

**ECONOMIC PROJECTIONS
FOR ALASKA AND THE
SOUTHERN RAILBELT
1999-2025**

by
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prepared for

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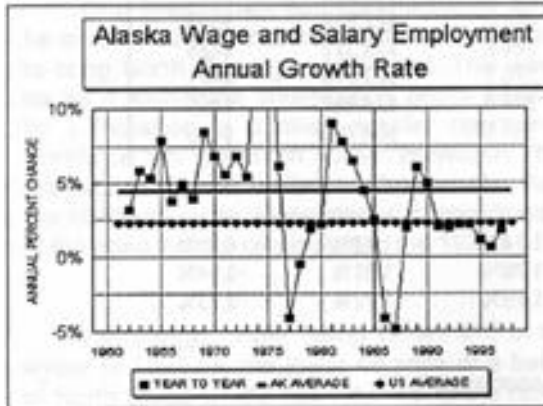


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INTRODUCTION

In the 30 years between statehood and 1990, Alaska was dominated by petroleum-driven growth punctuated by a number of boom and bust cycles, each of which has brought the economy to a higher plateau of activity (see Figure.). Since 1990 the Alaska economy has moved into a period of slower growth because petroleum production—the source of half of state value added—is now in decline. Continued exploitation of petroleum resources, even as production declines, as well as growth in other basic industries such as tourism and mining, will help to offset this loss and stabilize the economy. But dependence on commodity-producing industries means that cycles in the petroleum, fishing, timber, and mining sectors will continue to generate business cycles at the state and regional levels. The large federal and state government presence in the economy means that political decisions made in Washington and Juneau will continue to exert a strong influence on the economy.



For the state as a whole, the most likely (BASE CASE) rate of wage and salary employment growth, the best measure of the size of the economy, is projected to gradually rise, resulting in a 25-year average of 1.3 percent (Table 1). This is based on the assumptions of continued competitiveness of Alaska's export industries and successful downsizing of state and local government in response to reduced

petroleum revenues. The drag on the economy during this transition is gradually overcome. Growth in real personal income will also be below the historical rate because of slower growth in the number of jobs, the continuing shift toward lower wage industries, and slower growth in government payments to individuals. Population will grow at a slightly faster rate than employment because of the continuing trends of aging of the population and the replacement of nonresidents in the work force with Alaskan residents. The average household size will continue its historical decline so growth in the number of households will exceed that of population.

Unanticipated surprises, such as the discovery of oil at Prudhoe Bay and the Exxon Valdez oil spill, have been an important source of economic growth for Alaska in the past and could contribute to growth in the future as well. Higher economic growth—2.3 percent for employment—could occur if the assumptions made in the HIGH CASE scenario come to pass such as the construction of a gas pipeline. It is also possible that unanticipated factors could cause employment over the next 25 years to grow at .5 percent per year. This possibility is illustrated in the LOW CASE scenario. While the likelihood of either of those cases occurring is low, given the history of volatility of the economy, they are not beyond the realm of the possible.

The projected growth of Southcentral Alaska largely parallels that of the state. In the BASE CASE, the Anchorage and Kenai Peninsula Borough employment growth rates are 1.4 percent, while that of the Matanuska-Susitna Borough is 2.2 percent. The Anchorage economy is diversified and it serves as the trade, service, and headquarters center for the state. The Kenai Peninsula Borough is also relatively diversified with oil, fishing, timber, tourism, and government. The Matanuska-Susitna Borough enjoys a close proximity to Anchorage, serving as a bedroom community to absorb the overflow of growth from Anchorage, and its commodity-based economy will also expand in future years.

**Table 1. Projection Summary
Base Case**

	Population	Households	Total Employment	Wage and Salary Employment	Personal Income	Petroleum Revenues
	(000)	(000)	(000)	(000)	(Mill 98\$)	(Mill 98\$)
1998	621.3	224.0	317.9	272.3	\$15,826	\$1,856
1999	628.5	226.8	320.4	274.6	\$16,075	\$1,072
2000	631.2	228.0	323.2	277.1	\$16,205	\$1,138
2001	641.4	231.8	329.0	282.5	\$16,593	\$1,157
2002	649.9	234.9	334.2	287.1	\$16,941	\$1,147
2003	663.2	239.8	339.5	292.0	\$17,241	\$1,148
2004	676.2	244.5	345.0	297.0	\$17,510	\$1,087
2005	687.1	248.5	347.5	299.3	\$17,685	\$961
2006	692.6	250.5	346.0	297.9	\$17,657	\$940
2007	699.4	253.0	349.0	300.6	\$17,820	\$899
2008	708.6	256.4	352.2	303.5	\$18,125	\$856
2009	718.1	259.9	354.9	305.9	\$18,290	\$821
2010	729.4	264.0	359.6	310.3	\$18,661	\$755
2011	742.0	268.7	364.5	314.7	\$19,044	\$728
2012	755.0	273.5	369.3	319.1	\$19,431	\$707
2013	769.0	278.7	375.3	324.5	\$19,869	\$684
2014	784.5	284.5	382.2	330.7	\$20,350	\$655
2015	798.7	289.8	386.8	334.9	\$20,748	\$629
2016	809.5	293.9	389.1	337.0	\$20,916	\$604
2017	820.4	298.1	393.7	341.1	\$21,298	\$585
2018	832.7	302.9	399.0	345.9	\$21,719	\$562
2019	845.9	308.0	404.7	351.0	\$22,161	\$540
2020	860.3	313.5	411.3	357.1	\$22,650	\$522
2021	874.0	318.8	416.3	361.6	\$22,952	\$505
2022	886.8	323.8	421.2	366.0	\$23,377	\$488
2023	899.6	328.9	426.5	370.7	\$23,816	\$471
2024	913.1	334.1	432.3	376.0	\$24,287	\$455
2025	927.5	339.8	438.9	381.9	\$24,795	\$440

Annual Average Growth Rate

2000-2010	1.46%	1.48%	1.07%	1.14%	1.42%	-4.01%
2010-2025	1.62%	1.70%	1.34%	1.39%	1.91%	-3.54%
2000-2025	1.55%	1.61%	1.23%	1.29%	1.72%	-3.73%

Map Model Simulation

Prepared for

Created

Population	POP	CEA99B
Households	HH	Chugach Electric Association
Total Employment	EM99	6-1-99
Wage & Salary EM	EM97	July 1 Census Definition
Personal Income	DF. PIB	July 1 Census Definition
Petroleum Revenues	DF. RP9S	Includes Active Duty Military and Proprietors (Old Definition)
		Alaska Dept of Labor Definition
		USDC BEA Definition
		Includes Permanent Fund Contribution and Windfalls

THE BASIC SECTORS

For the foreseeable future, the Alaska export base will continue to be dominated by commodity-producing industries combined with tourism, national defense, and the movement of international freight. Relatively high labor costs, sparse and expensive infrastructure, small market size, and distance from markets will continue to act as barriers to the development of significant processing as well as manufacturing and services for export. Petroleum, mining, tourism, and international freight hold the most potential for employment growth. Growth of the timber and seafood industries may result from more intensive exploitation of the resource base coupled with the expansion of value-added processing.

Because of this dependence on commodity-producing industries, the Alaska economy will continue to experience localized business cycles as commodity prices respond to world market conditions. Although the existence of these cycles can be expected, their timing cannot be forecast. Consequently our projections have an appearance of smoothness and continuity which contrasts with the past experience of the economy and which is unlikely to be the actual pattern in the future.

One cycle which can be anticipated would be associated with the construction of a pipeline to bring North Slope gas to market. This would cause a significant construction boom followed by a transition to a much smaller operational workforce. In the High Case projection, this appears as a cycle similar to, albeit smaller than, the historical cycle associated with construction of the trans-Alaska oil pipeline in the 1970s.

Petroleum. After falling below \$10 in the winter of 1998-99, the lower 48 price of a barrel of North Slope Crude has returned to the range of its expected long term average \$16 (1999\$). After a period of restructuring highlighted by the BP ARCO merger, employment stabilizes. Several factors suggest this scenario. First, the state has recently relaxed the regulations regarding the state royalty rate on marginal oil fields and this will enhance interest in the development of a number of smaller fields on the North Slope, as well as heavy oil fields such as West Sak. Second, exploration continues and new fields continue to be discovered. Third, billions of barrels of oil remains in fields currently producing. The

expansion of infrastructure and technological advances will continue to reduce the costs of exploration, development and production in the future as they have in the past. Although future production is expected to continue to decline, it will continue to sustain a large workforce because of the intensity of development.

Exploration of ANWR is included in the Base Case but neither production from ANWR nor the construction of a gas line to carry North Slope natural gas to tidewater are assumed. We assume instead that North Slope gas is converted to a liquid on site and transported through the existing pipeline after 2005. North Slope oil production declines from 1.2 million barrels per day in 1999 to slightly over 1 million barrels per day in 2005. Thereafter it falls 4 percent annually. Employment in the industry stabilizes at 8.35 thousand in the next decade.

If the real price of oil were to grow over time, or some other set of changes were to increase the wellhead value of North Slope Crude by several dollars, the incentive to explore and develop on the North Slope would be greater than in the Base Case. In the High Case scenario, we assume development of a major discovery in ANWR with production after 2006, production from a major field offshore, and the construction of a gas pipeline between 2005 and 2010. Employment in the industry reaches 12 thousand by 2010.

If the real wellhead price of oil were to average several dollars less than in the Base Case, the incentive to explore and produce on the North Slope would be reduced and the level of petroleum employment could continue to decline throughout this decade. Exploration and development in ANWR would not occur, and there would be no construction of a gas pipeline. In this case declining production would result in falling employment to under 7 thousand in 2010.

In all cases the Alyeska Pipeline and the processing of petroleum for export continue in operation at the current level of employment. Processing consists of the export of LNG, the manufacture of Urea, and the refining of a small portion of the crude oil produced in the state.

Mining. The mineral potential of Alaska has long been recognized; and the combination of a large base of prospects, increasing world demand, and technological advances will result in growth in production in spite of flat commodity prices. This is reflected in the current activity level in this industry around the state and particularly in Southeast and Interior Alaska. The development of the Fort Knox mine outside Fairbanks, the reopening of the Greens Creek mine outside Juneau, and the expansion of the Red Dog Mine in the Northwest are the most visible examples of this interest.

The general lack of infrastructure at most sites, high construction and operating costs at remote sites, and distance from markets, means that only the largest deposits can be successfully developed. Furthermore, they must be able to withstand the dramatic price fluctuations experienced in world metal and coal markets due to world business cycles.

Identifiable projects which we assume are developed in the Base Case include the Kensington Gold mine and expansion of the Red Dog mine in Northwest Alaska. We also assume other prospects, not currently identified or publicly announced, are developed and brought into production including an additional gold mine in the Fairbanks area.

With higher mineral prices, more discoveries, favorable political decisions, and lower exploration and development costs, the expansion of the mining sector could proceed more rapidly. In the High Case we assume that production from a coal mine at Beluga on Cook Inlet takes place, a coal mine in the Matanuska valley is developed, and that other unidentified prospects employ more miners than in the Base Case.

If the economic and political climate proves to be unfavorable toward the mining industry, fewer potential projects would reach the production stage. In the Low Case we assume that the new gold mine in the Fairbanks area does not go into production and that employment growth from unidentified prospects grows only 1 percent annually. Existing mining facilities do continue in operation.

Forest Products. The closures of the pulp mills in Sitka and Ketchikan as well as the sawmill in Wrangell reflect a retrenchment of this industry that has historically been central to the economic health of Southeast Alaska. Timber harvesting and

processing will continue to be an important part of the Southeast Alaska economy albeit at a lower level of employment than in the recent past. On the other hand, there is potential for modest expansion of the harvest from Southcentral Alaska forests.

In the Base Case we assume that employment in harvesting and processing stabilizes at about 2 thousand at the end of the decade. A small wood processing facility locates in Ketchikan. Modest expansion in Southcentral Alaska results in overall employment growth in this industry of less than 1 percent annually.

If more timber were to become available for harvest, the long term price were strong, and processing opportunities developed, employment in harvesting and primary processing of timber could be higher in both the Southeast and Southcentral parts of the state. In the High Case we assume that harvesting employment grows at .5 percent annually and that modest processing facilities locate in both Ketchikan and Sitka.

Restrictions on supply and lower prices could result in a gradual reduction in the level of employment in the industry which we reflect in the Low Case by a 1% annual decline in employment in harvesting. In this case there is no growth in the industry in Southcentral Alaska.

Seafood. International competition has negatively impacted the value of Alaska seafood production in recent years, and expansion of the fishing industry is constrained in the long run by the resource base which is close to full exploitation. Potential for growth exists from further "Alaskanization" of the fishery (harvesting and processing of fish caught in Alaska waters by Alaskans), from adding value to seafood prior to export through additional processing, and from the stimulation of growth in consumer demand for Alaskan products. On the other hand, policies to rationalize seafood harvests could reduce Alaska employment levels while improving efficiency, and international competition could continue to reduce the value of Alaska stocks.

In the Base Case the level of employment in fish harvesting and processing remains constant after the opening of a new fish processing facility in Anchorage, reflecting a balance between these factors.

In the High Case expansion of onshore processing of salmon and bottomfish continues through the first decade of the next century at 2 percent annually.

In the Low Case intense competition from foreign sources combined with productivity increases in harvesting result in a gradual decline in the level of employment at a rate of 1 percent annually.

Tourism. The tourism industry will continue to expand as a result of both the growth of demand for tourism in the US and abroad and the increasing market share being drawn to Alaska because of continuing development of the tourism infrastructure in the state.

In the Base Case the index of tourism expenditure growth is 5 percent annually through 2005, 3 percent through 2010, and 2 percent thereafter. This index reflects the combined effects of growth in the number of visitors, increased average length of stay, and growing real expenditures per visitor day. In addition, we assume a continuation of construction activity associated with infrastructure development related to tourism.

In the High Case the tourism index is assumed to increase at the rate of 6 percent until 2005, 4 percent until 2010, and 3 percent thereafter.

In the Low Case the rate is 4 percent until 2005 and 2 percent until 2010, and 1 percent thereafter.

Military. Military personnel levels are difficult to project due to the conflicting demands of security and the federal budget. In recent years there has been a significant downsizing of Alaska military bases in Anchorage (Fort Richardson) and Fairbanks (Fort Wainwright) as well as the closure of several other bases in the state at Adak, King Salmon, McGrath, and Delta Junction. It is not clear whether additional rounds of base closures will occur.

At this time, the recent construction of a new hospital at Elmendorf Airforce Base in Anchorage, which will service a large part of the Pacific region, underscores a trend toward the upgrading of the types of jobs reflected in the manpower figures since the hospital staff will include a larger complement of higher paid officers than manpower lost earlier at Fort Richardson. In the future an increase in

manpower levels is certainly possible in Alaska if troops are returned to the United States from abroad as a cost cutting measure. Furthermore there is no assurance that additional manpower will not be needed in the future due to continued unrest in many parts of the world.

Finally there is some possibility that an anti ballistic missile system will be build and located in Alaska during the next decade.

The Base Case assumes that the level of active duty personnel stationed in Alaska stabilizes at 18 thousand in the late 1990s.

In the High Case annual growth of 1 percent is assumed.

In the Low Case an annual decline rate in personnel of 1 percent is assumed in addition to the closure of Fort Richardson at the end of the next decade.

Federal Civilian. In spite of some recent reduction in the number of federal employees in Alaska the federal government presence in the state is likely to increase in the future for several reasons. Federal civilian employment in certain agencies such as the US Postal Service will respond to growth in the population of the state. Other agencies such as the US Department of Interior will experience increasing levels of activity as the demands on federally owned and managed public resources increase.

In the Base Case we assume employment growth at a .25 percent annual rate.

In the High Case federal civilian employment grows at an annual rate of .5 percent.

In the Low Case employment declines .25 percent annually.

International Air Cargo. International air cargo operations have been expanding rapidly at the Anchorage International Airport, and some activity is also occurring at Fairbanks. The trans-Pacific market is growing rapidly and Alaska is well positioned to play an important role in this growth.

In both the Base Case and the Low Case we assume that employment expands at both Anchorage and Fairbanks from its current level of about 2 thousand to 2.6 thousand by 2010.

In the High Case we assume slightly faster growth, reaching 3.2 thousand by 2010.

Other Basic. We assume a continuation of the annual large infusion of federal funds for capital construction projects such as the new Native hospital in Anchorage through 2010. Thereafter the flow gradually tapers off. Other basic sector activity which has not been explicitly identified in the projection is assumed to grow with the growth in the overall economy. Growth in manufacturing for export, excluding fish processing, timber harvesting and processing, and petroleum processing, is currently insignificant and projected to remain so.

The Permanent Fund dividend, projected to pump nearly \$1 billion into the hands of Alaskan consumers in 1999, has contributed to growth of the economy like another basic industry. Its influence will begin to decline in future years as a portion of the earnings of the Permanent Fund, including part of the share now allocated to the dividend, is appropriated for to cover the expenses of government.

THE NATIONAL ECONOMY AND POLITICS

Trends in the national economy have an important influence on the growth of the Alaska economy. First, a large portion of the exports of the state are sold in the lower 48, so the strength of Alaska export industries, particularly tourism, depends upon the general health of the US economy. Second, the growth in real wage rates at the national level, which is driven by productivity increases, directly influences growth in real wages in Alaska. If real wages grow nationally, Alaska real wages will also grow to maintain parity. Higher real wages would in turn contribute to increased purchasing power for Alaskan consumers. Third, unemployment in the rest of the nation influences the size of the labor force in Alaska. Higher national rates of unemployment cause more people to consider Alaska as a place to look for work. Finally, the size of the federal budget has an important influence on the Alaska economy since Alaska receives more in federal expenditures per capita than any other state.

The national economy is currently in the later stages of a long business cycle expansion which is influencing the Alaska economy in several ways. First it is contributing to strong demand for some Alaskan products, particularly tourism opportunities

within the state. Second it is contributing to the unusually low unemployment rate the state has been enjoying. Third the strength of the stock market combined with low interest rates has contributed to consumer spending. Finally the general optimism about the economy has also contributed to strong consumer spending.

We assume that the growth of the national economy will eventually return to its long term trend values and that the Alaska economy will adjust in response to these changes. In particular the unemployment rate will return to the historical average and growth in consumer spending will slow.

We assume no significant changes in long-term national economic trends in the inflation rate, unemployment rate, real average weekly earnings, or real per capita income. But in the Low Case and High Case projections we assume slightly different values for these variables.

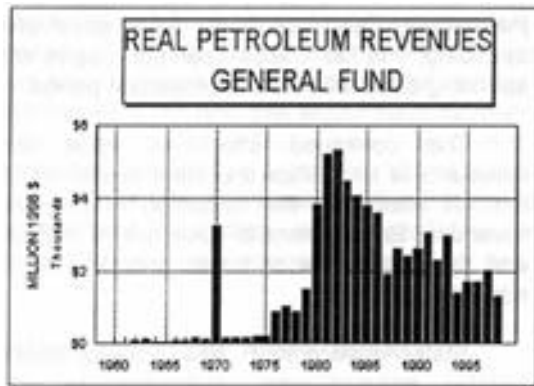
Because of the large military and federal civilian work forces, the large share of federally owned and managed natural resources, the large Native American population, and the fact that Alaska has only recently become a state, the federal government plays an important role in the Alaska economy. In general, we assume no major departures from current policies in these and other areas, such as the legal structure of the Alaska Native Corporations and the by-pass mail system of the U.S. Post Office, which provides subsidized freight service to rural Alaska.

We do assume that the federal cost of living adjustment (COLA), paid to a large share of federal employees in Alaska, gradually declines from its current level of 25 percent to 15 percent in the Base Cases, to 20 percent in the High Case, and 10 percent in the Low Case.

STATE FISCAL POLICY

Petroleum Revenues. State petroleum revenues are based upon the price of oil, production, and the tax and ownership regime. Although we project that the price will be relatively stable in the long run, experience shows that it is quite volatile in the short term, resulting in fluctuations in petroleum revenues of hundreds of millions of dollars from year to year in spite of relatively constant levels of production. Over the long term production is projected to continue the decline which began in

1989 (Figure). We use the Alaska Department of Revenue projections of production in the near term and, since these projections have tended to be conservative in the past, in the longer term use a decline rate consistent with the historical trend. Future production will be more expensive per barrel than historical production which has been



dominated by the Prudhoe Bay field. Furthermore, it is also less likely to be on land owned by the state. Both of these factors will reduce state revenues per barrel of oil produced: the first because the severance tax rate is lower for marginal fields, and the second because the state will not collect a royalty on private or federal offshore leases (and if the production is offshore the state will also not collect a severance tax).

State tax and royalty rates have changed numerous times in the past, but we assume no changes in the future that would significantly change effective rates. Federal policy also influences state petroleum revenues, most notably the recently lifted export ban on North Slope crude oil. We assume no change in federal policy impacting state petroleum revenues except the eventual opening of ANWR to exploration.

In the Base Case general fund petroleum revenues fall from \$1.1 billion in 1999 to \$.755 billion in 2010 (1999\$) and \$.522 billion in 2020. In the High Case petroleum revenues are \$1.3 billion in 2010 and 2020. In the Low Case petroleum revenues are \$.605 billion in 2010 and \$.359 billion by 2020.

In addition to taxes and royalties on current production, the state has received several hundred million dollars in each of the last several years from the settlement of various disputes with the oil companies over the valuation of petroleum for

calculating tax liability and royalty payments. This inventory of outstanding disputes has been greatly reduced, and the state has now accumulated a several billion dollar cash reserve in the Constitutional Budget Reserve account. We assume the state receives an additional \$.5 billion over the next 5 years for deposit into this account. This balance will probably be expended over the next several years to cover general fund deficits anticipated to be nearly \$1 billion dollars annually.

Alaska Permanent Fund. The Alaska Permanent Fund has a balance of about \$24 billion (including the earnings reserve and unrealized capital gains). Recent growth has been dramatic, based on the strength of the US stock market. In the future its growth in real terms will come from contributions of a share of state royalties from petroleum and other resources and from any reinvestment of earnings in excess of the amount used to fund the annual Permanent Fund Dividend and to maintain the purchasing power of the fund balance through deposits known as "inflation proofing." Although the Legislature has also made special appropriations to the Fund in the past, we do not expect that practice to continue.

Because of its size the annual earnings of the Fund now constitute the largest source of income for the state and it will be the centerpiece of any strategy to mitigate the effects of declining petroleum revenues which have led to the "fiscal gap". We assume a continuation of the conservative investment policy of the Fund and a stable 5 percent annual return after inflation in the Base Case. We assume a 6 percent return in the High Case and 4 percent in the Low Case.

"Fiscal Gap" Strategy. Since revenues from petroleum production account for 85 percent of the state general fund revenues and about 1-in-3 jobs in Alaska can be traced to state government spending, the decline in petroleum production which began in 1989 will continue to have a major impact on the economy. The relatively small contribution to state value added from our other resource industries precludes the possibility that revenues from these industries could successfully fill the void left by declining petroleum revenues. Whereas in the past increasing state expenditures fueled by expanding petroleum revenues contributed significantly to economic growth, the loss of petroleum revenues is now causing a "fiscal drag" on the economy.

We can describe the ways in which the loss of petroleum revenues will impact the economy only in very general terms because it is difficult to predict with any precision either the amount of petroleum revenues that will be available to government during the coming years or the adjustment policies which state and local governments will adopt to deal with declining revenues. Up to now, the main response has been to try to minimize growth in the state operating budget and utilize cash reserves to balance the budget. However, the need for more comprehensive adjustments presents itself in each of the projection scenario cases--Low, Base, and High.

These measures in each Case form a fiscal package with six elements, three of which have already been initiated. First, the level of state spending, including transfers to local government, falls as the availability of revenues decreases. In the all cases General Fund appropriations are held at a constant level through 2002. After that in the Base Case and Low Case General Fund appropriations grow with inflation and half the growth in population. In the High Case general fund expenditures grow with inflation and population. Second, the cash balances in the Constitutional Budget Reserves are used to balance the budget. Third, as the decline becomes more pronounced, the cost of living adjustment normally built into public sector wage rate contracts is eliminated for a period to allow real wage rates in the public sector to adjust downward.

Since these measures alone will be insufficient to balance the state budget at a level that provides a reasonable level of public services, three additional measures will become necessary. First the available earnings of the Permanent Fund are transferred each year as necessary to fund General Fund appropriations. Second, the formula used to determine the Permanent Fund Dividend paid to all Alaska residents is revised. The amount allocated to the Dividend account becomes the residual real earnings of the Permanent Fund after the appropriation to the General Fund. Third, the personal income tax is restored at rates which approximate those in place before the tax was eliminated in 1980. The tax is reimposed in 2006 in the Base Case, 2010 in the High Case, and 2002 in the Low Case.

If revenues from all these sources are insufficient to support General Fund spending at the desired level based on inflation and population

growth, spending is adjusted downward for consistency with available revenues. In no case is the corpus of the Permanent Fund used to fund government spending. In all Cases real per capita state spending does fall over the projection period.

The combined effect of these fiscal measures is to cushion the state economy from the full effects of the reduction in petroleum revenues. Employment in government stabilizes and the importance of public spending for the economy declines.

State government spending—operations, capital expenditures, transfers to local governments, transfers to individuals, loans to business and individuals—no longer contributes to economic growth as was the case in the past. For example, the restoration of the personal income tax and the reduction of the Dividend, actions designed to maintain the purchasing power of government, reduce the purchasing power of households by a somewhat smaller amount.

Local government is also a large employer and is heavily dependent on state transfers to support its programs. The declining ability of state government to finance its budget will limit the ability of local government to expand services and will force local government to look for new sources of revenue as well.

There is no assurance that state government will respond to declining petroleum revenues in the way described in these Cases, particularly with regard to the timing of events. There is a tendency in representative government to postpone the politically painful decisions associated with budget reductions until a crisis arises. However, there are examples from the past, such as the special contributions to the Permanent Fund in the 1980s, which demonstrate that Alaskans have successfully implemented policies which balance future public sector needs against pressing present demands. Thus, our assumption that the state will be successful in managing its fiscal future is at least partially supported by past experience.

One important implication of this set of fiscal assumptions is the continued growth of the Permanent Fund at the same time that there is a decline in government expenditures and the Permanent Fund dividend. Its continued existence provides an important source of income to Alaska and Alaskans, but it is possible that the Permanent Fund would not survive the painful transition which

declining revenues might impose. "Cashing out" of the Fund in the short run would eliminate it as a source of income in the longer term, and this would have significant consequences for any economic projection—providing a temporary stimulus to the economy as long as Permanent Fund-supported government spending were available, but followed by a severe economic slump.

INFRASTRUCTURE AND SUPPORT

Employment in infrastructure (transportation, communications, utilities, and construction) and support (trade, services, and finance), will grow slowly as the economy adjusts to the realities of life after Prudhoe Bay. Subsequently growth will accelerate in response both to increases in basic sector business activity and household purchasing power. As in the national economy, the continuing shift toward an economy dominated by the provision of services will be in evidence in Alaska.

Expansion of infrastructure and support has progressed at a very rapid pace during the last 30 years in response to maturation of the Alaska economy. At the time of statehood, there was very little business infrastructure to support the commodity-producing industries (including the military) or to provide services to Alaskan households. Since then growth in the infrastructure and support industries of the state has transformed the structure of the economy from a "frontier" to one typical of many parts of the rest of the nation. Although not yet complete, this maturation process has largely run its course and growth of these sectors in the future will occur at a rate which more closely parallels that of basic sector activity. Nevertheless the majority of new jobs added to the economy in the next 25 years will be in the support sector of the economy.

TOTAL EMPLOYMENT GROWTH

In the BASE CASE the level of employment will grow slowly until 2000, increase modestly the next decade, and grow more rapidly after 2010. This pattern is a direct result of the assumptions of basic sector and fiscal activity. Modest expansion in support sector activity will offset the fiscal drag on the economy from declining petroleum revenues. Total basic employment will expand slowly, infrastructure employment will be stable, support employment will experience the most rapid growth,

and pressure will continue to be on state and local government to contract. When state and local government get on a sustainable fiscal trajectory, the fiscal drag will disappear and growth will be determined by the economic base.

In the HIGH CASE more robust expansion of basic sector employment and higher petroleum revenues and Permanent Fund earnings fueling government spending keep total employment growing consistently over the projection period. Nevertheless, the majority of new jobs are in the support sector, which doubles in size between 1998 and 2025.

In the LOW CASE declining basic sector employment, consistently low oil prices, and lower Permanent Fund earnings combine to result in a relatively flat employment projection.

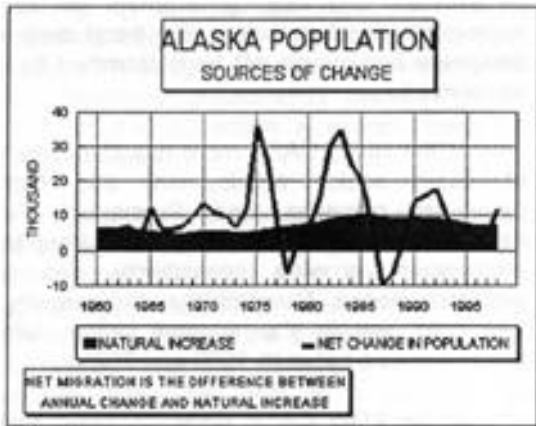
POPULATION AND HOUSEHOLDS

State population and household growth generally track that of employment since people tend to migrate in pursuit of jobs. The availability of jobs will continue to be the primary but not only determinant of population in the state. A smaller share of jobs than historically will go to nonresidents in future years. An increasing proportion of the population will either be too young or too old to be in the labor market.

The labor force participation rate for Alaska has historically been above the national average, not because Alaskans of a particular age and sex are more likely to work but because of a concentration of the population in those age groups that have a high percentage of people employed or looking for work.

In future years the Alaska labor force participation rate will be influenced by two factors which will have opposite effects on the rate. First, the aging of the population will move a larger share of the population into older age cohorts, which have lower labor force participation rates. Second, the age-specific labor force participation rates of females will continue to rise in concert with national rates. We assume the first of these factors will dominate and the labor force participation rate will decline very slowly.

Natural increase (births minus deaths) will continue to add about 10 thousand people to the population each year (Figure).



This will be insufficient to fully supply the labor market and net in migration will add to population growth in most years in the Base Case and High Case. In the Low Case net in migration will be much less. Some in migration however will be due to the increasing tendency of the older population to stay in Alaska rather than out migrate after retirement. The gross flows of newcomers into the state and of residents leaving will continue to be several times the size of the net flows.

Until quite recently, the average household size has been declining in Alaska as it has in the rest of the nation due to the increase in the proportion of single parent households, non-related adult households, and elderly households. In addition Native household size has declined substantially, partly in response to increased availability of housing and higher incomes. This has resulted in more rapid growth in the number of households than population. We assume, consistent with national expectations, that average household size will continue to decline, but at a much slower rate than in the past.

WAGES AND PERSONAL INCOME

The real average annual civilian wage (adjusted for inflation), which grew rapidly in the 1960s and at a slower rate in the 1970s fell during the 1980s. This reflects a shift in employment toward lower wage industries and downward pressure on wage rates from slower growth in employment

opportunities. This is partly a reflection of the state recession in mid decade, partly due to structural change in the Alaska economy, and partly the result of changes occurring in the national economy. The real average annual civilian wage is projected to decline modestly in the future in the Base Case, to decline a bit more rapidly in the Low Case, and to remain relatively flat in the High Case.

Historically, the vast majority of personal income in Alaska has come directly from wage and salary payments. This made household purchasing power very sensitive to fluctuations in basic industry activity. More recently however a larger share of income has come from non-wage sources (transfers and dividends, interest, and rent). This reflects both the growth of numerous state government income transfers to individuals such as the Permanent Fund dividend which support household spending, and the aging of the population. An older population has more opportunity to acquire assets which generate income independent of wages. An older population also has income from pensions and other retirement accounts.

Income from non-wage sources is expected to continue to grow, albeit at a slower pace than historically, particularly transfers. This is due to the likely reduction in the Permanent Fund dividend and other state government transfer programs, and the inability of the federal government to finance the continued expansion of entitlements such as medicaid and medicare at the same rates as in the past. The slowdown in growth of these non-wage components of income will impact household income and slow growth of support employment.

This trend will be punctuated by the distribution of the settlement of the Exxon Valdez oil spill lawsuit. This will result in large payments to a significant number of Alaskans. Although the court settlement was about \$5 billion, the amount which it will ultimately add to Alaskans' incomes is unknown since the decision is under appeal and the residences of all recipients is not known. We assume in the Base Case that \$1 billion will be added to Alaskan incomes from this source during the next decade. In the High Case we assume \$1.5 billion and in the low case \$.5 billion.

Real per capita income will remain relatively constant in the Base Case and Low Case, reflecting these opposing trends in real wage rates and non-

wage income. However, real per capita disposable income will fall slightly with the re-imposition of the personal income tax. In the High Case per capita income will increase. In all cases the differential between Alaska and the lower 48 will continue to decline.

PRICES

The price level in Anchorage is about 15 percent above the national average. This is down from 46 percent above in 1961, 34 percent in 1970, and 29 percent in 1980. The downward trend in the cost of living differential is attributable to an increase in market size in the state which results in competition in consumer and labor markets and economies of scale. These trends are expected to continue, albeit at a slower rate so that the price level in Anchorage will move closer to, but not fall to, the national average. In the Base Case the differential is projected to fall to 10 percent by 2010. In the High Case it remains at the current level, primarily due to labor supply constraints, and in the Low Case it falls to 11 percent.

STATEWIDE SUMMARY

In summary, employment growth is expected to be driven by the continued development of the natural resources of the state with modest increases in value added from processing of those commodities. The rate of employment growth will be considerably below the historical average because of the deceleration of growth of support sector activities and the realignment of the public sector. Growth is characterized as occurring at a relatively smooth rate, but it is likely to continue to be punctuated by cycles of more rapid and slower growth due to the dependence of the economy on commodity production and the uncertainty about how “fiscal drag” will manifest itself.

Strong construction seasons, the movement of several large retailers into the Alaska market, growth in services (in particular tourism and health services), a boom in mining, growth in the Permanent Fund dividend, expansion of the air cargo industry, and a strong national economy have generated most of the employment growth during the last several years.

Economic growth will be slow in the near term as the state wrestles with the “fiscal gap” and the national economy cools off.

ANCHORAGE

The growth rates for employment, population, and households in Anchorage parallel those of the state because Anchorage represents a large portion of the state economy and its economic base is the most diversified in the state. In addition Anchorage is the center for most of the support services provided both to businesses and households throughout much of Alaska. Consequently Anchorage is impacted by developments occurring in virtually every part of the state.

The important activities that support the economy include the following: Petroleum—headquarters for development and production on the North Slope and Cook Inlet in the Kenai Peninsula Borough, as well as home for many of the workers on the North Slope. Military—two military bases (Elmendorf Air force Base and Fort Richardson Army Base) with several thousand active duty personnel. Federal Government—the Department of Interior provides management of the 60 percent of Alaska lands owned by the Federal Government and the Department of Defense supports military operations. Tourism and Air Transportation—Anchorage hosts two-thirds of the 425,000 tourists who visit the state annually and the International Airport services both passenger and air freight traffic between the United States, Europe, and the Far East. Commercial Center—54 percent of trade receipts and 69 percent of service receipts flow through Anchorage businesses, and Anchorage serves as headquarters for most banks as well as being the transportation and construction center for much of the state. State Government — supported largely by petroleum revenues, state government is an important employer in Alaska, and Anchorage has the largest concentration of state employees.

Anchorage residents enjoy a high per capita income (at \$25,000 it was about 30 percent above the national average in 1990) and a high mean household income (\$67,000 in 1990). Factors contributing to the high overall income include the high average wages in several important industries such as petroleum and construction, a relatively high proportion of professional and technical jobs, a relatively small population over 65, and a high labor force participation rate. Purchasing power is enhanced by the absence of state or local income or sales taxes and the annual Permanent Fund dividend each resident receives from the state (expected to be about \$1,700 in 1999).

Although the cost of living in Anchorage has historically been higher than in the rest of the country, that is only a partial explanation of the higher wages and incomes. Furthermore the cost of living differential has narrowed considerably in recent years with improved transportation, increased population, larger markets, and other factors.

The Anchorage population has nearly tripled since Alaska became a state in 1959. In the process Anchorage has been transformed from a frontier town into a modern city. The petroleum industry has supplanted the military as the dominant basic industry in the community. Together with specific government policies fostering the development of the Alaska economy this has led both to growth in household income and population stability. Trade, services, and finance support industries have grown enormously as Anchorage has gradually replaced Seattle as the supply center for much of Alaska.

MATANUSKA-SUSITNA BOROUGH

The Matanuska-Susitna Borough economy has become closely linked to the Anchorage economy as over the years better road connections have transformed large parts of the Matanuska-Susitna Borough into a suburb of Anchorage. The Borough will continue to evolve as a part of the greater Anchorage economy and will grow with Anchorage since it has a relatively small economic base of its own consisting of mining, timber, and tourism. But because it is on the periphery of the greater Anchorage economy, change in the Borough will be more pronounced than for Anchorage. Consequently, the rate of growth in the Borough will be faster than for the state or for Anchorage when the economy is expanding and may lag when the state economy is stagnant.

KENAI PENINSULA BOROUGH

The economy of the Kenai Peninsula Borough is relatively diverse with significant levels of activity in the production and processing of petroleum, seafood, and timber. In addition the Borough is a center for tourism, state government facilities, and regional transportation. This base will provide stability to the economy and growth rates will mirror those of the state and Anchorage. The Borough will continue to rely on Anchorage for the provision of many support services.

The 18 thousand jobs in the Kenai Peninsula Borough are based primarily on the activities of the petroleum, fishing, and tourism industries. The transportation links to Anchorage do not allow commuting on a daily basis.

ECONOMIC PROJECTION METHODOLOGY

The projections of economic and demographic variables for the state of Alaska and the Southcentral region presented in this report were generated using the Institute of Social and Economic Research (ISER) MAP Econometric Modeling System. This modeling system combines an economic module, a demographic module, a fiscal module, a regionalization module, and a housing stock module.

The model is driven by an ECONOMIC DEVELOPMENT SCENARIO which is a consistent set of assumptions about levels of future basic industry activity within the state, national variables, and state fiscal policy variables. A complete listing of the assumptions for each scenario used to generate the Base, High, and Low Case projections is contained in an appendix.

The scenario elements were developed by the author with the assistance of an informal committee composed of representatives of the utilities participating in this study. The author proposed the elements to be included in each of the cases and the committee reviewed each scenario. Although the choice of assumptions to include within a scenario is rarely unanimous, there was broad general agreement among participants on the composition of each of the scenarios.

Many of the scenario elements involve a large degree of judgement about future domestic and international political events which are beyond the realm of economics. It is in these elements that the informal committee provided the most assistance in the formulation of the scenarios.

The working definitions of the Base, High, and Low Case are as follows: The **Base Case** is a combination of scenario elements that yields a projection of population in Southcentral Alaska which is the median of all possible population outcomes. That means approximately that there is as much chance that employment or population will actually be higher than the Base Case as there is that

employment or population will be lower. The **High Case** is a combination of scenario elements which yields a projection of population which is near the upper bound of the range of likely outcomes. The **Low Case** is a combination of scenario elements which yields a projection of population which is near the lower bound of the range of likely outcomes. These definitions are subjective but represent the general direction of thought of the group as the scenario elements were being chosen.

There are numerous combinations of scenario elements which, when combined into an ECONOMIC DEVELOPMENT SCENARIO, will yield a particular population projection for Southcentral Alaska. An earlier study by the author which also used the MAP Econometric Modeling System has demonstrated the range of possible population outcomes for a large number of combinations of scenario elements (*Economic and Demographic Projections for the Alaska Railbelt: 1988-2010*, ISER, 1988). Furthermore, the **High** and **Low Cases** could have been, but were not, defined to be the highest and lowest possible outcomes for all possible combinations of scenario elements. Consequently, the actual population growth for Southcentral Alaska could lie outside the upper or lower bounds of the range presented in this study, but with only a small likelihood.

The scenario elements for basic sector economic activity are a collection of both project-specific assumptions and generic industry assumptions. A typical project-specific element is the construction and operation of a gold mine at Fort Knox near Fairbanks while a typical generic element is the assumption of employment growth in the mining industry from projects not currently identified. In recognition of the fact that myopia prevents the identification of all potential projects which may occur over the next 30 years, there has been a conscious effort in the creation of the scenarios to account for this bias through the inclusion of the generic elements. These generic elements have been developed to be as consistent as possible with historical patterns of industrial activity.

One of the most critical assumptions in each development scenario is the price of oil since this affects both the level of petroleum industry activity in the state and the level of public revenues. Petroleum revenues are important to the economy since the state of Alaska currently receives about 85 percent of its

General Fund revenues from petroleum taxes and royalties, and state government spending in Alaska is currently at a rate about 3 times the national average. Consequently, state spending has a disproportionately large influence on the private economy.

In each of the three scenarios, petroleum revenues are less than they were in the past, and a set of assumptions regarding state and local government behavior to address this significant loss of revenue is formalized in a FISCAL SCENARIO.

The main elements of a FISCAL SCENARIO are policies controlling the level of state and local government spending in the face of reductions in revenues, determination of state and local government wage rates, reimposition of a state personal income tax, and the use of earnings of the Permanent Fund including reduction of the Permanent Fund Dividend. Actual state policies to deal with the shortfall of petroleum revenues as well as the timing of their imposition are difficult to project. However independent analyses support the conclusion that some set of policy changes similar to those reflected in the FISCAL SCENARIO will be necessary in the near future to balance the state budget as petroleum revenues decline. Of course neither the author nor the sponsoring utilities are advocating the particular sets of policies reflected in the FISCAL SCENARIOS.