly data, and therefore fail to reflect the high degree of seasonality prevalent in Alaska. The workforce projections are for average employment, (the number of workers employed at any point in time) s opposed to total employment, (the totl number of workers for the year). In a like manner, the unemployment, civilian workforce, and total population projections are an average of quarterly data.

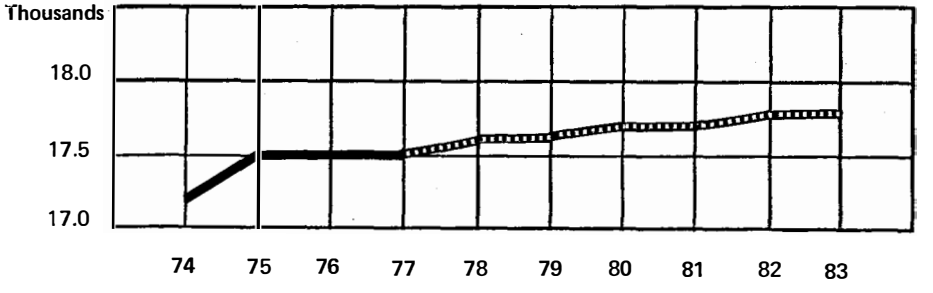
The analysis will contain a chart showing the projections and a narrative explaining selected aspects and highlights of the charts. Also shown on each chart are the projections assuming that no trans-Alaska gas pipeline is built during the study period. This is shown by a solid line. Supplementing this data is a dashed line defining the projections which assume that the trans-Alaska gas pipeline will be started in 1977. The difference between these lines represents the impact of the trans-Alaska gas pipeline project.

BASIC INDUSTRIES

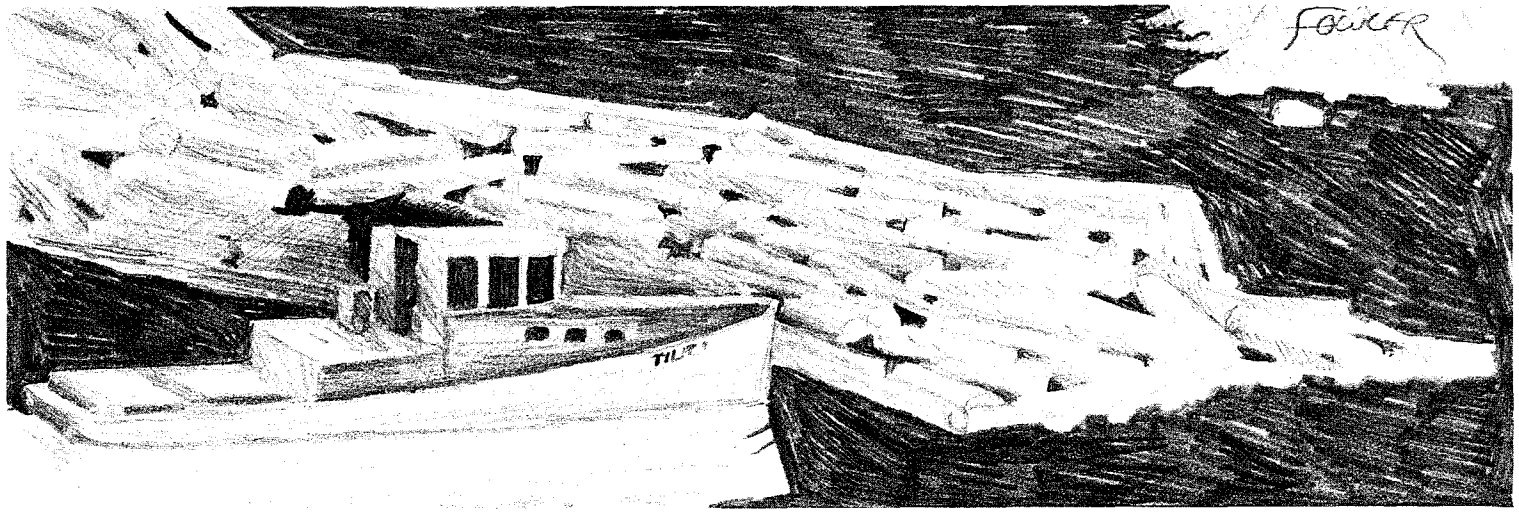
Basic industries as defined in this study are those industries which have the effect of bringing capital and employment into the state. The manufacturing and mining industries are basic because of the products they produce for export. Federal government is so classified because of the externally generated payrolls used to run the administrative and regulatory agencies. Communications and utilities are also considered basic industries because of the long-term nature of their community service facilities. The employment projections for each of these industries were made "outside" of the model. These projections, together with the projections of the trans-Alaska gas pipeline project form the basis for the basic industries projections within the model.

Federal Government:

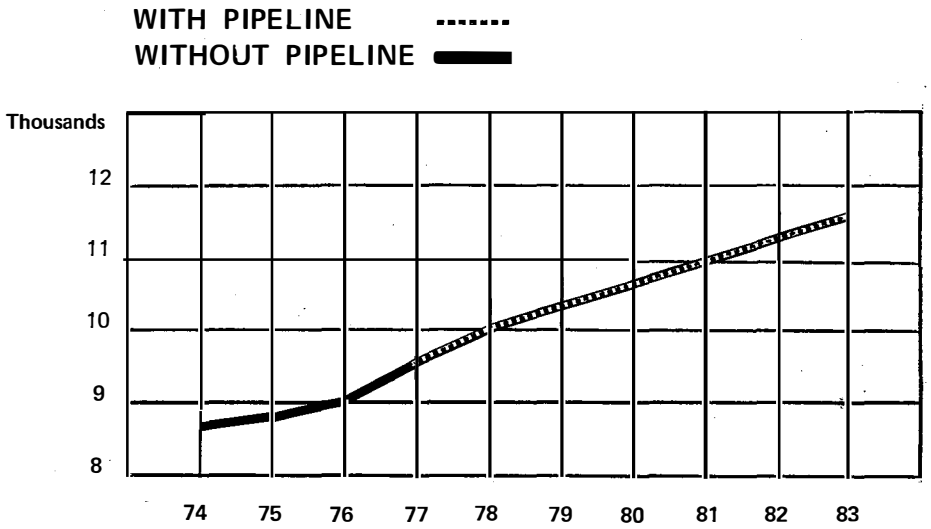
Employment in the federal government is expected to remain relatively constant during the study period, increasing by only 600 in 1983 over 1974 employment. All regions except the southcentral region will share in this modest growth. Although internal changes are expected to occur within the federal government, it will be the most stable and slowest growing component in Alaska's future economy. By 1983 the federal government will provide 8.2% of Alaska's employment, down sharply from 1974 level of 13% of Alaska's employment.

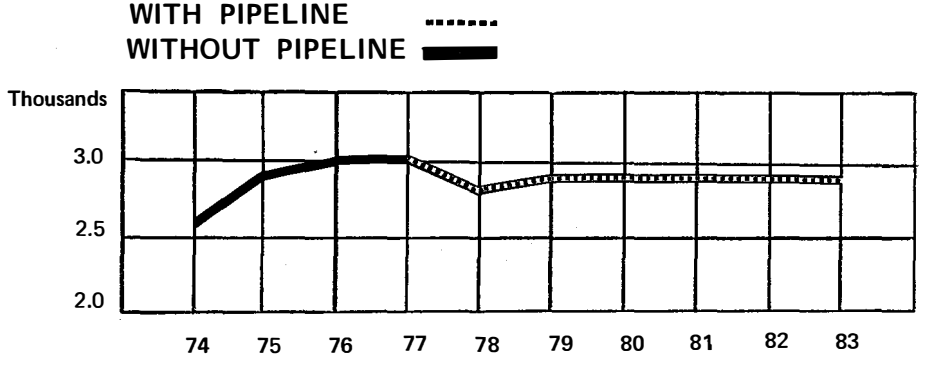


Manufacturing:



The manufacturing industry, composed primarily of food processing and the forest products industry, is expected to expand by 33% between 1974 and 1983. Most of this growth will occur in the Anchorage, Southeast and Southcentral regions. A relatively constant rate of growth will result in a statewide average employment of 11,600 by 1983. Employment in manufacturing will account for 5.4% of all employment in 1983, down from its 1974 level of 6.6%.



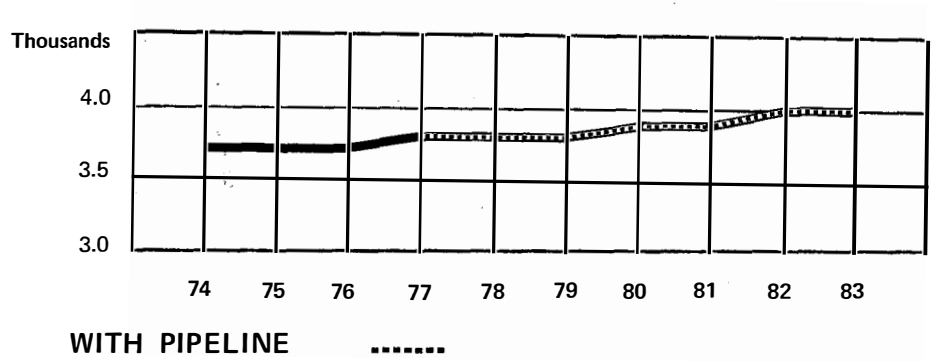


Mining:

Mining, another slow growth industry, is expected to have an employment increase of only 300 or 7% by 1983. Much of this growth will occur by 1979 and will be centered in the northern half of the State. Exploration by the "energy" industries will continue to exert the major thrust on the mining industry. The mining industry's share of the State's employment will decrease to 1.3% by 1983, down from 2% in 1974.

Communications and Utilities:

The communications and utilities industries will experience slow growth during the study period, increasing by 8% to reach 4,000 employees by 1983. In these capital intensive industries the expected installation of modern telephone equipment for example will result in decreased employment in certain sectors of the industries. Other sectors, such as radio, television and private utilities, will develope facilities and employment to meet the projected demand caused by the larger State population. Communications and utilities will also show a decreasing share of Alaska's total employment, to 1.8% in1983, down from 2.8% in 1974.



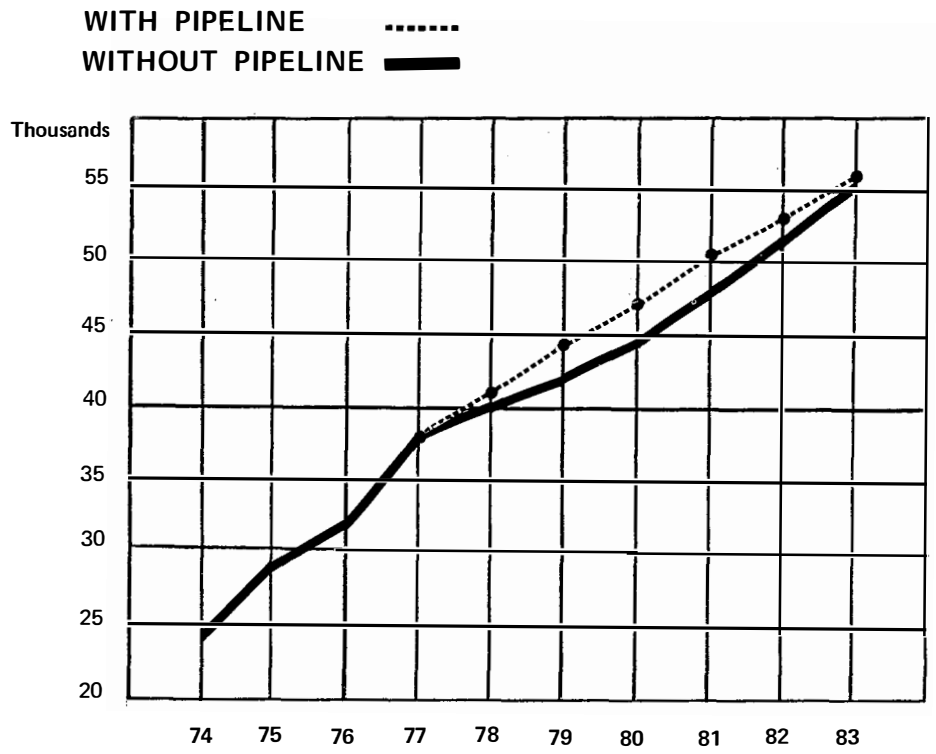
NON-BASIC INDUSTRIES

Non-basic industries are those industries whose products are used within the state and whose product demand is determined by other industries (especially the basic industries) and/or by the state's populace. The non-basic employment projections are generated within the model. The employment levels of each of those industries will be affected by the trans-Alaska oil and gas pipeline projects.

State and Local Government:

State and local government is projected to be the fastest growing industry in the period 1974 to 1983, increasing by 124% to reach 55,800 by 1983. All regions of the state will experience this rapid growth in state and local government. The major part of this expansion will occur during the trans-Alaska oil pipeline (1974 to 1977) era, and reflects the increased service demands caused by a substantial population increase.

Thereafter, the timing of the rise of employment in state and local government will be influenced by the trans-Alaska gas pipeline construction project. If the gas pipeline is constructed, the growth during the period 1977 to 1980 will be 25%, with 18% growth projected to occur during 1980 to 1983. Without the construction of an trans-Alaska gas pipeline growth during 1977 to 1980 will be 17% and during 1980 to 1983, 24%. By 1983 the net effect of the construction of a trans-Alaska gas pipeline will be the addition of only 600 workers to this industry's projected employment of 55,800.

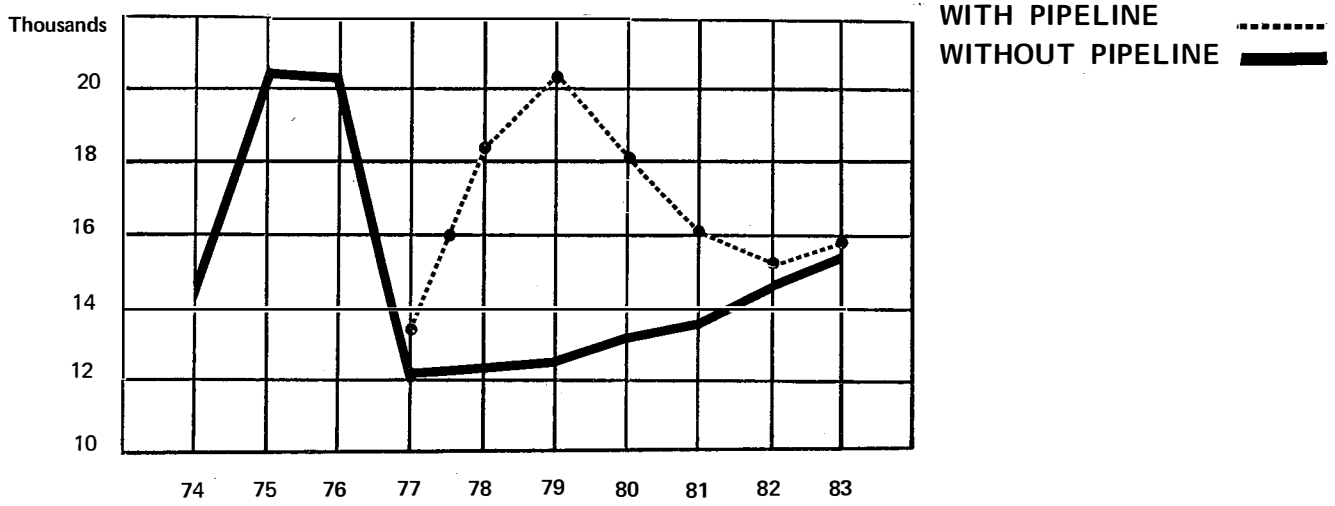


Construction:

The construction industry will continue to be the most volatile industry in Alaska. Because of its direct and substantial involvement in both the trans-Alaska oil and gas pipeline projects, yearly and regional changes in employment will closely follow pipeline construction timetables.

Employment in construction will reach its peak of approximately 20,400 in 1975 and 1976. Thereafter, if no trans-Alaska gas pipeline is built, construction employment will drop to 12,300 in 1977 and remain relatively constant to 1980 before beginning its later growth to 15,500 by 1983.

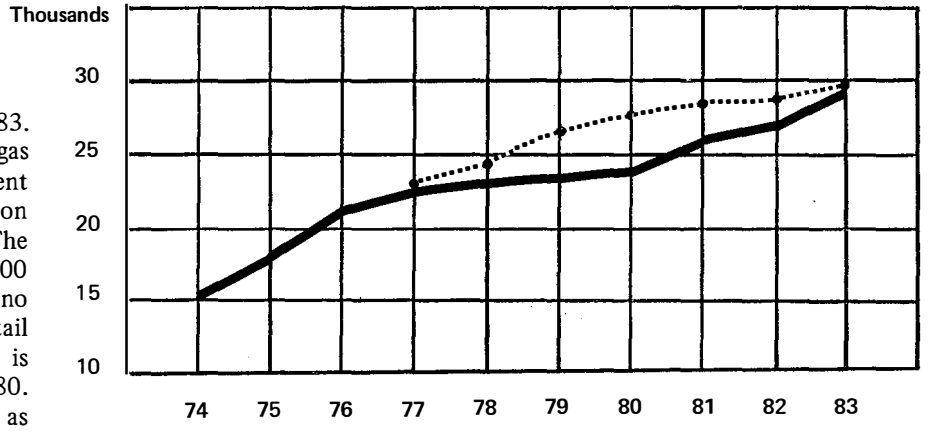
The building of the trans-Alaska gas pipeline will change construction employment in the following manner. Employment will drop to 13,500 in 1977, 1,200 higher than if no gas pipeline were built. During the next three years employment will almost reach the high levels experienced during the Alyeska construction project. Thereafter employment will gradually decline to 15,300 in 1982 before beginning its increase in 1983. In most regions of the state, and especially in the Fairbanks and Southcentral regions, the variations in the levels of construction employment will be impacted to a greater extent by the trans-Alaska gas pipeline and will, therefore, be more intense than the state-wide data.



Retail Trade:

The number of employees in the retail industry will almost double between 1974 and 1983, widening to an average employment of 29,900 by 1983. Over half of this growth will occur in the 1974 to 1976 trans-Alaska oil pipeline construction period. Much of the increase will occur in the Anchorage area which will enlarge its share of the state's retail trade employment from 57% in 1974 to 62% in 1983. Retail trade will increase its share of the Alaskan employment from 11.5% in 1974 to 13.5% in 1983.

The building of the trans-Alaska gas pipeline will cause a rapid development of employment during the construction and a low rate after completion. The project will result in a net gain of 600 retail trade employees by 1983. If no trans-Alaska gas pipeline is built, retail trades growth after the oil pipeline is completed will be low until 1980. Normal growth will start in 1980 as Alaska's economy begins to recover.



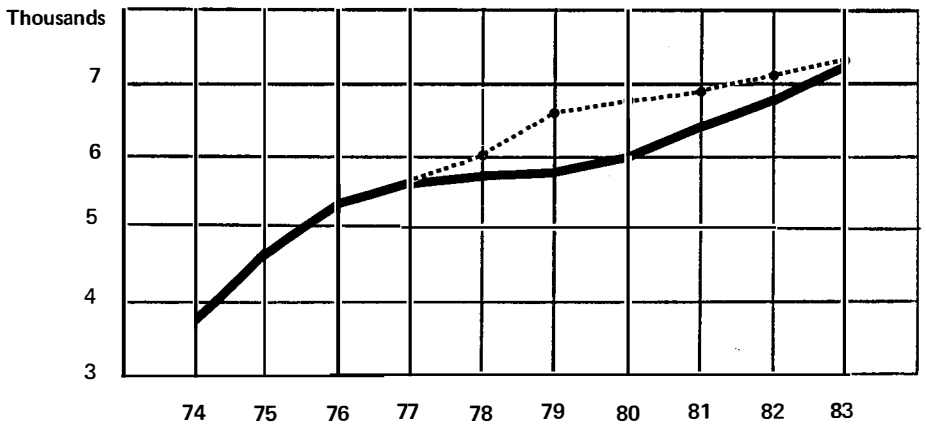
WITH PIPELINE .....

WITHOUT PIPELINE ———

Wholesale Trade:

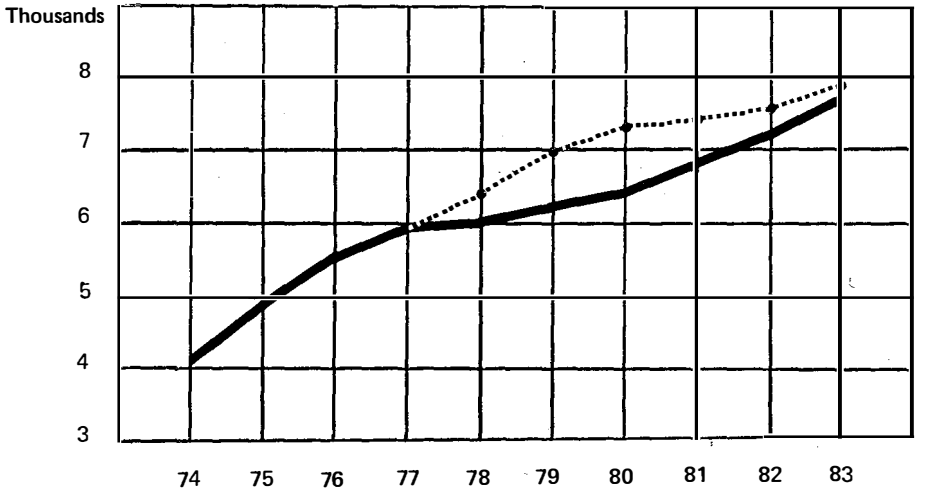
Employment in wholesale trade will grow 90% by 1983, expanding to 7,300. The Anchorage region will continue to have most (75%) of the states wholesale trade employment The wholesale trade industry's percentage share of Alaska's total employment will grow very slightly during the period. Over half of the increase in employment will occur during the trans-Alaska oil pipeline construction period. From 1977 employment will rise by about 100 per year until 1980 when normal growth rates will start.

The building of the trans-Alaska gas pipeline will cause slightly higher growth rates during the construction period followed by a slightly reduced growth rate until 1983. The net result of this project will be to cause higher employment by 100 employees in 1983.



WITH PIPELINE .....
WITHOUT PIPELINE ——

Finance. Insurance and Real Estate:



Employment in F.I.R.E. will grow 90% reaching 7,700 by 1983. The Anchorage region will broaden its dominance of this industry from 66% of the industry's statewide employment in 1974 to 70% by 1983. Most of this will occur during the oil pipeline construction. A period of very little growth will follow the completion of the project. This period of low growth will occur during 1977 to 1980 if no gas pipeline is built and during 1980 to 1983 if it is built. These periods of low growth will be followed by a return to normal growth as the states economy recovers from the post pipeline "bust" period.

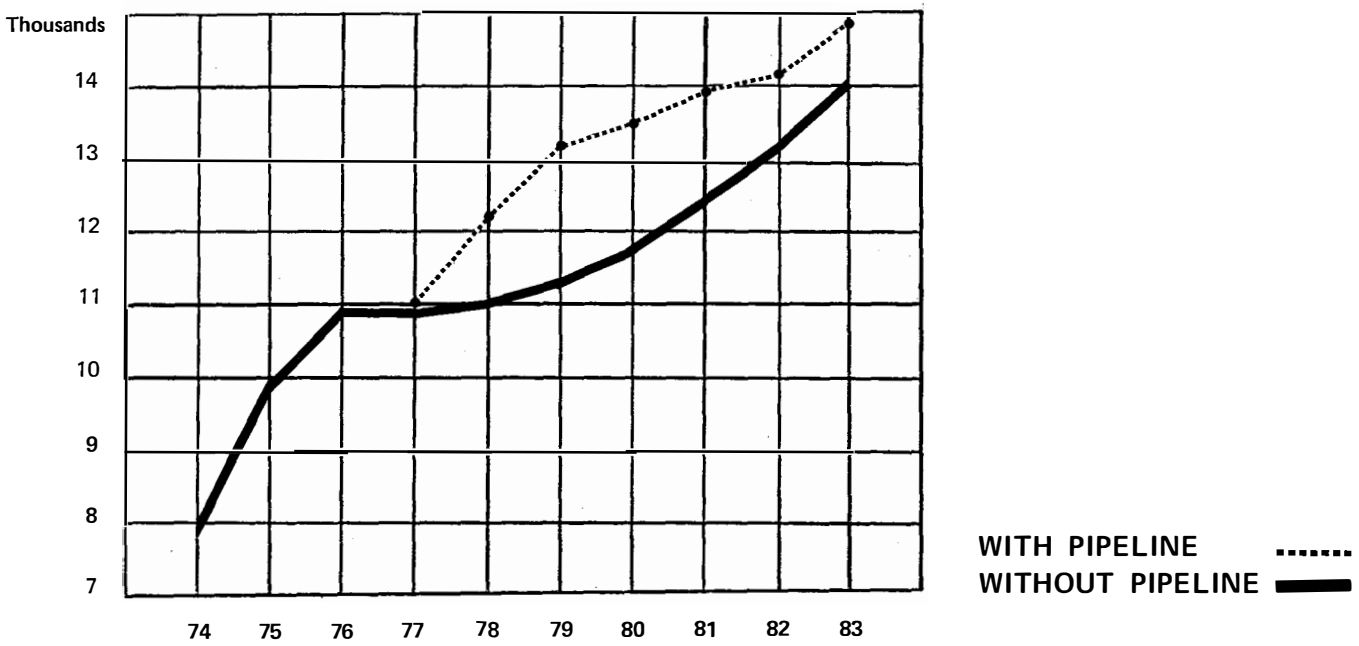
WITH PIPELINE .....

WITHOUT PIPELINE ———

Transportation:

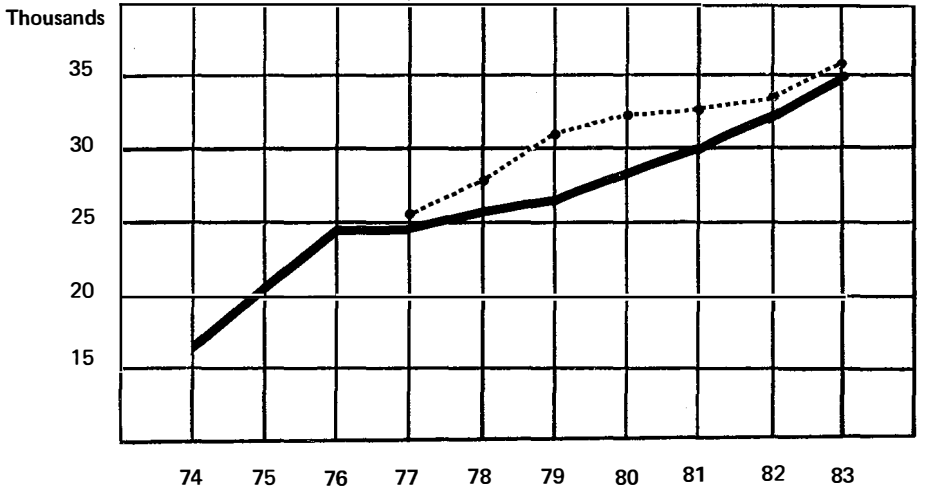
Transportation employment is expected to grow to 14,000 by 1983. After completion of the oil and gas pipelines the operation and maintenance personnel will be added to the transportation industry. This inclusion will cause transportation employment to accelerate especially in southcentral Alaska where the pipeline terminals will be located.

The trans-Alaska gas pipeline will have a net result of adding 800 workers to the transportation industry by 1983. A large portion of this growth will be the result of the inclusion of operation and pipeline maintenance personnel to the industry.



WITH PIPELINE .....
WITHOUT PIPELINE ——

Services:



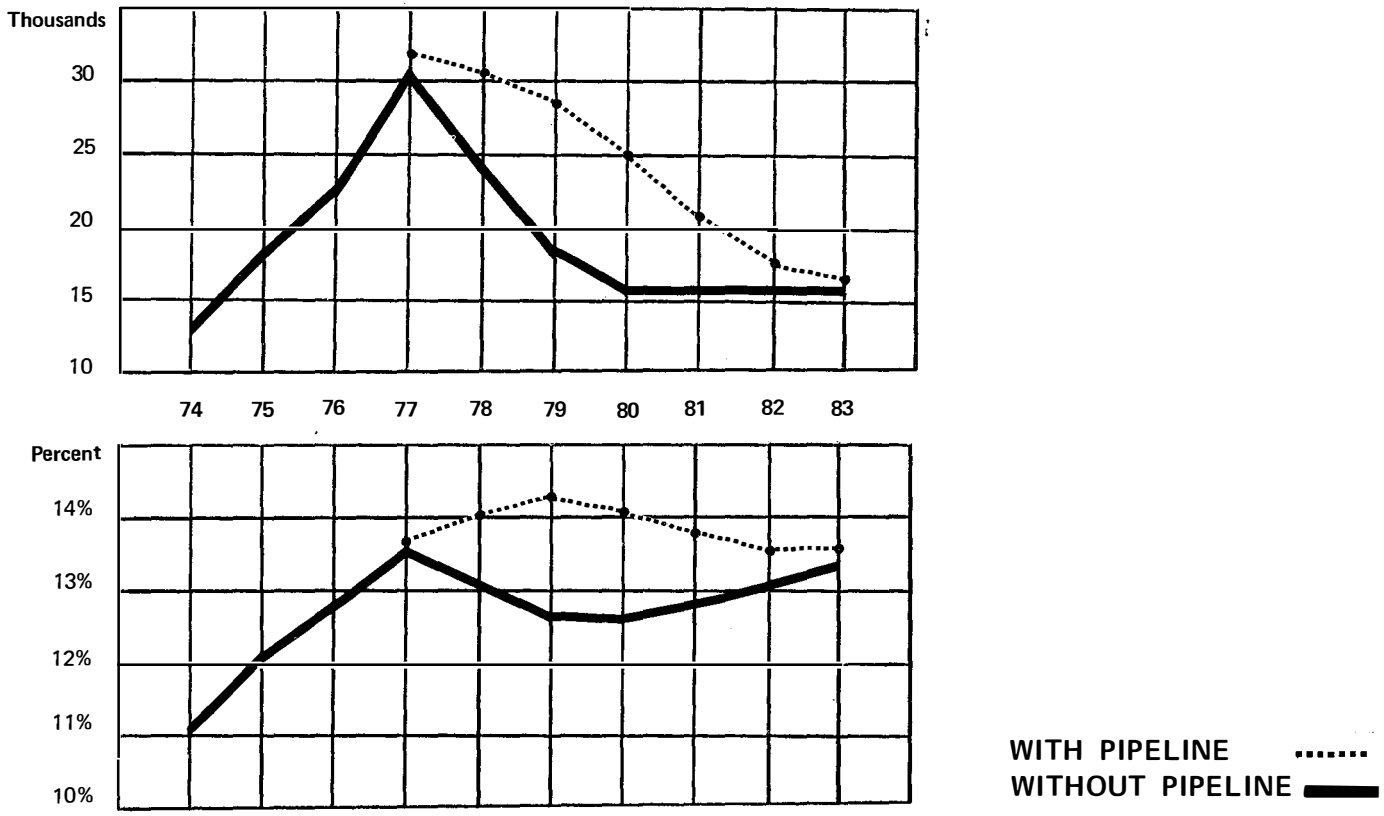
The service industry will be the second fastest growing industry during this study period, increasing its 1974 employment by 112% to a workforce of 34,800 in 1983. It will also widen its share of Alaska's total employment from 12.4% in 1974 to 16.1% in 1983 and become the State's second largest industry in terms of employment.

Over half of the growth in the service industry will occur during the 1974 to 1977 period. Thereafter growth will be less than normal until 1980 when normal growth will start. As in the case of all other non- basic industries, the trans-Alaska gas pipeline construction project will cause growth in the service industry to be slightly higher during the period 1977 to 1980 and slightly less than normal from 1980 until 1983, when normal growth resumes. The net effect of building the trans-Alaska gas pipeline will be the addition of 700 workers to the service industry.

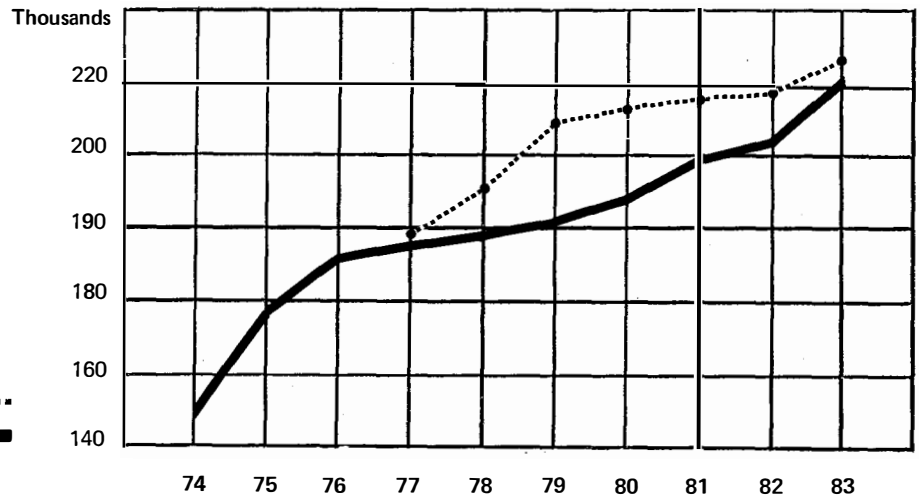
Unemployment:

Unemployment in Alaska has been high primarily because of the seasonality of most of the non-governmental industries. During the study period (1974 to 1983) unemployment will be higher than usual and will in some regions become a major problem. Out-of-state workers attracted to Alaska during the pipeline construction years, will contribute to high unemployment during the pipeline construction periods.

The unemployment rate will peak in 1977 when 14.2 percent of the workforce will be unemployed, up from 10.4% in 1974. Because of the substantial growth in work force during this period, 78% more workers will be unemployed in 1977 (27,900) than were unemployed in 1974 (15,700). After 1977 the unemployment rate will decrease gradually to 11.1% in 1980. The building of a trans-Alaska gas pipeline will increase the annual unemployment rates from 1977 to the end of the study period. The unemployment rate will peak in 1977 at 14.4% and 1978 at 14.1%. Therafter, the unemployment rate will decrease to 11.3% in 1983. The combination of seasonal variations in employment and pipeline layoffs in certain regions will cause substantially higher unemployment rates to occur. The Fairbanks region, for example, will have an unemployment rate of slightly over 20% for the second quarter of 1978.



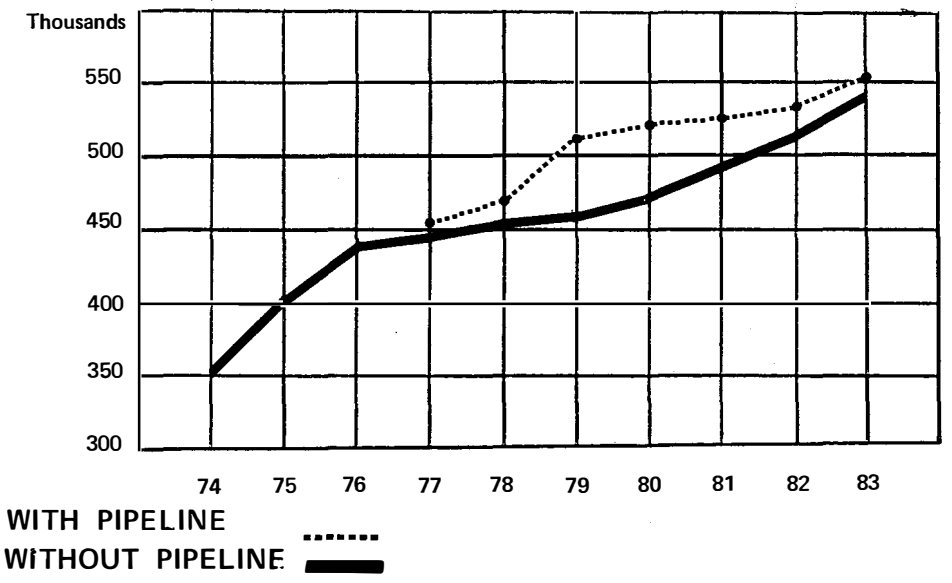
Civilian Workforce:



Civilian workforce in Alaska will increase by 95,000 or 64% between 1974 and 1983, to an average workforce of 243,400 by 1983. The Anchorage region will grow slightly faster than the state as a whole and in 1983 will have 47% of the state's civilian workforce compared to 45% in 1974. The southcentral, northwest, and norther regions will be the slower growing regions of the state.

More than half of the growth in the state's civilian workforce will occur during 1974 to 1977 at a rate of 32% for the three-year period. If a trans-Alaska gas pipeline is not built, growth during the years 1977 to 1980 will be a meager 6%, and in the years 1980 to 1983 a more normal 17%. The building of a trans-Alaska pipeline will cause the 1977 to 1980 growth to be 18% and the 1980 to 1983 increase to be 6%. A return to normal growth will occur in 1983. By 1983 the effect of building the trans-Alaska gas pipeline will be to add 4,300 to the civilian workforce.

Total Population:



Alaska's total population will increase by 187,900 or 54% between 1974 and 1983, to an average of 542,600 in 1983. All regions of the state will share in this growth, although the slightly higher rates for the Anchorage and Southeast regions will increase their percentage of the state's population by 1% and 2% respectively.

Most of the state's growth in population will occur during the trans-Alaska oil pipeline construction period 1974 to 1977, when 93,000 or 26% will be added for a total of 447,700 Thereafter, Alaska's population growth will depend upon whether or not the trans-Alaska gas pipeline is built. Without this construction project, Alaska's population will rise only 5% during the 1977 to 1980 period, followed by a more normal 15% growth during the period 1980 to 1983. The construction of the trans-Alaska gas pipeline project will cause a 15% increase in population during the years 1977 to 1980 and only a 6% increase during the 1980 to 1983 "bust" period. By 1983 the net effect of building the trans-Alaska gas pipeline will be the addition of 8,500 to the state's population.

Part II Regional analysis of projections

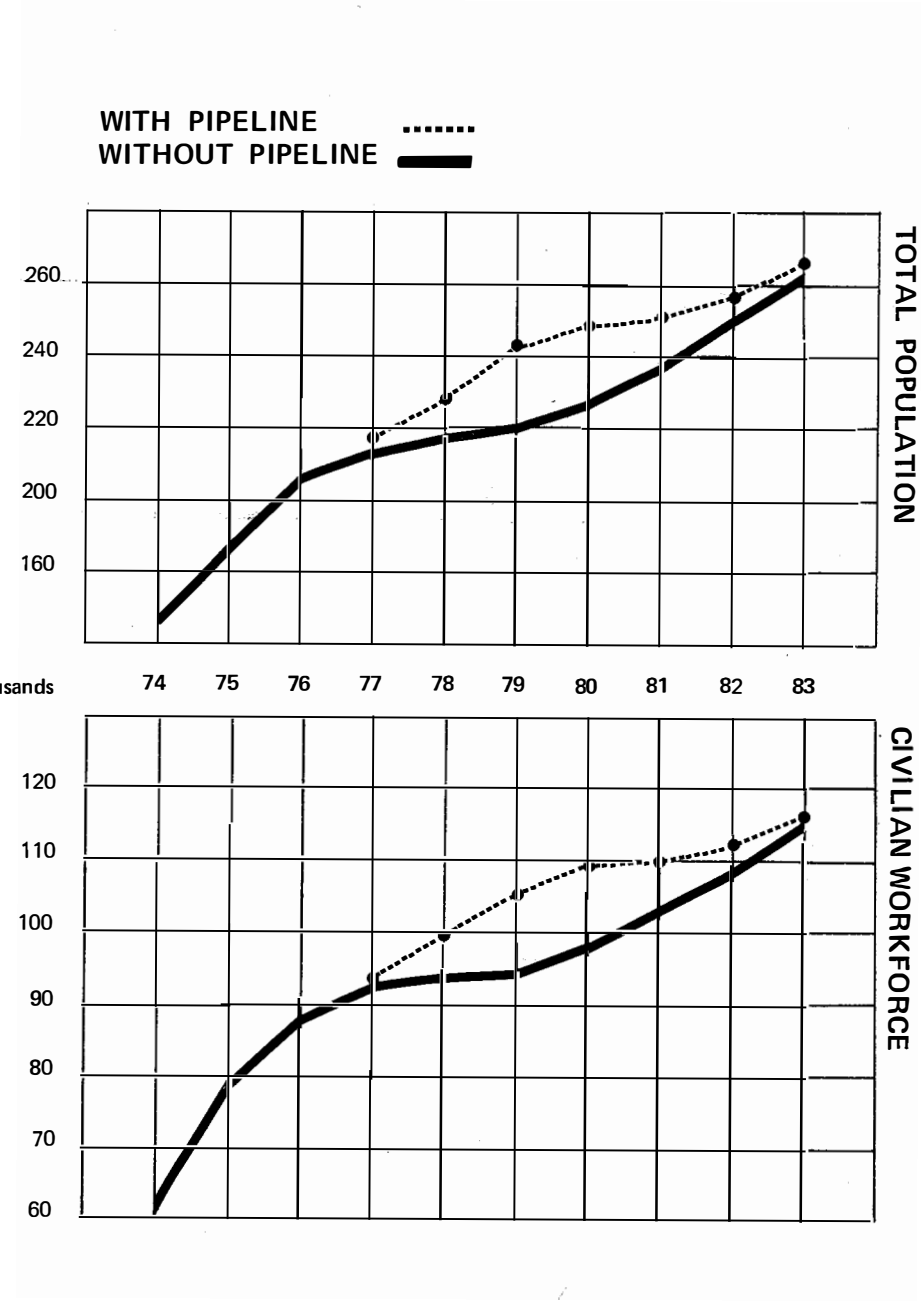
The following charts present the projected levels of the civilian workforce and the total population for the study's seven regions. As before, the solid lines represent the expected growth pattern without construction of a gas pipeline and the dashed lines assume that the trans-Alaska gas pipeline will be built with construction beginning in 1977. The difference between the two lines may be regarded as the expected impact of the trans-Alaska gas pipeline.

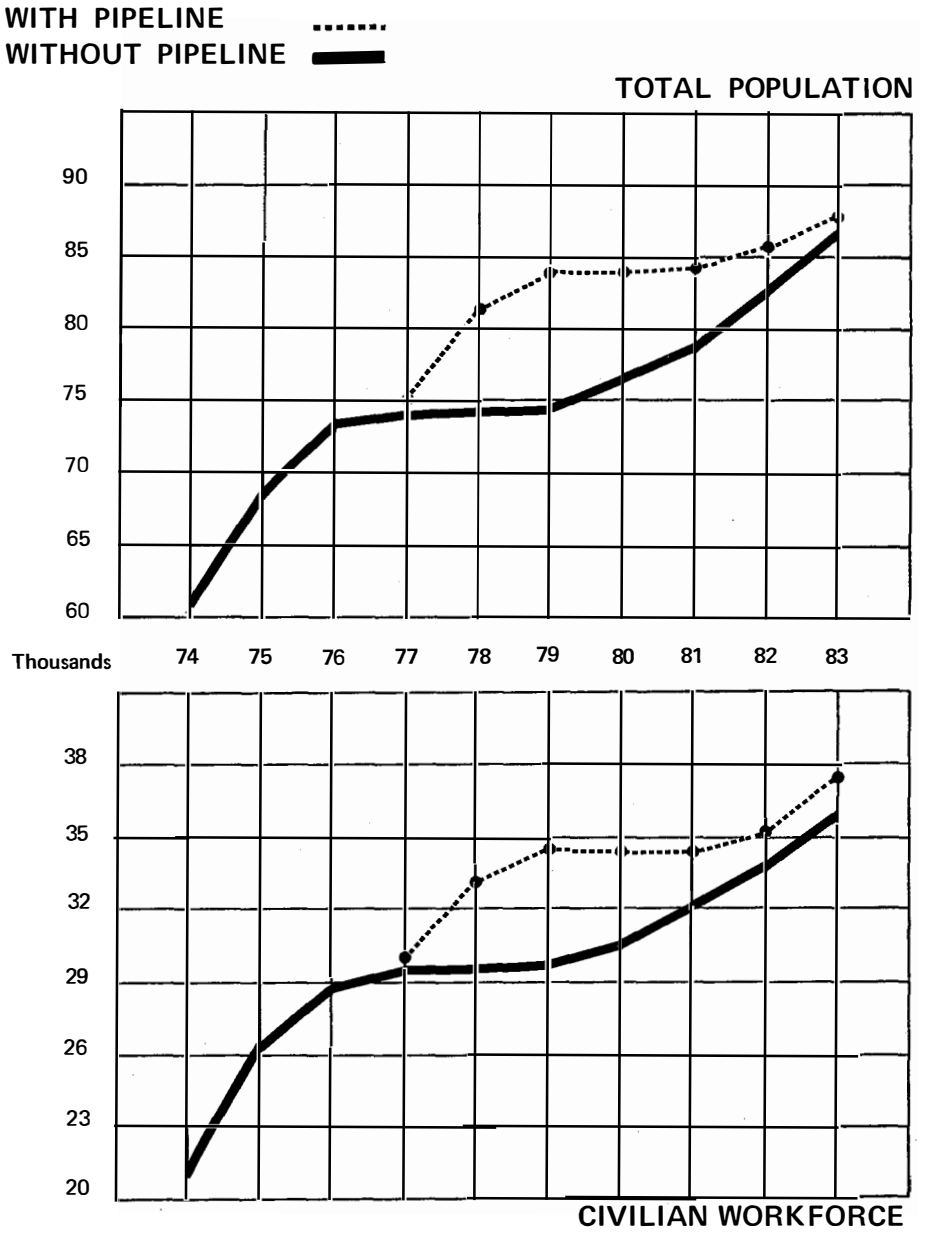
Within the model, population is estimated directly as a multiple of the projected workforce level. Thus the growth patterns for the population and workforce are identical for each particular region under consideration.

The general trend will be for the gas pipeline to extend the oil pipeline boom and to slightly reduce both the length and magnitude of the expected bust following this boom.

Anchorage:

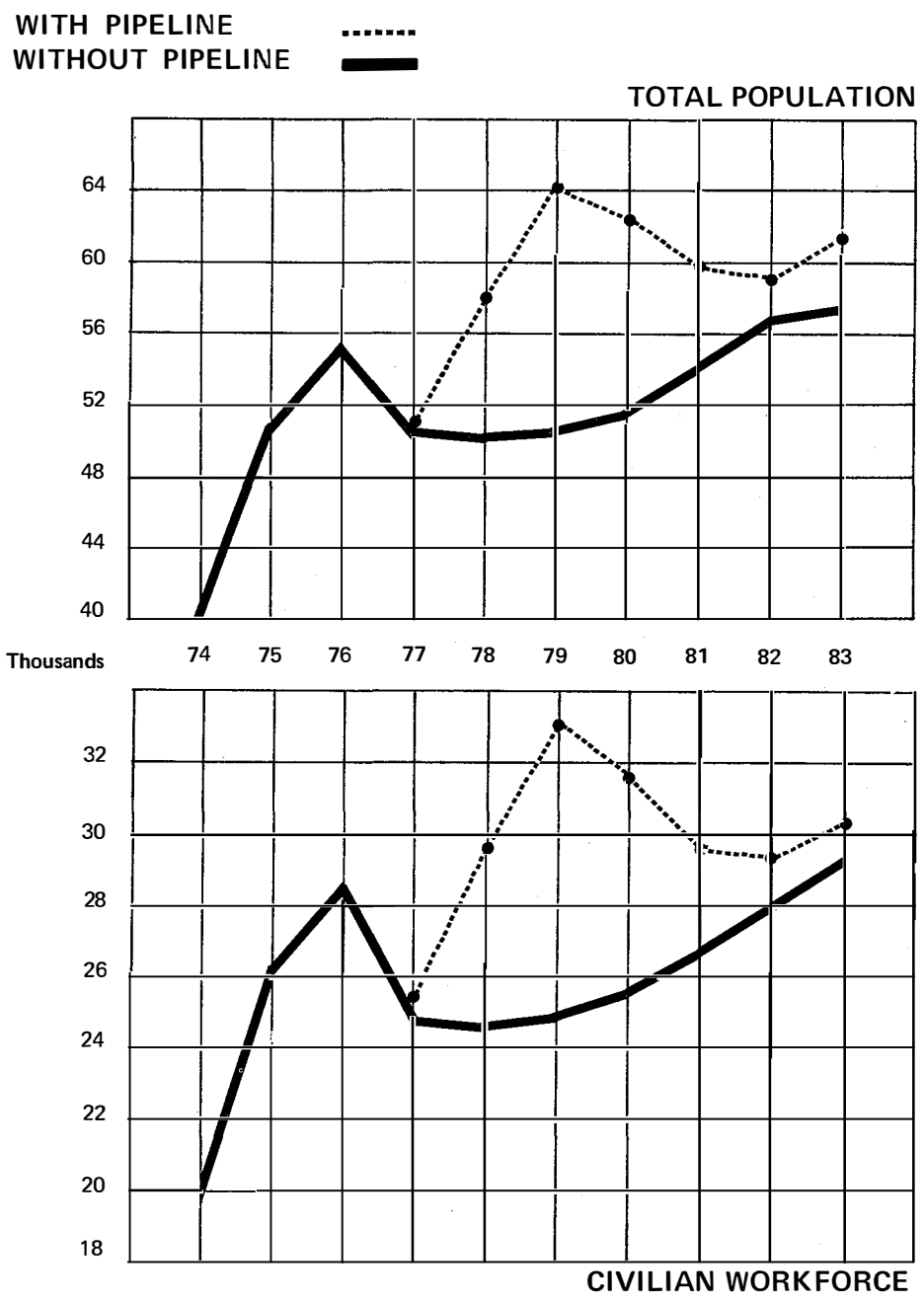
Anchorage: This area is expected to go through a two year no-growth phase following completion of the oil pipeline in 1977. The gas pipeline would extend the present growth rate through 1980 and then two years of very slight growth could be expected. By 1983 the additional population and workforce resulting from gas pipeline impact would be relatively small. The gas pipeline would have a pronounced effect only during the transitional bust period Anchorage faces.





Fairbanks:

Fairbanks: This region is expected to go through an abrupt change from a very rapid growth period during oil pipeline construction to a three year no growth period beginning in 1976. If the gas pipeline were built, Fairbanks would continue to grow rapidly during 1977 and 1978 after a relatively slack year in 1976. The bust period would occur during 1979-80. The population impact would be as great as 10,000 in 1979, however by 1983 the impact would be reduced to about 1,000-2,000.

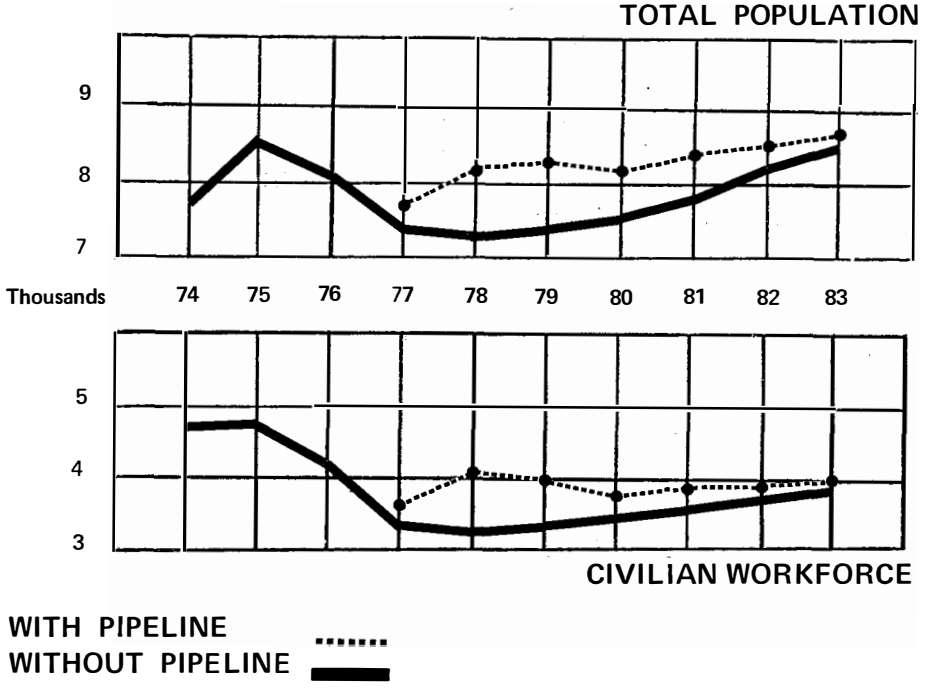


South Central:

South central: This region would experience a distinct additional boom from construction of a gas pipeline. The current projections anticipate a year of rapid negative growth in 1976 followed by two years of no growth. The gas pipeline would cause a two year boom period during 1977 and 1978 followed by a three year bust. Normal growth would resume in 1982. The population impact of the gas pipeline could be as high as 14,000 in 1979, but would be less than 5,000 by 1983.

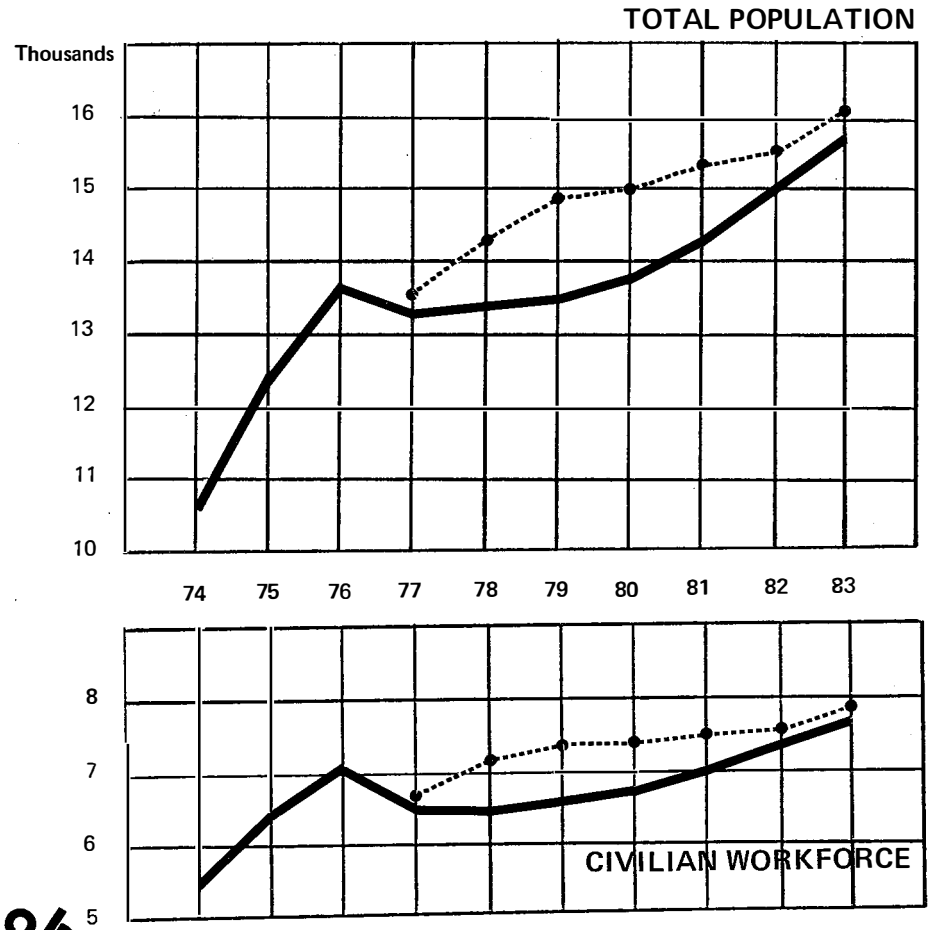
Northern:

Northern: This region is expected to experience a bust during 1975 and 1976 with population declining from 8,500 to 7,400 over this time. The gas pipeline would cause another smaller boom beginning in 1977. The impact on population would be approximately 1,000 during 1977 and 1978, but would be reduced to 100-200 by 1983.

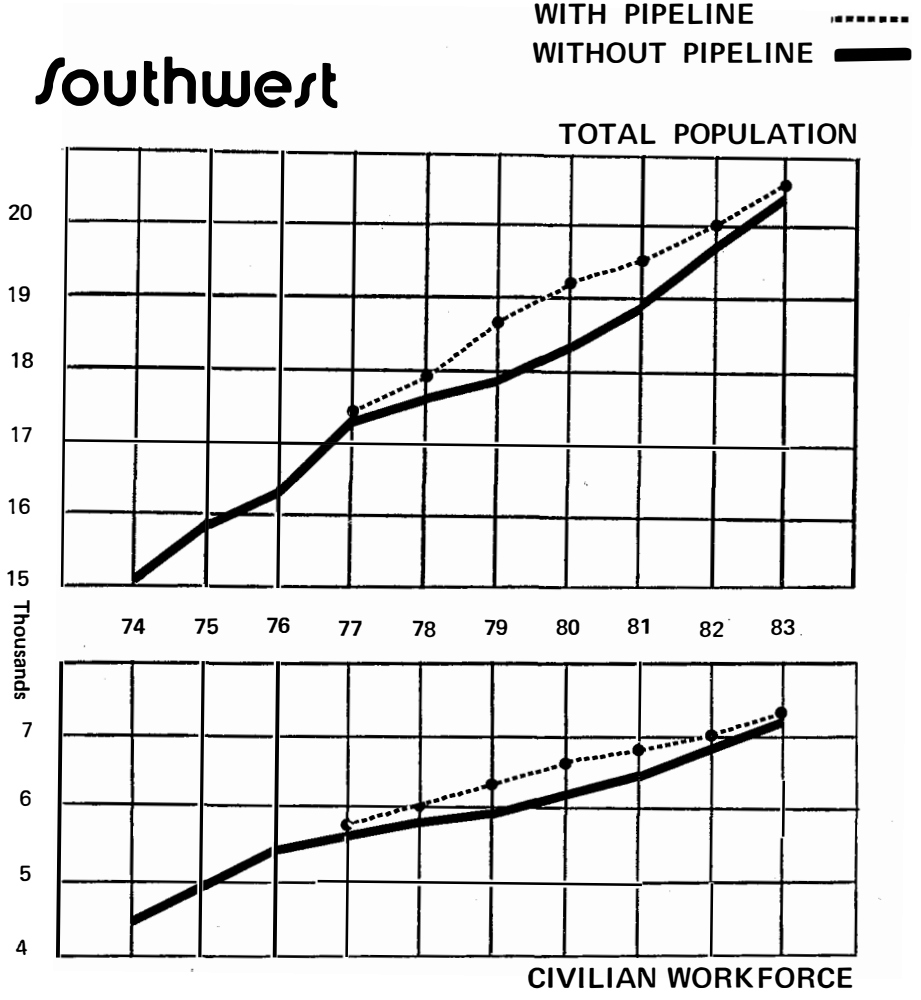


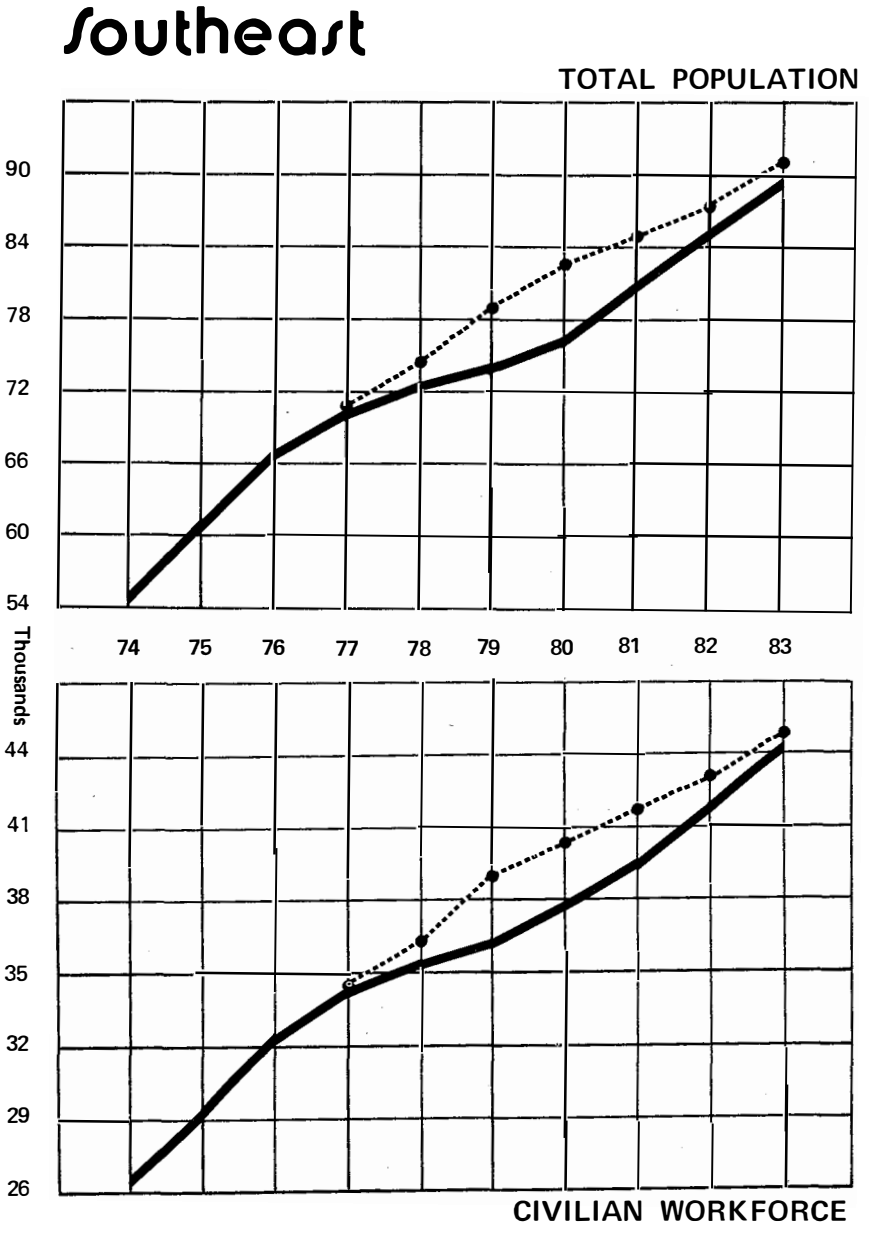
Northwest:

Northwest: This region is expected to experience a decline in the population level during 1976 followed by a year of no growth. Beginning in 1977, gradual positive growth is expected through 1983. A gas pipeline would cause the growth rate to be higher than originally projected during 1977 and 1978, but less than projected between 1979 and 1982. The overall impact by 1983 would be negligible.



Southwest & Southeast: These regions receive the least impact from pipeline construction. The oil pipeline has caused projected growth rates to be slightly higher than normal during the boom period and slightly lower than normal following the boom. The gas pipeline would have a similar effect. The impact by 1983 is expected to be positive but very small.





Part III Methodology

During the initial phase of this trans-Alaska gas pipeline study, several assumptions concerning Alaska's future economy were made. Factors such as the state's expenditures (budget), level of employment in Native services, and the number of "boomers" were projected on an annual basis. Other factors such as employment levels for the basic industries; federal government, manufacturing, mining, and communications were projected on a quarterly basis. These factors plus the estimated employment requirements for the trans-Alaska gas pipeline project made up the input data for the Alaskan econometric model. A brief explanation of assumptions concerning these factors follows.

State Expenditures:

During the study period 1974 to 1983, the level of state expenditures will be governed by the demand for public services and by the supply of revenue available. In the first half of this period the public demand for services will greatly rise because of the expected large growth in the state's population. However, the increase in revenue necessary to meet this vigorous demand may not be available until late in fiscal year 1978 when pipeline royalty becomes available. During the second half of the study period, revenue should be available to meet the projected service demand.

During the Fiscal Years 1975, 1976 and 1977, the rate of expansion for state expenditures is expected to be 10.5%, 14.8% and 11.1% respectively, reaching $623.7 million (1970 dollars) in fiscal year 1977. Thereafter, the rate of increase is assumed to drop to 7.5% annually. For the purpose of this study it is assumed that the demand for state-provided services will be met, that is, that the level of state expenditures will increase at a rate sufficient to satisfy the public's demand for services.

Native Services:

The Native Claims Settlement Act of 1971 created a new exogenous component (Native services) of the service industry with the establishment of the twelve regional Native corporations. An increasing number of professional and clerical workers will be employed to administer these corporations. For the purpose of this report it is assumed that employment in Native services will grow rapidly during the initial years of the corporation's existence. The high initial growth rate will decline by 1980 to a steady growth rate of 5%. Native employment by 1983 is expected to reach 650.

Boomers:

During the past "boom" periods in Alaska, a large number of workers have been attracted to Alaska in hopes of finding high-paying jobs. Many of these workers actually find jobs while others find only short term jobs and soon become unemployed. These unemployed immigrants, which are again expected to enter the Alaskan labor force, are referred to as "boomers". It has been estimated that 1,000 boomers were attracted to Alaska in 1974. This number is forecasted to reach 3,500 during 1977 and 1978 before decreasing to zero after 1982 when construction activity on the trans-Alaska gas pipeline will have been completed.

Federal Government:

In the past four years, civilian federal government employment has remained near the 17,200 level. Very slow growth in this basic industry is expected in the future. Internal changes will occur within this industry as it adjusts from an administrative and service delivery role to an administrative role only.

Services previously provided by federal agencies will be assumed by state and local government units and, in some cases, by the Native regional corporations. Some growth in this industry is expected in the land management and regulatory enforcement areas.

Manufacturing:

The manufacturing industry is expected to have only a modest increase in employment during the study period. Both major components of this industry, seafood processing and forest products,

are involved with the harvesting and processing of renewable resources, and are therefore limited by the sustained yield principles. Growth will occur, however, as new timber areas develop and as markets develop for the presently unused seafood types. Product demand for these two components of the manufacturing industry is influenced by the world market, with Japan being the prime importer. Although the present economic situation has caused a temporary reduction in product demand, the future is expected to bring increased demand for these products.

Mining:

A fairly large rise in employment in the mining industry is expected to occur during the study period. Presently, Alaska's mining industry is dominated by petroleum mining, especially oil and gas exploration. This domination is expected to continue throughout the study period, as vast areas of potentially rich oil and gas areas have not yet been thoroughly explored. There is expected to be heightened exploration activity in other mining during the later part of the study as demand for minerals expands. No large scale mineral developments are assumed to begin during the study period.

Communications and Utilities:

Employment in the communications and utilities industry is expected to increase at a rate slightly faster than the federal government during the study period. The communications industry is very capital intensive; substantial changes are expected in communications technology as well as hardware used. Although the industry itself is expected to have a high level of economic activity, based on increased needs of a larger population, employment within the industry is not projected to be as volatile. Installation of sophisticated equipment will keep employment levels down.

In the utilities industry the expansion of existing facilities is expected, causing a slow rate of increase in employment to occur. Large scale developments, such as a hydroelectric project, which may be needed because of population growth, will be of a high-cost and long-term nature. Since specific plans for such a project were not available, they were not assumed to occur during the study period.

THE ALASKAN ECONOMETRIC MODEL

The Economic base model of Alaska used in this study was a refinement by Human Resources Planning Institute of an economic base model of Alaska developed earlier for the Alaska Pipeline company and used in The Man in the Artic Program for the Institute of Social, Economic and Government Research at the University of Alaska. The purpose of an economic base model is to uncover the basic or underlying elements of an area's economy in order to better understand its functioning and to forecast its future trends.

The model divides the economy into exogenous and endogenous sectors. The exogenous sector consists of those final demand components which are independent of short-run changes in the area's level of economic activity. It is usually defined to include exports, government purchases and gross private investment. The endogenous sector consists of those final demand components which are functionally related to the area's level of output and income.

Basic and Non-Basic Industries:

The particular model of Alaskan workforce used in this study can be classified as a disaggregated economic base model. Alaska's work force was disaggregated into twelve industry categories. Each industry was identified as being either basic or non-basic to the Alaskan economy. Basic industries are defined as those industries whose demand is determined by factors exogenous to the local economy. The manufacturing and mining industries, both exporting industries, fall in this catagory. In addition, the communications and public utilities industries, whose activities are determined over long-range planning horizons, and federal government employment were treated as basic industries.

Non-basic industries are defined as those industries which respond to endogenous demand. Industries included within this catagory are state and local government, contract construction, retail trade, wholesale trade, transportation, services, finance insurance and real estate, and non-categorized. Several of the non-basic industries have basic components. In this study, the Native services component of the service industry, the pipeline operation component of the transportation industry and the pipeline construction component of construction industry were treated as basic.

In the development of this model, certain assumptions were made concerning the behavior of the economy. First, the level of employment demand generated in the economy can, in fact, be supplied. The model forecasts the "demand" aspect of the state's work force. The model assumes that a supply of workers, in the correct occupation, industry and point in time, will be available to meet this demand.

The relationships found to exist in the past will continue to exist in the future; the differences from past behavior are transitory and random. The non-basic industry projections generated by this model are based on mathematical functions crucial to basic industry relationships determined to have existed in the past. Certain trends have been identified and are assumed to continue into the future. It is further assumed that radically new technologies, major construction projects and the creation of new industries, except for those identified in this study, will not occur within the forecast period.

Operation of the Alaskan Econometric Model:

In the operation of the statewide model, a series of equations were used to generate the industrial employment, work force and population projections. The actual equations used will be discussed later in this section.

Once the basic industry projections and other exogenous data were introduced to the model, quarterly non-basic industry employment projections were generated using a series of non-basic industrial equations. Total employment was computed by aggregating the basic and non-basic industry employment. Unemployment was then calculated. Civilian work force was the sum of total employment and unemployment. Civilian population was determined by multiplying the civilian workforce by a civilian dependency ratio. Total population consists of the sum of the civilian population and the military population. The entire process was iterated for each quarter of the forecast period, with four quarters of data being averaged to produce the annual average projections.

Regional Allocation System:

Forecasts of regional employment were produced by an allocation of the statewide results. The procedure, incorporated as a subsystem of the base model, was based on the concept of an allocation coefficient or regional share. These regional shares were derived from historical patterns of employment in each of the non-basic industries. Trends of regional industrial growth were incorporated in the regional allocation system. Regional allocation of basic industry employment was made outside the model and was dependent on historical patterns and on the expected location of oil and gas pipeline construction employment. Regional forecasts of total employment were obtained by summing the region's employment in the basic and non-basic industries.

Regional civilian workforce was the sum of the region's unemployment and total employment. The region's civilian population and total population were calculated as they were in the statewide model except that they were done on a region by region basis. The seven regions discussed earlier are composites of Alaska's 24 labor market statistical areas.

Non-Basic Industry Equations:

Table 1 presents the eight non-basic industry equations and the unemployment equation used in the Alaskan model. These equations were determined using a step-wise regression program of quarterly employment data from the period 1960 to 1972, and were selected for statistical quality and economic reasoning.

Binary seasonal variables were included in the equation to account for the high degree of seasonality in Alaska's economy. The exogenous components pipe, o/m, and NASR were added to the equations to account for the basic aspects of the non-basic industries equations. The exogenous component, boom, was added to the unemployment equation.

WORKFORCE AND POPULATION EQUATIONS:

As mentioned earlier, the total employment forecast is the sum of basic and non-basic industry employment forecasts. The total employment forecasts represents an estimate of the total number of jobs within the Alaskan economy. Unemployment is added to total employment to obtain civilain workforce. Civilian population is the product of civilian workforce times a civilian dependency ratio.

The civilian dependency ratio was calculated from 1960 to 1972 data by dividing the annual civilian population by the annual civilian work- force figure. The dependency ratio was found to be declining throughout the period. This trend was expected to continue in the future and was included when the dependency ratios were projected. Military population was calculated by multiplying the military active duty personnel by a military dependency ratio. The military dependency ratio was estimated by scaling the civilain dependency upward by a factor of 1.055. The total of military population and civilian population gives the state's total population.

TABLE 1 NON-BASIC INDUSTRY EQUATIONS

Unemployment = −3895.8 + 4283.1 S1 + 5934.8 S2 + 1507.9 S3 + .0602134 TEMP
− 21445.4 DELT + .576633 UNEM(−1) + BOOM

State and Local Government = −11373.1 + .06069255 PLES + 36.0793 STEX

Transportation = 684.8 + 237.4 S1 − 16.4 S2 + 643.8 S3 + .162967 CONS
+ .713466 MING + .174706 MFRG. + .256229 STLO − 87.39 TIME + O/M

Retail Trade = −12039.8 + 1220.6 S1 + 1487.0 S2 − 352.6 S3 + .362468 MFRG
+ .180601 MING + .064513 POPL(−1) + 15.1 TIME

Services = − 1926.8 + 783.3 S1 + 482.2 S2 − 280.1 S3 − 49.27 TIME
+ .64438 RETL + .16094 CONS + .34271 STLO + NASR

Wholesale Trade = −217.7 + 134.6 S1 + 61.7 S2 + 32.0 S3 + .143862 MING
+ .236687 RETL

Construction = − 14067.6 − 1415.3 S1 + 1046.3 S2 + 2719.0 S3 + .034313 PLES
+ .59379 FEDL + PIPE

Finance, Insurance, Real Estate = 3742.7 + 423.8 S1 + 399.3 S2 − 174.1 S3
+ .229743 COMU + .107405 MFRG + .016999 POPL(−1)

Non-Categorized = 9717.0 − 903.2 S1 + 649.1 S2 + 2538.9 S3 + 2481.6 DUM65
+ 56.81 TIME

TABLE 2 VARIABLE ABBREVIATION LIST

BOOM	Unemployed "boomers"
COMU	Communcations and Utilities
CONS	Construction
DELT	(Temp-Temp(−1)/Temp(−1)
DEPN	Ratio of Civilian Population to Civilian Workforce
DUM 65	Dummy Variable = 1 in 1965, = 0 in all other years
FEDL	Federal Government
FIRE	Finance, Insurance and Real Estate
MFRG	Manufacturing
MING	Mining
MPOP	Military Population
NASR	Native Services
NONC	Non-Categorized
O/M	Pipeline Operation and Maintenance
PIPE	Pipeline Construction
PLES	POPL(−1) less PIPE
POPL	Total Population
RETL	Retail Trade
S1	Seasonal Dummy Function For Quarter 1
S2	Seasonal Dummy Function for Quarter 2
S3	Seasonal Dummy Function for Quarter 3
SERV	Services
STEX	State Expenditures (millions 1970 dollars)
STLO	State and Local Government
TEMP	Total Employment
TIME	Quarterly Counter (Starts in Qtr. 1 of 1960)
TRAN	Transportation
UNEM	Unemployment
WHOL	Wholesale Trade
WORK	Total Civilian Workforce

NOTE: Lagged values, which use the value for the preceding quarter, have a variable abbreviation followed by (−1), e.g. POPL(−1), TEMP(−1), UNEM(−1).

General Comments:

Although this study of the impact of a trans-Alaska gas pipeline project was prepared by the Research and Analysis Section of Alaska's Department of Labor, the econometric model and most of the economic assumptions were developed by Human Resources Planning Institute in association with Urban and Rural Systems Associates for their trans-Alaska oil pipeline impact study, Manpower and Employment Impact of the Trans-Alaska Pipeline. A more detailed description of the economic base model and the basic assumptions (except for the trans-Alaska gas pipeline constructions estimates) can be found in Volumes I and II of their study.

The Research and Analysis section of Alaska's Department of Labor is acquiring an economic base model similar to the one used by Human Resources Planning Institute. With this model, the Research and Analysis Section will update the model's projection on a semi-annual basis, and will be able to determine work force and population impacts of the many major construction and/or development projects to be proposed for Alaska's future. The purpose of this project is to provide researchers, planners and others interested in Alaska's future with current data suitable for use in the development of their special area of interest in impact statements and plans for meeting the projected impact. The Research and Analysis section, therefore, encourages anyone interested in this project to make their needs known to the section. Similarly, questions or comments concerning the projections in this study should be directed to Dave Gale, Chief, Research and Analysis Section, Alaska Department of Labor, P.O. Box 3-7000, Juneau, Alaska 99802.

APPENDIX I

Workforce and Population Projections Assuming

NO GAS PIPELINE

The following tables exhibit what the workforce, population, unemployment and unemployment rate projections for the years 1974 to 1983 will be if the Trans-Alaska Gas Pipeline Project is not undertaken. Workforce demand is broken out by industry and region. Industrial workforce, unemployment, unemployment rate, civilian workforce and total population are annual average figures.

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1974

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9150	2950	1900	1200	850	850	350	17200
STATE & LOCAL GOVERNMENT	8550	4350	6150	3350	1000	1000	500	24900
CONSTRUCTION (TOTAL)	4900	2000	1350	2350	100	1050	2700	14400
PIPELINE	500	800	0	1500	0	800	2600	6200
MANUFACTURING	1400	250	3850	2650	550	100	0	8700
MINING	850	150	50	800	50	550	150	2600
COMMUNICATION, UTILITIES	1700	550	450	350	50	100	450	3700
RETAIL TRADE	8650	2350	2350	1250	350	300	100	15300
WHOLESALE TRADE	2850	500	250	250	0	0	0	3800
FINANCE, INSURE, REAL EST	2700	550	500	250	50	50	0	4100
TRANSPORTATION	3500	1150	1950	600	300	400	50	7900
SERVICE	8950	2800	2000	1600	400	500	150	16400
NON-CATEGORIZED	5450	1650	2600	3150	350	250	100	13600
TOTAL WORKERS	58600	19100	23500	17800	4000	5100	4500	132700

WORK FORCE AND POPULATION DATA---

UNEMPLOYMENT	7700	2400	2650	1850	500	400	200	15700
RATE	11.6%	11.2%	10.1%	9.4%	11.1%	7.3%	4.3%	10.6%
BOOMERS	750	250	0	0	0	0	0	1000
CIVILIAN WORK FORCE	66400	21500	26200	19700	4500	5500	4700	148400
TOTAL POPULATION	166400	60600	54500	40000	15100	10600	7700	354900

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1975

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	10050	5100	7250	3950	1150	1200	600	29300
CONSTRUCTION (TOTAL)	6100	3150	1650	6550	100	1100	1800	20500
PIPELINE	800	1700	0	5500	0	900	1700	10600
MANUFACTURING	1400	250	3800	2850	450	100	0	8800
MINING	800	100	50	850	50	750	250	2900
COMMUNICATION, UTILITIES	1750	550	450	350	50	100	450	3700
RETAIL TRADE	10750	2800	2800	1500	450	350	100	18700
WHOLESALE TRADE	3500	600	300	300	0	0	0	4700
FINANCE, INSURE, REAL EST	3300	600	600	300	50	50	0	4900
TRANSPORTATION	4400	1400	2450	750	350	450	100	9900
SERVICE	11450	3550	2600	2000	500	600	200	20900
NON-CATEGORIZED	5550	1700	2650	3200	350	250	100	13800
TOTAL WORKERS	68300	22900	26500	23700	4400	5800	4100	155700
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	9900	3600	3000	2500	500	650	600	20700
RATE	12.7%	13.6%	10.2%	9.5%	10.2%	10.1%	12.8%	11.7%
BOOMERS	1300	600	0	100	0	0	0	2000
CIVILIAN WORK FORCE	78200	26400	29500	26200	4900	6500	4700	176400
TOTAL POPULATION	188500	68900	60800	51000	15900	12500	8600	406100

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1976

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	11750	5950	8500	4650	1350	1400	700	34300
CONSTRUCTION (TOTAL)	6900	2500	1850	6500	100	1150	1300	20300
PIPELINE	900	800	0	5300	0	900	1200	9100
MANUFACTURING	1450	350	3800	2900	450	100	0	9000
MINING	750	100	50	850	50	850	250	3000
COMMUNICATION, UTILITIES	1750	550	450	350	50	100	450	3700
RETAIL TRADE	12350	3200	3100	1650	500	350	100	21300
WHOLESALE TRADE	4000	650	350	300	0	0	0	5300
FINANCE, INSURE, REAL EST	3800	700	700	300	50	50	0	5600
TRANSPORTATION	4850	1550	2700	800	400	500	100	10900
SERVICE	13250	4100	3000	2350	550	700	200	24200
NON-CATEGORIZED	5600	1750	2700	3300	350	250	100	14100
TOTAL WORKERS	75700	24400	29100	25100	4800	6400	3700	169200
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	11450	4300	3450	3450	550	750	500	24400
RATE	13.1%	15.0%	10.6%	12.1%	10.3%	10.5%	11.9%	12.6%
BOOMERS	1100	600	0	300	0	0	0	2000
CIVILIAN WORK FORCE	87100	28700	32600	28500	5400	7100	4200	193600
TOTAL POPULATION	205800	73300	66700	55400	16800	13700	8100	439800

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1977

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	13150	6650	9450	5200	1500	1550	750	38300
CONSTRUCTION (TOTAL)	6550	1850	2050	1300	150	250	150	12300
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	1550	400	3900	3150	500	50	50	9500
MINING	750	150	50	900	50	850	250	3000
COMMUNICATION, UTILITIES	1750	550	450	400	50	100	450	3800
RETAIL TRADE	13300	3350	3200	1650	500	350	100	22500
WHOLESALE TRADE	4250	700	350	300	0	0	0	5600
FINANCE, INSURE, REAL EST	4050	700	750	350	50	50	0	5900
TRANSPORTATION	4700	1500	2550	950	350	550	200	10800
SERVICE	13650	4250	3050	2400	600	750	250	24900
NON-CATEGORIZED	5700	1750	2750	3350	350	250	100	14300
TOTAL WORKERS	78600	24800	30500	20900	5000	5700	2800	168300
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	13450	4800	3800	3950	650	800	450	27900
RATE	14.6%	16.2%	11.1%	15.9%	11.5%	12.3%	13.8%	14.2%
BOOMERS	1800	800	0	400	0	0	0	3000
CIVILIAN WORK FORCE	92000	29500	34300	24900	5600	6500	3300	196200
TOTAL POPULATION	215100	74000	70300	50300	17300	13300	7300	447700

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1978

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17600
STATE & LOCAL GOVERNMENT	13800	7000	9950	5450	1600	1600	800	40300
CONSTRUCTION (TOTAL)	6650	1850	2050	1350	150	300	150	12500
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	1700	400	4000	3300	450	100	50	10000
MINING	700	100	50	850	50	800	250	2800
COMMUNICATION, UTILITIES	1750	550	450	400	50	100	450	3800
RETAIL TRADE	13800	3400	3200	1650	550	300	150	23000
WHOLESALE TRADE	4350	700	350	250	0	0	0	5700
FINANCE, INSURE, REAL EST	4150	700	750	350	50	50	0	6000
TRANSPORTATION	4750	1550	2600	950	350	550	200	11000
SERVICE	14100	4400	3200	2500	600	750	250	25800
NON-CATEGORIZED	5800	1800	2800	3400	350	250	100	14500
TOTAL WORKERS	80900	25400	31400	21500	5100	5800	2800	173000
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	12500	4100	3950	3000	650	750	400	25400
RATE	13.4%	13.9%	11.2%	12.2%	11.3%	11.5%	12.5%	12.8%
BOOMERS	800	300	0	0	0	0	0	1000
CIVILIAN WORK FORCE	93400	29500	35400	24500	5800	6500	3200	198300
TOTAL POPULATION	218600	74400	72200	50000	17600	13400	7300	453300

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1979

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17600
STATE & LOCAL GOVERNMENT	14550	7400	10450	5750	1700	1700	850	42300
CONSTRUCTION (TOTAL)	6750	1900	2100	1350	150	300	150	12600
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	1750	400	4100	3400	450	100	50	10300
MINING	700	150	50	900	50	750	250	2900
COMMUNICATION, UTILITIES	1800	550	450	400	50	100	450	3800
RETAIL TRADE	14250	3400	3200	1600	550	300	150	23500
WHOLESALE TRADE	4500	700	350	250	0	0	0	5800
FINANCE, INSURE, REAL EST	4300	650	750	350	50	50	0	6200
TRANSPORTATION	4900	1550	2650	1900	400	550	200	11300
SERVICE	14600	4550	3300	2550	600	800	250	26700
NON-CATEGORIZED	5900	1800	2850	3450	400	300	100	14700
TOTAL WORKERS	83200	26100	32300	22000	5300	5800	2900	177600
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	11000	3500	4050	2800	650	750	350	23200
RATE	11.7%	11.8%	11.1%	11.3%	10.9%	11.5%	10.8%	11.6%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	94200	29600	36300	24800	5900	6600	3300	200800
TOTAL POPULATION	220400	74600	74000	50400	17900	13500	7400	458200

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1980

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9300	3000	2000	1100	900	900	500	17700
STATE & LOCAL GOVERNMENT	15400	7850	11100	6100	1800	1800	900	44900
CONSTRUCTION (TOTAL)	6950	1950	2150	1400	150	300	150	13100
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	1950	450	4300	3450	500	100	50	10700
MINING	700	150	50	900	50	750	250	2900
COMMUNICATION, UTILITIES	1800	600	450	400	50	100	450	3900
RETAIL TRADE	15050	3500	3200	1600	550	250	150	24300
WHOLESALE TRADE	4700	700	350	250	0	0	0	6000
FINANCE, INSURE, REAL EST	4450	650	800	350	50	50	0	6400
TRANSPORTATION	5100	1650	2800	1000	400	600	200	11700
SERVICE	15350	4750	3450	2700	650	850	250	28000
NON-CATEGORIZED	6000	1850	2900	3500	400	300	100	15000
TOTAL WORKERS	86800	27100	33600	22700	5500	6000	3000	184600
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	10850	3400	4150	2850	700	750	400	23100
RATE	11.1%	11.1%	11.0%	11.2%	11.3%	11.1%	11.8%	11.1%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	97600	30500	37800	25500	6200	6800	3400	207700
TOTAL POPULATION	226900	76300	76800	51700	18300	13800	7500	471300

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1981

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9300	3000	2000	1100	900	900	500	17700
STATE & LOCAL GOVERNMENT	16550	8400	11900	6500	1900	1950	950	48200
CONSTRUCTION (TOTAL)	7300	2050	2300	1500	150	300	150	13700
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	2100	350	4400	3550	500	100	50	11000
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1850	600	450	400	50	100	450	3900
RETAIL TRADE	15950	3700	3400	1700	600	300	150	25800
WHOLESALE TRADE	4950	750	400	250	0	0	0	6400
FINANCE, INSURE, REAL EST	4750	700	850	350	50	50	0	6800
TRANSPORTATION	5400	1750	2950	1050	400	600	200	12400
SERVICE	16400	5100	3700	2900	700	900	300	30000
NON-CATEGORIZED	6100	1850	2950	3550	400	300	100	15200
TOTAL WORKERS	91300	28400	35300	23700	5700	6200	3100	193800

WORK FORCE AND POPULATION DATA---

UNEMPLOYMENT	11350	3550	4400	2950	700	800	400	24100
RATE	11.1%	11.1%	11.1%	11.1%	10.9%	11.4%	11.4%	11.1%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	102700	32000	39700	26700	6500	7000	3500	218000
TOTAL POPULATION	236900	79200	80700	54000	18900	14300	7800	491800

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1982

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9400	3000	2000	1100	900	900	500	17800
STATE & LOCAL GOVERNMENT	17800	9050	12800	7000	2050	2100	1050	51800
CONSTRUCTION (TOTAL)	7750	2200	2400	1550	150	300	150	14600
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	2150	350	4450	3650	550	100	100	11300
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1850	600	450	400	50	100	450	4000
RETAIL TRADE	17000	3950	3600	1800	650	300	150	27400
WHOLESALE TRADE	5250	800	400	250	0	0	0	6800
FINANCE, INSURE, REAL EST	5050	750	900	400	50	50	0	7200
TRANSPORTATION	5750	1850	3150	1100	450	650	200	13200
SERVICE	17700	5500	4000	3100	750	950	300	32300
NON-CATEGORIZED	6150	1900	2950	3600	400	300	100	15400
TOTAL WORKERS	96600	30100	37200	24900	6100	6500	3300	204700

WORK FORCE AND POPULATION DATA---

UNEMPLOYMENT	12050	3750	4650	3100	750	800	400	25500
RATE	11.1%	11.1%	11.1%	11.1%	10.9%	11.0%	10.8%	11.1%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	108600	33800	41900	28000	6900	7400	3700	230200
TOTAL POPULATION	248800	82900	85000	56700	19700	15000	8200	516200

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1983

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

NO GAS PIPELINE

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9400	3000	2000	1100	900	900	500	17800
STATE & LOCAL GOVERNMENT	19150	9700	13800	7550	2200	2250	1100	55800
CONSTRUCTION (TOTAL)	8250	2300	2550	1650	150	350	150	15500
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	2200	350	4550	3750	600	100	100	11600
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1900	600	500	400	50	100	500	4000
RETAIL TRADE	18100	4200	3850	1950	650	300	150	29300
WHOLESALE TRADE	5600	850	450	300	0	0	0	7200
FINANCE, INSURE, REAL EST	5400	800	950	400	100	100	0	7700
TRANSPORTATION	6100	1950	3350	1200	450	700	200	14000
SERVICE	19100	5900	4300	3350	800	1050	300	34800
NON-CATEGORIZED	6250	1900	3000	3650	400	300	100	15700
TOTAL WORKERS	102200	31900	39400	26200	6400	6900	3400	216300
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	12800	4000	4900	3300	800	850	450	27100
RATE	11.1%	11.1%	11.1%	11.2%	11.1%	11.0%	11.7%	11.1%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	115000	35900	44300	29400	7200	7700	3900	243400
TOTAL POPULATION	261500	87000	89800	59600	20400	15800	8500	542600

APPENDIX II

Workforce and Population Projections Assuming

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

The following tables exhibit what the workforce, population, unemployment and unemployment rate projections for the years 1974 to 1983 will be if construction of the Trans-Alaska Gas Pipeline is initiated in 1977. Workforce demand is broken out by industry and region. Industrial workforce, unemployment, unemployment rate, civilian workforce and total population are annual average figures.

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1974

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9150	2950	1900	1200	850	850	350	17200
STATE & LOCAL GOVERNMENT	8550	4350	6150	3350	1000	1000	500	24900
CONSTRUCTION (TOTAL)	4900	2000	1350	2350	100	1050	2700	14400
PIPELINE	500	800	0	1500	0	800	2600	6200
MANUFACTURING	1400	250	3850	2650	550	100	0	8700
MINING	850	150	50	800	50	550	150	2600
COMMUNICATION, UTILITIES	1700	550	450	350	50	100	450	3700
RETAIL TRADE	8650	2350	2350	1250	350	300	100	15300
WHOLESALE TRADE	2850	500	250	250	0	0	0	3800
FINANCE, INSURE, REAL EST	2700	550	500	250	50	50	0	4100
TRANSPORTATION	3500	1150	1950	600	300	400	50	7900
SERVICE	8950	2800	2000	1600	400	500	150	16400
NON-CATEGORIZED	5450	1650	2600	3150	350	250	100	13600
TOTAL WORKERS	58600	19100	23500	17800	4000	5100	4500	132700

WORK FORCE AND POPULATION DATA---

UNEMPLOYMENT	7700	2400	2650	1850	500	400	200	15700
RATE	11.6%	11.2%	10.1%	9.4%	11.1%	7.3%	4.3%	10.6%
BOOMERS	750	250	0	0	0	0	0	1000
CIVILIAN WORK FORCE	66400	21500	26200	19700	4500	5500	4700	148400
TOTAL POPULATION	166400	60600	54500	40000	15100	10600	7700	354900

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1975

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	10050	5100	7250	3950	1150	1200	600	29300
CONSTRUCTION (TOTAL)	6100	3150	1650	6550	100	1100	1800	20500
PIPELINE	800	1700	0	5500	0	900	1700	10600
MANUFACTURING	1400	250	3800	2850	450	100	0	8800
MINING	800	100	50	850	50	750	250	2900
COMMUNICATION, UTILITIES	1750	550	450	350	50	100	450	3700
RETAIL TRADE	10750	2800	2800	1500	450	350	100	18700
WHOLESALE TRADE	3500	600	300	300	0	0	0	4700
FINANCE, INSURE, REAL EST	3300	600	600	300	50	50	0	4900
TRANSPORTATION	4400	1400	2450	750	350	450	100	9900
SERVICE	11450	3550	2600	2000	500	600	200	20900
NON-CATEGORIZED	5550	1700	2650	3200	350	250	100	13800
TOTAL WORKERS	68300	22900	26500	23700	4400	5800	4100	155700
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	9900	3600	3000	2500	500	650	600	20700
RATE	12.7%	13.6%	10.2%	9.5%	10.2%	10.1%	12.8%	11.7%
BOOMERS	1300	600	0	100	0	0	0	2000
CIVILIAN WORK FORCE	78200	26400	29500	26200	4900	6500	4700	176400
TOTAL POPULATION	188500	68900	60800	51000	15900	12500	8600	406100

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1976

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	11750	5950	8500	4650	1350	1400	700	34300
CONSTRUCTION (TOTAL)	6900	2500	1850	6500	100	1150	1300	20300
PIPELINE	900	800	0	5300	0	900	1200	9100
MANUFACTURING	1450	350	3800	2900	450	100	0	9000
MINING	750	100	50	850	50	850	250	3000
COMMUNICATION, UTILITIES	1750	550	450	350	50	100	450	3700
RETAIL TRADE	12350	3200	3100	1650	500	350	100	21300
WHOLESALE TRADE	4000	650	350	300	0	0	0	5300
FINANCE, INSURE, REAL EST	3800	700	700	300	50	50	0	5600
TRANSPORTATION	4850	1550	2700	800	400	500	100	10900
SERVICE	13250	4100	3000	2350	550	700	200	24200
NON-CATEGORIZED	5600	1750	2700	3300	350	250	100	14100
TOTAL WORKERS	75700	24400	29100	25100	4800	6400	3700	169200

WORK FORCE AND POPULATION DATA---

UNEMPLOYMENT	11450	4300	3450	3450	550	750	500	24400
RATE	13.1%	15.0%	10.6%	12.1%	10.3%	10.5%	11.9%	12.6%
BOOMERS	1100	600	0	300	0	0	0	2000
CIVILIAN WORK FORCE	87100	28730	32600	28500	5400	7100	4200	193600
TOTAL POPULATION	205800	7330	66700	55400	16800	13700	8100	439800

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1977

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	13150	6650	9450	5200	1500	1550	750	38300
CONSTRUCTION (TOTAL)	6550	2150	2050	1650	150	550	500	13500
PIPELINE	0	300	0	300	0	300	300	1200
MANUFACTURING	1550	400	3900	3150	500	50	50	9500
MINING	750	150	50	900	50	850	250	3000
COMMUNICATION, UTILITIES	1750	550	450	400	50	100	450	3800
RETAIL TRADE	13400	3350	3200	1650	500	350	100	22600
WHOLESALE TRADE	4250	700	350	300	0	0	0	5600
FINANCE, INSURE, REAL EST	4050	700	750	350	50	50	0	5900
TRANSPORTATION	4800	1550	2600	950	350	550	200	11000
SERVICE	13750	4250	3100	2400	600	750	250	25100
NON-CATEGORIZED	5700	1750	2750	3350	350	250	100	14300
TOTAL WORKERS	78900	25200	30600	21300	5000	5900	3200	170100
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	13950	5000	3800	4050	650	800	450	28700
RATE	15.0%	16.6%	11.0%	16.0%	11.5%	11.9%	12.3%	14.4%
BOOMERS	2100	900	0	500	0	0	0	3500
CIVILIAN WORK FORCE	92800	30100	34400	25400	5700	6700	3600	198800
TOTAL POPULATION	216400	75300	70500	51100	17400	13600	7700	451900

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1978

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17600
STATE & LOCAL GOVERNMENT	14050	7150	10150	5550	1650	1650	800	41000
CONSTRUCTION (TOTAL)	6900	2500	2150	5300	150	750	850	18500
PIPELINE	0	600	0	3900	0	500	700	5600
MANUFACTURING	1700	400	4000	3300	450	100	50	10000
MINING	700	100	50	850	50	800	250	2800
COMMUNICATION, UTILITIES	1750	550	450	400	50	100	450	3800
RETAIL TRADE	14600	3600	3400	1750	550	350	150	24400
WHOLESALE TRADE	4600	700	400	300	0	0	0	6000
FINANCE, INSURE, REAL EST	4400	700	800	350	50	50	0	6400
TRANSPORTATION	5300	1700	2900	1050	400	600	200	12200
SERVICE	15300	4750	3450	2700	650	850	250	27900
NON-CATEGORIZED	5800	1800	2800	3400	350	250	100	14500
TOTAL WORKERS	84400	27000	32500	26000	5300	6400	3600	185100
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	14550	6250	4050	3550	650	800	450	30300
RATE	14.7%	18.8%	11.1%	12.0%	10.9%	11.1%	11.1%	14.1%
BOOMERS	1800	1500	0	200	0	0	0	3500
CIVILIAN WORK FORCE	98900	33200	36500	29600	6000	7200	4100	215400
TOTAL POPULATION	228500	80900	74500	58000	17900	14300	8200	482500

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1979

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17600
STATE & LOCAL GOVERNMENT	15400	7800	11100	6050	1800	1800	900	44800
CONSTRUCTION (TOTAL)	7500	2550	2350	6650	150	650	600	20400
PIPELINE	0	400	0	5100	0	300	400	6400
MANUFACTURING	1750	400	4100	3400	450	100	50	10300
MINING	700	150	50	900	50	750	250	2900
COMMUNICATION, UTILITIES	1800	550	450	400	50	100	450	3800
RETAIL TRADE	16250	3900	3650	1850	600	300	150	26700
WHOLESALE TRADE	5100	800	400	300	0	0	0	6600
FINANCE, INSURE, REAL EST	4850	750	850	400	50	50	0	7000
TRANSPORTATION	5750	1850	3150	1200	450	650	200	13200
SERVICE	16900	5250	3800	2950	700	900	300	30800
NON-CATEGORIZED	5900	1800	2850	3450	400	300	100	14700
TOTAL WORKERS	91100	28800	34700	28600	5600	6600	3500	198900

WORK FORCE AND POPULATION DATA---

UNEMPLOYMENT	14950	5750	4350	4450	700	850	500	31600
RATE	14.1%	16.6%	11.1%	13.5%	11.1%	11.4%	12.5%	13.7%
BOOMERS	1500	800	0	500	0	0	0	2800
CIVILIAN WORK FORCE	106000	34600	39100	33100	6300	7400	4000	230500
TOTAL POPULATION	242600	84000	79500	64100	18700	14900	8300	512000

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1980

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9300	3000	2000	1100	900	900	500	17700
STATE & LOCAL GOVERNMENT	16400	8350	11800	6450	1900	1950	950	47800
CONSTRUCTION (TOTAL)	7850	2350	2450	4550	150	500	300	18100
PIPELINE	0	200	0	2900	0	200	100	3400
MANUFACTURING	1950	450	4300	3450	500	100	50	10700
MINING	700	150	50	900	50	750	250	2900
COMMUNICATION, UTILITIES	1800	600	450	400	50	100	450	3900
RETAIL TRADE	17150	4000	3650	1850	650	300	150	27700
WHOLESALE TRADE	5300	800	400	250	0	0	0	6800
FINANCE, INSURE, REAL EST	5100	750	900	400	50	50	0	7300
TRANSPORTATION	5800	1900	3150	1350	450	700	250	13600
SERVICE	17550	5450	3950	3100	750	950	300	32000
NON-CATEGORIZED	6000	1850	2900	3500	400	300	100	15000
TOTAL WORKERS	94800	29600	36100	27200	5800	6600	3300	203400
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	14450	4950	4600	4450	750	850	450	30500
RATE	13.2%	14.3%	11.3%	14.1%	11.5%	11.4%	12.0%	13.0%
BOOMERS	800	400	0	300	0	0	0	1500
CIVILIAN WORK FORCE	109300	34500	40700	31700	6600	7400	3800	233900
TOTAL POPULATION	249300	84100	82600	62500	19200	15000	8200	520800

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1981

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9300	3000	2000	1100	900	900	500	17700
STATE & LOCAL GOVERNMENT	17250	8750	12450	6800	2000	2050	1000	50300
CONSTRUCTION (TOTAL)	7950	2300	2500	2400	150	450	350	16100
PIPELINE	0	0	0	800	0	100	200	1100
MANUFACTURING	2100	350	4400	3550	500	100	50	11000
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1850	600	450	400	50	100	450	3900
RETAIL TRADE	17400	4050	3700	1850	650	300	150	28200
WHOLESALE TRADE	5400	800	400	300	0	0	0	6900
FINANCE, INSURE, REAL EST	5150	750	900	400	50	50	0	7400
TRANSPORTATION	5800	1900	3200	1500	450	700	300	13900
SERVICE	17900	5550	4000	3150	750	950	300	32600
NON-CATEGORIZED	6100	1850	2950	3550	400	300	100	15200
TOTAL WORKERS	96900	30100	37100	25900	6000	6700	3400	206100
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	13550	4350	4750	3850	750	850	450	28600
RATE	12.3%	12.6%	11.4%	12.9%	11.1%	11.3%	11.7%	12.2%
BOOMERS	300	100	0	100	0	0	0	500
CIVILIAN WORK FORCE	110500	34500	41800	29700	6800	7500	3900	234700
TOTAL POPULATION	252200	84300	84900	59900	19500	15300	8400	524400

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1982

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9400	3000	2000	1100	900	900	500	17800
STATE & LOCAL GOVERNMENT	18200	9250	13100	7200	2100	2150	1050	53100
CONSTRUCTION (TOTAL)	8150	2300	2550	1650	150	350	150	15300
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	2150	350	4450	3650	550	100	100	11300
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1850	600	450	400	50	100	450	4000
RETAIL TRADE	17800	4150	3800	1900	650	300	150	28700
WHOLESALE TRADE	5500	850	400	300	0	0	0	7100
FINANCE, INSURE, REAL EST	5300	800	950	400	100	100	0	7600
TRANSPORTATION	5900	1950	3250	1600	450	750	300	14200
SERVICE	18450	5700	4150	3250	800	1000	300	33700
NON-CATEGORIZED	6150	1900	2950	3600	400	300	100	15400
TOTAL WORKERS	99600	31000	38100	25800	6200	6800	3400	211000
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	13000	4050	4900	3450	800	900	450	27500
RATE	11.5%	11.6%	11.4%	11.8%	11.4%	11.7%	11.7%	11.5%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	112600	35100	43000	29300	7000	7600	3900	238500
TOTAL POPULATION	256800	85400	87300	59300	20000	15500	8500	532800

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1983

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1977

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9400	3000	2000	1100	900	900	500	17800
STATE & LOCAL GOVERNMENT	19350	9850	13950	7650	2250	2300	1150	56400
CONSTRUCTION (TOTAL)	8450	2350	2650	1700	150	350	150	15800
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	2200	350	4550	3750	600	100	100	11600
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1900	600	500	400	50	100	500	4000
RETAIL TRADE	18500	4300	3950	2000	700	350	150	29900
WHOLESALE TRADE	5700	850	450	300	0	0	0	7300
FINANCE, INSURE, REAL EST	5500	800	950	400	100	100	0	7900
TRANSPORTATION	6200	2050	3400	1650	500	750	300	14800
SERVICE	19450	6050	4400	3400	850	1050	350	35500
NON-CATEGORIZED	6250	1900	3000	3650	400	300	100	15700
TOTAL WORKERS	103600	32300	39800	26800	6500	7000	3500	219700
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	13200	4100	5050	3400	800	900	450	28000
RATE	11.3%	11.3%	11.3%	11.3%	11.0%	11.4%	11.4%	11.3%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	116900	36500	44900	30300	7300	7900	4000	247700
TOTAL POPULATION	265300	88200	91000	61200	20600	16100	8700	551100

APPENDIX III

Workforce and Population Projections Assuming

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

The following tables exhibit what the workforce, population, unemployment and unemployment rate projections for the years 1974 to 1983 will be if the building of the Trans-Alaska Gas Pipeline commences in 1978. Workforce demand is broken out by ndustry and region. Industrial workforce, unemployment, unemployment rate, civilian workforce and total population are annual average figures.

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1974

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9150	2950	1900	1200	850	850	350	17200
STATE & LOCAL GOVERNMENT	8550	4350	6150	3350	1000	1000	500	24900
CONSTRUCTION (TOTAL)	4900	2000	1350	2350	100	1050	2700	14400
PIPELINE	500	800	0	1500	0	800	2600	6200
MANUFACTURING	1400	250	3850	2650	550	100	0	8700
MINING	850	150	50	800	50	550	150	2600
COMMUNICATION, UTILITIES	1700	550	450	350	50	100	450	3700
RETAIL TRADE	8650	2350	2350	1250	350	300	100	15300
WHOLESALE TRADE	2850	500	250	250	0	0	0	3800
FINANCE, INSURE, REAL EST.	2700	550	500	250	50	50	0	4100
TRANSPORTATION	3500	1150	1950	600	300	400	50	7900
SERVICE	8950	2800	2000	1600	400	500	150	16400
NON-CATEGORIZED	5450	1650	2600	3150	350	250	100	13600
TOTAL WORKERS	58600	19100	23500	17800	4000	5100	4500	132700

WORKFORCE AND POPULATION DATA---

UNEMPLOYMENT	7700	2400	2650	1850	500	400	200	15700
RATE	11.6%	11.2%	10.1%	9.4%	11.1%	7.3%	4.3%	10.6%
BOOMERS	750	250	0	0	0	0	0	1000
CIVILIAN WORK FORCE	66400	21500	26200	19700	4500	5500	4700	148400
TOTAL POPULATION	166400	60600	54500	40000	15100	10600	7700	354900

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1975

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	10050	5100	7250	3950	1150	1200	600	29300
CONSTRUCTION (TOTAL)	6100	3150	1650	6550	100	1100	1800	20500
PIPELINE	800	1700	0	5500	0	900	1700	10600
MANUFACTURING	1400	250	3800	2850	450	100	0	8800
MINING	800	100	50	850	50	750	250	2900
COMMUNICATION, UTILITIES	1750	550	450	350	50	100	450	3700
RETAIL TRADE	10750	2800	2800	1500	450	350	100	18700
WHOLESALE TRADE	3500	600	300	300	0	0	0	4700
FINANCE, INSURE, REAL EST	3300	600	600	300	50	50	0	4900
TRANSPORTATION	4400	1400	2450	750	350	450	100	9900
SERVICE	11450	3550	2600	2000	500	600	200	20900
NON-CATEGORIZED	5550	1700	2650	3200	350	250	100	13800
TOTAL WORKERS	68300	22900	26500	23700	4400	5800	4100	155700
WORK FORCE AND POPULATION DATA---								
UNEMPLOYMENT	9900	3600	3000	2500	500	650	600	20700
RATE	12.7%	13.6%	10.2%	9.5%	10.2%	10.1%	12.8%	11.7%
BOOMERS	1300	600	0	100	0	0	0	2000
CIVILIAN WORK FORCE	78200	26400	29500	26200	4900	6500	4700	176400
TOTAL POPULATION	188500	68900	60800	51000	15900	12500	8600	406100

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1976

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	11750	5950	8500	4650	1350	1400	700	34300
CONSTRUCTION (TOTAL)	6900	2500	1850	6500	100	1150	1300	20300
PIPELINE	900	800	0	5300	0	900	1200	9100
MANUFACTURING	1450	350	3800	2900	450	100	0	9000
MINING	750	100	50	850	50	850	250	3000
COMMUNICATION, UTILITIES	1750	550	450	350	50	100	450	3700
RETAIL TRADE	12350	3200	3100	1650	500	350	100	21300
WHOLESALE TRADE	4000	650	350	300	0	0	0	5300
FINANCE, INSURE, REAL EST	3800	700	700	300	50	50	0	5600
TRANSPORTATION	4850	1550	2700	800	400	500	100	10900
SERVICE	13250	4100	3000	2350	550	700	200	24200
NON-CATEGORIZED	5600	1750	2700	3300	350	250	100	14100
TOTAL WORKERS	75700	24400	29100	25100	4800	6400	3700	169200
WORKFORCE AND POPULATION DATA---								
UNEMPLOYMENT	11450	4300	3450	3450	550	750	500	24400
RATE	13.1%	15.0%	10.6%	12.1%	10.3%	10.5%	11.9%	12.6%
BOOMERS	1100	600	0	300	0	0	0	2000
CIVILIAN WORK FORCE	87100	28700	32600	28500	5400	7100	4200	193600
TOTAL POPULATION	205800	73300	66700	55400	16800	13700	8100	439800

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1977

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17500
STATE & LOCAL GOVERNMENT	13150	6650	9450	5200	1500	1550	750	38300
CONSTRUCTION (TOTAL)	6550	1850	2050	1300	150	250	150	12300
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	1550	400	3900	3150	500	50	50	9500
MINING	750	150	50	900	50	850	250	3000
COMMUNICATION, UTILITIES	1750	550	450	400	50	100	450	3800
RETAIL TRADE	13300	3350	3200	1650	500	350	100	22500
WHOLESALE TRADE	4250	700	350	300	0	0	0	5600
FINANCE, INSURE, REAL EST	4050	700	750	350	50	50	0	5900
TRANSPORTATION	4700	1500	2550	950	350	550	200	10800
SERVICE	13650	4250	3050	2400	600	750	250	24900
NON-CATEGORIZED	5700	1750	2750	3350	350	250	100	14300
TOTAL WORKERS	78600	24800	30500	20900	5000	5700	2800	168300
WORKFORCE AND POPULATION DATA---								
UNEMPLOYMENT	13450	4800	3800	3950	650	800	450	27900
RATE	14.6%	16.2%	11.1%	15.9%	11.5%	12.3%	13.8%	14.2%
BOOMERS	1800	800	0	400	0	0	0	3000
CIVILIAN WORK FORCE	92000	29500	34300	24900	5600	6500	3300	196200
TOTAL POPULATION	215100	74000	70300	50300	17300	13300	7300	447700

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1978

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17600
STATE & LOCAL GOVERNMENT	13800	7000	9950	5450	1600	1600	800	40300
CONSTRUCTION (TOTAL)	6650	2200	2050	1650	150	550	500	13700
PIPELINE	0	300	0	300	0	300	300	1200
MANUFACTURING	1700	400	4000	3300	450	100	50	10000
MINING	700	100	50	850	50	800	250	2800
COMMUNICATION, UTILITIES	1750	550	450	400	50	100	450	3800
RETAIL TRADE	13850	3400	3200	1650	550	300	150	23100
WHOLESALE TRADE	4400	700	350	250	0	0	0	5700
FINANCE, INSURE, REAL EST.	4200	700	750	350	50	50	0	6100
TRANSPORTATION	4850	1550	2650	1000	400	550	200	11200
SERVICE	14250	4450	3200	2500	600	750	250	26000
NON-CATEGORIZED	5800	1800	2800	3400	350	250	100	14500
TOTAL WORKERS	81200	25800	31500	21900	5100	6100	3200	174800

WORKFORCE AND POPULATION DATA---

UNEMPLOYMENT	13100	4300	3950	3000	650	750	350	26200
RATE	13.9%	14.3%	11.1%	12.0%	11.3%	10.9%	9.9%	13.0%
BOOMERS	1100	400	0	0	0	0	0	1500
CIVILIAN WORK FORCE	94300	30100	35500	24900	5800	6800	3600	201000
TOTAL POPULATION	220100	75600	72400	50600	17600	13700	7600	457600

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1979

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9250	3000	1950	1100	900	900	500	17600
STATE & LOCAL GOVERNMENT	14800	7500	10650	5850	1700	1750	850	43100
CONSTRUCTION (TOTAL)	6950	2500	2150	5300	150	750	850	18700
PIPELINE	0	600	0	3900	0	500	700	5600
MANUFACTURING	1750	400	4100	3400	450	100	50	10300
MINING	700	150	50	900	50	750	250	2900
COMMUNICATION, UTILITIES	1800	550	450	400	50	100	450	3800
RETAIL TRADE	15100	3600	3350	1700	550	300	150	24800
WHOLESALE TRADE	4750	750	400	250	0	0	0	6100
FINANCE, INSURE, REAL EST.	4500	700	800	350	50	50	0	6500
TRANSPORTATION	5400	1750	2950	1100	400	600	200	12500
SERVICE	15750	4900	3550	2750	650	850	250	28800
NON-CATEGORIZED	5900	1800	2850	3450	400	300	100	14700
TOTAL WORKERS	86700	27600	33300	26500	5400	6500	3700	189800
WORKFORCE AND POPULATION DATA---								
UNEMPLOYMENT	13450	5350	4150	3200	700	800	450	28100
RATE	13.4%	16.2%	11.1%	10.8%	11.5%	11.0%	10.8%	12.9%
BOOMERS	1300	1100	0	200	0	0	0	2500
CIVILIAN WORK FORCE	100200	33000	37500	29700	6100	7300	4100	217900
TOTAL POPULATION	231000	80800	76300	58300	18200	14500	8400	487400

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1980

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9300	3000	2000	1100	900	900	500	17700
STATE & LOCAL GOVERNMENT	16250	8250	11700	6400	1900	1900	950	47400
CONSTRUCTION (TOTAL)	7700	2600	2400	6700	150	650	600	20800
PIPELINE	0	400	0	5100	0	300	400	6400
MANUFACTURING	1950	450	4300	3450	500	100	50	10700
MINING	700	150	50	900	50	750	250	2900
COMMUNICATION, UTILITIES	1800	600	450	400	50	100	450	3900
RETAIL TRADE	17050	3950	3650	1800	650	300	150	27600
WHOLESALE TRADE	5250	800	400	250	0	0	0	6800
FINANCE, INSURE, REAL EST.	5050	750	900	400	50	50	0	7300
TRANSPORTATION	5950	1900	3250	1250	450	700	200	13700
SERVICE	17650	5450	3950	3100	750	950	300	32200
NON-CATEGORIZED	6000	1850	2900	3500	400	300	100	15000
TOTAL WORKERS	94700	29800	36000	29200	5800	6700	3600	205900

WORKFORCE AND POPULATION DATA---

UNEMPLOYMENT	14900	5600	4450	4450	750	900	500	31600
RATE	13.6%	15.8%	11.0%	13.2%	11.5%	11.8%	12.2%	13.3%
BOOMERS	1500	800	0	500	0	0	0	2800
CIVILIAN WORK FORCE	109600	35400	40500	33700	6600	7600	4100	237400
TOTAL POPULATION	249400	85500	82200	65200	19100	15200	8500	525100

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1981

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9300	3000	2000	1100	900	900	500	17700
STATE & LOCAL GOVERNMENT	17500	8900	12600	6900	2050	2050	1050	51000
CONSTRUCTION (TOTAL)	8200	2450	2550	4600	150	500	300	18700
PIPELINE	0	200	0	2900	0	200	100	3400
MANUFACTURING	2100	350	4400	3550	500	100	50	11000
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1850	600	450	400	50	100	450	3900
RETAIL TRADE	18000	4200	3850	1900	650	300	150	29100
WHOLESALE TRADE	5550	850	450	300	0	0	0	7200
FINANCE, INSURE, REAL EST.	5350	800	950	400	100	100	0	7700
TRANSPORTATION	6050	2000	3350	1400	450	750	250	14300
SERVICE	18600	5750	4200	3250	800	1000	300	33900
NON-CATEGORIZED	6100	1850	2950	3550	400	300	100	15200
TOTAL WORKERS	99300	30900	37800	28300	6100	6800	3400	212700

WORKFORCE AND POPULATION DATA---

UNEMPLOYMENT	14950	5100	4800	4550	800	900	450	31500
RATE	13.1%	14.2%	11.3%	13.9%	11.6%	11.7%	11.7%	12.9%
BOOMERS	800	400	0	300	0	0	0	1500
CIVILIAN WORK FORCE	114300	36000	42600	32800	6900	7700	3900	244200
TOTAL POPULATION	259400	87000	86500	64800	19700	15500	8400	541300

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1982

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9400	3000	2000	1100	900	900	500	17800
STATE & LOCAL GOVERNMENT	18500	9400	13350	7300	2150	2200	1100	54000
CONSTRUCTION (TOTAL)	8400	2400	2600	2500	150	450	350	16900
PIPELINE	0	0	0	800	0	100	200	1100
MANUFACTURING	2150	350	4450	3650	550	100	100	11300
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1850	600	450	400	50	100	450	4000
RETAIL TRADE	18450	4300	3950	1950	700	350	150	29800
WHOLESALE TRADE	5700	850	450	300	0	0	0	7300
FINANCE, INSURE, REAL EST.	5500	800	950	400	100	100	0	7800
TRANSPORTATION	6150	2050	3400	1550	500	750	300	14600
SERVICE	19150	5950	4300	3350	800	1050	300	34900
NON-CATEGORIZED	6150	1900	2950	3600	400	300	100	15400
TOTAL WORKERS	102200	31800	38900	27100	6400	7000	3600	216900

WORKFORCE AND POPULATION DATA---

UNEMPLOYMENT	14200	4550	5000	4000	800	900	450	30000
RATE	12.2%	12.5%	11.4%	12.9%	11.1%	11.4%	11.1%	12.2%
BOOMERS	300	100	0	100	0	0	0	500
CIVILIAN WORK FORCE	116400	36300	44000	31100	7200	7900	4100	246900
TOTAL POPULATION	264100	88000	89200	62500	20300	15900	8800	548800

ALASKA MANPOWER STUDY

Workforce and Population Projections by Region

ANNUAL AVERAGE FOR 1983

ROWS AND COLUMNS MAY NOT ADD DUE TO ROUNDING

TRANS-ALASKA GAS PIPELINE CONSTRUCTION START 1978

	ANCHORAGE	FAIRBANKS	SOUTHEAST	SOUTHCENT	SOUTHWEST	NORTHWEST	NORTHERN	TOTAL ALASKA
FEDERAL GOVERNMENT	9400	3000	2000	1100	900	900	500	17800
STATE & LOCAL GOVERNMENT	19550	9950	14100	7700	2250	2300	1150	57000
CONSTRUCTION (TOTAL)	8600	2400	2700	1750	150	350	200	16200
PIPELINE	0	0	0	0	0	0	0	0
MANUFACTURING	2200	350	4550	3750	600	100	100	11600
MINING	750	200	50	900	50	700	200	2900
COMMUNICATION, UTILITIES	1900	600	500	400	50	100	500	4000
RETAIL TRADE	18900	4400	4050	2000	700	350	150	30600
WHOLESALE TRADE	5850	900	450	300	0	0	0	7500
FINANCE, INSURE, REAL EST.	5600	850	1000	450	100	100	0	8000
TRANSPORTATION	6300	2100	3450	1650	500	800	300	15100
SERVICE	19850	6150	4450	3500	850	1100	350	36200
NON-CATEGORIZED	6250	1900	3000	3650	400	300	100	15700
TOTAL WORKERS	105200	32800	40300	27100	6600	7100	3600	222600

WORKFORCE AND POPULATION DATA---

UNEMPLOYMENT	13750	4300	5150	3600	850	900	450	29100
RATE	11.6%	11.6%	11.3%	11.7%	11.4%	11.3%	11.1%	11.6%
BOOMERS	0	0	0	0	0	0	0	0
CIVILIAN WORK FORCE	119000	37100	45500	30700	7400	8000	4000	251700
TOTAL POPULATION	269400	89500	92100	62200	20800	16300	8800	559100