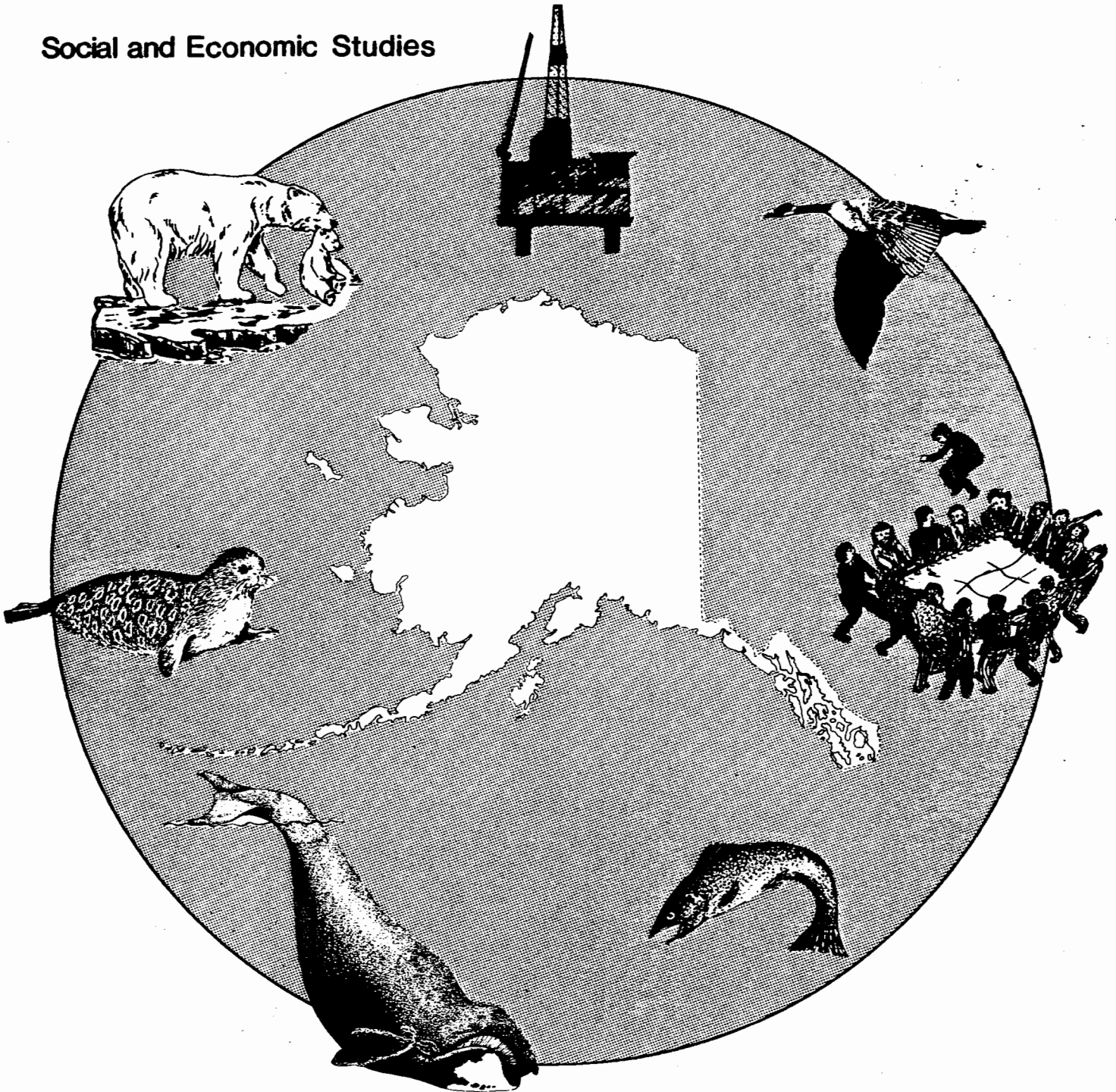


Alaska Statewide and Regional Economic Systems : Effects of OCS Exploration and Development, 1990

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Alaska Outer Continental Shelf Region

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FINAL TECHNICAL REPORT

**ALASKA STATEWIDE AND REGIONAL
ECONOMIC AND DEMOGRAPHIC SYSTEMS:
EFFECTS OF OCS EXPLORATION
AND DEVELOPMENT, 1990**

prepared for

**Social and Economic Studies Program
Minerals Management Service
Alaska OCS Region**

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ABSTRACT

This report contains projections and analyses of cumulative economic and demographic effects of petroleum exploration and development that may occur in Alaska from areas leased as of January 1990 on the federal Outer Continental Shelf (OCS). Econometric modeling techniques are used to develop projections for the state of Alaska and for the Anchorage-Mat-Su Region.

The projected cumulative effects of the Leasing Program include an increase of approximately 4 percent in population and employment for both the state and for the Anchorage-Mat-Su Region. The statewide effects begin with exploration activities in the first half of the 1990s, then grow quickly during construction of development and transportation facilities for OCS development near the end of the decade. The effects then decline slowly as petroleum development moves into the operations phase after the year 2000. Economic activity related to expanded OCS development yields significant new petroleum revenues for state and local governments. Including state income taxes potentially available from the expanded employment base, the revenues added by OCS development are more than sufficient to offset new demands on public services created by the larger population.

The effects on the Anchorage-Mat-Su Region are projected to be nearly as large in 2015 as in 2000 and reach the same percentage increases in population and employment as observed for the state as a whole. The effect of OCS leasing on the Anchorage-Mat-Su Region population and employment is likely to occur slightly later than for the state as a whole due to the lags in the multiplier process producing these largely indirect effects.

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I. INTRODUCTION

This report contains projections and analyses of cumulative economic and demographic effects of petroleum exploration and development that may occur in Alaska on areas leased as of January 1990 on the federal Outer Continental Shelf (OCS). We did not assume that any development would occur on areas not yet leased in 1990. Econometric modeling techniques are used to develop projections for the state of Alaska and for the Anchorage-Mat-Su Region. For this study, the Anchorage-Mat-Su Region includes the Municipality of Anchorage and the Matanuska-Susitna Borough.

We analyze the effects of OCS oil and gas development by projecting the economy and population under two alternative economic scenarios. These scenarios contain exactly the same set of assumptions about future patterns of non-OCS economic activities around the state. However, one scenario includes a hypothetical pattern of petroleum exploration and development activity on the federal Outer Continental Shelf, while the other scenario does not include any OCS activities. The scenario which does not contain OCS activities may be considered a "base case" and the scenario including OCS development an "impact case" for analyzing the effects of OCS activities on the Alaska state and regional economies.

In the following chapters, we discuss and compare economic and demographic projections of the two scenarios. We use the projections in order to assess the potential cumulative effects on the economy and population of Alaska and its

Anchorage-Mat-Su Region of future oil exploration and development on the federal OCS. Our scenario for OCS development assumes that natural gas is not developed commercially on any OCS areas in Alaska.

We project economic and demographic effects using the Man-in-the-Arctic Program (MAP) system of econometric models developed at the University of Alaska, Institute of Social and Economic Research (ISER). Chapter II contains a brief review of the concepts and structure of the MAP economic and demographic modeling system, showing how we use this tool to help project the effects of OCS petroleum development on the economy of the state and its various regions.

Chapter III reviews the assumptions used for the MAP statewide model and presents the economic and demographic projections for Alaska under the "without OCS development" scenario. This scenario assumes no further exploration after 1990 and no development of OCS areas already leased or potentially offered for leasing in the future. This projection serves as the "base case" for the discussion of the cumulative impacts of the future OCS activities. Chapter IV then discusses the economic and demographic projections using "with OCS development" case, comparing these "impact case" projections to the base case described in Chapter III. We use these results to analyze the potential effects of OCS development on the state economy and population.

Chapter V discusses projections of the population and economy of the Anchorage-Mat-Su Region of Alaska under the same without- and with-OCS

development scenarios. Comparing these projections allows us to assess the potential effects, largely indirect, of OCS development on the region containing the bulk of the state's financial, trade, and service industries. Chapter VI reviews and summarizes the results of the statewide and regional projections presented in Chapters III-V.

A number of appendixes contain additional supporting information. Appendix A contains tables describing the scenario assumptions for the with-OCS (impact case) economic and demographic projections for the state of Alaska. Appendix B contains the set of tables describing the with-OCS (impact-case) economic and demographic projection results. Appendix C contains a set of tables describing the without-OCS and the with-OCS projections for the Anchorage-Mat-Su region. Appendixes D and E contain details of economic development and OCS scenario assumptions.

II. METHODOLOGY

This chapter describes the methodology used to project statewide and regional economic and demographic effects of Alaska OCS development. We focus the analysis principally on changes in the magnitude and composition of population, employment, and personal income. Projections of these variables are the product of a complex modeling process. The Man-in-the-Arctic Program (MAP) model system, the principal modeling tool for our economic and demographic projections, has been used extensively in the past for economic and demographic projections. This chapter summarizes the MAP model system and provides a brief description of how it works.

The MAP model system includes a statewide econometric model and a regional model allocating employment and population within the state. These models were developed at ISER and have been refined and extended periodically over the years. Berman et al. (1986) contains a description and complete documentation of the model system. We shall, however, briefly review how each of the two models projects the main economic, demographic, and fiscal variables.

Statewide Projections

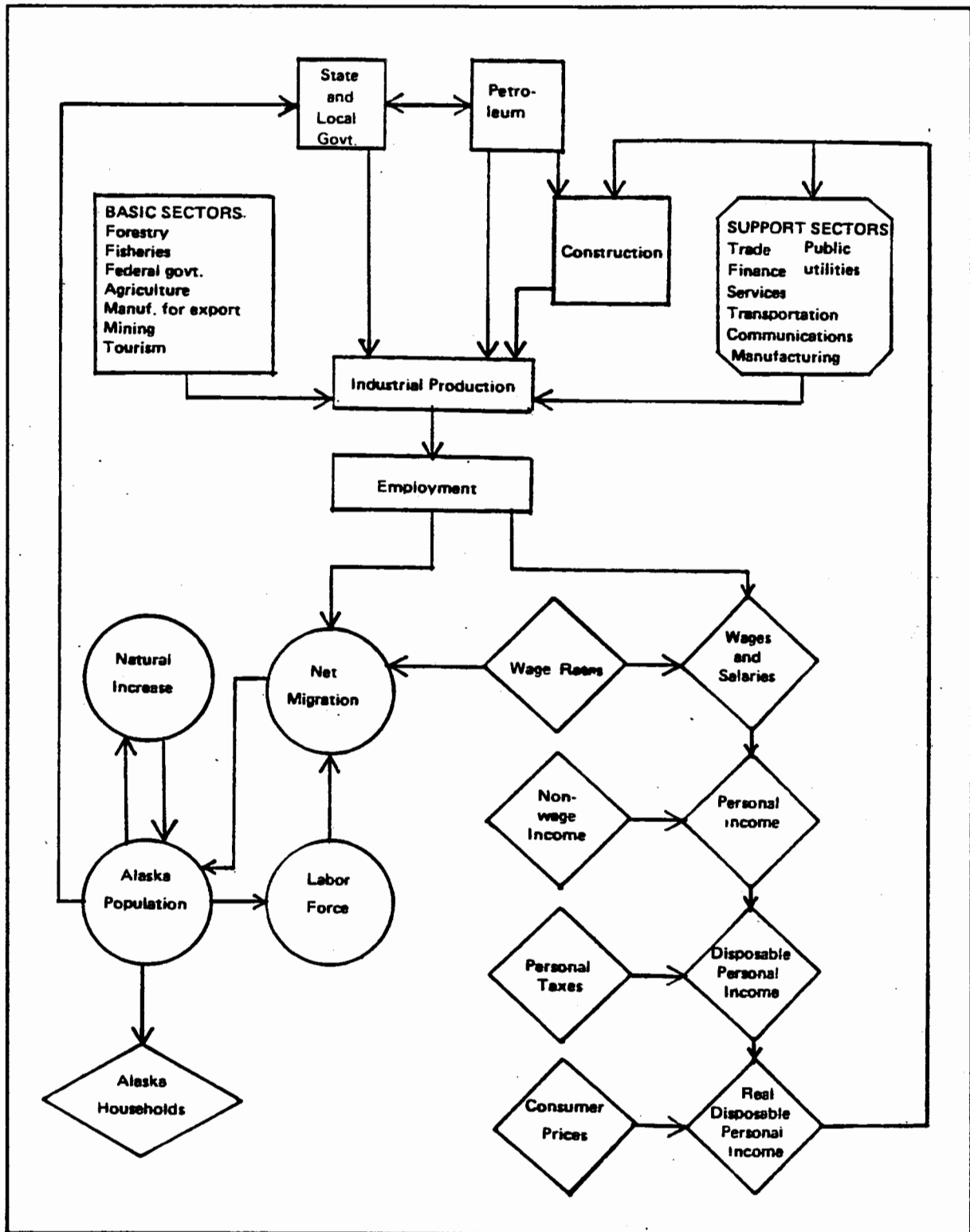
The MAP statewide econometric model has three main components – an economic model, a population model, and a fiscal model. The economic model determines the level of economic activity and employment in each industry as well as prices, wages, and total income. The population model projects values for

numerous demographic variables in order to determine total population and total households. The fiscal component models the revenue and spending patterns of Alaska state and local governments. The three components of the MAP model are interdependent, with linkages as shown in Figure 1. Understanding the nature of this interdependence is helpful for recognizing the powers and limitations of the model for making economic and demographic projections.

The link between the economic model and population model is the notion of a labor market. The population model produces a potential labor force while the economic model produces a labor force participation rate and the demand for labor, e.g., jobs. Net migration flows balance the supply and demand for labor, as discussed in Berman (1982). One link between the fiscal model and the economic model reflects the ability of the Alaska state government to stimulate or depress the economy through expenditures and tax policy. On the other hand, the level of government revenues depends on the level of economic activity, especially activity in the petroleum industry.

In addition to these major links among the three components of the MAP model, there are minor interdependencies such as the use of population figures in the economic and fiscal models to compute per capita income and per capita public spending. This last ratio has been significant in the past for computing state spending under the expenditure limitation initiative. Under recent revenue projections, however, spending is unlikely to reach the limit again even under optimistic scenarios.

Figure 1. MAP Model Structure



The economic model classifies all economic activity as exogenous or endogenous. Exogenous activities produce goods or services for a primarily national or international market while endogenous activities produce to satisfy local or state demand. Forest and fisheries products, petroleum and other mining, and federal government are the major exogenous industries. Most services sector employment is endogenous, although a portion derived from tourism is considered exogenous. Manufacturing, construction, and transportation also contain both endogenous and exogenous components, depending on the assumed location of the market for their products. State and local government spending are endogenous, but depend on revenues with major exogenous components (petroleum revenues and federal transfers). Although local markets absorb most Alaska agricultural production, state policy and resource constraints greatly influence the size and growth of the industry. Thus, we consider it more appropriate to classify this industry as exogenous rather than endogenous.

The notion of exogenous and endogenous economic activity in the MAP statewide economic model is, in many ways, similar to the basic and support sectors in an economic base model. In an economic base model, the so-called basic industries are exogenous (set outside the model), and the support industries are endogenous (computed by the model). The MAP model goes beyond the concept of the basic versus support industries by taking into account the fact that data available for various industries in Alaska to estimate and calibrate the model include both exogenous and endogenous components. Thus, some industries usually considered basic in a base model, such as manufacturing, have an endogenous

component while some support services have an exogenous component deriving from tourism.

Given the levels of exogenous economic activity, the MAP statewide model solves simultaneously for all the endogenous activities as well as for total disposable income, total population, and total employment. Though the process is much more complex than in an economic base model, the MAP model implicitly calculates an "employment multiplier," defined as the equilibrium change in total employment following a change in exogenous employment, other things equal. One may readily observe the multiplier process working in MAP model projections. Since the model assumes that much of support-sector activity depends on real income rather than employment, the actual value of the employment multiplier varies depending on the contribution of particular exogenous events to total income. Many economic variables affect real income, including state revenues and fiscal policy, wage rates, the cost of living and the mix of employment among relatively high- and relatively low-wage industries.

Regional Projections

The MAP regional model allocates MAP statewide model projections for population and basic, support, and government employment among 29 regions, given the regional distribution of exogenous industry employment. The MAP model regions correspond exactly to 1970 census divisions.

The methodology of the regional model is based upon the use of two large matrixes. One relates basic employment in each region to support sector employment in that and in other regions while the other matrix relates employment in each region to population in that and in other regions. The model also distributes government employment to regions based upon population and past trends. The model begins with allocations proportional to distribution of population and employment in 1980. Changes since 1980 in the pattern of basic employment in the regions affect the distribution of support sector employment and population in all the regions.

Personal Income and disposable Personal Income are calculated for 23 regions corresponding to 1980 Census areas. State wage income is distributed among the regions based on employment levels and adjusted for average wage differences among regions. Regional nonwage income is related to wage income, and personal taxes is related to total income.

III. ALASKA ECONOMIC GROWTH WITHOUT OCS DEVELOPMENT

This chapter discusses the projected growth and development of the Alaska economy and population to 2015, assuming that no further petroleum exploration or development activities take place on the federal Outer Continental Shelf after 1990. We assume in the projection discussed in this chapter, however, that exploration and development of petroleum resources continues onshore and in state waters throughout the projection period. We call this the without-OCS projection.

In Chapter IV we will compare the without-OCS projection to an analogous projection that includes the effects on the economy and population of exploration and potential future development of OCS areas. We call this the with-OCS projection. We use these two sets of projections in order to assess the potential cumulative effects of future OCS petroleum development activities. In this chapter, we first discuss the assumptions used for the without-OCS projection. Then we analyze the results of a simulation of the MAP statewide model under the without-OCS scenario.

Scenario Assumptions

Using the MAP model to project the Alaska economy and population requires an input scenario containing five types of assumptions. These are (1) projections for the level of activity in various industries which primarily serve markets outside the state (exogenous industry assumptions); (2) public revenue sources, including

projections of state petroleum revenues and state and local tax policy; (3) state fiscal policy, including assumptions regarding state taxation, spending, revenue sharing, and saving decisions; (4) national economic variable assumptions relevant to Alaska's economy; and (5) demographic assumptions for the Alaska population. Table 1 summarizes the assumptions we use for the MAP base-case projections, following the outline of the five categories.

The scenario assumptions represent, in the aggregate, a median outcome for future demographic, economic, and fiscal conditions affecting the Alaska economy. This means that we consider it equally likely that the value is higher or lower than the assumed value. Since it is unlikely but possible that a very high level may result for some scenario assumptions, the median value generally is lower than the average level of all possible outcomes (the mean). Goldsmith et al., 1985 (Appendix K, Section K.1) discusses this problem in greater detail.

TABLE 1.
1990 MINERALS MANAGEMENT SERVICE STUDY
ASSUMPTIONS USED IN ECONOMIC PROJECTIONS
Without-OCS Case (Case Name MMSB)

A. INDUSTRY ASSUMPTIONS

- | | |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Trans-Alaska Pipeline | Operating employment remains constant at 885 through 2010 with 390 at headquarters in Anchorage and the remainder along the pipeline corridor. [Source: personal communication with Alyeska Pipeline Company] (TAP.S90). |
| 2. Pipeline Corrosion | Corrosion-related repairs and maintenance results in construction employment peaking at 1200 in 1991 and 1992, falling to a constant level of 150 in 1994 (COR.S90N). |
| 3. Oilspill | The Exxon Valdez oilspill generated employment of 2,650 in 1989 and \$700 million in additional personal income to Alaskans (SPL.S90). |
| 4. North Slope Petroleum Development and Production | This case (NSO.S90H) is based upon an expansion of production to include West Sak or a comparable major new field in the 1990s. |
| 5. ANWR | Exploration but no development in ANWR (ANWR.S90L). |
| 6. Upper Cook Inlet -- Petroleum Production | Employment in exploration and development of oil and gas in the Upper Cook Inlet area declines gradually (1 percent annually) as the major oil fields are depleted (UPC.S90). |
| 7. Oil Industry Headquarters | This case (OHQ.S90) is associated with additional development of North Slope fields. |
| 8. TAGS Pipeline | Not constructed |

NOTE: Codes in parentheses indicate ISER names for MAP Model SCEN_ case files, and codes in brackets indicate MAP variable names.

TABLE 1 (continued)

| | |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9. Beluga Coal Production | Development of a 3.5 million ton/year mine for export beginning in 1993 results in employment of 375 in 1995 and beyond (BCL.S90-3). |
| 10. U.S. Borax | Does not begin operations |
| 11. Greens Creek Mine | Production from the Greens Creek Mine on Admiralty Island begins at the end of 1988. Employment in the mine is constant at 250 through 2010. [Source: personal communication, Greens Creek Mining Company] (GCM.S90). |
| 12. Red Dog Mine | The Red Dog Mine in the Western Brooks Range begins operation in 1990 with production employment of 350 (RED.S90). |
| 13. Wishbone Hill | This coal mine in the Matanuska-Susitna Valley begins operation in mid-1991, employing 250 in the extraction and export of coal to Japan (WIS.S90). |
| 14. AJ MINE | Echo Bay Mining Company begins production from this gold mine in Juneau in mid-1993. Operations employment is 450 (AJM.S90). |
| 15. Kensington Mine | Echo Bay Mining Company begins production from this mine north of Juneau in mid-1993. Operations employment is 340 (KEN.S90). |
| 16. Other Mining Activity | Mining employment net of specifically identified projects increases from 650 in 1989 by 3 percent annually (OMN.S90). |
| 17. Agriculture | Employment in agriculture is constant at 1989 level of 525 (AGR.S90). |
| 18. Logging and Sawmills | Logging and milling employment in the Southeast declines in the 1990s by 800 as the Native Corp. harvest falls to a sustainable level. Employment growth in Southcentral reflects new Native Corp. activities (FML.S90). |

TABLE 1 (continued)

| | |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19. Pulp Mills | After 1991 employment declines at a rate of 1 percent per year because of productivity gains (FMP.S90). |
| 20. Commercial Fish Harvesting-- Nonbottomfish | Employment levels in traditional fisheries harvest remain constant at 8,200 through 2015 (SFH.S88). |
| 21. Commercial Fish Processing-- Nonbottomfish | Employment in processing of traditional fisheries harvest increases to 7,500 and then remains constant (SFP.S90). |
| 22. Commercial Fishing-- Bottomfish | The total U.S. bottomfish catch expands to allowable catch. Onshore processing is centered in the Aleutians and Kodiak with additional activity in Anchorage, Kenai Peninsula, and Bristol Bay (SBO.S90). |
| 23. Federal Military Employment | Strength level not associated with special projects remains constant at current level (MIL.S90). |
| 24. Light Infantry Army Division Deployment | A new Army division is deployed to Fairbanks and Anchorage beginning in 1986, augmenting active-duty personnel by approximately 3,000 in 1989 and 3,400 by 1992. [Source: personal communication, Fort Richardson Office of Public Affairs] (LID.S90) |
| 25. Navy Cruiser Homeporting | None assumed |
| 26. Federal Civilian Employment | Employment rises at 0.5 percent annual rate consistent with the long-term trend since 1960 (CIV.S90). |
| 27. Tourism | Index of tourist visitors to Alaska increases by 3 percent per year (TRS.S90). |
| 28. State Electric Projects | Construction employment from Alaska Power Authority projects includes Bradley Lake (SHP.S90). |

TABLE 1 (continued)

B. FISCAL ASSUMPTIONS

B.1. Revenues

State revenue assumptions are based on an expected world oil price (Saudi Light delivered to the U.S. Gulf), in real 1989 dollars, as follows:

| <u>1990</u> | <u>2000</u> | <u>2010</u> |
|-------------|-------------|-------------|
| \$18 | \$19 | \$21 |

\$18 Saudi Light delivered to the U.S. Gulf corresponds to \$17 ANS crude delivered to the U.S. Gulf. (\$17 in 1989\$ is \$18.75 in 1991\$.)

1. Severance Taxes [RPTS] No changes from current tax structure (REVN.90).
2. Royalties [RPRY] Current royalty structure continues. These revenues are distributed between the General Fund and Permanent Fund (REVN.90).
3. Bonuses [RPBS] Based on projections published by Alaska Department of Revenue (REVN.90). No change in regulations.
4. Property Taxes [RPPS] Based on projections published by Alaska Department of Revenue (REVN.90) augmented by taxes on onshore facilities related to OCS development. (See OCS case.)
5. Petroleum Corporate Income Tax [RTCSPX] Based on projections published by Alaska Department of Revenue (REVN.90). No change in tax regulations.
6. Rents [RPEN] Constant in real terms at current level of \$8 million.
7. Miscellaneous Petroleum Settlement Revenues [RP9X] [EXPF2] Alaska receives \$2 billion (1990\$) over the period FY 1991 to 2000 in settlement of disputed offshore leases in the Beaufort Sea and in settlement of lawsuits and tax disputes regarding the valuation of North Slope oil. These revenues are evenly distributed between the General Fund and the Permanent Fund (WIN.S90).

TABLE 1 (continued)

| | |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8. Federal-State Petroleum-Related Shared Revenues [RSFDNPX] | Increasing \$1 million annually from current level of \$25 million. |
| 9. Personal Income Tax [EXPIT] | Reimposed at previous level when state appropriations fall below the FY 1988 level in real terms. Income tax is reimposed prior to elimination of the dividend but only after Permanent Fund earnings have been appropriated to the general fund. |
| 10. Large Project Corporate Income Taxes [RTCSX] | Zero. |
| 11. Miscellaneous Local Revenue Sources [RLTX] [RLPTX] [RLTFPX] | Miscellaneous state-local transfers, large project property taxes, petroleum-related federal transfers all set to zero. |
| 12. New Federal-State Shared Revenues [RSFDNX] | Zero. |
| <u>B.2. State Expenditures</u> | |
| 13. Aggregate Appropriations [EXWIND] | Annual appropriation equals current revenues plus 50 percent of general fund balance available for appropriations. |
| 14. Capital/Operations Split [EXSPLITX] | 90 percent operations; 10 percent capital. |
| 15. General Obligation Bonds | Bond sales for capital expenditures occur at a rate which maintains annual debt service payments at a level no more than 5 percent of current state revenues. |
| 16. Federal Grants-in-Aid for Capital Expenditures [RSFDNCAX] | Constant at \$75 million. |
| 17. State Loan Programs [EXKTR1X] [EXLOAN2] [EXGPSR1] | Appropriations from the general fund for program capitalization terminated after FY 1987. Programs continue functioning on existing capitalization including AHFC and APA revenue bond expenditures. |

TABLE 1 (continued)

| | |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18. Municipal Capital Grants [RLTMCAP] | Funding terminated after FY 1987. |
| 19. State-Local Revenue Sharing [RLTRS] | Continuation proportional to total state expenditures. |
| 20. State-Local Municipal Assistance [RLTMA] | Continuation proportional to total state expenditures. |
| 21. Permanent Fund/Other Appropriations in Excess of Spending Limit [EXGFOP SX] [EXSPCAP] | Special appropriation to Perm. Fund of \$150 million in 1991. Special capital appropriation from Railbelt Energy Fund in 1991. |
| 22. Permanent Fund Principal [EXKPF1] | Deposits from petroleum revenues continue at current rates; inflation-proofing eliminated when complete withdrawal of nominal earnings commences. |
| 23. Permanent Fund Dividend [EXPFDIST] | Continued at the rate of 50 percent of earnings averaged over the previous 5 years until revenues from all other sources are insufficient to maintain state appropriations at real 1988 level. When that milestone is reached, the dividend is phased out. |
| 24. Permanent Fund Earnings [EXPFTOGF] | After payment of the dividend, the remaining Fund earnings are added to the corpus of the Permanent Fund--inflation proofing and undistributed income. When state appropriations begin to fall below the real 1988 level, earnings are diverted to the general fund to maintain the 1988 level. |
| 25. Real Rate of Return [RORPF] | 4 percent |
| 26. State-Local Wage Rates [EXWR] | Wages held constant in nominal \$ for a 2-year period in early 1990s. |

TABLE 1 (continued)

C. NATIONAL VARIABLE ASSUMPTIONS

- | | |
|----------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1. U.S. Inflation Rate [GRUSCPI] | Consumer prices rise at an annual rate of 5 percent (REV.S90). |
| 2. Real Average Weekly Earnings [GRRWEUS] | Growth in real average weekly earnings averages 0.5 percent annually. |
| 3. Real Per Capita Income [GRDIRPU] | Growth in real per capita income averages 1.0 percent annually in excess of average weekly earnings. |
| 4. Unemployment Rate [UUS] | Long-run rate of 6.5 percent. |

D. REGIONAL ASSUMPTIONS

- | | |
|---------------|-------------------------------------------------------------------------------------------------|
| 1. Population | Regional population growth allocated on the basis of existing population and employment growth. |
| 2. Employment | No significant shifts in the location of support industries. |

E. DEMOGRAPHICS

- | | |
|-------------------------------------------------------|---------------------------|
| 1. Alaska Labor Force Participation Rate [LAFPRT1] | Stabilizes at 69 percent. |
|-------------------------------------------------------|---------------------------|

Exogenous Industry Assumptions

Exogenous industry assumptions for the base-case scenario are either assumptions about special projects or assumptions about industries. Although the level of future world oil prices is uncertain, we assume that development activities on North Slope fields continue aggressively through the 1990s, consistent with projections of petroleum revenues. The scenario assumes that the Arctic National Wildlife Refuge is opened for oil exploration, but that no commercial development takes place. Major expenditures are assumed to be required for corrosion repair on the Trans-Alaska Pipeline. Cook Inlet activities continue but gradually decline as the region is converted from an oil producing to a natural gas producing region. No OCS activities are assumed to take place after 1990.

The nonpetroleum industry assumptions summarized in Table 1 show a general pattern of modest growth. We project baseline employment serving markets outside the state to increase at a relatively slow rate in forest products, mining, fishing and processing, transportation, and agriculture, based upon supply and demand trends for these products. Tourism activity, as represented by the number of pleasure visitors to Alaska, increases more rapidly. We project that total federal employment will increase slightly from current levels. We anticipate that the long-term trend of slowly growing civilian federal employment will continue despite the federal budget deficit, and the deployment of the new light infantry division will increase military employment in the short run.

In addition to these baseline industry assumptions, we include a number of special projects. Our method is to include some major projects that might occur, while excluding others that might also occur. We seek to project the pattern of total exogenous employment in the industry, using actual proposed projects as examples of the type of economic activity that might take place. As such, we are not necessarily discounting the potential viability of certain specific projects as opposed to others. Rather, we develop a scenario of possible development consistent with our expectations for overall growth of that type of activity in Alaska.

The median scenario assumes completion of the state-funded Bradley Lake hydroelectric project, but no additional major state-funded power generation or transmission facilities. We categorize most construction and manufacturing employment as "low wage," associating the "high wage" categories only with specific activities likely to pay wages substantially above the projected average scale for the industry as a whole. Examples of high-wage construction and manufacturing activities would be pipeline construction and petroleum processing on the North Slope and the Outer Continental Shelf. High-wage construction is projected to occur on OCS-related petroleum development activities in the with-OCS scenario described in the next chapter, but no high-wage construction is projected to occur in the without-OCS case.

Except for construction required for petroleum development activities, exogenous construction employment remains at a low level in the 1990s. We project that the trend will continue toward an increasing role for local industry and household

demand in determining the level of construction in Alaska. The figures for low-wage exogenous construction include primarily employment resulting from state-sponsored energy projects. High-wage exogenous construction assumptions reflect an arbitrary division of North Slope onshore oil and gas operations between construction and petroleum employment in an attempt to provide consistency with historical Alaska Department of Labor employment figures.

We aggregate industry and special project assumptions into eleven categories of exogenous employment. These are employment in agriculture, petroleum, mining, commercial fishing, exogenous transportation, high-wage and low-wage exogenous construction and manufacturing, active-duty military, and federal civilian government. Table 2 presents the aggregated base-case projections for the ten categories of exogenous employment over the period 1990 to 2015, along with historical data from 1980 through 1989.

Fluctuations in year-to-year totals in some categories of employment reflect the timing of employment assumed for individual projects. While changes in the timing of particular projects could affect considerably the employment assumptions for certain years, such fluctuations have a relatively minor impact upon long-term projections of employment and population.

TABLE 2
MAP STATE MODEL SCENARIO ASSUMPTIONS
WITHOUT OCS DEVELOPMENT
BASIC EXOGENOUS INDUSTRY EMPLOYMENT
(thousands)

| | Agricultural Employment | Petroleum Employment | High-Wage Exogenous Construction Employment | Low-Wage Exogenous Construction Employment | Exogenous Trans- portation Employment | Mining Employment |
|------|----------------------------|-------------------------|------------------------------------------------------|-----------------------------------------------------|------------------------------------------------|----------------------|
| 1980 | 0.2 | 6.2 | 0.5 | 0.0 | 1.1 | 0.5 |
| 1981 | 0.3 | 8.1 | 1.6 | 0.0 | 1.1 | 0.8 |
| 1982 | 0.4 | 8.1 | 2.2 | 0.0 | 1.1 | 0.8 |
| 1983 | 0.4 | 7.4 | 3.0 | 0.0 | 1.1 | 0.7 |
| 1984 | 0.5 | 8.0 | 1.9 | 0.0 | 1.0 | 0.7 |
| 1985 | 0.5 | 8.9 | 1.2 | 0.0 | 0.9 | 0.6 |
| 1986 | 0.5 | 8.5 | 1.0 | 0.0 | 0.9 | 0.6 |
| 1987 | 0.5 | 8.1 | 0.4 | 0.0 | 0.9 | 0.7 |
| 1988 | 0.5 | 8.4 | 0.3 | 1.3 | 0.9 | 1.0 |
| 1989 | 0.5 | 8.6 | 0.4 | 1.0 | 3.6 | 1.1 |
| 1990 | 0.5 | 8.8 | 0.7 | 0.5 | 1.5 | 1.5 |
| 1991 | 0.5 | 9.0 | 1.7 | 0.2 | 1.2 | 1.7 |
| 1992 | 0.5 | 9.2 | 1.3 | 0.0 | 1.0 | 1.9 |
| 1993 | 0.5 | 9.4 | 0.9 | 0.2 | 1.0 | 2.4 |
| 1994 | 0.5 | 9.6 | 0.7 | 0.2 | 1.1 | 2.9 |
| 1995 | 0.5 | 9.8 | 0.8 | 0.0 | 1.1 | 3.0 |
| 1996 | 0.5 | 9.9 | 0.9 | 0.0 | 1.1 | 3.1 |
| 1997 | 0.5 | 10.0 | 1.0 | 0.0 | 1.1 | 3.1 |
| 1998 | 0.5 | 10.1 | 1.0 | 0.0 | 1.1 | 3.1 |
| 1999 | 0.5 | 10.2 | 1.0 | 0.0 | 1.1 | 3.2 |
| 2000 | 0.5 | 10.3 | 1.0 | 0.0 | 1.1 | 3.2 |
| 2001 | 0.5 | 10.4 | 1.0 | 0.0 | 1.1 | 3.3 |
| 2002 | 0.5 | 10.5 | 1.0 | 0.0 | 1.1 | 3.3 |
| 2003 | 0.5 | 10.6 | 1.0 | 0.0 | 1.1 | 3.3 |
| 2004 | 0.5 | 10.7 | 1.0 | 0.0 | 1.1 | 3.4 |
| 2005 | 0.5 | 10.9 | 1.0 | 0.0 | 1.1 | 3.4 |
| 2006 | 0.5 | 11.0 | 1.0 | 0.0 | 1.1 | 3.5 |
| 2007 | 0.5 | 11.1 | 1.0 | 0.0 | 1.1 | 3.5 |
| 2008 | 0.5 | 11.3 | 1.0 | 0.0 | 1.1 | 3.6 |
| 2009 | 0.5 | 11.4 | 1.0 | 0.0 | 1.1 | 3.6 |
| 2010 | 0.5 | 11.5 | 1.0 | 0.0 | 1.1 | 3.7 |
| 2011 | 0.5 | 11.7 | 1.0 | 0.0 | 1.1 | 3.7 |
| 2012 | 0.5 | 11.8 | 1.0 | 0.0 | 1.1 | 3.8 |
| 2013 | 0.5 | 11.9 | 1.0 | 0.0 | 1.1 | 3.8 |
| 2014 | 0.5 | 12.1 | 1.0 | 0.0 | 1.1 | 3.9 |
| 2015 | 0.5 | 12.2 | 1.0 | 0.0 | 1.1 | 4.0 |

SOURCES: 1980-1988, Alaska Department of Labor, *Statistical Quarterly*,
1989-2015, MAP Model Input Scenario MMSB – Created 7/90

TABLE 2 (continued)

| | High-Wage Exogenous Manufacturing Employment | Low-Wage Exogenous Manufacturing Employment | Fish Harvesting Employment | Active Duty Military Employment | Civilian Federal Employment |
|------|-------------------------------------------------------|------------------------------------------------------|----------------------------------|------------------------------------------|-----------------------------------|
| 1980 | 0.0 | 11.3 | 7.6 | 22.0 | 17.7 |
| 1981 | 0.0 | 11.3 | 7.9 | 22.5 | 17.5 |
| 1982 | 0.0 | 9.8 | 8.3 | 22.1 | 17.6 |
| 1983 | 0.0 | 8.9 | 7.9 | 22.3 | 17.7 |
| 1984 | 0.0 | 8.1 | 8.2 | 22.6 | 18.1 |
| 1985 | 0.0 | 8.7 | 8.4 | 23.1 | 17.6 |
| 1986 | 0.0 | 9.5 | 8.4 | 23.0 | 17.8 |
| 1987 | 0.0 | 9.9 | 8.4 | 24.4 | 17.9 |
| 1988 | 0.0 | 12.1 | 9.0 | 24.1 | 18.1 |
| 1989 | 0.0 | 12.2 | 9.0 | 24.1 | 18.2 |
| 1990 | 0.0 | 12.5 | 9.0 | 23.8 | 18.3 |
| 1991 | 0.0 | 12.5 | 9.1 | 23.9 | 18.4 |
| 1992 | 0.0 | 12.4 | 9.1 | 23.9 | 18.5 |
| 1993 | 0.0 | 12.2 | 9.1 | 23.9 | 18.6 |
| 1994 | 0.0 | 12.0 | 9.1 | 23.9 | 18.7 |
| 1995 | 0.0 | 11.9 | 9.1 | 23.9 | 18.8 |
| 1996 | 0.0 | 11.8 | 9.1 | 23.9 | 18.9 |
| 1997 | 0.0 | 11.8 | 9.1 | 23.9 | 19.0 |
| 1998 | 0.0 | 11.7 | 9.1 | 23.9 | 19.1 |
| 1999 | 0.0 | 11.7 | 9.1 | 23.9 | 19.2 |
| 2000 | 0.0 | 11.7 | 9.1 | 23.9 | 19.3 |
| 2001 | 0.0 | 11.7 | 9.1 | 23.9 | 19.4 |
| 2002 | 0.0 | 11.7 | 9.1 | 23.9 | 19.5 |
| 2003 | 0.0 | 11.7 | 9.1 | 23.9 | 19.6 |
| 2004 | 0.0 | 11.7 | 9.1 | 23.9 | 19.7 |
| 2005 | 0.0 | 11.7 | 9.1 | 23.9 | 19.8 |
| 2006 | 0.0 | 11.6 | 9.1 | 23.9 | 19.9 |
| 2007 | 0.0 | 11.6 | 9.1 | 23.9 | 20.0 |
| 2008 | 0.0 | 11.6 | 9.1 | 23.9 | 20.0 |
| 2009 | 0.0 | 11.6 | 9.1 | 23.9 | 20.1 |
| 2010 | 0.0 | 11.6 | 9.1 | 23.9 | 20.2 |
| 2011 | 0.0 | 11.6 | 9.1 | 23.9 | 20.3 |
| 2012 | 0.0 | 11.6 | 9.1 | 23.9 | 20.4 |
| 2013 | 0.0 | 11.6 | 9.1 | 23.9 | 20.5 |
| 2014 | 0.0 | 11.6 | 9.1 | 23.9 | 20.6 |
| 2015 | 0.0 | 11.6 | 9.1 | 23.9 | 20.8 |

Not included in the exogenous employment assumptions for the MAP model in Table 2 is employment resulting from tourism. The MAP model projects the economic effects of tourism in the form of a series of increments to employment in transportation and various service industries. The size of the increments depend on the projected number of out-of-state visitors. Table 3 shows the projected number of tourists visiting Alaska consistent with the assumption summarized in Table 1. This projection of visitors results in strong growth in employment in tourist-affected industries.

Alaska State Revenue Assumptions

Petroleum royalty and severance taxes assumed for the model are based upon an expected world oil price (Saudi Light, delivered to the U.S. Gulf Coast) of \$18 per barrel in 1990, rising to \$19 per barrel in 2000 and to \$20 per barrel (in real 1989 dollars) in 2010. Oil production assumptions and other petroleum revenues are based on Alaska Department of Revenue 50 percent probability projections released in March 1990. We assume Alaska also receives \$2 billion over the 1990s in miscellaneous revenues, evenly distributed between the General Fund and the Permanent Fund, from settlement of lease and tax disputes. Our scenario assumptions for the five types of petroleum revenues are shown in Table 4.

TABLE 3
MAP STATE MODEL SCENARIO ASSUMPTIONS
WITHOUT OCS DEVELOPMENT
TOURISM ASSUMPTIONS
(thousands)

| | Tourists Visiting Alaska |
|-------|-----------------------------|
| <hr/> | |
| 1980 | 439.0 |
| 1981 | 447.0 |
| 1982 | 467.0 |
| 1983 | 485.0 |
| 1984 | 519.0 |
| 1985 | 555.0 |
| 1986 | 583.2 |
| 1987 | 588.5 |
| 1988 | 610.7 |
| 1989 | 629.0 |
| 1990 | 647.9 |
| 1991 | 667.3 |
| 1992 | 687.3 |
| 1993 | 708.0 |
| 1994 | 729.2 |
| 1995 | 751.1 |
| 1996 | 773.6 |
| 1997 | 796.8 |
| 1998 | 820.7 |
| 1999 | 845.3 |
| 2000 | 870.7 |
| 2001 | 896.8 |
| 2002 | 923.7 |
| 2003 | 951.4 |
| 2004 | 980.0 |
| 2005 | 1009.4 |
| 2006 | 1039.7 |
| 2007 | 1070.9 |
| 2008 | 1103.0 |
| 2009 | 1136.1 |
| 2010 | 1170.2 |
| 2011 | 1205.3 |
| 2012 | 1241.4 |
| 2013 | 1278.7 |
| 2014 | 1317.0 |
| 2015 | 1356.5 |

SOURCE: 1980-1988, MAP database from Alaska Visitors' Association;
1989-2015, MAP Model Input Scenario MMSB – Created 7/90

TABLE 4
MAP STATE MODEL SCENARIO ASSUMPTIONS
WITHOUT OCS DEVELOPMENT
PETROLEUM REVENUES
(million dollars)

| | State Production Tax Revenue | State Royalty Income | State Bonus Payment Revenue | State Property Tax Revenue | State Corporate Petroleum Tax Revenue | Settlement Revenue |
|------|---------------------------------------|----------------------------|--------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------|
| 1980 | 506. | 917. | 456. | 169. | 548. | 0. |
| 1981 | 1170. | 1496. | 10. | 143. | 860. | 0. |
| 1982 | 1581. | 1548. | 7. | 143. | 669. | 0. |
| 1983 | 1493. | 1472. | 49. | 153. | 236. | 0. |
| 1984 | 1392. | 1404. | 14. | 131. | 265. | 0. |
| 1985 | 1389. | 1393. | 16. | 128. | 169. | 0. |
| 1986 | 1107. | 1108. | 46. | 114. | 134. | 419. |
| 1987 | 647. | 586. | 1. | 103. | 120. | 71. |
| 1988 | 819. | 954. | 11. | 96. | 158. | 329. |
| 1989 | 699. | 819. | 23. | 90. | 166. | 260. |
| 1990 | 1002. | 1023. | 0. | 85. | 130. | 111. |
| 1991 | 1010. | 1063. | 0. | 80. | 139. | 200. |
| 1992 | 1011. | 1097. | 0. | 75. | 135. | 210. |
| 1993 | 991. | 1109. | 0. | 70. | 134. | 221. |
| 1994 | 941. | 1087. | 0. | 64. | 133. | 232. |
| 1995 | 881. | 1050. | 0. | 57. | 129. | 243. |
| 1996 | 830. | 1031. | 0. | 51. | 127. | 255. |
| 1997 | 777. | 998. | 0. | 47. | 112. | 268. |
| 1998 | 800. | 1059. | 0. | 42. | 103. | 281. |
| 1999 | 796. | 1087. | 0. | 37. | 94. | 295. |
| 2000 | 778. | 1096. | 0. | 33. | 85. | 310. |
| 2001 | 745. | 1087. | 0. | 29. | 79. | 0. |
| 2002 | 708. | 1066. | 0. | 25. | 73. | 0. |
| 2003 | 667. | 1039. | 0. | 21. | 69. | 0. |
| 2004 | 644. | 1035. | 0. | 19. | 64. | 0. |
| 2005 | 655. | 1085. | 0. | 18. | 66. | 0. |
| 2006 | 704. | 1196. | 0. | 16. | 60. | 0. |
| 2007 | 761. | 1327. | 0. | 15. | 56. | 0. |
| 2008 | 819. | 1468. | 0. | 13. | 45. | 0. |
| 2009 | 786. | 1451. | 0. | 11. | 42. | 0. |
| 2010 | 777. | 1478. | 0. | 9. | 38. | 0. |
| 2011 | 777. | 1478. | 0. | 9. | 38. | 0. |
| 2012 | 777. | 1478. | 0. | 9. | 38. | 0. |
| 2013 | 777. | 1478. | 0. | 9. | 38. | 0. |
| 2014 | 777. | 1478. | 0. | 9. | 38. | 0. |
| 2015 | 777. | 1478. | 0. | 9. | 38. | 0. |

SOURCE: 1980-1989, Alaska Department of Revenue, *Revenue Sources*;
1990-2015, MAP Model Input Scenario MMSB – Created 7/90

State Fiscal Policy Assumptions

Assumptions about state spending and taxation policy follow the rules noted in Table 1. We assume that the Permanent Fund principal remains intact, but that the earnings of the fund are diverted to fund state operations when all other sources of revenue are insufficient to retain the real 1988 expenditure level. As total unrestricted revenues decline net of inflation, we assume that permanent fund dividends are eliminated only after the personal income tax is reinstated in attempting to keep state appropriations at real 1988 levels. After these adjustments have been made, expenditures are reduced to match revenues.

National Variable Assumptions

The national variable assumptions define the benchmarks used by the MAP model for the national economy. These are important for our projections because national economic trends in the long run mainly determine Alaskan prices, earnings, and labor market conditions. In the current study, we assume a constant long-run U.S. inflation rate of 5 percent, a long-run average U.S. unemployment rate of 6.5 percent, and real wage and real per-capita income levels growing at 0.5 and 1.5 percent per year, respectively.

Changing the rate of inflation has little effect on projections in constant dollars. A different long-run unemployment rate would affect the ratio of population to employment in Alaska without changing the projected employment levels significantly. If one were to assume a higher rate of growth of U.S. wage rates and per capita income, projected Alaska support-sector employment would increase

at a faster rate due to the increased spending power than the model would project for Alaska. A slower growth in U.S. earnings would result in projections with reduced growth in Alaska's support industries. Our assumptions for growth in real earnings and income are generally consistent with federal agency projections.*

Statewide Projections

Summary

Table 5 summarizes the without-OCS projection of the Alaska economy and population to 2010, using the MAP model and the revenue, fiscal, industry, and national economic assumptions discussed above. The industry assumptions used for this projection include exploration and development activities likely to occur on OCS areas already leased and scheduled to be leased by January 1987.

*The U.S. Bureau of Labor Statistics (Saunders 1987) projected that real per-capita Personal Income would grow at an average annual rate of 1.6 percent through 2000.

TABLE 5
ECONOMIC AND DEMOGRAPHIC PROJECTION SUMMARY
WITHOUT OCS DEVELOPMENT

| | Population (000) | Households (000) | Total Employment (000) | Wage and Salary Employment (000) | Personal Income (million 1989 \$) | Petroleum Revenues (million 1989 \$) |
|------|---------------------|---------------------|------------------------------|-------------------------------------------|--------------------------------------------|-----------------------------------------------|
| 1980 | 419.8 | 131.5 | 211.4 | 170.0 | 7221.2 | 3360.8 |
| 1981 | 433.8 | - | 227.7 | 185.4 | 7722.6 | 4428.4 |
| 1982 | 463.4 | - | 243.5 | 199.8 | 8767.2 | 4509.6 |
| 1983 | 497.6 | - | 257.5 | 212.8 | 9852.7 | 3886.5 |
| 1984 | 522.0 | - | 268.5 | 222.5 | 9890.1 | 3497.6 |
| 1985 | 541.3 | - | 275.0 | 228.1 | 10309.7 | 3276.2 |
| 1986 | 547.6 | - | 265.0 | 218.7 | 10146.6 | 3053.8 |
| 1987 | 537.8 | - | 254.9 | 208.0 | 9985.6 | 1596.9 |
| 1988 | 531.2 | 182.0 | 259.6 | 213.0 | 9975.8 | 2452.7 |
| 1989 | 542.3 | 186.3 | 272.2 | 224.5 | 10497.5 | 2092.9 |
| 1990 | 556.5 | 191.7 | 271.8 | 224.4 | 10590.1 | 2279.7 |
| 1991 | 565.3 | 195.2 | 275.4 | 227.6 | 10682.7 | 2301.3 |
| 1992 | 570.5 | 197.4 | 275.3 | 227.5 | 10687.1 | 2234.1 |
| 1993 | 578.4 | 200.6 | 279.6 | 231.4 | 10874.0 | 2135.9 |
| 1994 | 588.9 | 204.6 | 284.7 | 236.1 | 11086.8 | 1990.1 |
| 1995 | 594.9 | 207.0 | 283.2 | 234.7 | 11121.7 | 1837.9 |
| 1996 | 599.5 | 209.0 | 284.3 | 235.8 | 11219.3 | 1711.8 |
| 1997 | 603.1 | 210.6 | 284.8 | 236.2 | 10900.8 | 1574.0 |
| 1998 | 607.0 | 212.3 | 286.0 | 237.3 | 10992.8 | 1554.7 |
| 1999 | 612.2 | 214.4 | 288.1 | 239.2 | 11148.5 | 1503.6 |
| 2000 | 618.1 | 216.8 | 290.4 | 241.3 | 11291.5 | 1434.8 |
| 2001 | 623.0 | 218.8 | 291.3 | 242.2 | 11369.4 | 1164.5 |
| 2002 | 626.7 | 220.4 | 291.3 | 242.2 | 11428.8 | 1077.3 |
| 2003 | 629.8 | 221.7 | 291.3 | 242.1 | 11476.0 | 991.1 |
| 2004 | 633.1 | 223.2 | 292.3 | 243.0 | 11554.4 | 931.6 |
| 2005 | 638.2 | 225.2 | 294.8 | 245.3 | 11716.7 | 921.7 |
| 2006 | 645.2 | 227.9 | 298.1 | 248.3 | 11896.7 | 953.7 |
| 2007 | 653.8 | 231.1 | 302.1 | 252.0 | 12113.8 | 994.2 |
| 2008 | 663.9 | 234.8 | 306.5 | 256.1 | 12361.6 | 1031.0 |
| 2009 | 674.6 | 238.8 | 310.8 | 260.0 | 12612.0 | 964.8 |
| 2010 | 685.0 | 242.6 | 314.3 | 263.2 | 12842.0 | 928.4 |
| 2011 | 694.1 | 246.0 | 316.8 | 265.5 | 13028.4 | 889.3 |
| 2012 | 701.0 | 248.6 | 317.8 | 266.4 | 13113.5 | 851.4 |
| 2013 | 707.0 | 250.9 | 319.2 | 267.6 | 13233.8 | 815.2 |
| 2014 | 712.7 | 253.2 | 321.0 | 269.3 | 13370.0 | 780.6 |
| 2015 | 718.7 | 255.5 | 323.0 | 271.2 | 13511.9 | 747.4 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Population (POP) is July 1, Census definition.

Households (HH) is July 1 (except in 1980), Census definition.

Total Employment (EM99) includes active duty military and proprietors – pre-1985 proprietor definition.

Wage and Salary Employment (EM97) is Alaska Department of Labor definition.

Personal Income (DF.PIB) is U.S. BEA definition.

Petroleum Revenues (DF.RP9S) includes Permanent Fund contribution.

The base-case projection shown in Table 5 shows growth in total population from 542,000 in 1989 to 719,000 in 2015, an increase of nearly one-third. Total employment grows by 19 percent from 272,000 in 1989 (including military and self-employed) to 323,000 in 2015, a much smaller increase. According to this projection, the Alaska economy is beginning a prolonged period of relative stability. We project total employment to grow by nearly 10,000 between 1992 and 1994, and then level off in the mid 1990s. Employment grows slightly around the end of the decade and then remains constant through 2004. During the last ten years of the projection period, we project the Alaska economy to resume steady employment growth of around 0.7 percent per year.

We project real Personal Income to remain virtually constant at its current level of around \$11 billion (in 1989 dollars) until well into the next century. Since population is growing steadily during this period, real per-capita income actually declines somewhat. After 2005, real Personal Income increases at just over one percent per year. This is about 0.3 to 0.4 percent faster than the rate of growth of employment and population, implying slowly increasing living standards.

The projected pattern of growth, particularly in the 1990s, is uneven. The stop-start growth path is due to the interaction of several positive and negative factors. In 1990 and 1991, growth stops primarily because there is not enough new exogenous industry activity to make up for the loss of the EXXON Valdez oil spill cleanup spending. The economy picks up again in 1993, only to stall in 1994 as the Alaska state and local governments finally have to confront the gap between

public revenues and historical expenditure levels. After the fiscal crisis is resolved by 1996 with the reimposition of an income tax and the elimination of the Permanent Fund Dividend, the economy begins to grow again on the strength of the private economy.

The figures for state petroleum revenues in Table 5 show revenues declining in real terms as a result of the projected decline in Alaska oil production. The fiscal crisis appears in the projection basically when state petroleum revenues decline to \$2 billion (in 1989 dollars). The world oil price is not assumed to fluctuate in this projection, growing slowly in real terms from 18 dollars to 20 dollars per barrel (in 1989 dollars). In reality, world oil prices are uncertain and are likely to take a cyclical path ranging from about 12 to 25 dollars per barrel, with temporary departures possibly outside this range. Thus it is possible, in fact quite likely, that the state fiscal crisis and the accompanying recession may occur sooner or later than shown in Table 5. We can not predict exactly when the recession will occur, although it will almost certainly occur in the decade of the 1990s. The figures in Table 5 show the magnitude of the effects on the Alaska economy of the eventual and inevitable decline in state petroleum revenues, whenever it does occur.

Composition of Employment

Table 6 shows the composition of total employment in the without-OCS projection by sector. According to the projections shown in this table, the support sector provides most of the net new growth in Alaska employment to 2015. Basic sector employment remains nearly constant at around 90,000 through the 1990s, and

then grows by about 10 percent after 2000. Infrastructure employment also remains relatively constant at around 30,000 in the 1990s, before expanding by 17 percent to 35,000 in 2015. Government sector employment grows slightly in the next few years but then stabilizes and actually declines by 7 percent between 1997 and 2015. Employment in the support sector, however, grows by about 30 percent over the 25-year projection period to reach 135,000 in 2015.

The industry composition of private sector employment, shown in Table 7, further illustrates the importance of the support sector in sustaining the Alaska economy through projected economic slowdowns. Mining and petroleum employment swells by 30 percent to 13,000 by the mid 1990s, reflecting both the expansion of the state's hardrock mining industry and the effects of increasing petroleum development activities on the North Slope. After the initial jump in employment mining and petroleum activities expand slowly over the next 20 years, adding another 3,000 jobs to the economy. Employment in construction fluctuates a little but basically stays at its current level of just under 10,000. Agriculture, forestry and fisheries (mainly fisheries) remains at its current level. Manufacturing employment is projected to decline by about 2,000 workers, due to the end of the current logging boom in coastal areas as Alaska native corporations deplete their timber holdings.

TABLE 6
EMPLOYMENT BY SECTOR
WITHOUT OCS DEVELOPMENT
(thousands)

| | Total Employment | Basic Employment | Infrastructure Employment | Support Employment | Government Employment |
|------|---------------------|---------------------|------------------------------|-----------------------|--------------------------|
| 1980 | 211.4 | 73.4 | 30.1 | 71.6 | 36.3 |
| 1981 | 227.7 | 77.8 | 33.3 | 78.0 | 38.6 |
| 1982 | 243.5 | 78.2 | 37.5 | 86.3 | 41.5 |
| 1983 | 257.5 | 78.1 | 41.1 | 94.1 | 44.1 |
| 1984 | 268.5 | 78.8 | 42.5 | 100.8 | 46.4 |
| 1985 | 275.0 | 79.6 | 41.7 | 104.5 | 49.2 |
| 1986 | 265.0 | 80.1 | 35.3 | 100.8 | 48.8 |
| 1987 | 254.9 | 81.0 | 31.9 | 95.4 | 46.5 |
| 1988 | 259.6 | 85.1 | 29.0 | 98.2 | 47.2 |
| 1989 | 272.2 | 90.3 | 28.4 | 103.2 | 50.3 |
| 1990 | 271.8 | 88.1 | 29.7 | 104.2 | 49.8 |
| 1991 | 275.4 | 88.9 | 30.3 | 105.5 | 50.8 |
| 1992 | 275.3 | 88.0 | 31.1 | 106.1 | 50.1 |
| 1993 | 279.6 | 88.8 | 31.8 | 107.5 | 51.4 |
| 1994 | 284.7 | 89.5 | 31.9 | 109.5 | 53.8 |
| 1995 | 283.2 | 90.0 | 30.5 | 108.7 | 54.0 |
| 1996 | 284.3 | 90.5 | 30.1 | 109.4 | 54.4 |
| 1997 | 284.8 | 91.1 | 29.7 | 109.1 | 54.9 |
| 1998 | 286.0 | 91.6 | 29.9 | 109.7 | 54.8 |
| 1999 | 288.1 | 92.1 | 30.4 | 110.8 | 54.8 |
| 2000 | 290.4 | 92.6 | 31.0 | 112.0 | 54.8 |
| 2001 | 291.3 | 93.2 | 31.3 | 112.9 | 54.0 |
| 2002 | 291.3 | 93.7 | 31.3 | 113.5 | 52.7 |
| 2003 | 291.3 | 94.3 | 31.0 | 114.1 | 51.9 |
| 2004 | 292.3 | 94.9 | 31.0 | 114.8 | 51.6 |
| 2005 | 294.8 | 95.5 | 31.3 | 116.2 | 51.8 |
| 2006 | 298.1 | 96.1 | 31.7 | 117.9 | 52.4 |
| 2007 | 302.1 | 96.7 | 32.3 | 120.0 | 53.1 |
| 2008 | 306.5 | 97.3 | 33.1 | 122.5 | 53.7 |
| 2009 | 310.8 | 98.0 | 34.0 | 125.0 | 53.8 |
| 2010 | 314.3 | 98.6 | 34.8 | 127.4 | 53.4 |
| 2011 | 316.8 | 99.3 | 35.1 | 129.4 | 53.0 |
| 2012 | 317.8 | 100.0 | 34.7 | 130.7 | 52.5 |
| 2013 | 319.2 | 100.7 | 34.5 | 131.9 | 52.1 |
| 2014 | 321.0 | 101.4 | 34.8 | 133.3 | 51.6 |
| 2015 | 323.0 | 102.1 | 35.0 | 134.7 | 51.1 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Total Employment (EM99).

Basic Employment (EM9BASE) includes exogenous components of Construction, Manufacturing, Transportation, Mining, Petroleum, Tourism, Federal Government, Agriculture, Forestry, and Fish Harvesting.

Infrastructure Employment (EM9INFR) includes Transportation, Communications, Public Utilities, Endogenous Construction, and Business Services net of Exogenous and Tourism-related Transportation.

Support Employment (EM9SUPRT) includes Trade, Finance, Services, Local Manufacturing, and Proprietors not engaged in Fish Harvesting net of Trade and Service Tourism Employment and Business Services.

Government Employment (EMGA) includes State and Local Government.

TABLE 7
PRIVATE EMPLOYMENT
WITHOUT OCS DEVELOPMENT
(thousands)

| | Total Private | Agriculture, Forestry, Fisheries | Mining and Petroleum | Construction | Manufacturing | Transport, Comm., Public Utilities | Trade, Finances, and Services |
|------|------------------|----------------------------------------|----------------------------|--------------|---------------|---------------------------------------------|----------------------------------------|
| 1980 | 135.4 | 8.3 | 6.7 | 10.6 | 14.0 | 17.1 | 78.7 |
| 1981 | 149.2 | 9.0 | 8.9 | 12.9 | 14.0 | 18.2 | 86.1 |
| 1982 | 162.2 | 10.0 | 8.8 | 16.8 | 12.6 | 18.4 | 95.6 |
| 1983 | 173.4 | 9.9 | 8.2 | 20.8 | 11.9 | 18.6 | 104.0 |
| 1984 | 181.4 | 10.4 | 8.7 | 20.3 | 11.3 | 18.9 | 111.7 |
| 1985 | 185.2 | 10.1 | 9.5 | 18.6 | 12.1 | 18.7 | 116.2 |
| 1986 | 175.4 | 10.1 | 9.1 | 13.4 | 12.6 | 18.0 | 112.3 |
| 1987 | 166.0 | 9.8 | 8.8 | 10.1 | 12.9 | 17.8 | 106.7 |
| 1988 | 170.2 | 9.8 | 9.3 | 10.7 | 14.9 | 17.9 | 107.6 |
| 1989 | 179.6 | 9.8 | 9.7 | 9.3 | 17.0 | 20.7 | 113.1 |
| 1990 | 179.9 | 9.8 | 10.3 | 9.6 | 16.5 | 19.4 | 114.3 |
| 1991 | 182.3 | 9.8 | 10.7 | 10.7 | 16.0 | 19.3 | 115.8 |
| 1992 | 182.7 | 9.8 | 11.0 | 10.9 | 15.2 | 19.2 | 116.6 |
| 1993 | 185.6 | 9.8 | 11.8 | 11.1 | 15.1 | 19.5 | 118.4 |
| 1994 | 188.3 | 9.8 | 12.5 | 10.7 | 15.0 | 19.8 | 120.6 |
| 1995 | 186.5 | 9.8 | 12.8 | 9.5 | 14.8 | 19.7 | 120.0 |
| 1996 | 187.1 | 9.8 | 12.9 | 9.0 | 14.7 | 19.9 | 120.9 |
| 1997 | 187.0 | 9.8 | 13.1 | 8.9 | 14.7 | 19.8 | 120.8 |
| 1998 | 188.2 | 9.8 | 13.2 | 8.9 | 14.6 | 20.0 | 121.6 |
| 1999 | 190.2 | 9.8 | 13.4 | 9.1 | 14.6 | 20.2 | 123.1 |
| 2000 | 192.4 | 9.8 | 13.5 | 9.4 | 14.6 | 20.5 | 124.6 |
| 2001 | 194.1 | 9.8 | 13.7 | 9.6 | 14.6 | 20.7 | 125.7 |
| 2002 | 195.2 | 9.8 | 13.8 | 9.5 | 14.6 | 20.8 | 126.7 |
| 2003 | 195.9 | 9.8 | 14.0 | 9.1 | 14.6 | 20.9 | 127.5 |
| 2004 | 197.1 | 9.8 | 14.1 | 8.9 | 14.6 | 21.1 | 128.5 |
| 2005 | 199.3 | 9.8 | 14.3 | 8.9 | 14.6 | 21.4 | 130.2 |
| 2006 | 201.9 | 9.8 | 14.5 | 9.0 | 14.6 | 21.7 | 132.3 |
| 2007 | 205.1 | 9.8 | 14.6 | 9.2 | 14.7 | 22.0 | 134.8 |
| 2008 | 208.9 | 9.8 | 14.8 | 9.5 | 14.7 | 22.4 | 137.7 |
| 2009 | 212.9 | 9.8 | 15.0 | 9.9 | 14.7 | 22.8 | 140.7 |
| 2010 | 216.7 | 9.8 | 15.2 | 10.4 | 14.7 | 23.1 | 143.5 |
| 2011 | 219.6 | 9.8 | 15.4 | 10.3 | 14.7 | 23.5 | 145.9 |
| 2012 | 221.0 | 9.8 | 15.6 | 9.7 | 14.7 | 23.7 | 147.6 |
| 2013 | 222.7 | 9.8 | 15.8 | 9.3 | 14.7 | 23.9 | 149.2 |
| 2014 | 224.9 | 9.8 | 16.0 | 9.3 | 14.7 | 24.1 | 150.9 |
| 2015 | 227.2 | 9.8 | 16.2 | 9.3 | 14.7 | 24.4 | 152.8 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Private (EMPVT) is all nongovernment. Agriculture, Forestry, Fisheries (EMAFF).
Mining and Petroleum (EMP9). Construction (EMCN). Manufacturing (EMM9).
Transportation, Communications, Public Utilities (EMTCU).
Trade, Finance, and Services (EMSUP) includes Proprietors not involved in Fish Harvesting.

Employment in transportation, communications, and public utilities was temporarily elevated in 1989 as this was the industry in which most oil spill cleanup workers were classified. As cleanup operations wind down, this employment will subside. However, we project that employment in transportation, communications, and public utilities will grow steadily after 1992 to reach 24,000, about 20 percent higher than current levels. The trade, finance, and services industry is projected to grow even faster, however. We project that this sector will add almost 40,000 jobs to the economy over the next 25 years.

The historical and projected composition of government employment is shown in Table 8. Military employment has recently increased, reflecting deployment of the new light infantry division beginning in 1986. In the future, we project it to remain constant at current levels. Federal civilian employment rises at a slow but steady rate throughout the period. State and local government employment both rise into the mid-1990s to serve a growing population. Later on in the 1990s, however, we project that declining petroleum revenues will force the state to cut expenditures and transfers to local governments. This will cause reductions in state and local employment of about 2,000 workers each by 2015.

**TABLE 8
GOVERNMENT EMPLOYMENT
WITHOUT OCS DEVELOPMENT
(thousands)**

| | Total | Military | Federal Civilian | State | Local |
|------|-------|----------|---------------------|-------|-------|
| 1980 | 76.0 | 22.0 | 17.7 | 15.4 | 20.9 |
| 1981 | 78.5 | 22.5 | 17.5 | 16.6 | 22.0 |
| 1982 | 81.3 | 22.1 | 17.6 | 18.0 | 23.5 |
| 1983 | 84.1 | 22.3 | 17.7 | 18.9 | 25.2 |
| 1984 | 87.1 | 22.6 | 18.1 | 19.3 | 27.1 |
| 1985 | 89.8 | 23.1 | 17.6 | 20.5 | 28.7 |
| 1986 | 89.6 | 23.0 | 17.8 | 20.2 | 28.6 |
| 1987 | 88.9 | 24.4 | 17.9 | 18.7 | 27.8 |
| 1988 | 89.4 | 24.1 | 18.1 | 19.2 | 28.0 |
| 1989 | 92.6 | 24.1 | 18.2 | 20.7 | 29.6 |
| 1990 | 91.9 | 23.8 | 18.3 | 20.6 | 29.2 |
| 1991 | 93.1 | 23.9 | 18.4 | 21.5 | 29.3 |
| 1992 | 92.5 | 23.9 | 18.5 | 21.0 | 29.1 |
| 1993 | 94.0 | 23.9 | 18.6 | 21.2 | 30.2 |
| 1994 | 96.4 | 23.9 | 18.7 | 22.2 | 31.6 |
| 1995 | 96.7 | 23.9 | 18.8 | 22.5 | 31.5 |
| 1996 | 97.2 | 23.9 | 18.9 | 22.9 | 31.5 |
| 1997 | 97.8 | 23.9 | 19.0 | 23.3 | 31.5 |
| 1998 | 97.8 | 23.9 | 19.1 | 23.4 | 31.4 |
| 1999 | 97.9 | 23.9 | 19.2 | 23.5 | 31.3 |
| 2000 | 97.9 | 23.9 | 19.3 | 23.6 | 31.1 |
| 2001 | 97.2 | 23.9 | 19.4 | 23.1 | 30.9 |
| 2002 | 96.1 | 23.9 | 19.5 | 22.4 | 30.3 |
| 2003 | 95.4 | 23.9 | 19.6 | 22.1 | 29.9 |
| 2004 | 95.2 | 23.9 | 19.7 | 22.0 | 29.6 |
| 2005 | 95.5 | 23.9 | 19.8 | 22.1 | 29.7 |
| 2006 | 96.2 | 23.9 | 19.9 | 22.4 | 30.0 |
| 2007 | 96.9 | 23.9 | 20.0 | 22.9 | 30.1 |
| 2008 | 97.6 | 23.9 | 20.0 | 23.5 | 30.2 |
| 2009 | 97.9 | 23.9 | 20.1 | 23.7 | 30.1 |
| 2010 | 97.6 | 23.9 | 20.2 | 23.4 | 30.0 |
| 2011 | 97.2 | 23.9 | 20.3 | 22.9 | 30.1 |
| 2012 | 96.8 | 23.9 | 20.4 | 22.3 | 30.2 |
| 2013 | 96.5 | 23.9 | 20.5 | 22.0 | 30.1 |
| 2014 | 96.1 | 23.9 | 20.6 | 21.7 | 29.9 |
| 2015 | 95.8 | 23.9 | 20.8 | 21.5 | 29.7 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Total (EMG9).

Military (EMGM) is active duty.

Federal Civilian (EMGC).

State (EMGS) includes University of Alaska.

Local (EMGL).

Composition of Population

Tables 9 and 10 show the composition of the population by components of change and by type, respectively. Table 9 illustrates the changing composition of employment projected in the base case. The total population grows about twice as fast after 2000 as during the 1990s. Natural increase remains nearly constant for the next 15 years at just under 10,000 people. This is far larger than the total population change in most years, so the balance must be made up by net out-migration of the population. In interpreting the figures in Table 9 one should keep in mind that the population leaving the state includes more children than the migrants who enter the state each year. This can clearly be seen from the figures for military migration. Table 9 shows that about one-fourth of the net out-migration in an average year comes from military families. Yet military employment remains the same; military families add to natural increase by having children while in Alaska, then leave the state with larger families.

Table 10 shows that while the military population remains stable and the civilian non-native population grows by one-quarter over the next 25 years, the native population grows by more than two-thirds. This projection reflects the assumption in the MAP demographic model that civilian migration affects only the non-native population. While this will not be strictly true in practice, the conclusion remains that the share of Alaska natives in the state population is likely to increase over the next 25 years due to a lower out-migration rate than for natives than for non-natives.

TABLE 9
POPULATION CHANGE WITHOUT OCS DEVELOPMENT
(thousands)

COMPONENTS OF CHANGE

| | Total Population | Total Annual Change | Natural Increase | Non- Military Migration | Military Migration |
|------|---------------------|---------------------------|---------------------|-------------------------------|-----------------------|
| 1980 | 419.8 | 6.1 | 7.7 | 2.0 | -3.7 |
| 1981 | 433.8 | 14.0 | 8.2 | 5.8 | -0.0 |
| 1982 | 463.4 | 29.6 | 9.0 | 22.3 | -1.7 |
| 1983 | 497.6 | 34.2 | 9.9 | 25.0 | -0.6 |
| 1984 | 522.0 | 24.4 | 10.4 | 14.4 | -0.3 |
| 1985 | 541.3 | 19.3 | 10.7 | 8.6 | 0.0 |
| 1986 | 547.6 | 6.3 | 10.4 | -2.9 | -1.2 |
| 1987 | 537.8 | -9.8 | 9.8 | -21.7 | 2.0 |
| 1988 | 531.2 | -6.6 | 9.3 | -15.6 | -0.4 |
| 1989 | 542.3 | 11.1 | 9.0 | 3.3 | -1.0 |
| 1990 | 556.5 | 14.2 | 9.2 | 7.0 | -1.5 |
| 1991 | 565.3 | 8.8 | 9.4 | 0.4 | -0.9 |
| 1992 | 570.5 | 5.2 | 9.5 | -3.1 | -1.0 |
| 1993 | 578.4 | 8.0 | 9.5 | -0.5 | -1.0 |
| 1994 | 588.9 | 10.4 | 9.6 | 2.0 | -1.0 |
| 1995 | 594.9 | 6.0 | 9.7 | -2.9 | -1.0 |
| 1996 | 599.5 | 4.6 | 9.7 | -3.9 | -1.0 |
| 1997 | 603.1 | 3.6 | 9.7 | -4.6 | -1.0 |
| 1998 | 607.0 | 3.9 | 9.7 | -4.3 | -1.0 |
| 1999 | 612.2 | 5.2 | 9.6 | -3.2 | -1.0 |
| 2000 | 618.1 | 5.9 | 9.6 | -2.5 | -1.0 |
| 2001 | 623.0 | 4.9 | 9.7 | -3.4 | -1.0 |
| 2002 | 626.7 | 3.8 | 9.7 | -4.7 | -1.0 |
| 2003 | 629.8 | 3.0 | 9.7 | -5.5 | -1.0 |
| 2004 | 633.1 | 3.3 | 9.6 | -5.0 | -1.0 |
| 2005 | 638.2 | 5.1 | 9.6 | -3.2 | -1.0 |
| 2006 | 645.2 | 7.0 | 9.6 | -1.5 | -1.0 |
| 2007 | 653.8 | 8.6 | 9.7 | 0.0 | -1.0 |
| 2008 | 663.9 | 10.1 | 9.8 | 1.4 | -1.0 |
| 2009 | 674.6 | 10.7 | 10.0 | 1.8 | -1.0 |
| 2010 | 685.0 | 10.3 | 10.2 | 1.3 | -1.0 |
| 2011 | 694.1 | 9.1 | 10.3 | -0.1 | -1.0 |
| 2012 | 701.0 | 7.0 | 10.4 | -2.4 | -1.0 |
| 2013 | 707.0 | 5.9 | 10.5 | -3.4 | -1.0 |
| 2014 | 712.7 | 5.8 | 10.5 | -3.4 | -1.0 |
| 2015 | 718.7 | 6.0 | 10.6 | -3.2 | -1.0 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

NOTE: Population is equal to population in prior year plus migration and natural increase. The sum of components does not equal the total due to rounding in the allocation of migrants to individual cohorts.

Population (POP) is July 1 Census definition.

Annual Change in population (DELPOP) is year-to-year July 1 change.

Natural Increase (POPNI9) includes civilian and military.

Non-Military Migration (POPMIG). Military Migration (POPMIGM) includes active duty military plus dependents.

TABLE 10
POPULATION COMPONENTS
WITHOUT OCS DEVELOPMENT
(thousands)

| | Total | Civilian Non-Native | Native | Military |
|------|-------|------------------------|--------|----------|
| 1980 | 419.8 | 310.0 | 64.1 | 45.7 |
| 1981 | 433.8 | 319.4 | 67.8 | 46.6 |
| 1982 | 463.4 | 348.3 | 69.2 | 45.9 |
| 1983 | 497.6 | 380.2 | 71.1 | 46.3 |
| 1984 | 522.0 | 402.0 | 73.1 | 46.9 |
| 1985 | 541.3 | 418.3 | 75.1 | 47.9 |
| 1986 | 547.6 | 423.0 | 76.9 | 47.7 |
| 1987 | 537.8 | 408.4 | 78.6 | 50.8 |
| 1988 | 531.2 | 401.9 | 79.3 | 50.0 |
| 1989 | 542.3 | 411.2 | 81.1 | 50.0 |
| 1990 | 556.5 | 423.9 | 83.0 | 49.5 |
| 1991 | 565.3 | 430.7 | 84.9 | 49.7 |
| 1992 | 570.5 | 434.0 | 86.9 | 49.7 |
| 1993 | 578.4 | 440.0 | 88.8 | 49.7 |
| 1994 | 588.9 | 448.5 | 90.7 | 49.7 |
| 1995 | 594.9 | 452.5 | 92.7 | 49.7 |
| 1996 | 599.5 | 455.1 | 94.7 | 49.7 |
| 1997 | 603.1 | 456.7 | 96.7 | 49.7 |
| 1998 | 607.0 | 458.6 | 98.8 | 49.7 |
| 1999 | 612.2 | 461.7 | 100.8 | 49.7 |
| 2000 | 618.1 | 465.5 | 103.0 | 49.7 |
| 2001 | 623.0 | 468.2 | 105.1 | 49.7 |
| 2002 | 626.7 | 469.8 | 107.3 | 49.7 |
| 2003 | 629.8 | 470.6 | 109.5 | 49.7 |
| 2004 | 633.1 | 471.6 | 111.8 | 49.7 |
| 2005 | 638.2 | 474.4 | 114.1 | 49.7 |
| 2006 | 645.2 | 479.0 | 116.5 | 49.7 |
| 2007 | 653.8 | 485.3 | 118.9 | 49.7 |
| 2008 | 663.9 | 492.9 | 121.3 | 49.7 |
| 2009 | 674.6 | 501.2 | 123.8 | 49.7 |
| 2010 | 685.0 | 509.0 | 126.3 | 49.7 |
| 2011 | 694.1 | 515.5 | 128.9 | 49.7 |
| 2012 | 701.0 | 519.8 | 131.6 | 49.7 |
| 2013 | 707.0 | 523.1 | 134.2 | 49.7 |
| 2014 | 712.7 | 526.1 | 136.9 | 49.7 |
| 2015 | 718.7 | 529.3 | 139.7 | 49.7 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Population (POP) is July 1 Census definition.

Civilian Non-Native (CNNTOT).

Native (NATTOT) civilian is July 1 estimate, except 1980 is April 1.

Military (MLTOT) is active duty plus dependents.

State Revenues and Spending

Table 11 shows the projection of sources of real Alaska state expenditures and revenues. Petroleum revenues, the source of over 80 percent of total General Fund revenues in Fiscal Year 1990, will decline to only about one-fourth their current magnitude by 2010. Note that revenues in Table 11 do not have to match expenditures (and historically have not matched them) as long as surplus funds remain in the General Fund and other state accounts (see fiscal assumption 13, page 17).

Fluctuations in world oil prices may affect the timing of revenues somewhat – for example, the figures for 1990-91 do not reflect the recent rise in world oil prices in the aftermath of Iraq's invasion of Kuwait – but not the overall trend. That is because of the overwhelming size of the Prudhoe Bay field compared to all other Alaska oil prospects put together. OCS oil development is not included in this without-OCS case, but as we shall see below, Alaska would receive only limited revenues from development of resources on the federal OCS.

Non-tax sources of revenues such as federal grants and earnings on state investments such as the permanent fund grow very slowly over the projection period. The other revenues category – chiefly taxes – gets a boost in 1995-96 due to the projected reimposition of the state personal income tax (or other new tax collecting a similar amount of revenue) around that time.

TABLE 11
STATE UNRESTRICTED GENERAL FUND WITHOUT OCS DEVELOPMENT
(million 1989 dollars)

| <u>EXPENDITURES</u> | | <u>REVENUES</u> | | | |
|---------------------|--------|-----------------|-----------|------------|------------------------|
| | | Total | Petroleum | Endogenous | Investment Earnings |
| 1980 | 1512.6 | 3225.9 | 2916.1 | 324.6 | 154.6 |
| 1981 | 4226.6 | 4452.5 | 3967.3 | 212.4 | 272.8 |
| 1982 | 3851.9 | 4654.3 | 4055.9 | 230.5 | 367.8 |
| 1983 | 4328.0 | 4084.7 | 3412.9 | 249.1 | 422.8 |
| 1984 | 3493.3 | 3668.4 | 3101.4 | 261.1 | 305.9 |
| 1985 | 3524.0 | 3429.0 | 2889.2 | 294.2 | 245.6 |
| 1986 | 2859.2 | 3178.3 | 2748.5 | 228.1 | 201.7 |
| 1987 | 3744.7 | 1856.3 | 1440.3 | 248.9 | 167.0 |
| 1988 | 2604.4 | 2475.9 | 2030.7 | 246.3 | 198.9 |
| 1989 | 2309.2 | 2276.1 | 1873.2 | 248.1 | 154.8 |
| 1990 | 2403.4 | 2362.1 | 1963.5 | 246.9 | 151.7 |
| 1991 | 2686.5 | 2330.7 | 1939.7 | 246.9 | 144.2 |
| 1992 | 2193.8 | 2227.3 | 1865.7 | 247.1 | 114.4 |
| 1993 | 2130.0 | 2124.1 | 1766.3 | 246.8 | 111.1 |
| 1994 | 2132.2 | 2102.9 | 1627.9 | 247.1 | 227.9 |
| 1995 | 2171.2 | 2131.4 | 1484.8 | 400.9 | 245.7 |
| 1996 | 2203.8 | 2158.5 | 1364.7 | 531.0 | 262.8 |
| 1997 | 2205.2 | 2202.8 | 1237.2 | 523.6 | 442.0 |
| 1998 | 2218.0 | 2219.3 | 1208.7 | 514.4 | 496.1 |
| 1999 | 2222.0 | 2225.7 | 1154.5 | 518.2 | 553.0 |
| 2000 | 2228.4 | 2219.2 | 1087.1 | 521.9 | 610.1 |
| 2001 | 2109.9 | 2099.0 | 916.3 | 522.3 | 660.4 |
| 2002 | 2070.4 | 2069.3 | 837.6 | 521.8 | 710.0 |
| 2003 | 2038.8 | 2040.5 | 761.1 | 521.5 | 757.9 |
| 2004 | 2038.4 | 2031.2 | 706.5 | 521.1 | 803.6 |
| 2005 | 2059.8 | 2061.1 | 690.7 | 523.5 | 846.9 |
| 2006 | 2115.6 | 2122.9 | 705.3 | 528.7 | 888.9 |
| 2007 | 2179.3 | 2188.8 | 725.6 | 534.3 | 928.9 |
| 2008 | 2247.5 | 2248.1 | 741.4 | 540.6 | 966.0 |
| 2009 | 2227.3 | 2227.3 | 684.3 | 547.1 | 996.0 |
| 2010 | 2177.4 | 2176.8 | 649.0 | 552.9 | 974.9 |
| 2011 | 2128.0 | 2127.4 | 615.7 | 557.3 | 954.4 |
| 2012 | 2076.3 | 2076.8 | 583.9 | 558.6 | 934.4 |
| 2013 | 2024.7 | 2027.2 | 553.6 | 558.7 | 914.8 |
| 2014 | 1977.7 | 1980.5 | 524.9 | 559.7 | 895.8 |
| 2015 | 1937.8 | 1941.2 | 502.6 | 561.5 | 877.2 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Note: The sum of revenue components is greater than the total in 1980 because petroleum revenues includes ANCSA payment not reflected in the total. Expenditures (DF.EXGFB) is unrestricted General Fund expenditures. Total Revenues (DF.RSGFB).

Petroleum Revenues (DF.RP9SG) excludes Permanent Fund contribution.

Endogenous Revenues (DF.RSENG) is total net of petroleum and investment earnings.

Investment Earnings (DF.RSIN) is earnings from all sources deposited in the General Fund.

Table 11 also shows total state expenditures compared to total revenues. As long as funds accumulated from previous budget surpluses exist, expenditures in a given year can exceed revenues. When these funds are totally depleted in the mid-1990s, expenditures must fall to equal revenues.

Expenditures affect the state economy and population in different ways depending on how they are appropriated and spent. Table 12 shows projected real General Fund appropriations in three categories as well as projected permanent fund dividend payments, the balance on the state's General and Permanent Funds, and revenues projected to be collected from the personal income tax. Appropriations for the operating budget affect the economy within the year; spending of appropriations for capital projects may be spread over several years. Debt service payments have no direct effect on the state's economy, but encumber revenues which might otherwise be available to spend on items which do affect the economy. Revenues shown in Table 12 collected from the proposed personal income tax are a portion of the "endogenous" revenues shown in Table 11.

Personal Income

Table 13 shows how the projected sources of real Personal Income, respectively, vary over time in the without-OCS case. While no dramatic trends are apparent in the tables, the figures show a few interesting changes. If we were to ignore the Permanent Fund dividend (which we assume disappears in 1997, transfer payments increase more rapidly than any other form of income. Transfer payments net of the approximate \$400 million per year contribution of the dividend

TABLE 12
STATE GOVERNMENT MISCELLANEOUS VARIABLES
WITHOUT OCS DEVELOPMENT
(million 1989 dollars)

| <u>GENERAL FUND APPROPRIATIONS</u> | | | | | | | |
|------------------------------------|--------|-----------|---------|-----------------|-------------------------------|------------------------------|---------------------------|
| | Total | Operating | Capital | Debt Service | Permanent Fund Dividend | Permanent Fund Balance | Personal Income Tax |
| 1980 | 1464.4 | - | - | 98.3 | 0.0 | 623.2 | 129.6 |
| 1981 | 5940.2 | - | - | 117.0 | 0.0 | 2188.2 | 0.0 |
| 1982 | 6415.9 | - | - | 115.9 | 541.7 | 3639.7 | 0.0 |
| 1983 | 3435.5 | - | - | 161.6 | 210.9 | 4921.6 | 0.0 |
| 1984 | 3418.0 | - | - | 180.0 | 173.2 | 5816.0 | 0.0 |
| 1985 | 4072.6 | - | - | 178.3 | 221.5 | 6841.3 | 0.0 |
| 1986 | 2926.3 | - | - | 168.7 | 306.1 | 7797.5 | 0.0 |
| 1987 | 2473.5 | - | - | 159.8 | 390.3 | 8658.5 | 0.0 |
| 1988 | 2570.7 | 1862.9 | 556.2 | 151.6 | 398.6 | 9446.4 | 0.0 |
| 1989 | 2247.3 | 1658.0 | 452.9 | 136.5 | 409.3 | 9746.3 | 0.0 |
| 1990 | 2421.7 | 1847.1 | 458.4 | 116.2 | 403.6 | 9971.6 | 0.0 |
| 1991 | 2677.3 | 1892.5 | 423.3 | 88.7 | 369.5 | 10404.9 | 0.0 |
| 1992 | 2153.9 | 1742.6 | 348.0 | 63.3 | 341.7 | 10791.6 | 0.0 |
| 1993 | 2109.8 | 1726.2 | 304.1 | 79.5 | 360.9 | 11173.8 | 0.0 |
| 1994 | 2115.9 | 1748.3 | 267.7 | 100.0 | 373.0 | 11424.9 | 0.0 |
| 1995 | 2156.7 | 1803.3 | 235.3 | 118.0 | 385.3 | 11635.6 | 156.7 |
| 1996 | 2188.7 | 1870.2 | 202.6 | 115.9 | 394.8 | 11757.2 | 289.2 |
| 1997 | 2217.2 | 1898.7 | 211.0 | 107.6 | 0.0 | 12133.1 | 283.1 |
| 1998 | 2226.1 | 1912.7 | 212.5 | 100.9 | 0.0 | 12417.5 | 277.6 |
| 1999 | 2229.0 | 1920.2 | 213.4 | 95.5 | 0.0 | 12711.9 | 280.9 |
| 2000 | 2235.9 | 1932.8 | 214.8 | 88.4 | 0.0 | 12954.4 | 284.2 |
| 2001 | 2106.9 | 1811.5 | 201.3 | 94.2 | 0.0 | 13043.6 | 285.2 |
| 2002 | 2073.2 | 1768.2 | 196.5 | 108.5 | 0.0 | 13072.9 | 285.4 |
| 2003 | 2042.3 | 1736.8 | 193.0 | 112.6 | 0.0 | 13041.7 | 285.7 |
| 2004 | 2044.8 | 1743.4 | 193.7 | 107.7 | 0.0 | 12956.0 | 285.6 |
| 2005 | 2067.6 | 1768.1 | 196.5 | 103.1 | 0.0 | 12828.8 | 287.2 |
| 2006 | 2126.0 | 1824.6 | 202.7 | 98.6 | 0.0 | 12673.4 | 290.9 |
| 2007 | 2190.3 | 1887.1 | 209.7 | 93.5 | 0.0 | 12494.6 | 294.9 |
| 2008 | 2259.4 | 1958.5 | 217.6 | 83.3 | 0.0 | 12295.1 | 299.1 |
| 2009 | 2232.7 | 1944.8 | 216.1 | 71.9 | 0.0 | 12047.0 | 303.6 |
| 2010 | 2179.4 | 1886.8 | 209.6 | 82.9 | 0.0 | 11808.7 | 307.7 |
| 2011 | 2128.7 | 1814.0 | 201.6 | 113.1 | 0.0 | 11575.0 | 310.7 |
| 2012 | 2077.4 | 1750.9 | 194.5 | 132.0 | 0.0 | 11345.5 | 311.3 |
| 2013 | 2027.5 | 1711.0 | 190.1 | 126.3 | 0.0 | 11120.0 | 310.8 |
| 2014 | 1980.6 | 1674.8 | 186.1 | 119.7 | 0.0 | 10898.6 | 310.8 |
| 2015 | 1941.3 | 1648.3 | 183.1 | 109.8 | 0.0 | 10676.1 | 311.3 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Total (DF.APGF). Operating (DF.APGFO). Capital (DF.APGFC).
Debt Service (DF.EXDSS) includes only general obligation debt of state.
Permanent Fund Dividend (DF.EXTRN). Permanent Fund Balance (DF.BALPF).
Personal Income Tax (DF.RTIS).

TABLE 13
COMPONENTS OF REAL PERSONAL INCOME
WITHOUT OCS DEVELOPMENT
(million 1989 dollars)

| | Wage and Salary Payments | Net Earnings | Residence Adjustment | Dividends, Interest, Rent | Transfers | Personal Income | Disposable Personal Income |
|------|--------------------------------|-----------------|-------------------------|---------------------------------|-----------|--------------------|----------------------------------|
| 1980 | 5664.5 | 6496.7 | 428.5 | 525.4 | 628.0 | 7221.2 | 6040.4 |
| 1981 | 6286.0 | 6935.2 | 484.2 | 599.4 | 672.0 | 7722.6 | 6293.1 |
| 1982 | 6889.6 | 7612.5 | 555.1 | 681.3 | 1028.9 | 8767.2 | 7279.2 |
| 1983 | 7501.0 | 8508.0 | 608.2 | 827.8 | 1125.2 | 9852.7 | 8247.5 |
| 1984 | 7567.2 | 8599.0 | 595.3 | 915.3 | 971.1 | 9890.1 | 8427.0 |
| 1985 | 7500.2 | 8650.7 | 598.6 | 997.8 | 1259.8 | 10309.7 | 8949.8 |
| 1986 | 7041.3 | 8284.4 | 512.0 | 1037.7 | 1336.4 | 10146.6 | 8781.4 |
| 1987 | 6645.1 | 7912.0 | 467.2 | 1099.2 | 1441.6 | 9985.6 | 8531.3 |
| 1988 | 6860.1 | 7764.2 | 465.8 | 1015.2 | 1479.8 | 9975.8 | 8511.5 |
| 1989 | 7165.5 | 8312.0 | 492.9 | 1022.0 | 1470.8 | 10497.5 | 8935.8 |
| 1990 | 7210.1 | 8327.6 | 504.7 | 1071.6 | 1512.7 | 10590.1 | 9025.4 |
| 1991 | 7411.2 | 8414.1 | 559.7 | 1127.1 | 1518.8 | 10682.7 | 9085.9 |
| 1992 | 7458.2 | 8395.5 | 548.5 | 1156.3 | 1503.9 | 10687.1 | 9091.5 |
| 1993 | 7549.8 | 8483.4 | 541.6 | 1190.4 | 1564.0 | 10874.0 | 9243.6 |
| 1994 | 7657.1 | 8599.8 | 541.5 | 1233.3 | 1619.3 | 11086.8 | 9421.7 |
| 1995 | 7659.8 | 8578.8 | 546.6 | 1269.6 | 1647.3 | 11121.7 | 9242.2 |
| 1996 | 7724.2 | 8634.3 | 555.0 | 1295.3 | 1675.0 | 11219.3 | 9333.5 |
| 1997 | 7786.6 | 8686.2 | 563.5 | 1315.7 | 1295.4 | 10900.8 | 9055.5 |
| 1998 | 7856.9 | 8749.8 | 569.1 | 1334.9 | 1313.2 | 10992.8 | 9132.8 |
| 1999 | 7958.7 | 8857.4 | 576.9 | 1362.0 | 1344.3 | 11148.5 | 9254.3 |
| 2000 | 8064.6 | 8957.4 | 584.9 | 1390.0 | 1369.8 | 11291.5 | 9371.7 |
| 2001 | 8134.2 | 9006.7 | 590.4 | 1413.7 | 1383.1 | 11369.4 | 9440.8 |
| 2002 | 8171.1 | 9032.4 | 593.9 | 1436.8 | 1400.4 | 11428.8 | 9485.0 |
| 2003 | 8206.5 | 9055.1 | 597.0 | 1454.6 | 1413.5 | 11476.0 | 9521.9 |
| 2004 | 8274.5 | 9111.2 | 602.0 | 1470.9 | 1427.6 | 11554.4 | 9590.7 |
| 2005 | 8387.7 | 9226.8 | 610.3 | 1497.2 | 1459.2 | 11716.7 | 9721.3 |
| 2006 | 8522.7 | 9354.8 | 620.6 | 1529.5 | 1491.9 | 11896.7 | 9863.1 |
| 2007 | 8679.8 | 9504.8 | 632.1 | 1571.5 | 1531.4 | 12113.8 | 10041.9 |
| 2008 | 8852.1 | 9669.8 | 644.7 | 1622.7 | 1578.3 | 12361.6 | 10245.9 |
| 2009 | 9017.4 | 9826.4 | 656.8 | 1681.1 | 1629.0 | 12612.0 | 10451.8 |
| 2010 | 9162.2 | 9960.1 | 667.5 | 1741.8 | 1678.6 | 12842.0 | 10641.0 |
| 2011 | 9271.9 | 10056.5 | 675.8 | 1799.2 | 1723.1 | 13028.4 | 10794.0 |
| 2012 | 9334.4 | 10088.8 | 681.0 | 1840.5 | 1743.7 | 13113.5 | 10868.3 |
| 2013 | 9411.9 | 10149.4 | 686.6 | 1880.0 | 1773.5 | 13233.8 | 10971.2 |
| 2014 | 9513.0 | 10232.2 | 693.9 | 1915.7 | 1802.4 | 13370.0 | 11088.7 |
| 2015 | 9620.6 | 10320.6 | 701.9 | 1951.5 | 1832.0 | 13511.9 | 11206.5 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Wage and Salary Payments (DF.PIWS) is nonagricultural wage and salary job categories plus military.
Net Earnings (DF.PI NE) is net labor and proprietors' income by place of work.
Residence Adjustment (DF.PIRAD). Dividends, Interest, and Rent (DF.PIDIR).
Transfers (DF.PITRAN). Personal Income (DF.PIB). Disposable Personal Income (DF.DPIB)

nearly double by 2015. This projected increase is linked in the MAP model to the anticipated rise in the population of older Alaskans, who receive the pension funds, social security, and life insurance payments that constitute most of transfer income.

The residence adjustment shown in Table 13 shows the difference between wages and salaries and proprietors' income which are earned in Alaska and earnings of Alaska residents. Nonresidents earned more from working in Alaska than Alaska residents earned from working outside the state, so Personal Income of Alaskans is smaller than the sum of wage and salary payments, proprietors' net earnings, investment earnings, and transfers. The residence adjustment depends mainly on the industry mix of employment.

Another shift noticeable in the figures is the declining share of Personal Income that remains as disposable Personal Income in the 1990s. This is due to the projected increase in personal taxes needed to help offset the fiscal effects of declining petroleum revenues. The combination of the end of Permanent Fund dividends (part of transfer payments) and the initiation of the personal income tax causes Alaska real disposable Personal Income to remain almost constant throughout the 1990s, despite an 11 percent projected population increase. The projected decline in real per capita Personal Income implied by the figures in Table 13 does not include the effects on the perceived standard of living caused by the reduction in public services that we also project to occur during the same period.

Price Changes

Table 14 shows the projected increase in Anchorage consumer prices over the next 25 years. The Anchorage consumer price index (CPI) is used to deflate projected values in nominal dollars to real dollars. The growth in the Anchorage CPI is closely linked to the assumed 5 percent annual percentage growth in the U.S. CPI. Alaska prices are projected to grow slightly more slowly than the national average, however, as the size of the Alaska economy continues to increase, increasing efficiency of distribution of goods and services. By 2015, Alaska prices are projected to be only one percent higher on the average than U.S. prices, according to the projection shown in Table 14.

TABLE 14
PRICE INDEXES WITHOUT OCS DEVELOPMENT

| | Anchorage CPI-W | Alaska/US Price Level |
|------|--------------------|--------------------------|
| 1980 | 86.3 | 1.290 |
| 1981 | 92.9 | 1.261 |
| 1982 | 98.2 | 1.257 |
| 1983 | 98.9 | 1.229 |
| 1984 | 102.9 | 1.235 |
| 1985 | 105.8 | 1.227 |
| 1986 | 107.7 | 1.230 |
| 1987 | 107.9 | 1.189 |
| 1988 | 108.3 | 1.148 |
| 1989 | 111.3 | 1.126 |
| 1990 | 116.6 | 1.121 |
| 1991 | 122.4 | 1.121 |
| 1992 | 128.0 | 1.116 |
| 1993 | 133.8 | 1.111 |
| 1994 | 139.8 | 1.106 |
| 1995 | 146.2 | 1.101 |
| 1996 | 153.5 | 1.101 |
| 1997 | 160.4 | 1.096 |
| 1998 | 168.4 | 1.096 |
| 1999 | 176.0 | 1.091 |
| 2000 | 184.0 | 1.086 |
| 2001 | 192.3 | 1.081 |
| 2002 | 201.0 | 1.076 |
| 2003 | 210.0 | 1.071 |
| 2004 | 219.5 | 1.066 |
| 2005 | 229.4 | 1.061 |
| 2006 | 239.7 | 1.056 |
| 2007 | 250.5 | 1.051 |
| 2008 | 261.8 | 1.046 |
| 2009 | 273.5 | 1.041 |
| 2010 | 285.8 | 1.036 |
| 2011 | 298.7 | 1.031 |
| 2012 | 312.1 | 1.025 |
| 2013 | 326.0 | 1.020 |
| 2014 | 340.7 | 1.015 |
| 2015 | 355.9 | 1.010 |

SOURCE: 1980-1987, MAP Database; 1988-2015, ISER MAP Model Simulation MMSB, Created 7/90.

Anchorage CPI (PDANCP) Consumer Price Index for Urban Wage Earners (1982-1984 = 100).
Alaska/US Price Level (PDRATIO) is the ratio of Anchorage and US Consumer Price Index levels.

IV. STATEWIDE ECONOMIC AND DEMOGRAPHIC EFFECTS OF OCS DEVELOPMENT

This chapter discusses the projected effects on the Alaska economy and population of exploration and development activities that might take place on areas of the federal Outer Continental Shelf leased for petroleum development by 1990. First, we discuss the direct contribution of projected OCS activities to the exogenous industry employment and state revenue assumptions used for the base-case projection discussed in Chapter III. Then using the MAP statewide model we present an impact-case projection of the Alaska economy and population including the contribution of OCS activity. We use the difference between the with-OCS, or impact-case projection, and the without-OCS, or base-case projection, to analyze the economic and demographic impacts of the OCS development in Alaska.

Direct Employment and Revenue Effects

Table 15 summarizes the employment and revenue assumptions for OCS exploration and development which may take place over the next 25 years. Since no projected OCS activities are included in the without-OCS projection discussed in the preceding chapter, the figures in this table represent incremental direct employment and revenues for the Alaska economy.

TABLE 15
OCS EXPLORATION AND DEVELOPMENT ASSUMPTIONS
(thousands of employees; millions of current \$)

| | Total High Wage Construction Employment | Total Petroleum Mining Employment | Total Transportation Employment | State Property Tax Revenue | State Royalty Income | State Production Tax Revenue |
|------|--------------------------------------------------|--------------------------------------------|---------------------------------------|-------------------------------------|----------------------------|---------------------------------------|
| 1980 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1981 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1982 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1983 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1984 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1985 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1986 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1987 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1988 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1990 | 0.000 | 0.189 | 0.060 | 0.000 | 0.000 | 0.000 |
| 1991 | 0.000 | 0.199 | 0.055 | 0.000 | 0.000 | 0.000 |
| 1992 | 0.010 | 0.765 | 0.308 | 0.000 | 0.000 | 0.000 |
| 1993 | 0.000 | 0.785 | 0.308 | 0.023 | 0.000 | 0.000 |
| 1994 | 0.035 | 0.701 | 0.258 | 0.142 | 0.000 | 0.000 |
| 1995 | 0.069 | 0.555 | 0.184 | 0.398 | 0.000 | 0.000 |
| 1996 | 0.069 | 0.446 | 0.134 | 0.678 | 0.000 | 0.000 |
| 1997 | 0.746 | 1.040 | 0.200 | 3.889 | 0.000 | 0.000 |
| 1998 | 0.763 | 1.648 | 0.307 | 7.507 | 0.000 | 0.000 |
| 1999 | 0.996 | 3.038 | 0.478 | 8.006 | 0.000 | 0.000 |
| 2000 | 0.000 | 3.095 | 0.521 | 12.149 | 0.000 | 0.000 |
| 2001 | 0.000 | 2.611 | 0.440 | 11.951 | 57.000 | 32.400 |
| 2002 | 0.000 | 2.508 | 0.480 | 11.424 | 58.200 | 31.300 |
| 2003 | 0.000 | 2.312 | 0.480 | 10.815 | 59.500 | 30.200 |
| 2004 | 0.000 | 1.658 | 0.480 | 10.116 | 60.600 | 28.900 |
| 2005 | 0.000 | 1.663 | 0.480 | 9.320 | 60.400 | 27.000 |
| 2006 | 0.000 | 1.663 | 0.480 | 8.419 | 56.900 | 23.800 |
| 2007 | 0.000 | 1.698 | 0.480 | 7.574 | 52.600 | 20.500 |
| 2008 | 0.000 | 1.698 | 0.480 | 6.807 | 48.000 | 17.400 |
| 2009 | 0.000 | 1.698 | 0.480 | 6.074 | 47.300 | 15.900 |
| 2010 | 0.000 | 1.698 | 0.480 | 5.370 | 45.000 | 13.900 |
| 2011 | 0.000 | 1.678 | 0.480 | 4.702 | 43.700 | 12.300 |
| 2012 | 0.000 | 1.678 | 0.480 | 4.063 | 41.400 | 10.600 |
| 2013 | 0.000 | 1.678 | 0.480 | 3.441 | 39.900 | 9.200 |
| 2014 | 0.000 | 1.678 | 0.480 | 2.839 | 39.300 | 8.100 |
| 2015 | 0.000 | 1.678 | 0.480 | 2.248 | 37.500 | 6.900 |

SOURCE: MAP MODEL CASE OCS.M90
VARIABLES: EMT9X RPPS RPRY RPTS

We used employment assumptions provided to us by the Minerals Management Service Alaska OCS office. They assume that Alaska is considered the place of work of all OCS workers, consistent with other employment data used in the MAP model. The MAP model does not assume that all these additional OCS-related workers actually live in Alaska. Rather, the model projects population migration depending upon a number of labor market indicators, and it adjusts Personal Income for residence depending on the industry mix of total employment.

Direct employment effects of the exploration and development activities occur in the construction, petroleum extraction, and transportation industries. The projected increment to petroleum employment rises to over 3,000 in 1999 and 2000 as operators drill development wells to bring major discoveries into commercial production. Petroleum employment then falls to 1,700 during the operations phase of activities. Exogenous transportation employment to support offshore exploration increases to over 300 in 1992 and 1993. After falling by about one-half in the mid 1990s, OCS-related transportation employment rises to over 500 in 2000 and then stabilizes at 480 in 2002. After 2000, the bulk of additional transportation workers are employed in support of pipeline operations. Projected OCS-related construction employment rises to nearly 1,000 as pipeline and production facilities are constructed near the turn of the century.

Production of oil and gas from the federal Outer Continental Shelf does not provide the state of Alaska directly with any shared royalties or severance tax revenue. The state and local governments can, however, tax petroleum exploration,

production, and pipeline property located on shore or within the three-mile offshore zone (Alaska Statutes 43.56). Production facilities for OCS development would be located beyond the three-mile limit, but shore bases onshore pipelines would be subject to taxation. The tax rate by statute is 20 mills on the full value of the property, with the proceeds shared between the state and local jurisdiction according to the applicable local mill rate. We assumed the state would collect a share equal to the current average state share of petroleum property taxes on the depreciated inflation-adjusted construction cost of shore bases and onshore pipelines. If the portion of the incremental property tax revenues actually collected by organized local governments differs from the current average, there might be some difference in the regional allocation of public spending, but the total public expenditures and statewide economic effects would be relatively unaffected.

We project that onshore facilities constructed for OCS exploration and development activities associated with the Five-Year Program will yield the State of Alaska \$12 million in property tax revenue (in nominal dollars) in 2000. Local governments are projected to receive approximately four times this amount. The incremental state revenues would decline to \$2 million by 2015 as the facilities depreciate. We assume a schedule of depreciation that follows the depletion schedule assumed for oil reserves associated with each facility. We used assumptions for production schedules, timing and construction cost of facilities and pipelines provided to us by the Minerals Management Service.

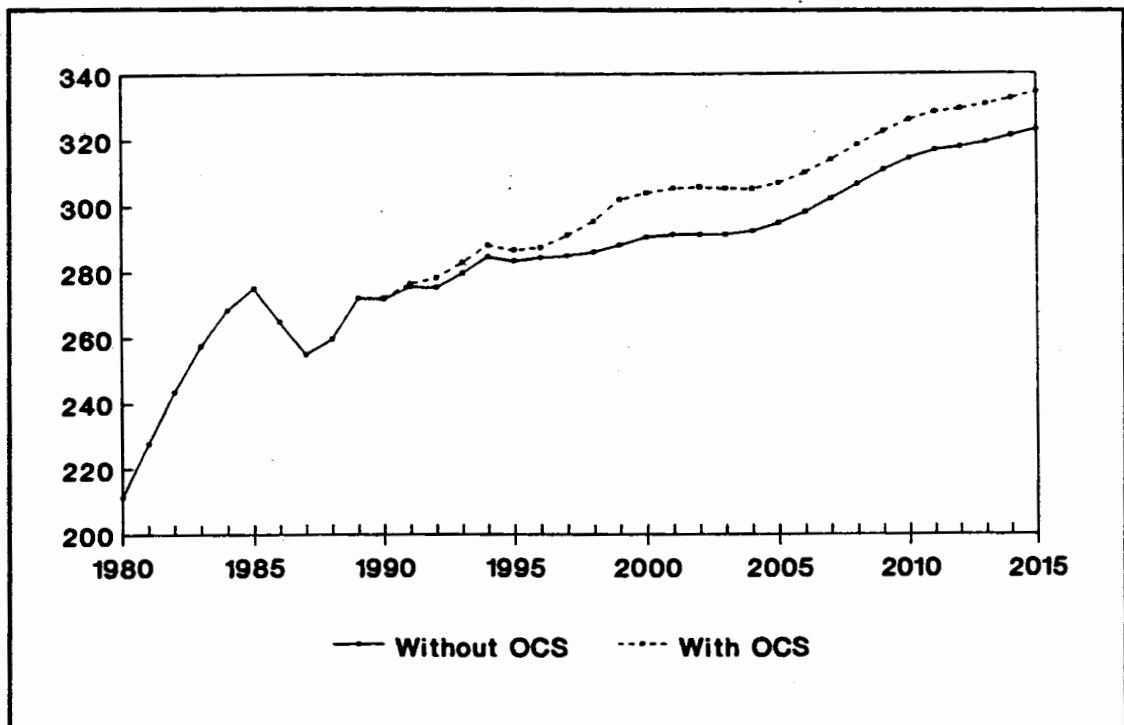
In addition to these property tax revenues, production from OCS fields may have an indirect effect on Alaska state revenues by reducing the cost of pipeline transportation for all North Slope oil. This effect comes from the effect of increasing throughput on the Trans-Alaska Pipeline System (TAPS) tariff under the current ratemaking agreement. Under the OCS development scenario assumed for this study, approximately 2.5 billion barrels of OCS oil would move through most of the TAPS pipeline after it passed through a new pipeline connecting to offshore fields. Using the Alaska Department of Revenue production scenario consistent with the petroleum revenues assumed in the without-OCS case, reduced tariffs as a result of incremental TAPS throughput would allow another 54 million barrels of oil to be extracted from North Slope fields (Platt 1989, 1990). The added North Slope oil production would increase state royalty income after 2000 by about \$60 million annually and severance taxes by roughly one-half that amount. Appendix E provides full documentation of the assumptions used for the projected revenue effects of OCS production.

Projected Impact of the Five-Year Leasing Program

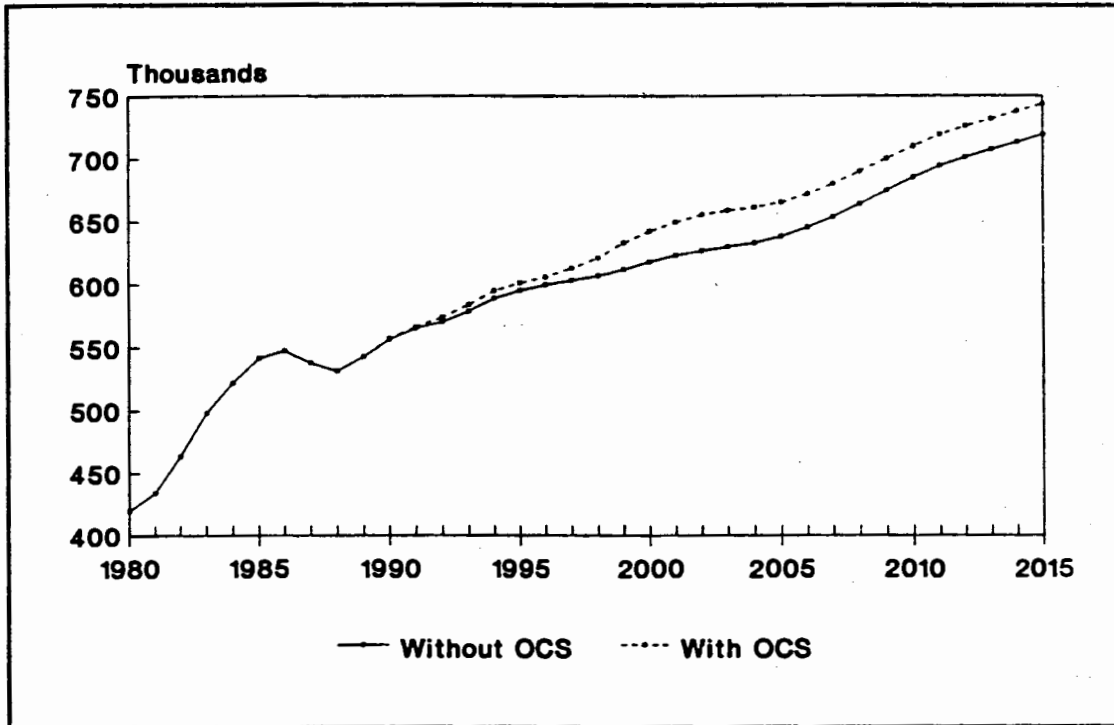
We projected the MAP state economic and demographic model using the same scenario as described in the previous chapter, but with the addition of the OCS employment and revenue assumptions shown in Table 15. Appendix A contains the complete set of scenario assumptions for employment, petroleum revenues, and tourists visiting Alaska for the with-OCS projections. Figures 2, 3, and 4 summarize the MAP model results by comparing the projected pattern of total employment, population, and per-capita disposable Personal Income, respectively,

for the with-OCS and without-OCS scenarios. We projected that OCS development will add 4.6 percent to Alaska employment in 2000 and 3.5 percent in 2015. Effects on population are similar but slightly smaller – 3.9 percent and 3.4 percent, respectively. Figure 4 shows clearly the effects of the assumed reimposition of the personal income tax and elimination of the Permanent Fund dividend program on disposable Personal Income in the mid-1990s. We project that the overall effect of OCS activities will raise real disposable Personal Income by about 1.5 percent, principally because OCS-related jobs pay higher wages on the average than other Alaska jobs.

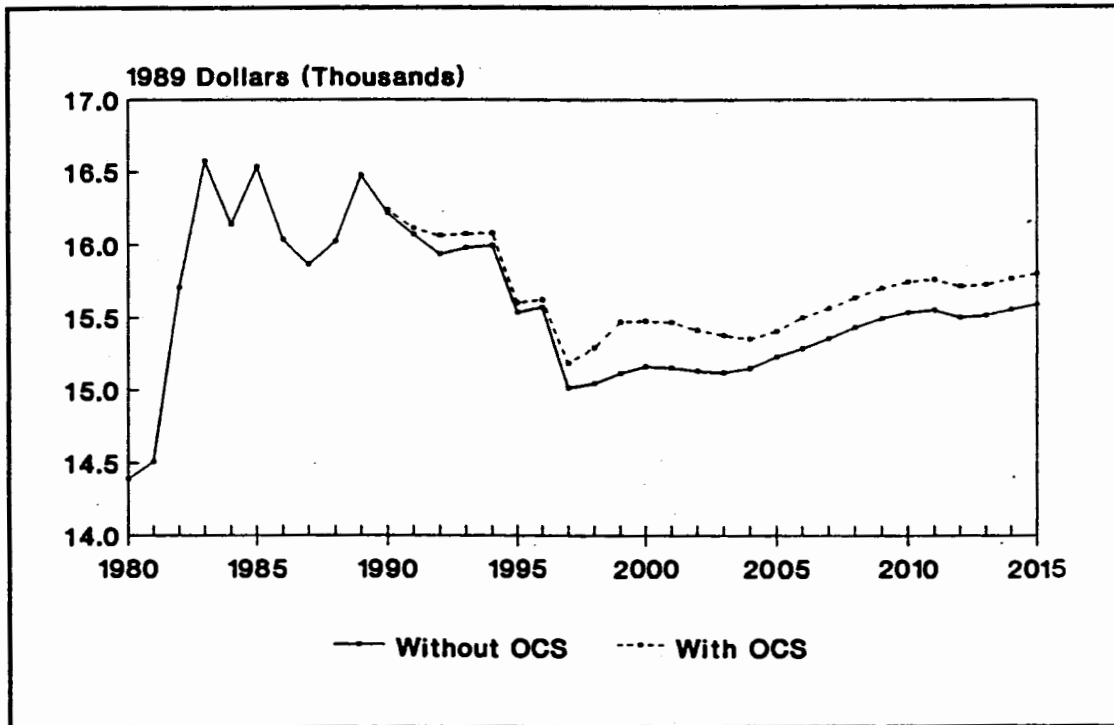
**Figure 2. Economic and Demographic Projections
Total Alaska Employment**



**Figure 3. Economic and Demographic Projections
Alaska Population**



**Figure 4. Economic and Demographic Projections
Per Capita Disposable Personal Income**



Appendix B contains a set of ten tables showing the details of the projection of the state economy and population for the with-OCS scenario. The ten Appendix B tables are analogous to and show the same information as Tables 5 through 14 for the without-OCS projection. The with-OCS projection presents a broadly similar view of the future of Alaska's economy and population as discussed in Chapter III for the without-OCS case. Rather than describe the results contained in these tables in detail, which would be repetitious, we choose to focus on the differences between the with-OCS, or impact-case projection and the without-OCS, or base-case projection. These differences can be interpreted as the potential cumulative effects of OCS exploration and development.

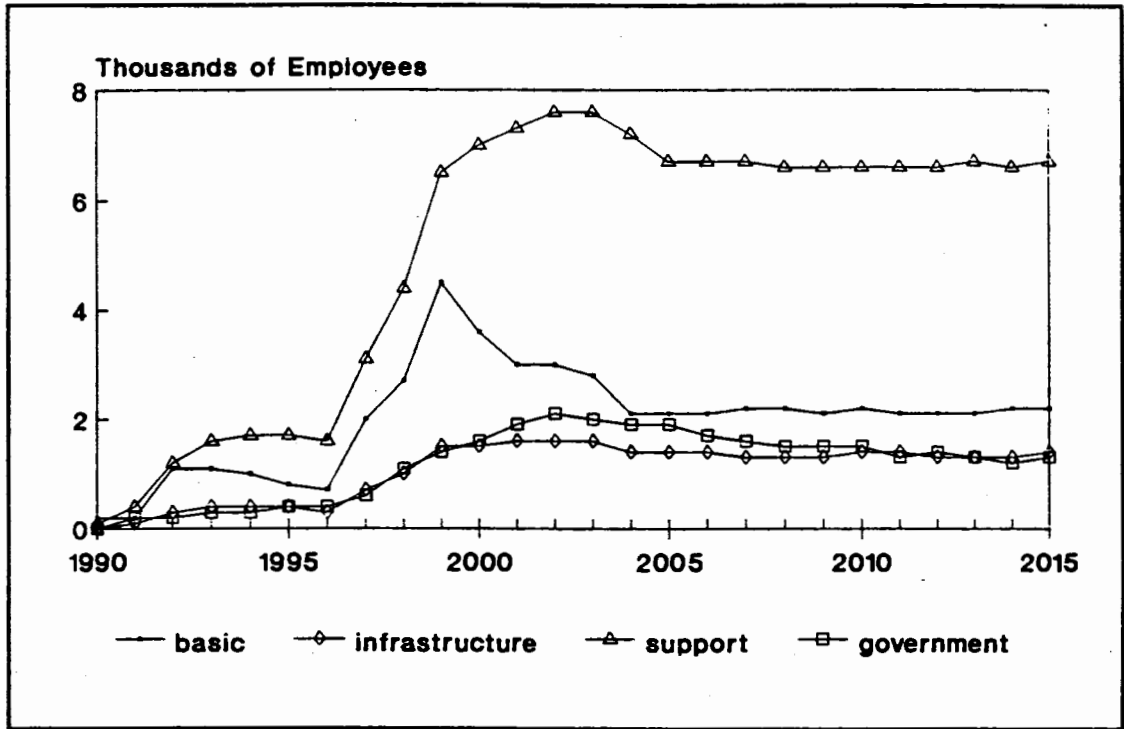
Figure 5 shows the **difference** between employment by sector in the with-OCS and the without-OCS cases. The projected additional employment attributed to OCS activities rises to about 14,000 in the first few years of the next century. The employment effect declines somewhat, then levels off at between 11 and 12,000 workers from 2005 through the rest of the period. Support employment accounts for slightly more than one-half the total effect. The share of basic employment declines from about one-third to about one-fifth as OCS activities move into the operations phase. Infrastructure and government employment rises by a smaller and equal amount over the base case projection.

Figure 6 shows the industry composition of private sector (basic and support) employment. The distribution of the basic sector employment effects show mainly the distribution of direct OCS exploration and development employment. The

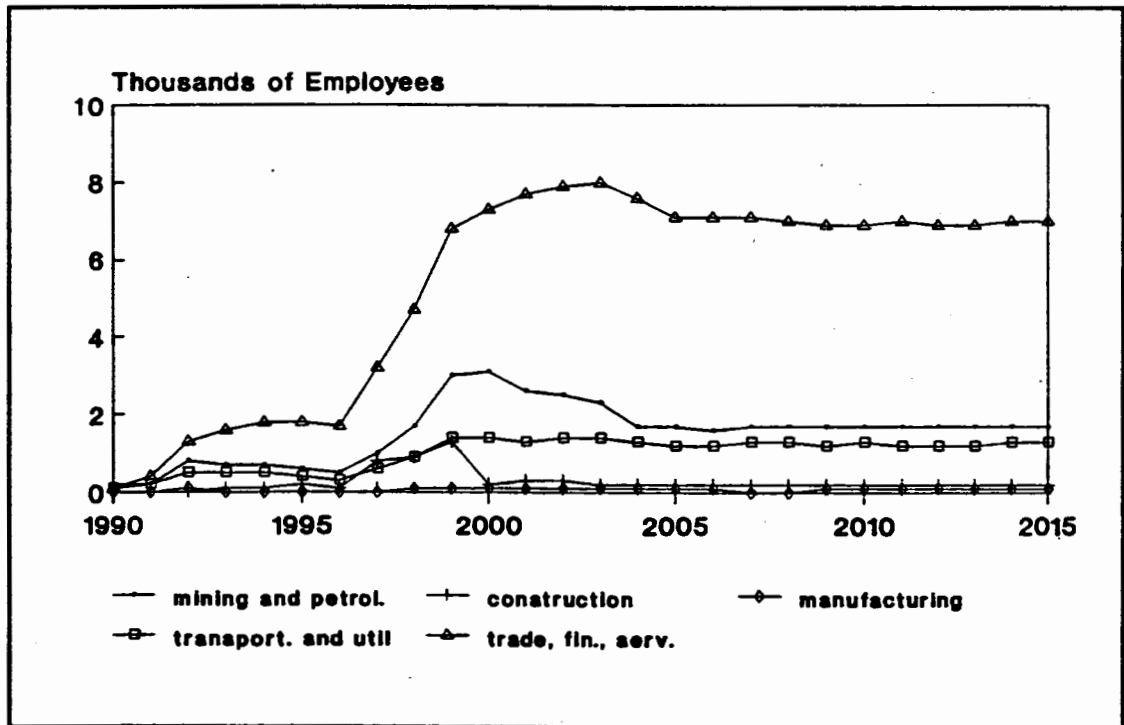
trade, finance, and services industries reflect the indirect effects. Most of the additional government employment generated as a by-product of additional OCS leasing – about two-thirds – is at the local level, as Figure 7 shows. These jobs would mainly be in local public services such as education, public safety, and municipal utilities that would be needed to serve a larger population.

Figure 8 shows the difference between the with-OCS and the without-OCS projection for the components of population change. The impact on net migration is largest in 1999, when construction peaks for facilities needed to develop additional OCS petroleum resources and build a pipeline to connect with TAPS. Around 6,000 more people move to the state in 1999 as a result of OCS development. After the economy has adjusted to this shock, OCS jobs would continue to attract a positive flow of job-seekers until 2004. From 2004 onward, net migration flows are negative – more people leave the state than enter. Since the population has been enlarged from the earlier period of migration, however, natural increase remains larger than before, as children are born to residents who moved to Alaska from 1997 through 2002.

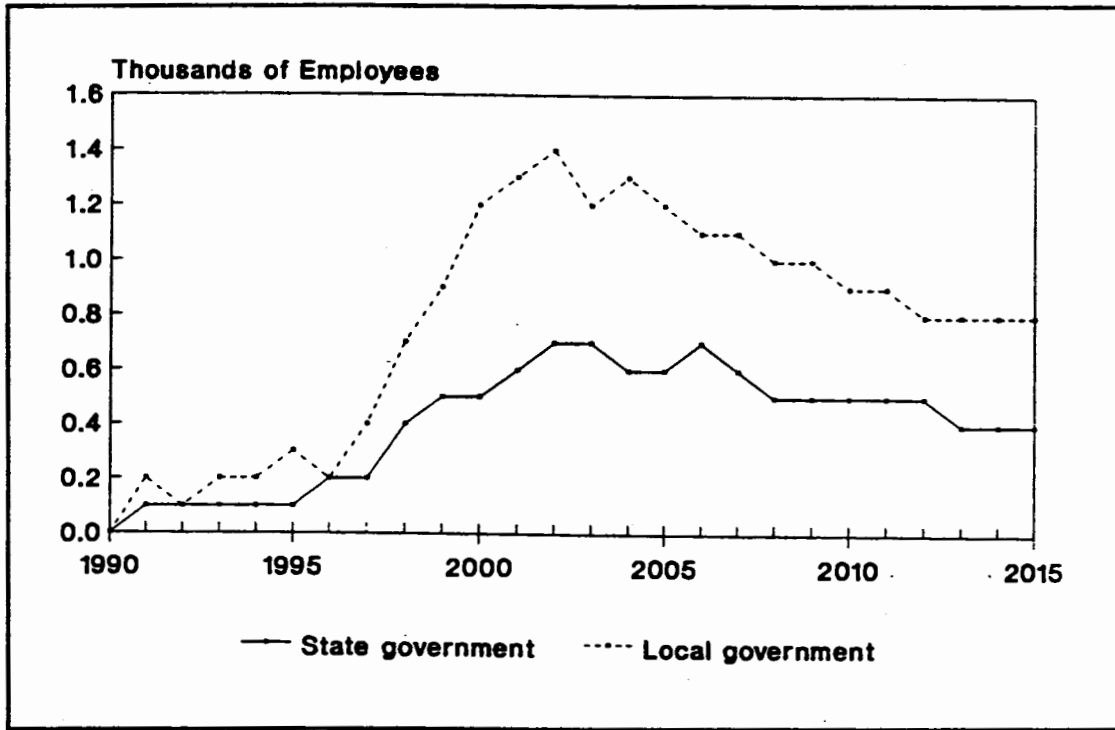
**Figure 5. Impact of OCS Development
Employment by Sector**



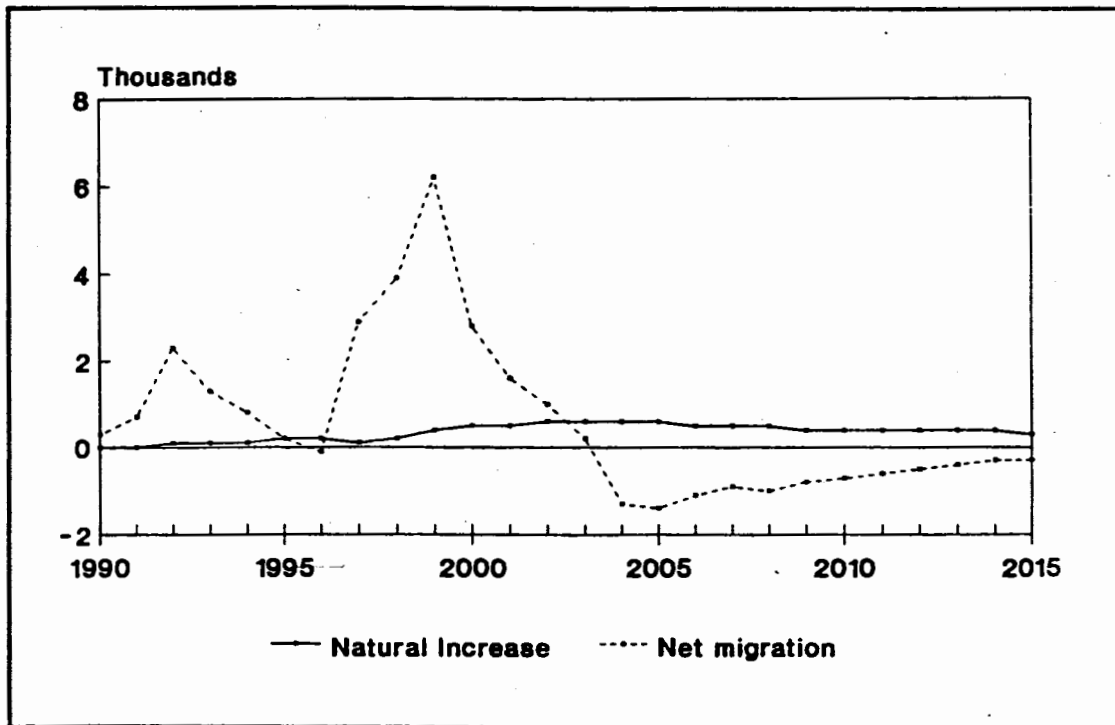
**Figure 6. Impact of OCS Development
Private Sector Employment by Industry**



**Figure 7. Impact of OCS Development
Public Sector Employment**



**Figure 8. Impact of OCS Development
Components of Population Change**



We project OCS development to bring a modest but significant increase in real state revenues, as shown in Figure 9. State petroleum revenues are nearly \$10 million (in 1989 dollars) higher in 1991 through 1997 because more petroleum property taxes are collected from onshore support facilities for OCS exploration. Petroleum revenues rise rapidly in 2000 due to property taxes realized from completion of a major pipeline and additional royalties and severance taxes collected from North Slope fields. The petroleum revenue effects decline rapidly after 2001 due to depreciation of the tax base and declining oil production. Other state revenues rise in the late 1990s primarily because the extra workers hired as a result of OCS development are now paying state income taxes. Investment earnings also rise slowly, reflecting the assumption that a portion of the incremental oil royalties – part of the petroleum revenues shown in Figure 9 – are deposited into the Permanent Fund.

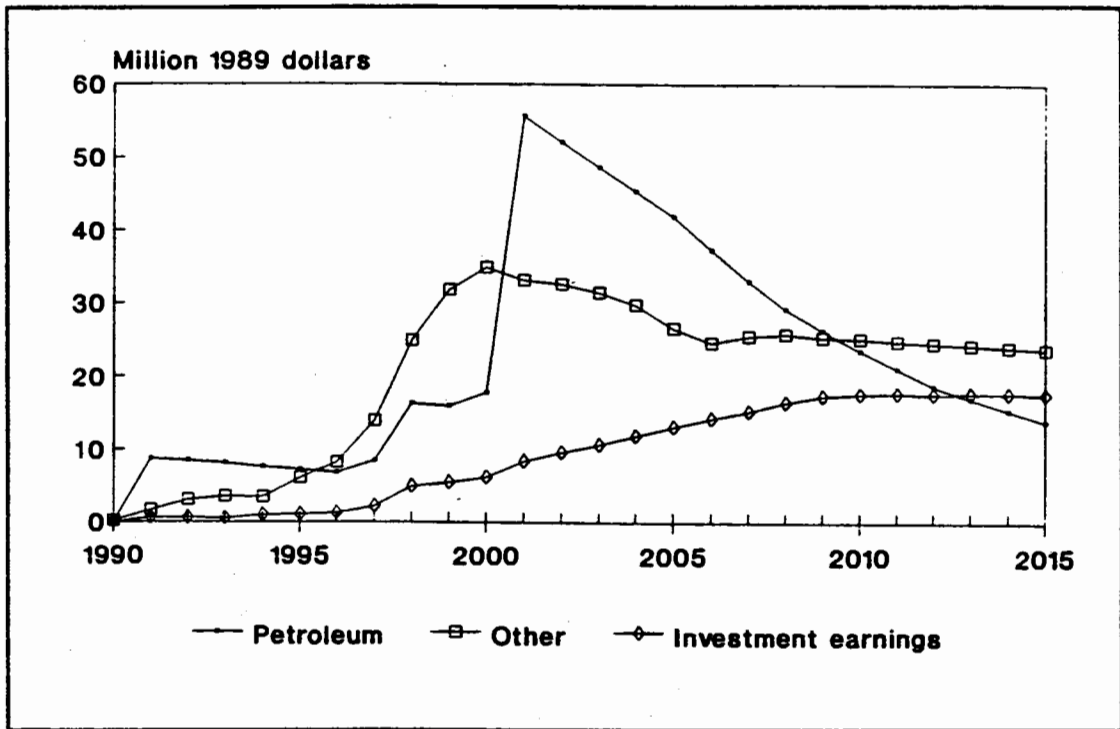
Figure 10 shows the projected distribution of spending of the additional state revenues. Most of the increase goes into the operating budget (and much of this is likely to be transferred to local governments to help pay for the added demand for public services from the larger population). There is almost no change in the capital budget or debt service. Although OCS development provides additional state and local revenues, the incremental revenues are not sufficient to revive capital spending significantly above the level of the without-OCS case. The Permanent Fund balance rises by about \$50 million (in 1989 dollars) in 1991 and again in 1998. There is no change in the nominal Permanent Fund balance in these years. However, a larger employment base due to OCS development

reduces the Alaska-U.S. price differential by about one-half of one percent in each of these two years. A reduced level of inflation causes the Permanent Fund balance to be relatively larger when expressed in real terms. After 2000, the Permanent Fund grows slightly faster in the with-OCS case because of the share of incremental oil royalties deposited into the Permanent Fund.

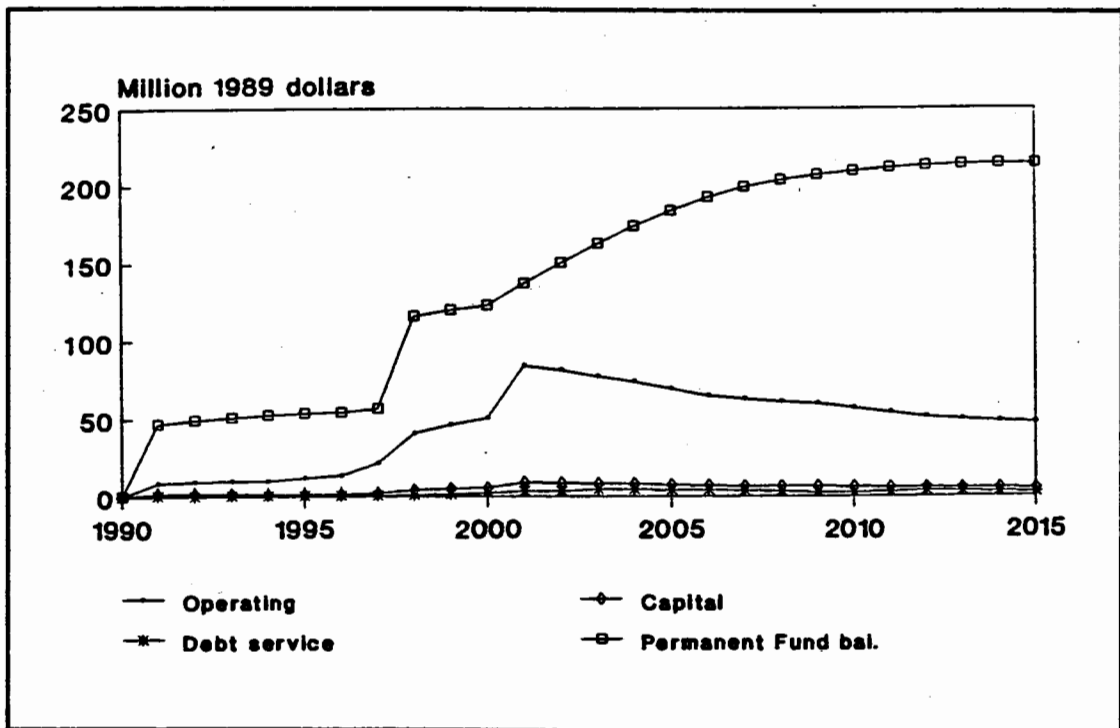
Figure 11 shows how total Personal Income and its sources are projected to change as a result of the Five-Year Leasing Program. Total Personal Income of Alaska residents rises by roughly \$750 million (in 1989 dollars) in 1999. Wages and salaries (reported by place of work) represent the majority of this increase. At the height of the boom associated with construction of facilities in the late 1990s, nonresident earnings reduce the amount of Alaska income earned by residents by roughly ten percent.

The higher Personal Income resulting from additional OCS development leads to an increase in average per capita Personal Income of \$400 (1989 dollars) in 1999. Figure 12 shows that the impact quickly diminishes to around \$250 per capita (in 1989 dollars) through 2015. The widening gap between the line showing Personal Income and the line showing disposable Personal Income in Figure 12 illustrates the increasing tax burden placed on income earners as state revenues decline and state and local governments are forced to tap new sources of revenue.

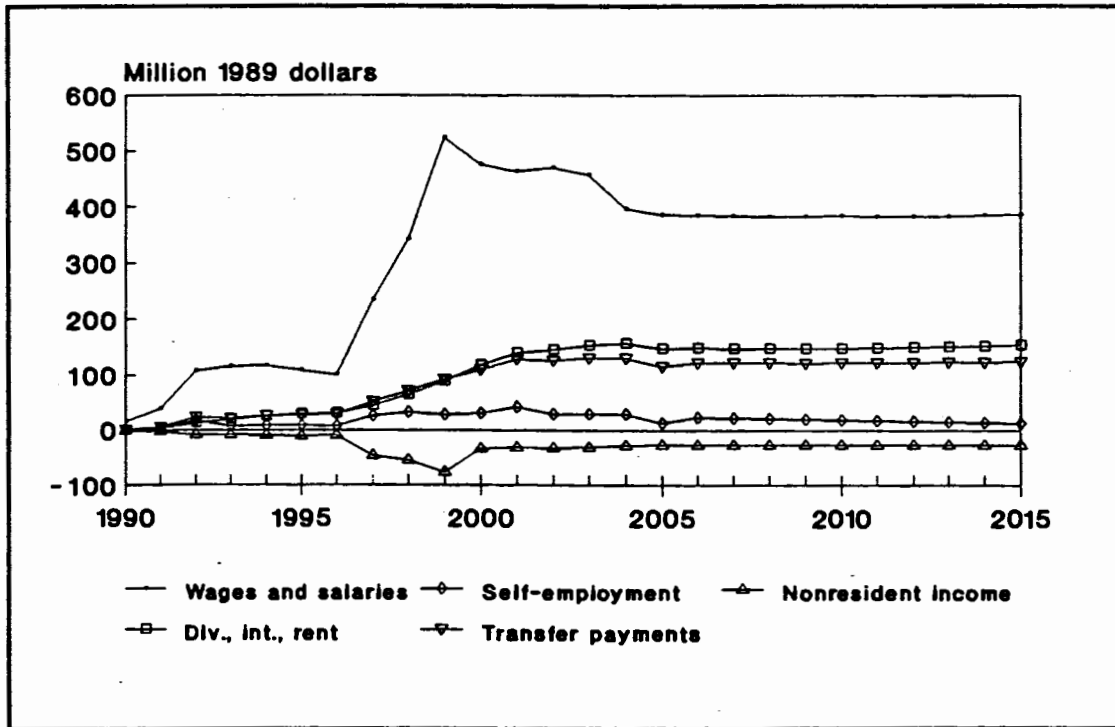
**Figure 9. Impact of OCS Development
Unrestricted State General Fund Revenue**



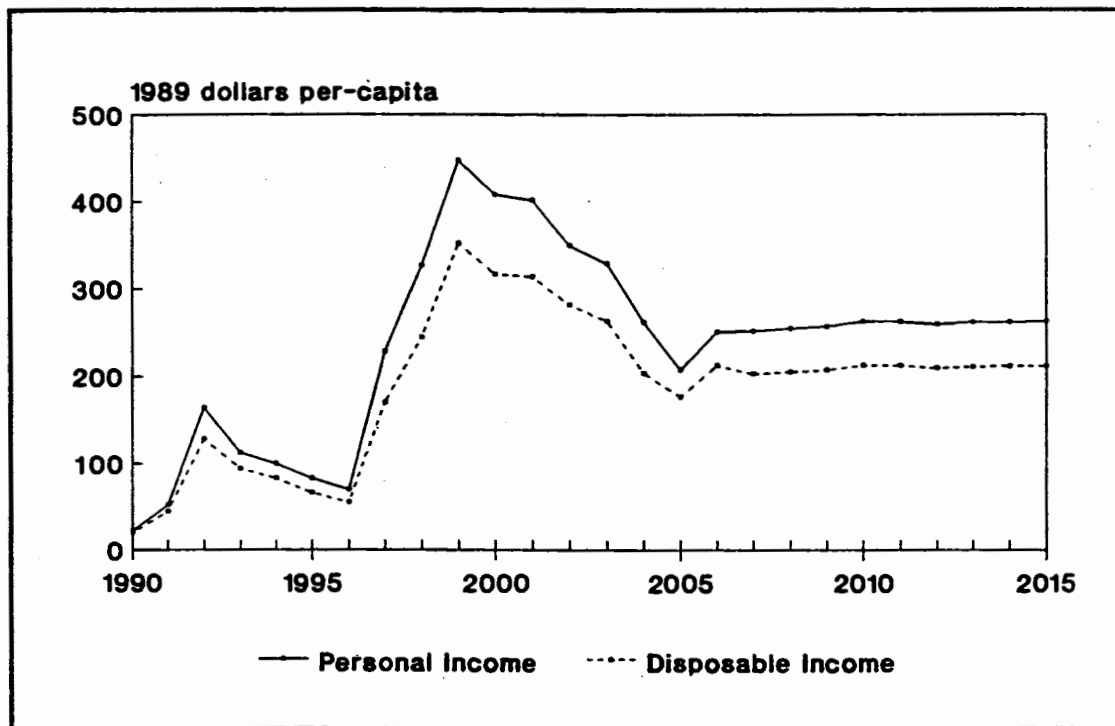
**Figure 10. Impact of OCS Development
Real State Appropriations and Fund Balance**



**Figure 11. Impact of OCS Development
Real Personal Income by Source**



**Figure 12. Impact of OCS Development
Real Per Capita Personal Income**



V. IMPACT OF THE FIVE-YEAR PLAN ON SOUTHCENTRAL ALASKA

In this chapter, we discuss economic and demographic projections for the Anchorage-Mat-Su Region of the state of Alaska using the MAP regional model outlined in Chapter II. We project the economy and population of the Anchorage-Mat-Su region depending upon whether or not OCS exploration and development takes place on areas proposed for lease in the Five-Year Program.

The MAP regional model requires a set of assumptions about exogenous basic industry and federal government employment for each of twenty regions of the state. First, we discuss the without-OCS, or base-case projections for the Anchorage-Mat-Su Region. This regional projection corresponds to the statewide projection discussed in Chapter III. Then we discuss the exogenous employment assumptions used for the regional model and present the regional with-OCS, or impact-case projections.

Regional Base Case Projections

Our regional exogenous employment assumptions follow the assumptions summarized in Table 1. In general, we assume the regional distribution of baseline exogenous employment in each industry remains the same as observed in recent years. Special projects – opening of new mines and OCS development activities, for example – change the regional distribution of statewide exogenous employment, as do differing rates of growth projected for different industries, given

the uneven distribution of employment by industry among Alaska regions. The complete set of regional base case exogenous employment assumptions (except for OCS activities, which are discussed below) appears in Appendix D.

Table 16 shows projections of total population, the number of households, total employment, and three categories of employment for Anchorage-Mat-Su region, using the MAP regional model. We project that total employment in 2015 will be 32 percent greater than in 1990. The number of households will rise by 36 percent, reflecting the national trend toward smaller households. Basic sector and support employment each increase by about one-third over the period. The strong growth in basic sector employment in Anchorage results from the projected trend of an increasing share of Alaska jobs in the petroleum and related industries located in Anchorage. Government employment, affected by falling state revenues, stays virtually constant.

Our projections show Anchorage-Mat-Su employment growing from the current level of around 131,000 to a level of around 137,000 in 1994. After remaining virtually constant for five years, employment begins to grow again, but very slowly until 2005. From that point onward, regional employment grows by 1.25 percent per year through 2015.

TABLE 16
MAP REGIONAL MODEL PROJECTIONS
WITHOUT OCS DEVELOPMENT
ANCHORAGE MAT-SU REGION
(thousands)

| | Population | Households | EMPLOYMENT | | | |
|------|------------|------------|------------|--------|---------|------------|
| | | | Total | Basic | Support | Government |
| 1988 | 261.113 | 93.527 | 125.058 | 25.436 | 61.173 | 38.449 |
| 1989 | 268.529 | 96.363 | 131.441 | 26.684 | 65.144 | 39.614 |
| 1990 | 275.630 | 99.160 | 131.141 | 26.189 | 65.807 | 39.145 |
| 1991 | 279.089 | 100.612 | 132.046 | 26.688 | 66.054 | 39.303 |
| 1992 | 281.699 | 101.782 | 132.611 | 27.216 | 66.278 | 39.117 |
| 1993 | 285.769 | 103.445 | 134.643 | 27.876 | 67.124 | 39.643 |
| 1994 | 290.890 | 105.460 | 136.971 | 28.246 | 68.190 | 40.535 |
| 1995 | 293.218 | 106.523 | 136.106 | 27.872 | 67.559 | 40.676 |
| 1996 | 295.131 | 107.431 | 136.732 | 27.819 | 68.043 | 40.871 |
| 1997 | 296.269 | 108.054 | 136.804 | 27.948 | 67.749 | 41.106 |
| 1998 | 298.032 | 108.886 | 137.559 | 28.268 | 68.158 | 41.133 |
| 1999 | 301.003 | 110.136 | 139.001 | 28.743 | 69.078 | 41.180 |
| 2000 | 304.332 | 111.501 | 140.468 | 29.253 | 69.994 | 41.221 |
| 2001 | 307.156 | 112.689 | 141.357 | 29.689 | 70.678 | 40.990 |
| 2002 | 309.411 | 113.677 | 141.820 | 29.893 | 71.329 | 40.597 |
| 2003 | 311.148 | 114.477 | 142.146 | 29.951 | 71.827 | 40.368 |
| 2004 | 313.050 | 115.321 | 142.908 | 30.176 | 72.425 | 40.307 |
| 2005 | 316.104 | 116.558 | 144.473 | 30.602 | 73.428 | 40.443 |
| 2006 | 320.229 | 118.161 | 146.427 | 31.107 | 74.615 | 40.705 |
| 2007 | 325.331 | 120.106 | 148.808 | 31.722 | 76.082 | 41.004 |
| 2008 | 331.310 | 122.357 | 151.517 | 32.446 | 77.795 | 41.275 |
| 2009 | 337.742 | 124.774 | 154.234 | 33.210 | 79.638 | 41.386 |
| 2010 | 344.004 | 127.138 | 156.685 | 33.943 | 81.436 | 41.305 |
| 2011 | 349.449 | 129.223 | 158.568 | 34.388 | 82.989 | 41.191 |
| 2012 | 353.354 | 130.774 | 159.521 | 34.466 | 83.970 | 41.086 |
| 2013 | 356.718 | 132.136 | 160.623 | 34.669 | 84.970 | 40.984 |
| 2014 | 360.137 | 133.510 | 162.033 | 35.120 | 86.048 | 40.865 |
| 2015 | 363.753 | 134.946 | 163.542 | 35.606 | 87.161 | 40.775 |

SOURCE: MAP Model Simulation MMSBR, Created 7/90.
VARIABLES: PCEN.AM, HHCEN.AM, M.AM, B.AM, S.AM, G.AM

Regional Effects of OCS Development

Other studies have analyzed potential impacts of offshore oil and gas development on the communities and regions that would receive the main direct impacts of OCS development (see Knapp, 1987, 1986, 1984). This study considers instead the potential cumulative regional impacts – mainly indirect – of potential OCS-related exploration and development activities. Anchorage, as the state's major city and business center, is affected by economic activity occurring anywhere in the state. For the purposes of this analysis we assume that all direct OCS employment occurs in the coastal areas adjacent to the Bering and Beaufort Seas. While exploration could occur from bases in Anchorage-Mat-Su Alaska, we assume that such ventures have a negligible impact on the region. We do assume, however, some additional oil industry headquarters employment in Anchorage associated with OCS activity.

Table 17 shows the regional distribution of employment in OCS petroleum exploration and development assumed for the regional simulation. The table shows Anchorage headquarters employment as well as on-site employment assumed to be located in the Aleutian Islands (Cold Bay) and the North Slope regions. These assumptions are provided by the Minerals Management Service. The regional numbers correspond to the statewide employment assumptions shown in Table 15 and discussed in Chapter IV.

TABLE 17
OCS EXPLORATION AND DEVELOPMENT ASSUMPTIONS
(thousands of employees)

| | Aleutian Islands | Anchorage | Barrow/ North Slope |
|------|---------------------|-----------|------------------------|
| 1980 | 0.000 | 0.000 | 0.000 |
| 1981 | 0.000 | 0.000 | 0.000 |
| 1982 | 0.000 | 0.000 | 0.000 |
| 1983 | 0.000 | 0.000 | 0.000 |
| 1984 | 0.000 | 0.000 | 0.000 |
| 1985 | 0.000 | 0.000 | 0.000 |
| 1986 | 0.000 | 0.000 | 0.000 |
| 1987 | 0.000 | 0.000 | 0.000 |
| 1988 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.000 | 0.000 | 0.000 |
| 1990 | 0.000 | 0.000 | 0.249 |
| 1991 | 0.000 | 0.010 | 0.244 |
| 1992 | 0.180 | 0.015 | 0.888 |
| 1993 | 0.247 | 0.020 | 0.826 |
| 1994 | 0.247 | 0.040 | 0.707 |
| 1995 | 0.247 | 0.050 | 0.511 |
| 1996 | 0.093 | 0.060 | 0.496 |
| 1997 | 0.742 | 0.070 | 1.174 |
| 1998 | 0.362 | 0.080 | 2.276 |
| 1999 | 0.421 | 0.200 | 3.891 |
| 2000 | 0.426 | 0.200 | 2.990 |
| 2001 | 0.426 | 0.200 | 2.425 |
| 2002 | 0.343 | 0.200 | 2.445 |
| 2003 | 0.287 | 0.200 | 2.305 |
| 2004 | 0.287 | 0.200 | 1.651 |
| 2005 | 0.292 | 0.200 | 1.651 |
| 2006 | 0.292 | 0.200 | 1.651 |
| 2007 | 0.292 | 0.200 | 1.686 |
| 2008 | 0.292 | 0.200 | 1.686 |
| 2009 | 0.292 | 0.200 | 1.686 |
| 2010 | 0.292 | 0.200 | 1.686 |
| 2011 | 0.292 | 0.180 | 1.686 |
| 2012 | 0.292 | 0.180 | 1.686 |
| 2013 | 0.292 | 0.180 | 1.686 |
| 2014 | 0.292 | 0.180 | 1.686 |
| 2015 | 0.292 | 0.180 | 1.686 |

SOURCE: MAP Model Case OCS.M90
VARIABLES: B01, B02, B04, EMCNX1, EMPP

Although the direct effect of OCS employment is small in the Anchorage-Mat-Su Region, the MAP regional model calculates much larger indirect effects that derive from two sources: (1) the model assigns the Anchorage-Mat-Su region to be the place of residence of some workers in remote areas, and (2) the model allocates a large share of increased support-sector employment from the indirect effects of OCS development to the Anchorage-Mat-Su Region.

Appendix C contains the complete figures for the projection of population, employment by sector, and personal income for the Anchorage-Mat-Su region in the with-OCS and without-OCS cases. Figures 13 through 15 illustrate the differences between two cases, which may be interpreted as the impact of OCS development on the region. The regional impact projections include both the effects of changes in the regional distribution of exogenous employment and the effects of changes in statewide employment and population.

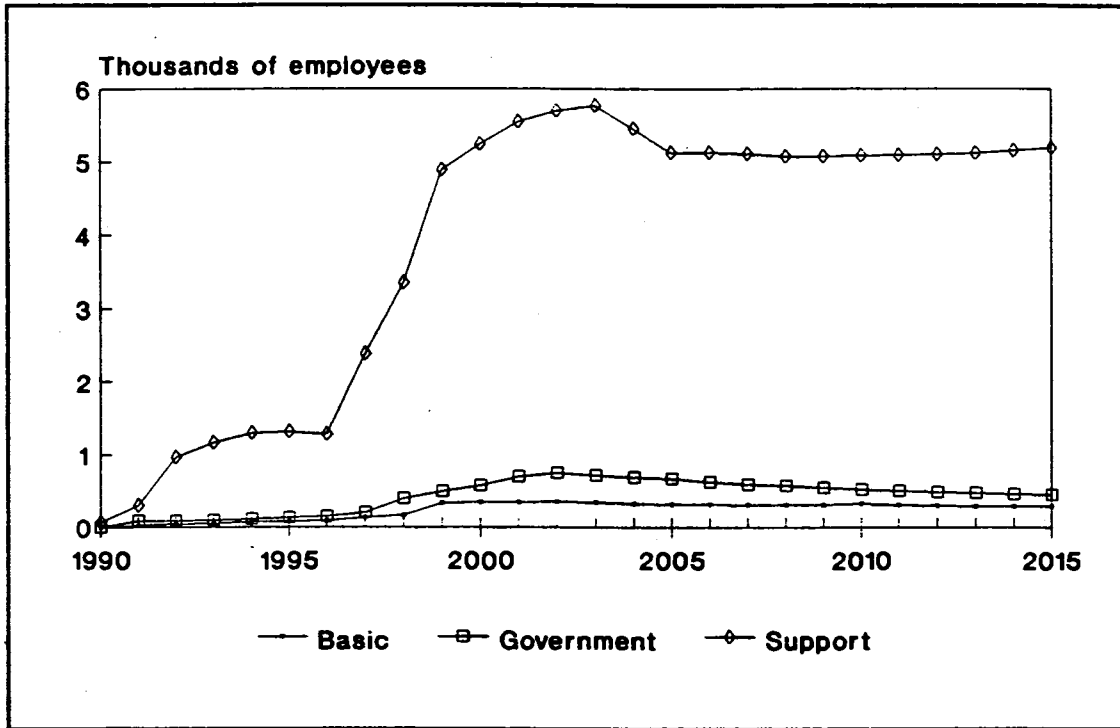
Figure 13 shows the difference between the two sets of projections for the components of total employment in the Anchorage-Mat-Su region. The employment effect of OCS development rises quickly to around 6,000 jobs in 1999, at the same time as the peak for statewide activity (as discussed in Chapter IV). The projected contribution of OCS development to regional employment levels off in 2005 after only a slight decline. By 2015, total employment in the impact case is roughly four percent higher than in the base case. While there is almost no effect on basic employment, support employment increases by five percent more

in the with-OCS case than in the without case. Government employment also increases, but only slightly.

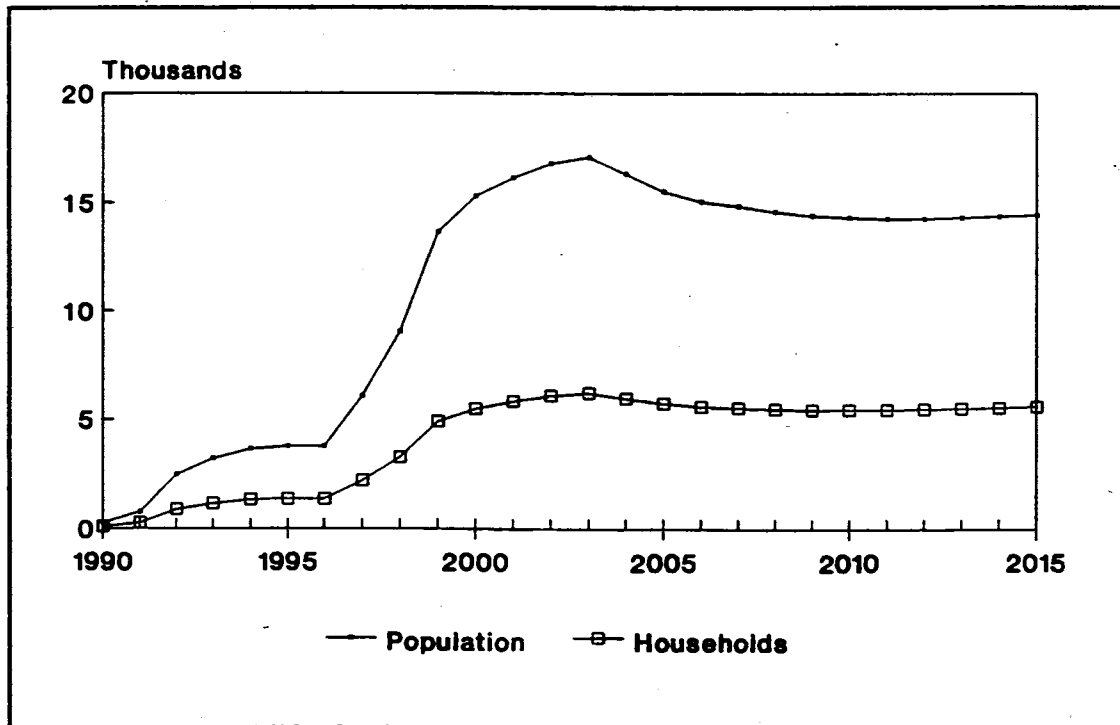
Figure 14 shows that the contribution of OCS activities to the Anchorage-Mat-Su region population rises rapidly between 1997 and 2003. Population in the with-OCS case is around 15,000, or five percent higher than it is in the base case in year 2000. This population gain amounts to 6,000 new households living in the region. After the turn of the century, the impact on population remains virtually constant, although growth from other sources pushes the percentage change down from 5 to 4 percent.

Basically all of the indirect employment effects of OCS activities are projected to occur in the Anchorage-Mat-Su Region. Approximately one-half of all new jobs generated by OCS development during the period will be located in the Anchorage-Mat-Su Region. Of the total state population gain of 24,000 by 2015, we project that nearly 15,000, or almost 63 percent of the additional residents, will live in the Anchorage-Mat-Su Region. These proportions derive from our assumptions used in the MAP regional model that the location of employment and population effects of OCS development in the Beaufort Sea and Bering Sea would be similar to those of the average basic industry job in the North Slope and Aleutian Islands census areas, respectively, in 1980.

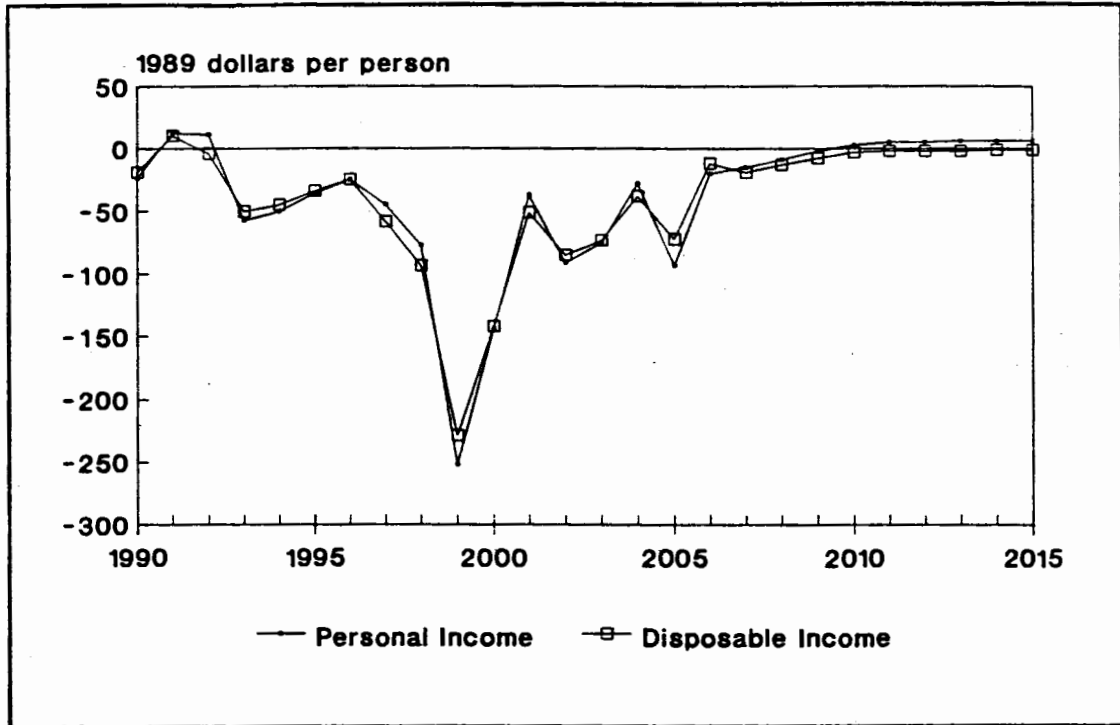
**Figure 13. Impact of OCS Development
Anchorage Mat-Su Employment**



**Figure 14. Impact of OCS Development
Anchorage Mat-Su Population**



**Figure 15. Impact of OCS Development
Anchorage Mat-Su Per Capita Income**



VI. CONCLUSIONS

If no further exploration and development activities take place on the federal OCS, we project that the Alaska economy will go through periods of growth interspersed by periods of stagnation over the next 15 years. Steady growth will resume around 2005 as the state finally adjusts to a lower level of petroleum revenues and a lower level of state spending. OCS development activities, were they to occur, have the potential to provide jobs to substitute for declines in state spending during the transition period. But because major development expenditures such as large pipelines involve mobilizing large numbers of workers at a time, OCS development may create a temporary, unsustainable expansion of the Alaska economy in the late 1990s. Steady growth is projected to resume after the turn of the century whether or not OCS oil fields are developed. This is because upward trends in national wages and per capita incomes cause Alaska wage rates to rise, stimulating support-sector growth.

We project that OCS petroleum exploration and development activities will have a significant but not large effect on the Alaska economy. The long-term projected effect of cumulative OCS development on Alaska statewide population and employment rises to around a 4 percent difference by 2000 and declines slowly through 2015. For the Anchorage-Mat-Su Region of the state, the long-term effect – largely indirect – of OCS development remains as large in 2015 as in 2000. OCS activities cause about as large a percentage difference in employment and population in the Anchorage-Mat-Su region as in the state as a whole. The effect

on Anchorage-Mat-Su Region population and employment remains strong for longer than for the state as a whole due to the lags in the multiplier process producing these largely indirect effects.

We project that onshore facilities constructed for offshore petroleum development and reduced tariffs for transporting oil through the TAPS pipeline will contribute a significant amount of new revenues to state and local governments. Indirectly, additional economic activities resulting from expanded economic activities generate some additional tax revenues. These increases in revenues, however, barely cover the increased demand for public services created by the projected influx of new residents, an influx which is likely to occur at a time of severe state fiscal pressure.

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APPENDIX A

**MAP STATE MODEL SCENARIO ASSUMPTIONS
WITH OCS DEVELOPMENT**

TABLE A.1
MAP STATE MODEL SCENARIO ASSUMPTIONS
WITH OCS DEVELOPMENT
EXOGENOUS INDUSTRY EMPLOYMENT (THOUSANDS)

| | AGRICULTURAL EMPLOYMENT | PETROLEUM EMPLOYMENT | HIGH-WAGE EXOGENOUS CONSTRUCTION EMPLOYMENT | LOW-WAGE EXOGENOUS CONSTRUCTION EMPLOYMENT | EXOGENOUS TRANSPORTATION EMPLOYMENT | MINING EMPLOYMENT |
|------|----------------------------|-------------------------|------------------------------------------------------|-----------------------------------------------------|-------------------------------------------|----------------------|
| | ----- | ----- | ----- | ----- | ----- | ----- |
| 1980 | 0.2 | 6.2 | 0.5 | 0.0 | 1.1 | 0.5 |
| 1981 | 0.3 | 8.1 | 1.6 | 0.0 | 1.1 | 0.8 |
| 1982 | 0.4 | 8.1 | 2.2 | 0.0 | 1.1 | 0.8 |
| 1983 | 0.4 | 7.4 | 3.0 | 0.0 | 1.1 | 0.7 |
| 1984 | 0.5 | 8.0 | 1.9 | 0.0 | 1.0 | 0.7 |
| 1985 | 0.5 | 8.9 | 1.2 | 0.0 | 0.9 | 0.6 |
| 1986 | 0.5 | 8.5 | 1.0 | 0.0 | 0.9 | 0.6 |
| 1987 | 0.5 | 8.1 | 0.4 | 0.0 | 0.9 | 0.7 |
| 1988 | 0.5 | 8.4 | 0.3 | 1.3 | 0.9 | 1.0 |
| 1989 | 0.5 | 8.6 | 0.4 | 1.0 | 3.6 | 1.1 |
| 1990 | 0.5 | 9.0 | 0.7 | 0.5 | 1.5 | 1.5 |
| 1991 | 0.5 | 9.2 | 1.7 | 0.2 | 1.2 | 1.7 |
| 1992 | 0.5 | 9.9 | 1.3 | 0.0 | 1.3 | 1.9 |
| 1993 | 0.5 | 10.2 | 0.9 | 0.2 | 1.3 | 2.4 |
| 1994 | 0.5 | 10.3 | 0.8 | 0.2 | 1.3 | 2.9 |
| 1995 | 0.5 | 10.3 | 0.9 | 0.0 | 1.3 | 3.0 |
| 1996 | 0.5 | 10.3 | 1.0 | 0.0 | 1.2 | 3.1 |
| 1997 | 0.5 | 11.0 | 1.8 | 0.0 | 1.3 | 3.1 |
| 1998 | 0.5 | 11.7 | 1.8 | 0.0 | 1.4 | 3.1 |
| 1999 | 0.5 | 13.2 | 2.0 | 0.0 | 1.6 | 3.2 |
| 2000 | 0.5 | 13.4 | 1.0 | 0.0 | 1.6 | 3.2 |
| 2001 | 0.5 | 13.0 | 1.0 | 0.0 | 1.5 | 3.3 |
| 2002 | 0.5 | 13.0 | 1.0 | 0.0 | 1.6 | 3.3 |
| 2003 | 0.5 | 12.9 | 1.0 | 0.0 | 1.6 | 3.3 |
| 2004 | 0.5 | 12.4 | 1.0 | 0.0 | 1.6 | 3.4 |
| 2005 | 0.5 | 12.5 | 1.0 | 0.0 | 1.6 | 3.4 |
| 2006 | 0.5 | 12.7 | 1.0 | 0.0 | 1.6 | 3.5 |
| 2007 | 0.5 | 12.8 | 1.0 | 0.0 | 1.6 | 3.5 |
| 2008 | 0.5 | 13.0 | 1.0 | 0.0 | 1.6 | 3.6 |
| 2009 | 0.5 | 13.1 | 1.0 | 0.0 | 1.6 | 3.6 |
| 2010 | 0.5 | 13.2 | 1.0 | 0.0 | 1.6 | 3.7 |
| 2011 | 0.5 | 13.3 | 1.0 | 0.0 | 1.6 | 3.7 |
| 2012 | 0.5 | 13.5 | 1.0 | 0.0 | 1.6 | 3.8 |
| 2013 | 0.5 | 13.6 | 1.0 | 0.0 | 1.6 | 3.8 |
| 2014 | 0.5 | 13.8 | 1.0 | 0.0 | 1.6 | 3.9 |
| 2015 | 0.5 | 13.9 | 1.0 | 0.0 | 1.6 | 4.0 |

SOURCES: 1980-1988, ALASKA DEPT. OF LABOR, STATISTICAL QUARTERLY;
1989-2015, MAP MODEL INPUT SCENARIO MMSI--CREATED 7/90

TABLE A.1 (CONTINUED)

| | HIGH-WAGE EXOGENOUS MANUFACTURING EMPLOYMENT | LOW-WAGE EXOGENOUS MANUFACTURING EMPLOYMENT | FISH HARVESTING EMPLOYMENT | ACTIVE DUTY MILITARY EMPLOYMENT | CIVILIAN FEDERAL EMPLOYMENT |
|------|-------------------------------------------------------|------------------------------------------------------|----------------------------------|------------------------------------------|-----------------------------------|
| | ----- | ----- | ----- | ----- | ----- |
| 1980 | 0.0 | 11.3 | 7.6 | 22.0 | 17.7 |
| 1981 | 0.0 | 11.3 | 7.9 | 22.5 | 17.5 |
| 1982 | 0.0 | 9.8 | 8.3 | 22.1 | 17.6 |
| 1983 | 0.0 | 8.9 | 7.9 | 22.3 | 17.7 |
| 1984 | 0.0 | 8.1 | 8.2 | 22.6 | 18.1 |
| 1985 | 0.0 | 8.7 | 8.4 | 23.1 | 17.6 |
| 1986 | 0.0 | 9.5 | 8.4 | 23.0 | 17.8 |
| 1987 | 0.0 | 9.9 | 8.4 | 24.4 | 17.9 |
| 1988 | 0.0 | 12.1 | 9.0 | 24.1 | 18.1 |
| 1989 | 0.0 | 12.2 | 9.0 | 24.1 | 18.2 |
| 1990 | 0.0 | 12.5 | 9.0 | 23.8 | 18.3 |
| 1991 | 0.0 | 12.5 | 9.1 | 23.9 | 18.4 |
| 1992 | 0.0 | 12.4 | 9.1 | 23.9 | 18.5 |
| 1993 | 0.0 | 12.2 | 9.1 | 23.9 | 18.6 |
| 1994 | 0.0 | 12.0 | 9.1 | 23.9 | 18.7 |
| 1995 | 0.0 | 11.9 | 9.1 | 23.9 | 18.8 |
| 1996 | 0.0 | 11.8 | 9.1 | 23.9 | 18.9 |
| 1997 | 0.0 | 11.8 | 9.1 | 23.9 | 19.0 |
| 1998 | 0.0 | 11.7 | 9.1 | 23.9 | 19.1 |
| 1999 | 0.0 | 11.7 | 9.1 | 23.9 | 19.2 |
| 2000 | 0.0 | 11.7 | 9.1 | 23.9 | 19.3 |
| 2001 | 0.0 | 11.7 | 9.1 | 23.9 | 19.4 |
| 2002 | 0.0 | 11.7 | 9.1 | 23.9 | 19.5 |
| 2003 | 0.0 | 11.7 | 9.1 | 23.9 | 19.6 |
| 2004 | 0.0 | 11.7 | 9.1 | 23.9 | 19.7 |
| 2005 | 0.0 | 11.7 | 9.1 | 23.9 | 19.8 |
| 2006 | 0.0 | 11.6 | 9.1 | 23.9 | 19.9 |
| 2007 | 0.0 | 11.6 | 9.1 | 23.9 | 20.0 |
| 2008 | 0.0 | 11.6 | 9.1 | 23.9 | 20.0 |
| 2009 | 0.0 | 11.6 | 9.1 | 23.9 | 20.1 |
| 2010 | 0.0 | 11.6 | 9.1 | 23.9 | 20.2 |
| 2011 | 0.0 | 11.6 | 9.1 | 23.9 | 20.3 |
| 2012 | 0.0 | 11.6 | 9.1 | 23.9 | 20.4 |
| 2013 | 0.0 | 11.6 | 9.1 | 23.9 | 20.5 |
| 2014 | 0.0 | 11.6 | 9.1 | 23.9 | 20.6 |
| 2015 | 0.0 | 11.6 | 9.1 | 23.9 | 20.8 |

SOURCES: 1980-1988, ALASKA DEPT. OF LABOR, STATISTICAL QUARTERLY;
1989-2015, MAP MODEL INPUT SCENARIO MMSI--CREATED 7/90

TABLE A.2
MAP STATE MODEL SCENARIO ASSUMPTIONS
WITH OCS DEVELOPMENT
TOURISM ASSUMPTIONS
(THOUSANDS)

| | TOURISTS VISITING ALASKA |
|------|--------------------------------|
| | ----- |
| 1980 | 439.0 |
| 1981 | 447.0 |
| 1982 | 467.0 |
| 1983 | 485.0 |
| 1984 | 519.0 |
| 1985 | 555.0 |
| 1986 | 583.2 |
| 1987 | 588.5 |
| 1988 | 610.7 |
| 1989 | 629.0 |
| 1990 | 647.9 |
| 1991 | 667.3 |
| 1992 | 687.3 |
| 1993 | 708.0 |
| 1994 | 729.2 |
| 1995 | 751.1 |
| 1996 | 773.6 |
| 1997 | 796.8 |
| 1998 | 820.7 |
| 1999 | 845.3 |
| 2000 | 870.7 |
| 2001 | 896.8 |
| 2002 | 923.7 |
| 2003 | 951.4 |
| 2004 | 980.0 |
| 2005 | 1009.4 |
| 2006 | 1039.7 |
| 2007 | 1070.9 |
| 2008 | 1103.0 |
| 2009 | 1136.1 |
| 2010 | 1170.2 |
| 2011 | 1205.3 |
| 2012 | 1241.4 |
| 2013 | 1278.7 |
| 2014 | 1317.0 |
| 2015 | 1356.5 |

SOURCES: 1980-1988, MAP DATABASE FROM ALASKA VISITORS' ASSN.
1989-2015, MAP MODEL INPUT SCENARIO MMSI--CREATED 7/90

TABLE A.3
MAP STATE MODEL SCENARIO ASSUMPTIONS
WITH OCS DEVELOPMENT
PETROLEUM REVENUES (MILLION DOLLARS)

| | STATE PRODUCTION TAX REVENUE | STATE ROYALTY INCOME | STATE BONUS PAYMENT REVENUE | STATE PROPERTY TAX REVENUE | STATE CORPORATE PETROLEUM TAX REVENUE | SETTLEMENT REVENUE |
|------|---------------------------------------|----------------------------|--------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------|
| 1980 | 506. | 917. | 456. | 169. | 548. | 0. |
| 1981 | 1170. | 1496. | 10. | 143. | 860. | 0. |
| 1982 | 1581. | 1548. | 7. | 143. | 669. | 0. |
| 1983 | 1493. | 1472. | 49. | 153. | 236. | 0. |
| 1984 | 1392. | 1404. | 14. | 131. | 265. | 0. |
| 1985 | 1389. | 1393. | 16. | 128. | 169. | 0. |
| 1986 | 1107. | 1108. | 46. | 114. | 134. | 419. |
| 1987 | 647. | 586. | 1. | 103. | 120. | 71. |
| 1988 | 819. | 954. | 11. | 96. | 158. | 329. |
| 1989 | 699. | 819. | 23. | 90. | 166. | 260. |
| 1990 | 1002. | 1023. | 0. | 85. | 130. | 111. |
| 1991 | 1010. | 1063. | 0. | 80. | 139. | 200. |
| 1992 | 1011. | 1097. | 0. | 75. | 135. | 210. |
| 1993 | 991. | 1109. | 0. | 70. | 134. | 221. |
| 1994 | 941. | 1087. | 0. | 64. | 133. | 232. |
| 1995 | 881. | 1050. | 0. | 57. | 129. | 243. |
| 1996 | 830. | 1031. | 0. | 52. | 127. | 255. |
| 1997 | 777. | 998. | 0. | 50. | 112. | 268. |
| 1998 | 800. | 1059. | 0. | 49. | 103. | 281. |
| 1999 | 796. | 1087. | 0. | 45. | 94. | 295. |
| 2000 | 778. | 1096. | 0. | 45. | 85. | 310. |
| 2001 | 777. | 1144. | 0. | 41. | 79. | 0. |
| 2002 | 739. | 1124. | 0. | 37. | 73. | 0. |
| 2003 | 697. | 1099. | 0. | 32. | 69. | 0. |
| 2004 | 673. | 1096. | 0. | 30. | 64. | 0. |
| 2005 | 682. | 1145. | 0. | 27. | 66. | 0. |
| 2006 | 728. | 1253. | 0. | 25. | 60. | 0. |
| 2007 | 782. | 1380. | 0. | 22. | 56. | 0. |
| 2008 | 836. | 1516. | 0. | 20. | 45. | 0. |
| 2009 | 802. | 1498. | 0. | 17. | 42. | 0. |
| 2010 | 791. | 1523. | 0. | 15. | 38. | 0. |
| 2011 | 789. | 1522. | 0. | 14. | 38. | 0. |
| 2012 | 788. | 1519. | 0. | 13. | 38. | 0. |
| 2013 | 786. | 1518. | 0. | 13. | 38. | 0. |
| 2014 | 785. | 1517. | 0. | 12. | 38. | 0. |
| 2015 | 784. | 1516. | 0. | 11. | 38. | 0. |

SOURCES: 1980-1989, ALASKA DEPT. OF REVENUE, REVENUE SOURCES;
1990-2015, MAP MODEL INPUT SCENARIO MMSI--CREATED 7/90

APPENDIX B

MAP STATE MODEL PROJECTIONS WITH OCS DEVELOPMENT

TABLE B.1. PROJECTION SUMMARY WITH OCS DEVELOPMENT

| | POPULATION (000) | HOUSEHOLDS (000) | TOTAL EMPLOYMENT (000) | WAGE AND SALARY EMPLOYMENT (000) | PERSONAL INCOME (MILLION 1989 \$) | PETROLEUM REVENUES (MILLION 1989 \$) |
|------|---------------------|---------------------|------------------------------|-------------------------------------------|--------------------------------------------|-----------------------------------------------|
| 1980 | 419.8 | 131.5 | 211.4 | 170.0 | 7221.2 | 3360.8 |
| 1981 | 433.8 | - | 227.7 | 185.4 | 7722.6 | 4428.4 |
| 1982 | 463.4 | - | 243.5 | 199.8 | 8767.2 | 4509.6 |
| 1983 | 497.6 | - | 257.5 | 212.8 | 9852.7 | 3886.5 |
| 1984 | 522.0 | - | 268.5 | 222.5 | 9890.1 | 3497.6 |
| 1985 | 541.3 | - | 275.0 | 228.1 | 10309.7 | 3276.2 |
| 1986 | 547.6 | - | 265.0 | 218.7 | 10146.6 | 3053.8 |
| 1987 | 537.8 | - | 254.9 | 208.0 | 9985.6 | 1596.9 |
| 1988 | 531.2 | 182.0 | 259.6 | 213.0 | 9975.8 | 2452.7 |
| 1989 | 542.3 | 186.3 | 272.2 | 224.5 | 10497.5 | 2092.9 |
| 1990 | 556.8 | 191.8 | 272.2 | 224.7 | 10607.9 | 2279.8 |
| 1991 | 566.4 | 195.6 | 276.4 | 228.5 | 10733.1 | 2311.6 |
| 1992 | 574.0 | 198.7 | 278.2 | 230.1 | 10846.7 | 2244.3 |
| 1993 | 583.4 | 202.3 | 282.8 | 234.4 | 11033.6 | 2145.7 |
| 1994 | 594.8 | 206.6 | 288.1 | 239.2 | 11257.3 | 1999.3 |
| 1995 | 601.2 | 209.2 | 286.5 | 237.7 | 11289.4 | 1846.7 |
| 1996 | 605.9 | 211.2 | 287.4 | 238.6 | 11381.5 | 1720.2 |
| 1997 | 612.9 | 214.0 | 291.1 | 242.0 | 11217.4 | 1584.1 |
| 1998 | 621.3 | 217.3 | 295.3 | 245.8 | 11454.6 | 1574.3 |
| 1999 | 633.1 | 221.6 | 302.0 | 251.9 | 11811.8 | 1522.9 |
| 2000 | 642.5 | 225.2 | 304.0 | 253.8 | 11999.3 | 1455.8 |
| 2001 | 649.7 | 228.1 | 305.2 | 254.9 | 12117.2 | 1234.8 |
| 2002 | 655.0 | 230.2 | 305.6 | 255.2 | 12173.8 | 1144.0 |
| 2003 | 658.8 | 231.9 | 305.3 | 255.0 | 12221.5 | 1054.4 |
| 2004 | 661.5 | 233.2 | 305.0 | 254.7 | 12245.7 | 991.6 |
| 2005 | 665.6 | 234.9 | 306.9 | 256.4 | 12357.7 | 978.0 |
| 2006 | 671.8 | 237.4 | 310.0 | 259.3 | 12555.3 | 1004.8 |
| 2007 | 680.0 | 240.5 | 313.9 | 262.8 | 12770.2 | 1040.1 |
| 2008 | 689.5 | 244.1 | 318.3 | 266.8 | 13013.6 | 1072.2 |
| 2009 | 699.8 | 247.9 | 322.4 | 270.6 | 13262.6 | 1002.8 |
| 2010 | 709.8 | 251.7 | 325.9 | 273.8 | 13493.1 | 962.9 |
| 2011 | 718.7 | 255.0 | 328.3 | 276.0 | 13678.7 | 921.0 |
| 2012 | 725.6 | 257.7 | 329.3 | 276.8 | 13762.1 | 880.2 |
| 2013 | 731.5 | 260.0 | 330.6 | 278.0 | 13883.7 | 841.6 |
| 2014 | 737.2 | 262.3 | 332.4 | 279.7 | 14022.6 | 805.1 |
| 2015 | 743.2 | 264.7 | 334.4 | 281.6 | 14167.4 | 769.8 |

SOURCES: 1980-1987, MAP DATABASE;
1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

POPULATION (POP) IS JULY 1, CENSUS DEFINITION.

HOUSEHOLDS (HH) IS JULY 1 (EXCEPT IN 1980), CENSUS DEFINITION.

TOTAL EMPLOYMENT (EM99) INCLUDES ACTIVE DUTY MILITARY AND PROPRIETORS--PRE-1985 PROPRIETOR DEFINITION.

WAGE AND SALARY EMPLOYMENT (EM97) IS ALASKA DEPARTMENT OF LABOR DEFINITION.

PERSONAL INCOME (DF.PIB) IS US BEA DEFINITION.

PETROLEUM REVENUES (DF.RP9S) INCLUDES PERMANENT FUND CONTRIBUTION.

TABLE B.2. EMPLOYMENT BY SECTOR WITH OCS DEVELOPMENT
(THOUSANDS)

| | TOTAL EMPLOYMENT | BASIC EMPLOYMENT | INFRA- STRUCTURE EMPLOYMENT | SUPPORT EMPLOYMENT | GOVERNMENT EMPLOYMENT |
|------|---------------------|---------------------|-----------------------------------|-----------------------|--------------------------|
| 1980 | 211.4 | 73.4 | 30.1 | 71.6 | 36.3 |
| 1981 | 227.7 | 77.8 | 33.3 | 78.0 | 38.6 |
| 1982 | 243.5 | 78.2 | 37.5 | 86.3 | 41.5 |
| 1983 | 257.5 | 78.1 | 41.1 | 94.1 | 44.1 |
| 1984 | 268.5 | 78.8 | 42.5 | 100.8 | 46.4 |
| 1985 | 275.0 | 79.6 | 41.7 | 104.5 | 49.2 |
| 1986 | 265.0 | 80.1 | 35.3 | 100.8 | 48.8 |
| 1987 | 254.9 | 81.0 | 31.9 | 95.4 | 46.5 |
| 1988 | 259.6 | 85.1 | 29.0 | 98.2 | 47.2 |
| 1989 | 272.2 | 90.3 | 28.4 | 103.2 | 50.3 |
| 1990 | 272.2 | 88.3 | 29.7 | 104.3 | 49.8 |
| 1991 | 276.4 | 89.1 | 30.4 | 105.9 | 51.0 |
| 1992 | 278.2 | 89.1 | 31.4 | 107.3 | 50.3 |
| 1993 | 282.8 | 89.9 | 32.2 | 109.1 | 51.7 |
| 1994 | 288.1 | 90.5 | 32.3 | 111.2 | 54.1 |
| 1995 | 286.5 | 90.8 | 30.9 | 110.4 | 54.4 |
| 1996 | 287.4 | 91.2 | 30.4 | 111.0 | 54.8 |
| 1997 | 291.1 | 93.1 | 30.4 | 112.2 | 55.5 |
| 1998 | 295.3 | 94.3 | 30.9 | 114.1 | 55.9 |
| 1999 | 302.0 | 96.6 | 31.9 | 117.3 | 56.2 |
| 2000 | 304.0 | 96.2 | 32.5 | 119.0 | 56.4 |
| 2001 | 305.2 | 96.2 | 32.9 | 120.2 | 55.9 |
| 2002 | 305.6 | 96.7 | 32.9 | 121.1 | 54.8 |
| 2003 | 305.3 | 97.1 | 32.6 | 121.7 | 53.9 |
| 2004 | 305.0 | 97.0 | 32.4 | 122.0 | 53.5 |
| 2005 | 306.9 | 97.6 | 32.7 | 122.9 | 53.7 |
| 2006 | 310.0 | 98.2 | 33.1 | 124.6 | 54.1 |
| 2007 | 313.9 | 98.9 | 33.6 | 126.7 | 54.7 |
| 2008 | 318.3 | 99.5 | 34.4 | 129.1 | 55.2 |
| 2009 | 322.4 | 100.1 | 35.3 | 131.6 | 55.3 |
| 2010 | 325.9 | 100.8 | 36.2 | 134.0 | 54.9 |
| 2011 | 328.3 | 101.4 | 36.5 | 136.0 | 54.3 |
| 2012 | 329.3 | 102.1 | 36.0 | 137.3 | 53.9 |
| 2013 | 330.6 | 102.8 | 35.8 | 138.6 | 53.4 |
| 2014 | 332.4 | 103.6 | 36.1 | 139.9 | 52.8 |
| 2015 | 334.4 | 104.3 | 36.4 | 141.4 | 52.4 |

SOURCES: 1980-1987, MAP DATABASE;

1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

TOTAL EMPLOYMENT (EM99).

BASIC EMPLOYMENT (EM9BASE) INCLUDES EXOGENOUS COMPONENTS OF CONSTRUCTION, MANUFACTURING, TRANSPORTATION, MINING, PETROLEUM, TOURISM, FEDERAL GOVERNMENT, AGRICULTURE, FORESTRY, AND FISH HARVESTING.

INFRASTRUCTURE EMPLOYMENT (EM9INFR) INCLUDES TRANSPORTATION, COMMUNICATIONS, PUBLIC UTILITIES, ENDOGENOUS CONSTRUCTION, AND BUSINESS SERVICES NET OF EXOGENOUS AND TOURISM-RELATED TRANSPORTATION.

SUPPORT EMPLOYMENT (EM9SUPRT) INCLUDES TRADE, FINANCE, SERVICES, LOCAL MANUFACTURING, AND PROPRIETORS NOT ENGAGED IN FISH HARVESTING, NET OF TRADE AND SERVICE TOURISM EMPLOYMENT AND BUSINESS SERVICES.

GOVERNMENT EMPLOYMENT (EMGA) INCLUDES STATE AND LOCAL GOVERNMENT

TABLE B.3. PRIVATE EMPLOYMENT WITH OCS DEVELOPMENT
(THOUSANDS)

| | TOTAL PRIVATE | AGRIC., FORESTRY, FISHERIES | MINING AND PETROLEUM | CONSTRUCTION | MANUFACTURING | TRANSPORT., COMMUNICATION, PUBLIC UTILITIES | TRADE, FINANCE, SERVICES |
|------|------------------|-----------------------------------|----------------------------|--------------|---------------|------------------------------------------------------|--------------------------------|
| 1980 | 135.4 | 8.3 | 6.7 | 10.6 | 14.0 | 17.1 | 78.7 |
| 1981 | 149.2 | 9.0 | 8.9 | 12.9 | 14.0 | 18.2 | 86.1 |
| 1982 | 162.2 | 10.0 | 8.8 | 16.8 | 12.6 | 18.4 | 95.6 |
| 1983 | 173.4 | 9.9 | 8.2 | 20.8 | 11.9 | 18.6 | 104.0 |
| 1984 | 181.4 | 10.4 | 8.7 | 20.3 | 11.3 | 18.9 | 111.7 |
| 1985 | 185.2 | 10.1 | 9.5 | 18.6 | 12.1 | 18.7 | 116.2 |
| 1986 | 175.4 | 10.1 | 9.1 | 13.4 | 12.6 | 18.0 | 112.3 |
| 1987 | 166.0 | 9.8 | 8.8 | 10.1 | 12.9 | 17.8 | 106.7 |
| 1988 | 170.2 | 9.8 | 9.3 | 10.7 | 14.9 | 17.9 | 107.6 |
| 1989 | 179.6 | 9.8 | 9.7 | 9.3 | 17.0 | 20.7 | 113.1 |
| 1990 | 180.3 | 9.8 | 10.5 | 9.6 | 16.5 | 19.5 | 114.4 |
| 1991 | 183.1 | 9.8 | 10.9 | 10.7 | 16.0 | 19.5 | 116.2 |
| 1992 | 185.4 | 9.8 | 11.8 | 10.9 | 15.3 | 19.7 | 117.9 |
| 1993 | 188.6 | 9.8 | 12.5 | 11.2 | 15.1 | 20.0 | 120.0 |
| 1994 | 191.4 | 9.8 | 13.2 | 10.8 | 15.0 | 20.3 | 122.4 |
| 1995 | 189.4 | 9.8 | 13.4 | 9.7 | 14.8 | 20.1 | 121.8 |
| 1996 | 189.8 | 9.8 | 13.4 | 9.1 | 14.7 | 20.2 | 122.6 |
| 1997 | 192.8 | 9.8 | 14.1 | 9.7 | 14.7 | 20.4 | 124.0 |
| 1998 | 196.4 | 9.8 | 14.9 | 9.8 | 14.7 | 20.9 | 126.3 |
| 1999 | 202.7 | 9.8 | 16.4 | 10.4 | 14.7 | 21.6 | 129.9 |
| 2000 | 204.5 | 9.8 | 16.6 | 9.6 | 14.7 | 21.9 | 131.9 |
| 2001 | 206.0 | 9.8 | 16.3 | 9.9 | 14.7 | 22.0 | 133.4 |
| 2002 | 207.4 | 9.8 | 16.3 | 9.8 | 14.7 | 22.2 | 134.6 |
| 2003 | 207.9 | 9.8 | 16.3 | 9.3 | 14.7 | 22.3 | 135.5 |
| 2004 | 207.9 | 9.8 | 15.8 | 9.1 | 14.7 | 22.4 | 136.1 |
| 2005 | 209.5 | 9.8 | 16.0 | 9.1 | 14.7 | 22.6 | 137.3 |
| 2006 | 212.1 | 9.8 | 16.1 | 9.2 | 14.7 | 22.9 | 139.4 |
| 2007 | 215.4 | 9.8 | 16.3 | 9.4 | 14.7 | 23.3 | 141.9 |
| 2008 | 219.1 | 9.8 | 16.5 | 9.7 | 14.7 | 23.7 | 144.7 |
| 2009 | 223.0 | 9.8 | 16.7 | 10.1 | 14.8 | 24.0 | 147.6 |
| 2010 | 226.8 | 9.8 | 16.9 | 10.6 | 14.8 | 24.4 | 150.4 |
| 2011 | 229.7 | 9.8 | 17.1 | 10.5 | 14.8 | 24.7 | 152.9 |
| 2012 | 231.1 | 9.8 | 17.3 | 9.9 | 14.8 | 24.9 | 154.5 |
| 2013 | 232.8 | 9.8 | 17.5 | 9.5 | 14.8 | 25.1 | 156.1 |
| 2014 | 235.0 | 9.8 | 17.7 | 9.5 | 14.8 | 25.4 | 157.9 |
| 2015 | 237.4 | 9.8 | 17.9 | 9.5 | 14.8 | 25.7 | 159.8 |

SOURCES: 1980-1987, MAP DATABASE;
1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

PRIVATE (EMPVT) IS ALL NON-GOVERNMENT. AGRICULTURE, FORESTRY, FISHERIES (EMAFF).
MINING AND PETROLEUM (EMP9). CONSTRUCTION (EMCN). MANUFACTURING (EMM9).
TRANSPORTATION, COMMUNICATIONS, PUBLIC UTILITIES (EMTCU).
TRADE, FINANCE, AND SERVICES (EMSUP) INCLUDES PROPRIETORS NOT INVOLVED
IN FISH HARVESTING.

**TABLE B.4. GOVERNMENT EMPLOYMENT WITH OCS DEVELOPMENT
(THOUSANDS)**

| | TOTAL | MILITARY | FEDERAL CIVILIAN | STATE | LOCAL |
|------|--------------|-----------------|-----------------------------|--------------|--------------|
| | ----- | ----- | ----- | ----- | ----- |
| 1980 | 76.0 | 22.0 | 17.7 | 15.4 | 20.9 |
| 1981 | 78.5 | 22.5 | 17.5 | 16.6 | 22.0 |
| 1982 | 81.3 | 22.1 | 17.6 | 18.0 | 23.5 |
| 1983 | 84.1 | 22.3 | 17.7 | 18.9 | 25.2 |
| 1984 | 87.1 | 22.6 | 18.1 | 19.3 | 27.1 |
| 1985 | 89.8 | 23.1 | 17.6 | 20.5 | 28.7 |
| 1986 | 89.6 | 23.0 | 17.8 | 20.2 | 28.6 |
| 1987 | 88.9 | 24.4 | 17.9 | 18.7 | 27.8 |
| 1988 | 89.4 | 24.1 | 18.1 | 19.2 | 28.0 |
| 1989 | 92.6 | 24.1 | 18.2 | 20.7 | 29.6 |
| 1990 | 91.9 | 23.8 | 18.3 | 20.6 | 29.2 |
| 1991 | 93.3 | 23.9 | 18.4 | 21.6 | 29.5 |
| 1992 | 92.8 | 23.9 | 18.5 | 21.1 | 29.2 |
| 1993 | 94.2 | 23.9 | 18.6 | 21.3 | 30.4 |
| 1994 | 96.7 | 23.9 | 18.7 | 22.3 | 31.8 |
| 1995 | 97.1 | 23.9 | 18.8 | 22.6 | 31.8 |
| 1996 | 97.6 | 23.9 | 18.9 | 23.1 | 31.7 |
| 1997 | 98.4 | 23.9 | 19.0 | 23.5 | 31.9 |
| 1998 | 98.9 | 23.9 | 19.1 | 23.8 | 32.1 |
| 1999 | 99.2 | 23.9 | 19.2 | 24.0 | 32.2 |
| 2000 | 99.5 | 23.9 | 19.3 | 24.1 | 32.3 |
| 2001 | 99.2 | 23.9 | 19.4 | 23.7 | 32.2 |
| 2002 | 98.2 | 23.9 | 19.5 | 23.1 | 31.7 |
| 2003 | 97.4 | 23.9 | 19.6 | 22.8 | 31.1 |
| 2004 | 97.1 | 23.9 | 19.7 | 22.6 | 30.9 |
| 2005 | 97.3 | 23.9 | 19.8 | 22.7 | 30.9 |
| 2006 | 97.9 | 23.9 | 19.9 | 23.1 | 31.1 |
| 2007 | 98.6 | 23.9 | 20.0 | 23.5 | 31.2 |
| 2008 | 99.2 | 23.9 | 20.0 | 24.0 | 31.2 |
| 2009 | 99.4 | 23.9 | 20.1 | 24.2 | 31.1 |
| 2010 | 99.0 | 23.9 | 20.2 | 23.9 | 30.9 |
| 2011 | 98.6 | 23.9 | 20.3 | 23.4 | 31.0 |
| 2012 | 98.2 | 23.9 | 20.4 | 22.8 | 31.0 |
| 2013 | 97.8 | 23.9 | 20.5 | 22.4 | 30.9 |
| 2014 | 97.4 | 23.9 | 20.6 | 22.1 | 30.7 |
| 2015 | 97.0 | 23.9 | 20.8 | 21.9 | 30.5 |

SOURCES: 1980-1987, MAP DATABASE;
1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

TOTAL (EMG9).

MILITARY (EMGM) IS ACTIVE DUTY.

FEDERAL CIVILIAN (EMGC).

STATE (EMGS) INCLUDES UNIVERSITY OF ALASKA.

LOCAL (EMGL).

TABLE B.5. POPULATION CHANGE WITH OCS DEVELOPMENT
(THOUSANDS)

| | COMPONENTS OF CHANGE | | | | |
|------|----------------------|---------------------------|---------------------|-------------------------------|-----------------------|
| | TOTAL POPULATION | TOTAL ANNUAL CHANGE | NATURAL INCREASE | NON- MILITARY MIGRATION | MILITARY MIGRATION |
| 1980 | 419.8 | 6.1 | 7.7 | 2.0 | -3.7 |
| 1981 | 433.8 | 14.0 | 8.2 | 5.8 | -0.0 |
| 1982 | 463.4 | 29.6 | 9.0 | 22.3 | -1.7 |
| 1983 | 497.6 | 34.2 | 9.9 | 25.0 | -0.6 |
| 1984 | 522.0 | 24.4 | 10.4 | 14.4 | -0.3 |
| 1985 | 541.3 | 19.3 | 10.7 | 8.6 | 0.0 |
| 1986 | 547.6 | 6.3 | 10.4 | -2.9 | -1.2 |
| 1987 | 537.8 | -9.8 | 9.8 | -21.7 | 2.0 |
| 1988 | 531.2 | -6.6 | 9.3 | -15.6 | -0.4 |
| 1989 | 542.3 | 11.1 | 9.0 | 3.3 | -1.0 |
| 1990 | 556.8 | 14.5 | 9.2 | 7.3 | -1.5 |
| 1991 | 566.4 | 9.6 | 9.4 | 1.1 | -0.9 |
| 1992 | 574.0 | 7.6 | 9.6 | -0.8 | -1.0 |
| 1993 | 583.4 | 9.3 | 9.6 | 0.8 | -1.0 |
| 1994 | 594.8 | 11.4 | 9.7 | 2.8 | -1.0 |
| 1995 | 601.2 | 6.4 | 9.9 | -2.7 | -1.0 |
| 1996 | 605.9 | 4.7 | 9.9 | -4.0 | -1.0 |
| 1997 | 612.9 | 7.0 | 9.8 | -1.7 | -1.0 |
| 1998 | 621.3 | 8.4 | 9.9 | -0.4 | -1.0 |
| 1999 | 633.1 | 11.8 | 10.0 | 3.0 | -1.0 |
| 2000 | 642.5 | 9.4 | 10.1 | 0.3 | -1.0 |
| 2001 | 649.7 | 7.2 | 10.2 | -1.8 | -1.0 |
| 2002 | 655.0 | 5.3 | 10.3 | -3.7 | -1.0 |
| 2003 | 658.8 | 3.8 | 10.3 | -5.3 | -1.0 |
| 2004 | 661.5 | 2.7 | 10.2 | -6.3 | -1.0 |
| 2005 | 665.6 | 4.1 | 10.2 | -4.6 | -1.0 |
| 2006 | 671.8 | 6.2 | 10.1 | -2.6 | -1.0 |
| 2007 | 680.0 | 8.2 | 10.2 | -0.9 | -1.0 |
| 2008 | 689.5 | 9.6 | 10.3 | 0.4 | -1.0 |
| 2009 | 699.8 | 10.3 | 10.4 | 1.0 | -1.0 |
| 2010 | 709.8 | 10.0 | 10.6 | 0.6 | -1.0 |
| 2011 | 718.7 | 8.9 | 10.7 | -0.7 | -1.0 |
| 2012 | 725.6 | 6.9 | 10.8 | -2.9 | -1.0 |
| 2013 | 731.5 | 5.9 | 10.9 | -3.8 | -1.0 |
| 2014 | 737.2 | 5.8 | 10.9 | -3.7 | -1.0 |
| 2015 | 743.2 | 6.0 | 10.9 | -3.5 | -1.0 |

SOURCES: 1980-1987, MAP DATABASE; 1988-2015, ISEER MAP MODEL SIMULATION MMSI, CREATED 7/90

NOTE: POPULATION IS EQUAL TO POPULATION IN PRIOR YEAR PLUS MIGRATION AND NATURAL INCREASE. THE SUM OF COMPONENTS DOES NOT EQUAL THE TOTAL DUE TO ROUNDING IN THE ALLOCATION OF MIGRANTS TO INDIVIDUAL COHORTS.

POPULATION (POP) IS JULY 1, CENSUS DEFINITION.

ANNUAL CHANGE IN POPULATION (DELPOP) IS YEAR TO YEAR JULY 1 CHANGE.

NATURAL INCREASE (POPNI9) INCLUDES CIVILIAN AND MILITARY. NON-MILITARY MIGRATION (POPMIG).

MILITARY MIGRATION (POPMIGM) INCLUDES ACTIVE DUTY MILITARY PLUS DEPENDENTS.

TABLE B.6. POPULATION COMPONENTS WITH OCS DEVELOPMENT
(THOUSANDS)

| | TOTAL | CIVILIAN NON-NATIVE | NATIVE | MILITARY |
|------|-------|------------------------|--------|----------|
| 1980 | 419.8 | 310.0 | 64.1 | 45.7 |
| 1981 | 433.8 | 319.4 | 67.8 | 46.6 |
| 1982 | 463.4 | 348.3 | 69.2 | 45.9 |
| 1983 | 497.6 | 380.2 | 71.1 | 46.3 |
| 1984 | 522.0 | 402.0 | 73.1 | 46.9 |
| 1985 | 541.3 | 418.3 | 75.1 | 47.9 |
| 1986 | 547.6 | 423.0 | 76.9 | 47.7 |
| 1987 | 537.8 | 408.4 | 78.6 | 50.8 |
| 1988 | 531.2 | 401.9 | 79.3 | 50.0 |
| 1989 | 542.3 | 411.2 | 81.1 | 50.0 |
| 1990 | 556.8 | 424.3 | 83.0 | 49.5 |
| 1991 | 566.4 | 431.8 | 84.9 | 49.7 |
| 1992 | 574.0 | 437.5 | 86.9 | 49.7 |
| 1993 | 583.4 | 444.9 | 88.8 | 49.7 |
| 1994 | 594.8 | 454.4 | 90.7 | 49.7 |
| 1995 | 601.2 | 458.9 | 92.7 | 49.7 |
| 1996 | 605.9 | 461.5 | 94.7 | 49.7 |
| 1997 | 612.9 | 466.5 | 96.7 | 49.7 |
| 1998 | 621.3 | 472.9 | 98.8 | 49.7 |
| 1999 | 633.1 | 482.6 | 100.8 | 49.7 |
| 2000 | 642.5 | 489.9 | 103.0 | 49.7 |
| 2001 | 649.7 | 494.9 | 105.1 | 49.7 |
| 2002 | 655.0 | 498.0 | 107.3 | 49.7 |
| 2003 | 658.8 | 499.6 | 109.5 | 49.7 |
| 2004 | 661.5 | 500.1 | 111.8 | 49.7 |
| 2005 | 665.6 | 501.8 | 114.1 | 49.7 |
| 2006 | 671.8 | 505.7 | 116.5 | 49.7 |
| 2007 | 680.0 | 511.4 | 118.9 | 49.7 |
| 2008 | 689.5 | 518.6 | 121.3 | 49.7 |
| 2009 | 699.8 | 526.3 | 123.8 | 49.7 |
| 2010 | 709.8 | 533.8 | 126.3 | 49.7 |
| 2011 | 718.7 | 540.1 | 128.9 | 49.7 |
| 2012 | 725.6 | 544.4 | 131.6 | 49.7 |
| 2013 | 731.5 | 547.6 | 134.2 | 49.7 |
| 2014 | 737.2 | 550.6 | 136.9 | 49.7 |
| 2015 | 743.2 | 553.9 | 139.7 | 49.7 |

SOURCES: 1980-1987, MAP DATABASE;
1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

POPULATION (POP) IS JULY 1, CENSUS DEFINITION.

CIVILIAN NON-NATIVE (CNNTOT).

NATIVE (NATTOT) CIVILIAN IS JULY 1 ESTIMATE EXCEPT 1980 IS APRIL 1.

MILITARY (MILTOT) IS ACTIVE DUTY PLUS DEPENDENTS.

TABLE B.7. STATE UNRESTRICTED GENERAL FUND WITH OCS DEVELOPMENT
(MILLION 1989 DOLLARS)

| | REVENUES | | | | |
|------|--------------|--------|-----------|------------|---------------------|
| | EXPENDITURES | TOTAL | PETROLEUM | ENDOGENOUS | INVESTMENT EARNINGS |
| 1980 | 1512.6 | 3225.9 | 2916.1 | 324.6 | 154.6 |
| 1981 | 4226.6 | 4452.5 | 3967.3 | 212.4 | 272.8 |
| 1982 | 3851.9 | 4654.3 | 4055.9 | 230.5 | 367.8 |
| 1983 | 4328.0 | 4084.7 | 3412.9 | 249.1 | 422.8 |
| 1984 | 3493.3 | 3668.4 | 3101.4 | 261.1 | 305.9 |
| 1985 | 3524.0 | 3429.0 | 2889.2 | 294.2 | 245.6 |
| 1986 | 2859.2 | 3178.3 | 2748.5 | 228.1 | 201.7 |
| 1987 | 3744.7 | 1856.3 | 1440.3 | 248.9 | 167.0 |
| 1988 | 2604.4 | 2475.9 | 2030.7 | 246.3 | 198.9 |
| 1989 | 2309.2 | 2276.1 | 1873.2 | 248.1 | 154.8 |
| 1990 | 2403.6 | 2362.3 | 1963.5 | 247.1 | 151.7 |
| 1991 | 2699.1 | 2341.8 | 1948.4 | 248.6 | 144.8 |
| 1992 | 2205.6 | 2239.4 | 1874.2 | 250.2 | 115.0 |
| 1993 | 2142.1 | 2136.2 | 1774.4 | 250.3 | 111.6 |
| 1994 | 2144.5 | 2115.0 | 1635.5 | 250.5 | 228.9 |
| 1995 | 2185.7 | 2145.8 | 1492.0 | 407.0 | 246.8 |
| 1996 | 2220.1 | 2174.7 | 1371.5 | 539.2 | 264.0 |
| 1997 | 2229.3 | 2227.4 | 1245.7 | 537.5 | 444.2 |
| 1998 | 2263.4 | 2265.4 | 1225.0 | 539.4 | 501.0 |
| 1999 | 2274.8 | 2279.0 | 1170.5 | 550.0 | 558.5 |
| 2000 | 2286.9 | 2278.0 | 1104.9 | 556.8 | 616.3 |
| 2001 | 2204.4 | 2196.2 | 971.9 | 555.5 | 668.8 |
| 2002 | 2164.8 | 2163.7 | 889.7 | 554.4 | 719.6 |
| 2003 | 2129.8 | 2131.4 | 809.8 | 553.0 | 768.6 |
| 2004 | 2125.7 | 2118.4 | 751.9 | 550.9 | 815.5 |
| 2005 | 2141.7 | 2142.7 | 732.7 | 550.1 | 860.0 |
| 2006 | 2192.3 | 2199.3 | 742.7 | 553.4 | 903.2 |
| 2007 | 2253.3 | 2262.9 | 758.7 | 559.9 | 944.2 |
| 2008 | 2319.0 | 2319.5 | 770.7 | 566.4 | 982.5 |
| 2009 | 2296.6 | 2296.7 | 710.7 | 572.5 | 1013.4 |
| 2010 | 2243.7 | 2243.1 | 672.6 | 578.1 | 992.5 |
| 2011 | 2191.8 | 2191.2 | 636.9 | 582.2 | 972.1 |
| 2012 | 2137.5 | 2138.0 | 602.7 | 583.2 | 952.0 |
| 2013 | 2083.6 | 2086.1 | 570.6 | 583.0 | 932.5 |
| 2014 | 2034.8 | 2037.6 | 540.3 | 583.8 | 913.5 |
| 2015 | 1993.1 | 1996.6 | 516.5 | 585.3 | 894.8 |

SOURCES: 1980-1987, MAP DATABASE;
1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

EXPENDITURES (DF.EXGFB) IS UNRESTRICTED GENERAL FUND EXPENDITURES.

TOTAL REVENUES (DF.RSGFB).

PETROLEUM REVENUES (DF.RP9SG) EXCLUDES PERMANENT FUND CONTRIBUTION.

ENDOGENOUS REVENUES (DF.RSENG) IS TOTAL NET OF PETROLEUM AND INVESTMENT EARNINGS.

INVESTMENT EARNINGS (DF.RSIN) IS EARNINGS FROM ALL SOURCES DEPOSITED IN THE GENERAL FUND.

TABLE B.8. STATE GOVERNMENT MISCELLANEOUS VARIABLES WITH OCS DEVELOPMENT
(MILLION 1989 DOLLARS)

| GENERAL FUND APPROPRIATIONS | | | | | | | |
|-----------------------------|-----------|---------|-----------------|-------------------------------|------------------------------|---------------------------|-------|
| TOTAL | OPERATING | CAPITAL | DEBT SERVICE | PERMANENT FUND DIVIDEND | PERMANENT FUND BALANCE | PERSONAL INCOME TAX | |
| 1980 | 1464.4 | - | - | 98.3 | 0.0 | 623.2 | 129.6 |
| 1981 | 5940.2 | - | - | 117.0 | 0.0 | 2188.2 | 0.0 |
| 1982 | 6415.9 | - | - | 115.9 | 541.7 | 3639.7 | 0.0 |
| 1983 | 3435.5 | - | - | 161.6 | 210.9 | 4921.6 | 0.0 |
| 1984 | 3418.0 | - | - | 180.0 | 173.2 | 5816.0 | 0.0 |
| 1985 | 4072.6 | - | - | 178.3 | 221.5 | 6841.3 | 0.0 |
| 1986 | 2926.3 | - | - | 168.7 | 306.1 | 7797.5 | 0.0 |
| 1987 | 2473.5 | - | - | 159.8 | 390.3 | 8658.5 | 0.0 |
| 1988 | 2570.7 | 1862.9 | 556.2 | 151.6 | 398.6 | 9446.4 | 0.0 |
| 1989 | 2247.3 | 1658.0 | 452.9 | 136.5 | 409.3 | 9746.3 | 0.0 |
| 1990 | 2421.9 | 1847.3 | 458.4 | 116.2 | 403.6 | 9971.6 | 0.0 |
| 1991 | 2689.9 | 1901.5 | 425.3 | 89.1 | 371.2 | 10451.8 | 0.0 |
| 1992 | 2165.7 | 1752.1 | 349.9 | 63.6 | 343.3 | 10840.8 | 0.0 |
| 1993 | 2121.9 | 1736.1 | 305.8 | 79.9 | 362.6 | 11225.0 | 0.0 |
| 1994 | 2128.1 | 1758.3 | 269.2 | 100.6 | 374.7 | 11477.5 | 0.0 |
| 1995 | 2171.2 | 1815.6 | 236.9 | 118.7 | 387.1 | 11689.4 | 159.3 |
| 1996 | 2205.0 | 1884.2 | 204.1 | 116.7 | 396.7 | 11811.6 | 293.9 |
| 1997 | 2241.9 | 1920.3 | 213.4 | 108.3 | 0.0 | 12189.9 | 291.6 |
| 1998 | 2272.4 | 1953.3 | 217.0 | 102.1 | 0.0 | 12533.5 | 292.4 |
| 1999 | 2282.4 | 1966.8 | 218.5 | 97.0 | 0.0 | 12831.8 | 300.2 |
| 2000 | 2294.9 | 1983.6 | 220.4 | 90.8 | 0.0 | 13077.3 | 305.9 |
| 2001 | 2204.2 | 1896.0 | 210.7 | 97.5 | 0.0 | 13180.6 | 307.1 |
| 2002 | 2167.5 | 1849.9 | 205.5 | 112.1 | 0.0 | 13223.1 | 306.6 |
| 2003 | 2133.2 | 1814.2 | 201.6 | 117.4 | 0.0 | 13204.2 | 306.3 |
| 2004 | 2132.0 | 1817.7 | 202.0 | 112.3 | 0.0 | 13129.9 | 305.2 |
| 2005 | 2149.3 | 1837.6 | 204.2 | 107.5 | 0.0 | 13012.7 | 304.2 |
| 2006 | 2202.5 | 1889.6 | 210.0 | 102.9 | 0.0 | 12865.8 | 306.6 |
| 2007 | 2264.4 | 1950.1 | 216.7 | 97.6 | 0.0 | 12693.5 | 311.4 |
| 2008 | 2331.0 | 2019.8 | 224.4 | 86.7 | 0.0 | 12498.7 | 316.0 |
| 2009 | 2302.2 | 2004.9 | 222.8 | 74.5 | 0.0 | 12253.9 | 320.3 |
| 2010 | 2245.7 | 1944.2 | 216.0 | 85.5 | 0.0 | 12018.2 | 324.2 |
| 2011 | 2192.4 | 1868.5 | 207.6 | 116.3 | 0.0 | 11786.5 | 327.2 |
| 2012 | 2138.6 | 1802.5 | 200.3 | 135.8 | 0.0 | 11558.2 | 327.6 |
| 2013 | 2086.4 | 1760.8 | 195.6 | 129.9 | 0.0 | 11333.6 | 326.9 |
| 2014 | 2037.8 | 1723.4 | 191.5 | 122.9 | 0.0 | 11112.6 | 326.8 |
| 2015 | 1996.7 | 1695.9 | 188.4 | 112.3 | 0.0 | 10889.8 | 327.2 |

SOURCES: 1980-1987, MAP DATABASE;
1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

TOTAL (DF.APGF). OPERATING (DF.APGFO). CAPITAL (DF.APGFC).
DEBT SERVICE (DF.EXDSS) INCLUDES ONLY GENERAL OBLIGATION DEBT OF STATE.
PERMANENT FUND DIVIDEND (DF.EXTRN). PERMANENT FUND BALANCE (DF.BALPF).
PERSONAL INCOME TAX (DF.RTIS).

TABLE B.9. COMPONENTS OF REAL PERSONAL INCOME WITH OCS DEVELOPMENT
(MILLION 1989 DOLLARS)

| | WAGE AND SALARY PAYMENTS | NET EARNINGS | RESIDENCE ADJUSTMENT | DIVIDENDS, INTEREST, RENT | TRANSFERS | PERSONAL INCOME | DISPOSABLE PERSONAL INCOME |
|------|--------------------------------|-----------------|-------------------------|---------------------------------|-----------|--------------------|----------------------------------|
| | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1980 | 5664.5 | 6496.7 | 428.5 | 525.4 | 628.0 | 7221.2 | 6040.4 |
| 1981 | 6286.0 | 6935.2 | 484.2 | 599.4 | 672.0 | 7722.6 | 6293.1 |
| 1982 | 6889.6 | 7612.5 | 555.1 | 681.3 | 1028.9 | 8767.2 | 7279.2 |
| 1983 | 7501.0 | 8508.0 | 608.2 | 827.8 | 1125.2 | 9852.7 | 8247.5 |
| 1984 | 7567.2 | 8599.0 | 595.3 | 915.3 | 971.1 | 9890.1 | 8427.0 |
| 1985 | 7500.2 | 8650.7 | 598.6 | 997.8 | 1259.8 | 10309.7 | 8949.8 |
| 1986 | 7041.3 | 8284.4 | 512.0 | 1037.7 | 1336.4 | 10146.6 | 8781.4 |
| 1987 | 6645.1 | 7912.0 | 467.2 | 1099.2 | 1441.6 | 9985.6 | 8531.3 |
| 1988 | 6860.1 | 7764.2 | 465.8 | 1015.2 | 1479.8 | 9975.8 | 8511.5 |
| 1989 | 7165.5 | 8312.0 | 492.9 | 1022.0 | 1470.8 | 10497.5 | 8935.8 |
| 1990 | 7226.9 | 8344.9 | 505.8 | 1072.0 | 1513.7 | 10607.9 | 9041.2 |
| 1991 | 7450.7 | 8456.9 | 562.2 | 1130.2 | 1524.9 | 10733.1 | 9128.8 |
| 1992 | 7565.8 | 8521.8 | 556.0 | 1170.7 | 1528.4 | 10846.7 | 9220.5 |
| 1993 | 7665.0 | 8607.3 | 549.3 | 1210.0 | 1585.9 | 11033.6 | 9378.2 |
| 1994 | 7773.7 | 8725.7 | 550.7 | 1259.0 | 1645.6 | 11257.3 | 9565.6 |
| 1995 | 7768.9 | 8696.7 | 556.7 | 1299.3 | 1675.7 | 11289.4 | 9379.9 |
| 1996 | 7825.3 | 8743.9 | 564.5 | 1326.8 | 1704.1 | 11381.5 | 9466.5 |
| 1997 | 8021.9 | 8948.7 | 609.7 | 1360.5 | 1347.7 | 11217.4 | 9306.9 |
| 1998 | 8199.1 | 9125.3 | 623.6 | 1399.6 | 1384.8 | 11454.6 | 9499.7 |
| 1999 | 8482.6 | 9410.5 | 653.5 | 1450.6 | 1436.5 | 11811.8 | 9793.1 |
| 2000 | 8540.1 | 9464.6 | 617.9 | 1508.0 | 1480.1 | 11999.3 | 9945.4 |
| 2001 | 8597.1 | 9512.7 | 622.1 | 1553.3 | 1512.2 | 12117.2 | 10049.4 |
| 2002 | 8641.1 | 9532.6 | 626.1 | 1582.8 | 1526.7 | 12173.8 | 10097.7 |
| 2003 | 8663.3 | 9542.0 | 628.4 | 1608.8 | 1544.9 | 12221.5 | 10133.8 |
| 2004 | 8671.6 | 9537.9 | 629.4 | 1627.9 | 1558.7 | 12245.7 | 10155.6 |
| 2005 | 8774.0 | 9626.5 | 636.6 | 1645.2 | 1575.1 | 12357.7 | 10256.0 |
| 2006 | 8907.7 | 9764.0 | 646.6 | 1679.0 | 1614.5 | 12555.3 | 10412.4 |
| 2007 | 9064.6 | 9913.0 | 658.5 | 1719.8 | 1654.4 | 12770.2 | 10582.1 |
| 2008 | 9234.9 | 10074.9 | 671.0 | 1770.8 | 1700.6 | 13013.6 | 10782.4 |
| 2009 | 9400.4 | 10230.6 | 683.1 | 1829.2 | 1751.0 | 13262.6 | 10987.3 |
| 2010 | 9546.1 | 10364.1 | 693.9 | 1890.5 | 1800.9 | 13493.1 | 11176.8 |
| 2011 | 9654.8 | 10458.4 | 702.1 | 1948.9 | 1845.9 | 13678.7 | 11329.2 |
| 2012 | 9717.0 | 10488.6 | 707.3 | 1990.9 | 1866.3 | 13762.1 | 11401.8 |
| 2013 | 9795.2 | 10548.7 | 713.0 | 2031.6 | 1896.9 | 13883.7 | 11505.9 |
| 2014 | 9898.0 | 10632.1 | 720.3 | 2068.8 | 1926.8 | 14022.6 | 11625.8 |
| 2015 | 10007.3 | 10721.1 | 728.5 | 2106.2 | 1957.5 | 14167.4 | 11746.1 |

SOURCES: 1980-1987, MAP DATABASE;

1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

WAGE AND SALARY PAYMENTS (DF.PIWS) IN NONAGRICULTURAL WAGE AND SALARY
JOB CATEGORIES PLUS MILITARY.

NET EARNINGS (DF.PINE) IS NET LABOR AND PROPRIETORS' INCOME BY PLACE OF WORK.

RESIDENCE ADJUSTMENT (DF.PIRAD). DIVIDENDS, INTEREST, AND RENT (DF.PIDIR).

TRANSFERS (DF.PITRAN). PERSONAL INCOME (DF.PIB).

DISPOSABLE PERSONAL INCOME (DF.DPIB)

TABLE B.10. PRICE INDEXES WITH OCS DEVELOPMENT

| | ANCHORAGE CPI-W ----- | ALASKA/US PRICE LEVEL ----- |
|------|-----------------------------|-----------------------------------|
| 1980 | 86.3 | 1.290 |
| 1981 | 92.9 | 1.261 |
| 1982 | 98.2 | 1.257 |
| 1983 | 98.9 | 1.229 |
| 1984 | 102.9 | 1.235 |
| 1985 | 105.8 | 1.227 |
| 1986 | 107.7 | 1.230 |
| 1987 | 107.9 | 1.189 |
| 1988 | 108.3 | 1.148 |
| 1989 | 111.3 | 1.126 |
| 1990 | 116.6 | 1.121 |
| 1991 | 121.9 | 1.116 |
| 1992 | 127.4 | 1.111 |
| 1993 | 133.2 | 1.106 |
| 1994 | 139.2 | 1.101 |
| 1995 | 145.5 | 1.096 |
| 1996 | 152.8 | 1.096 |
| 1997 | 159.7 | 1.091 |
| 1998 | 166.9 | 1.086 |
| 1999 | 174.4 | 1.081 |
| 2000 | 182.3 | 1.076 |
| 2001 | 190.5 | 1.071 |
| 2002 | 199.1 | 1.066 |
| 2003 | 208.0 | 1.061 |
| 2004 | 217.4 | 1.056 |
| 2005 | 227.2 | 1.051 |
| 2006 | 237.4 | 1.046 |
| 2007 | 248.1 | 1.041 |
| 2008 | 259.2 | 1.035 |
| 2009 | 270.9 | 1.030 |
| 2010 | 283.0 | 1.025 |
| 2011 | 295.7 | 1.020 |
| 2012 | 309.0 | 1.015 |
| 2013 | 322.8 | 1.010 |
| 2014 | 337.3 | 1.005 |
| 2015 | 352.3 | 1.000 |

SOURCES: 1980-1987, MAP DATABASE;
1988-2015, ISER MAP MODEL SIMULATION MMSI, CREATED 7/90

ANCHORAGE CPI (PDANCPI) CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS
(1982-1984 = 100).

ALASKA/US PRICE LEVEL (PDRATIO) IS THE RATIO OF ANCHORAGE AND
US CONSUMER PRICE INDEX LEVELS.

APPENDIX C

**MAP MODEL REGIONAL PROJECTIONS
WITHOUT AND WITH OCS DEVELOPMENT**

TABLE C.1.
MAP REGIONAL MODEL PROJECTIONS
WITHOUT OCS DEVELOPMENT
ANCHORAGE MAT-SU REGION
EMPLOYMENT
(THOUSANDS)

| | BASIC | SUPPORT | GOVERNMENT | TOTAL | WAGE AND SALARY |
|------|--------|---------|------------|---------|-----------------|
| 1988 | 25.436 | 61.173 | 38.449 | 125.058 | 105.033 |
| 1989 | 26.684 | 65.144 | 39.614 | 131.441 | 110.780 |
| 1990 | 26.189 | 65.807 | 39.145 | 131.141 | 110.854 |
| 1991 | 26.688 | 66.054 | 39.303 | 132.046 | 111.849 |
| 1992 | 27.216 | 66.278 | 39.117 | 132.611 | 112.427 |
| 1993 | 27.876 | 67.124 | 39.643 | 134.643 | 114.238 |
| 1994 | 28.246 | 68.190 | 40.535 | 136.971 | 116.298 |
| 1995 | 27.872 | 67.559 | 40.676 | 136.106 | 115.486 |
| 1996 | 27.819 | 68.043 | 40.871 | 136.732 | 116.077 |
| 1997 | 27.948 | 67.749 | 41.106 | 136.804 | 116.137 |
| 1998 | 28.268 | 68.158 | 41.133 | 137.559 | 116.834 |
| 1999 | 28.743 | 69.078 | 41.180 | 139.001 | 118.166 |
| 2000 | 29.253 | 69.994 | 41.221 | 140.468 | 119.514 |
| 2001 | 29.689 | 70.678 | 40.990 | 141.357 | 120.341 |
| 2002 | 29.893 | 71.329 | 40.597 | 141.820 | 120.801 |
| 2003 | 29.951 | 71.827 | 40.368 | 142.146 | 121.127 |
| 2004 | 30.176 | 72.425 | 40.307 | 142.908 | 121.849 |
| 2005 | 30.602 | 73.428 | 40.443 | 144.473 | 123.290 |
| 2006 | 31.107 | 74.615 | 40.705 | 146.427 | 125.055 |
| 2007 | 31.722 | 76.082 | 41.004 | 148.808 | 127.218 |
| 2008 | 32.446 | 77.795 | 41.275 | 151.517 | 129.683 |
| 2009 | 33.210 | 79.638 | 41.386 | 154.234 | 132.166 |
| 2010 | 33.943 | 81.436 | 41.305 | 156.685 | 134.420 |
| 2011 | 34.388 | 82.989 | 41.191 | 158.568 | 136.161 |
| 2012 | 34.466 | 83.970 | 41.086 | 159.521 | 137.041 |
| 2013 | 34.669 | 84.970 | 40.984 | 160.623 | 138.077 |
| 2014 | 35.120 | 86.048 | 40.865 | 162.033 | 139.390 |
| 2015 | 35.606 | 87.161 | 40.775 | 163.542 | 140.779 |

SOURCE: DSET MMSBR, DATE OF CREATION: 7/90
VARIABLES: B.AM, S.AM, G.AM, M.AM, M97.AM

TABLE C.2.
MAP REGIONAL MODEL PROJECTIONS
WITHOUT OCS DEVELOPMENT
ANCHORAGE MAT-SU REGION
POPULATION
(THOUSANDS)

| | POPULATION | | | HOUSEHOLDS | |
|------|------------|---------|---------|------------|-------|
| | STATE | U.S.BEA | BOROUGH | NUMBER | SIZE |
| 1988 | 261.113 | 259.513 | 263.990 | 93.527 | 2.737 |
| 1989 | 268.529 | 266.886 | 271.520 | 96.363 | 2.733 |
| 1990 | 275.630 | 273.948 | 278.754 | 99.160 | 2.727 |
| 1991 | 279.089 | 277.397 | 282.376 | 100.612 | 2.723 |
| 1992 | 281.699 | 279.997 | 285.092 | 101.782 | 2.717 |
| 1993 | 285.769 | 284.045 | 289.236 | 103.445 | 2.713 |
| 1994 | 290.890 | 289.138 | 294.451 | 105.460 | 2.709 |
| 1995 | 293.218 | 291.457 | 296.869 | 106.523 | 2.704 |
| 1996 | 295.131 | 293.362 | 298.850 | 107.431 | 2.699 |
| 1997 | 296.269 | 294.495 | 300.032 | 108.054 | 2.694 |
| 1998 | 298.032 | 296.250 | 301.836 | 108.886 | 2.690 |
| 1999 | 301.003 | 299.202 | 304.840 | 110.136 | 2.686 |
| 2000 | 304.332 | 302.512 | 308.220 | 111.501 | 2.683 |
| 2001 | 307.156 | 305.320 | 311.085 | 112.689 | 2.680 |
| 2002 | 309.411 | 307.562 | 313.388 | 113.677 | 2.676 |
| 2003 | 311.148 | 309.290 | 315.160 | 114.477 | 2.673 |
| 2004 | 313.050 | 311.183 | 317.103 | 115.321 | 2.670 |
| 2005 | 316.104 | 314.218 | 320.193 | 116.558 | 2.668 |
| 2006 | 320.229 | 318.319 | 324.381 | 118.161 | 2.666 |
| 2007 | 325.331 | 323.391 | 329.551 | 120.106 | 2.666 |
| 2008 | 331.310 | 329.336 | 335.624 | 122.357 | 2.665 |
| 2009 | 337.742 | 335.730 | 342.148 | 124.774 | 2.665 |
| 2010 | 344.004 | 341.957 | 348.518 | 127.138 | 2.665 |
| 2011 | 349.449 | 347.372 | 354.059 | 129.223 | 2.664 |
| 2012 | 353.354 | 351.258 | 358.066 | 130.774 | 2.662 |
| 2013 | 356.718 | 354.604 | 361.503 | 132.136 | 2.660 |
| 2014 | 360.137 | 358.004 | 364.978 | 133.510 | 2.659 |
| 2015 | 363.753 | 361.598 | 368.644 | 134.946 | 2.657 |

SOURCE: DSET MMSBR, DATE OF CREATION: 7/90
VARIABLES: PCEN.AM, PBEA.AM, PBOR.AM, HHCEN.AM, HSIZE.AM

TABLE C.3.
MAP REGIONAL MODEL PROJECTIONS
WITHOUT OCS DEVELOPMENT
ANCHORAGE MAT-SU REGION
PERSONAL INCOME

| | NOMINAL \$ | | 1989 \$ | | | |
|------|---------------------------------|--------------------------------------------|---------------------------------|--------------------------------------------|------------------------|-----------------------------------|
| | PERSONAL INCOME (MILLION \$) | DISPOSABLE PERSONAL INCOME (MILLION \$) | PERSONAL INCOME (MILLION \$) | DISPOSABLE PERSONAL INCOME (MILLION \$) | PER CAPITA INCOME (\$) | PER CAPITA DISPOSABLE INCOME (\$) |
| 1988 | \$ 5263 | \$ 4490 | \$ 5408 | \$ 4614 | \$20840 | \$17781 |
| 1989 | \$ 5807 | \$ 4943 | \$ 5807 | \$ 4943 | \$21760 | \$18522 |
| 1990 | \$ 6086 | \$ 5187 | \$ 5809 | \$ 4950 | \$21203 | \$18070 |
| 1991 | \$ 6319 | \$ 5374 | \$ 5744 | \$ 4885 | \$20706 | \$17611 |
| 1992 | \$ 6607 | \$ 5620 | \$ 5745 | \$ 4887 | \$20518 | \$17455 |
| 1993 | \$ 7013 | \$ 5962 | \$ 5835 | \$ 4960 | \$20541 | \$17461 |
| 1994 | \$ 7471 | \$ 6349 | \$ 5947 | \$ 5053 | \$20566 | \$17478 |
| 1995 | \$ 7824 | \$ 6502 | \$ 5958 | \$ 4951 | \$20442 | \$16988 |
| 1996 | \$ 8286 | \$ 6893 | \$ 6009 | \$ 4999 | \$20482 | \$17040 |
| 1997 | \$ 8402 | \$ 6980 | \$ 5830 | \$ 4843 | \$19796 | \$16445 |
| 1998 | \$ 8901 | \$ 7395 | \$ 5882 | \$ 4886 | \$19853 | \$16494 |
| 1999 | \$ 9455 | \$ 7849 | \$ 5978 | \$ 4962 | \$19979 | \$16585 |
| 2000 | \$10020 | \$ 8317 | \$ 6061 | \$ 5031 | \$20036 | \$16629 |
| 2001 | \$10548 | \$ 8758 | \$ 6105 | \$ 5069 | \$19994 | \$16602 |
| 2002 | \$11101 | \$ 9213 | \$ 6148 | \$ 5102 | \$19988 | \$16589 |
| 2003 | \$11665 | \$ 9679 | \$ 6181 | \$ 5129 | \$19985 | \$16582 |
| 2004 | \$12287 | \$10198 | \$ 6230 | \$ 5171 | \$20019 | \$16617 |
| 2005 | \$13044 | \$10823 | \$ 6328 | \$ 5251 | \$20140 | \$16710 |
| 2006 | \$13859 | \$11490 | \$ 6434 | \$ 5334 | \$20213 | \$16758 |
| 2007 | \$14764 | \$12239 | \$ 6559 | \$ 5437 | \$20283 | \$16814 |
| 2008 | \$15768 | \$13069 | \$ 6704 | \$ 5557 | \$20356 | \$16872 |
| 2009 | \$16839 | \$13955 | \$ 6852 | \$ 5678 | \$20408 | \$16913 |
| 2010 | \$17955 | \$14878 | \$ 6992 | \$ 5793 | \$20446 | \$16942 |
| 2011 | \$19073 | \$15802 | \$ 7108 | \$ 5889 | \$20462 | \$16953 |
| 2012 | \$20081 | \$16643 | \$ 7162 | \$ 5936 | \$20391 | \$16900 |
| 2013 | \$21208 | \$17582 | \$ 7239 | \$ 6002 | \$20415 | \$16925 |
| 2014 | \$22415 | \$18590 | \$ 7323 | \$ 6074 | \$20455 | \$16965 |
| 2015 | \$23698 | \$19655 | \$ 7411 | \$ 6146 | \$20494 | \$16997 |

SOURCE: DSET MMSBR, DATE OF CREATION: 7/90

VARIABLES: PI.AM, DPI.AM, DF.PI.AM, DF.DI.AM, DP.PI.AM, DP.DI.AM

TABLE C.4.
MAP REGIONAL MODEL PROJECTIONS
WITH OCS DEVELOPMENT
ANCHORAGE MAT-SU REGION
EMPLOYMENT
(THOUSANDS)

| | BASIC | SUPPORT | GOVERNMENT | TOTAL | WAGE AND SALARY |
|------|--------|---------|------------|---------|-----------------|
| 1988 | 25.436 | 61.173 | 38.449 | 125.058 | 105.033 |
| 1989 | 26.684 | 65.144 | 39.614 | 131.441 | 110.780 |
| 1990 | 26.190 | 65.879 | 39.145 | 131.214 | 110.927 |
| 1991 | 26.712 | 66.356 | 39.387 | 132.454 | 112.258 |
| 1992 | 27.263 | 67.238 | 39.203 | 133.704 | 113.520 |
| 1993 | 27.932 | 68.290 | 39.738 | 135.959 | 115.555 |
| 1994 | 28.323 | 69.488 | 40.649 | 138.460 | 117.788 |
| 1995 | 27.955 | 68.872 | 40.809 | 137.636 | 117.015 |
| 1996 | 27.908 | 69.319 | 41.020 | 138.248 | 117.593 |
| 1997 | 28.077 | 70.131 | 41.312 | 139.520 | 118.854 |
| 1998 | 28.437 | 71.511 | 41.534 | 141.482 | 120.757 |
| 1999 | 29.081 | 73.963 | 41.670 | 144.713 | 123.878 |
| 2000 | 29.595 | 75.232 | 41.795 | 146.623 | 125.668 |
| 2001 | 30.032 | 76.227 | 41.691 | 147.950 | 126.934 |
| 2002 | 30.244 | 77.025 | 41.349 | 148.618 | 127.600 |
| 2003 | 30.298 | 77.592 | 41.083 | 148.972 | 127.953 |
| 2004 | 30.500 | 77.878 | 40.997 | 149.375 | 128.316 |
| 2005 | 30.918 | 78.555 | 41.110 | 150.582 | 129.399 |
| 2006 | 31.424 | 79.742 | 41.333 | 152.499 | 131.126 |
| 2007 | 32.034 | 81.186 | 41.596 | 154.816 | 133.227 |
| 2008 | 32.754 | 82.863 | 41.844 | 157.461 | 135.627 |
| 2009 | 33.523 | 84.706 | 41.934 | 160.163 | 138.095 |
| 2010 | 34.266 | 86.519 | 41.830 | 162.615 | 140.350 |
| 2011 | 34.694 | 88.079 | 41.694 | 164.468 | 142.062 |
| 2012 | 34.763 | 89.068 | 41.573 | 165.404 | 142.924 |
| 2013 | 34.960 | 90.088 | 41.458 | 166.507 | 143.961 |
| 2014 | 35.411 | 91.199 | 41.326 | 167.936 | 145.293 |
| 2015 | 35.897 | 92.348 | 41.223 | 169.468 | 146.704 |

SOURCE: DSET MMSIR, DATE OF CREATION: 7/90
VARIABLES: B.AM, S.AM, G.AM, M.AM, M97.AM

TABLE C.5.
MAP REGIONAL MODEL PROJECTIONS
WITH OCS DEVELOPMENT
ANCHORAGE MAT-SU REGION
POPULATION
(THOUSANDS)

| | POPULATION | | | HOUSEHOLDS | |
|------|------------|---------|---------|------------|-------|
| | STATE | U.S.BEA | BOROUGH | NUMBER | SIZE |
| 1988 | 261.113 | 259.513 | 263.990 | 93.527 | 2.737 |
| 1989 | 268.529 | 266.886 | 271.520 | 96.363 | 2.733 |
| 1990 | 275.898 | 274.215 | 279.023 | 99.256 | 2.728 |
| 1991 | 279.842 | 278.145 | 283.134 | 100.879 | 2.723 |
| 1992 | 284.164 | 282.446 | 287.572 | 102.660 | 2.718 |
| 1993 | 288.963 | 287.219 | 292.458 | 104.588 | 2.713 |
| 1994 | 294.543 | 292.768 | 298.144 | 106.774 | 2.710 |
| 1995 | 296.987 | 295.203 | 300.685 | 107.885 | 2.705 |
| 1996 | 298.895 | 297.104 | 302.665 | 108.797 | 2.700 |
| 1997 | 302.361 | 300.550 | 306.182 | 110.260 | 2.695 |
| 1998 | 307.083 | 305.243 | 310.972 | 112.144 | 2.692 |
| 1999 | 314.639 | 312.752 | 318.601 | 115.038 | 2.690 |
| 2000 | 319.608 | 317.695 | 323.669 | 117.009 | 2.687 |
| 2001 | 323.308 | 321.375 | 327.444 | 118.537 | 2.684 |
| 2002 | 326.204 | 324.257 | 330.410 | 119.784 | 2.680 |
| 2003 | 328.215 | 326.257 | 332.468 | 120.715 | 2.676 |
| 2004 | 329.368 | 327.406 | 333.668 | 121.327 | 2.672 |
| 2005 | 331.615 | 329.640 | 335.947 | 122.311 | 2.669 |
| 2006 | 335.282 | 333.285 | 339.667 | 123.781 | 2.667 |
| 2007 | 340.161 | 338.135 | 344.607 | 125.673 | 2.666 |
| 2008 | 345.890 | 343.831 | 350.424 | 127.860 | 2.665 |
| 2009 | 352.150 | 350.055 | 356.772 | 130.240 | 2.664 |
| 2010 | 358.332 | 356.202 | 363.059 | 132.599 | 2.663 |
| 2011 | 363.720 | 361.560 | 368.541 | 134.686 | 2.662 |
| 2012 | 367.624 | 365.445 | 372.548 | 136.260 | 2.660 |
| 2013 | 371.030 | 368.833 | 376.028 | 137.659 | 2.658 |
| 2014 | 374.510 | 372.293 | 379.564 | 139.076 | 2.656 |
| 2015 | 378.189 | 375.951 | 383.294 | 140.556 | 2.654 |

SOURCE: DSET MMSIR, DATE OF CREATION: 7/90
VARIABLES: PCEN.AM, PBEA.AM, PBOR.AM, HHCEN.AM, HSIZE.AM

TABLE C.6.
MAP REGIONAL MODEL PROJECTIONS
WITH OCS DEVELOPMENT
ANCHORAGE MAT-SU REGION
PERSONAL INCOME

| | NOMINAL \$ | | 1989 \$ | | | |
|------|---------------------------------|--------------------------------------------|---------------------------------|--------------------------------------------|------------------------|-----------------------------------|
| | PERSONAL INCOME (MILLION \$) | DISPOSABLE PERSONAL INCOME (MILLION \$) | PERSONAL INCOME (MILLION \$) | DISPOSABLE PERSONAL INCOME (MILLION \$) | PER CAPITA INCOME (\$) | PER CAPITA DISPOSABLE INCOME (\$) |
| 1988 | \$ 5263 | \$ 4490 | \$ 5408 | \$ 4614 | \$20840 | \$17781 |
| 1989 | \$ 5807 | \$ 4943 | \$ 5807 | \$ 4943 | \$21760 | \$18522 |
| 1990 | \$ 6085 | \$ 5186 | \$ 5808 | \$ 4950 | \$21179 | \$18051 |
| 1991 | \$ 6311 | \$ 5368 | \$ 5762 | \$ 4901 | \$20718 | \$17621 |
| 1992 | \$ 6638 | \$ 5643 | \$ 5798 | \$ 4929 | \$20529 | \$17451 |
| 1993 | \$ 7040 | \$ 5984 | \$ 5883 | \$ 5001 | \$20484 | \$17411 |
| 1994 | \$ 7512 | \$ 6383 | \$ 6006 | \$ 5104 | \$20516 | \$17433 |
| 1995 | \$ 7874 | \$ 6543 | \$ 6024 | \$ 5005 | \$20406 | \$16954 |
| 1996 | \$ 8342 | \$ 6939 | \$ 6078 | \$ 5055 | \$20457 | \$17015 |
| 1997 | \$ 8516 | \$ 7066 | \$ 5936 | \$ 4925 | \$19751 | \$16387 |
| 1998 | \$ 9051 | \$ 7506 | \$ 6036 | \$ 5006 | \$19776 | \$16401 |
| 1999 | \$ 9668 | \$ 8015 | \$ 6170 | \$ 5115 | \$19727 | \$16356 |
| 2000 | \$10349 | \$ 8578 | \$ 6320 | \$ 5238 | \$19892 | \$16487 |
| 2001 | \$10977 | \$ 9104 | \$ 6414 | \$ 5319 | \$19957 | \$16551 |
| 2002 | \$11540 | \$ 9572 | \$ 6452 | \$ 5352 | \$19897 | \$16504 |
| 2003 | \$12142 | \$10068 | \$ 6496 | \$ 5386 | \$19910 | \$16509 |
| 2004 | \$12785 | \$10603 | \$ 6545 | \$ 5428 | \$19991 | \$16579 |
| 2005 | \$13490 | \$11196 | \$ 6608 | \$ 5484 | \$20047 | \$16638 |
| 2006 | \$14356 | \$11906 | \$ 6730 | \$ 5581 | \$20193 | \$16746 |
| 2007 | \$15276 | \$12658 | \$ 6853 | \$ 5679 | \$20268 | \$16795 |
| 2008 | \$16294 | \$13500 | \$ 6996 | \$ 5796 | \$20347 | \$16859 |
| 2009 | \$17384 | \$14401 | \$ 7143 | \$ 5918 | \$20406 | \$16905 |
| 2010 | \$18521 | \$15342 | \$ 7284 | \$ 6034 | \$20449 | \$16939 |
| 2011 | \$19660 | \$16283 | \$ 7400 | \$ 6129 | \$20467 | \$16951 |
| 2012 | \$20691 | \$17142 | \$ 7454 | \$ 6175 | \$20396 | \$16898 |
| 2013 | \$21844 | \$18103 | \$ 7532 | \$ 6242 | \$20421 | \$16923 |
| 2014 | \$23082 | \$19136 | \$ 7617 | \$ 6315 | \$20461 | \$16964 |
| 2015 | \$24398 | \$20228 | \$ 7707 | \$ 6390 | \$20500 | \$16996 |

SOURCE: DSET MMSIR, DATE OF CREATION: 7/90

VARIABLES: PI.AM, DPI.AM, DF.PI.AM, DF.DI.AM, DP.PI.AM, DP.DI.AM

APPENDIX D

**STATEWIDE AND REGIONAL EXOGENOUS INDUSTRY
EMPLOYMENT ASSUMPTIONS**

**TABLE D.1. AGRICULTURE
(THOUSANDS OF EMPLOYEES)**

| | ALEUTIAN ISLANDS | ANCHORAGE | FAIRBANKS | JUNEAU | KENAI/ COOK INLET |
|------|-----------------------------|------------------|------------------|---------------|------------------------------|
| 1988 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1989 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1990 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1991 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1992 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1993 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1994 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1995 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1996 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1997 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1998 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 1999 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2000 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2001 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2002 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2003 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2004 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2005 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2006 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2007 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2008 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2009 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2010 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2011 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2012 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2013 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2014 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |
| 2015 | 0.002 | 0.352 | 0.064 | 0.016 | 0.013 |

**SOURCE: MAP MODEL CASE AGR.S90
VARIABLES: B01 B02 B09 B11 B12**

TABLE D.1. (CONTINUED)

| | KODIAK | MATANUSKA/ SUSITNA | FAIRBANKS | TOTAL AGRICULTURE EMPLOYMENT |
|------|--------|-----------------------|-----------|------------------------------------|
| 1988 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1989 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1990 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1991 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1992 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1993 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1994 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1995 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1996 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1997 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1998 | 0.004 | 0.054 | 0.020 | 0.525 |
| 1999 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2000 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2001 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2002 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2003 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2004 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2005 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2006 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2007 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2008 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2009 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2010 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2011 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2012 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2013 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2014 | 0.004 | 0.054 | 0.020 | 0.525 |
| 2015 | 0.004 | 0.054 | 0.020 | 0.525 |

SOURCE: MAP MODEL CASE AGR.S90
 VARIABLES: B15 B17 B24 EMAGRI

TABLE D.2. ALASKA-JUNEAU MINE
(THOUSANDS OF EMPLOYEES)

| | JUNEAU | TOTAL HIGH-WAGE CONSTRUCTION EMPLOYMENT | TOTAL MINING EMPLOYMENT |
|------|--------|--------------------------------------------------|-------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.010 | 0.010 | 0.000 |
| 1989 | 0.010 | 0.010 | 0.000 |
| 1990 | 0.010 | 0.010 | 0.000 |
| 1991 | 0.300 | 0.300 | 0.000 |
| 1992 | 0.400 | 0.400 | 0.000 |
| 1993 | 0.400 | 0.150 | 0.250 |
| 1994 | 0.450 | 0.000 | 0.450 |
| 1995 | 0.450 | 0.000 | 0.450 |
| 1996 | 0.450 | 0.000 | 0.450 |
| 1997 | 0.450 | 0.000 | 0.450 |
| 1998 | 0.450 | 0.000 | 0.450 |
| 1999 | 0.450 | 0.000 | 0.450 |
| 2000 | 0.450 | 0.000 | 0.450 |
| 2001 | 0.450 | 0.000 | 0.450 |
| 2002 | 0.450 | 0.000 | 0.450 |
| 2003 | 0.450 | 0.000 | 0.450 |
| 2004 | 0.450 | 0.000 | 0.450 |
| 2005 | 0.450 | 0.000 | 0.450 |
| 2006 | 0.450 | 0.000 | 0.450 |
| 2007 | 0.450 | 0.000 | 0.450 |
| 2008 | 0.450 | 0.000 | 0.450 |
| 2009 | 0.450 | 0.000 | 0.450 |
| 2010 | 0.450 | 0.000 | 0.450 |
| 2011 | 0.450 | 0.000 | 0.450 |
| 2012 | 0.450 | 0.000 | 0.450 |
| 2013 | 0.450 | 0.000 | 0.450 |
| 2014 | 0.450 | 0.000 | 0.450 |
| 2015 | 0.450 | 0.000 | 0.450 |

SOURCE: MAP MODEL CASE AJM.S90
VARIABLES: B11 EMCNX1 EMPMINE

**TABLE D.3. ARCTIC NATIONAL WILDLIFE REFUGE
(THOUSANDS OF EMPLOYEES)**

| | BARROW/ NORTH SLOPE | TOTAL HIGH-WAGE CONSTRUCTION EMPLOYMENT | TOTAL PETROLEUM MINING EMPLOYMENT |
|------|------------------------------------|------------------------------------------------------------|------------------------------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.000 | 0.000 | 0.000 |
| 1990 | 0.100 | 0.050 | 0.050 |
| 1991 | 0.100 | 0.050 | 0.050 |
| 1992 | 0.100 | 0.050 | 0.050 |
| 1993 | 0.100 | 0.050 | 0.050 |
| 1994 | 0.100 | 0.050 | 0.050 |
| 1995 | 0.100 | 0.050 | 0.050 |
| 1996 | 0.100 | 0.050 | 0.050 |
| 1997 | 0.100 | 0.050 | 0.050 |
| 1998 | 0.100 | 0.050 | 0.050 |
| 1999 | 0.100 | 0.050 | 0.050 |
| 2000 | 0.100 | 0.050 | 0.050 |
| 2001 | 0.100 | 0.050 | 0.050 |
| 2002 | 0.100 | 0.050 | 0.050 |
| 2003 | 0.100 | 0.050 | 0.050 |
| 2004 | 0.100 | 0.050 | 0.050 |
| 2005 | 0.100 | 0.050 | 0.050 |
| 2006 | 0.100 | 0.050 | 0.050 |
| 2007 | 0.100 | 0.050 | 0.050 |
| 2008 | 0.100 | 0.050 | 0.050 |
| 2009 | 0.100 | 0.050 | 0.050 |
| 2010 | 0.100 | 0.050 | 0.050 |
| 2011 | 0.100 | 0.050 | 0.050 |
| 2012 | 0.100 | 0.050 | 0.050 |
| 2013 | 0.100 | 0.050 | 0.050 |
| 2014 | 0.100 | 0.050 | 0.050 |
| 2015 | 0.100 | 0.050 | 0.050 |

**SOURCE: MAP MODEL CASE AWR.S90L
VARIABLES: B04 EMCNX1 EMPP**

TABLE D.4. BELUGA COAL MINING
(THOUSANDS OF EMPLOYEES)

| | KENAI/ COOK INLET | TOTAL LOW-WAGE CONSTRUCTION EMPLOYMENT | TOTAL MINING EMPLOYMENT | TOTAL TRANS- PORTATION EMPLOYMENT |
|------|----------------------|-------------------------------------------------|-------------------------------|--------------------------------------------|
| 1988 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1990 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1991 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1992 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1993 | 0.325 | 0.200 | 0.100 | 0.025 |
| 1994 | 0.450 | 0.200 | 0.200 | 0.050 |
| 1995 | 0.375 | 0.000 | 0.300 | 0.075 |
| 1996 | 0.375 | 0.000 | 0.300 | 0.075 |
| 1997 | 0.375 | 0.000 | 0.300 | 0.075 |
| 1998 | 0.375 | 0.000 | 0.300 | 0.075 |
| 1999 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2000 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2001 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2002 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2003 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2004 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2005 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2006 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2007 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2008 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2009 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2010 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2011 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2012 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2013 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2014 | 0.375 | 0.000 | 0.300 | 0.075 |
| 2015 | 0.375 | 0.000 | 0.300 | 0.075 |

SOURCE: MAP MODEL CASE BCL.S90
VARIABLES: B12 EMCNX2 EMPMINE EMT9X

TABLE D.5. FEDERAL CIVILIAN GOVERNMENT
(THOUSANDS OF EMPLOYEES)

| | ALEUTIAN ISLANDS | ANCHORAGE | BARROW/ NORTH SLOPE | BETHEL | BRISTOL BAY |
|------|---------------------|-----------|---------------------------|--------|----------------|
| 1988 | 0.825 | 10.263 | 0.137 | 0.256 | 0.174 |
| 1989 | 0.829 | 10.314 | 0.138 | 0.257 | 0.175 |
| 1990 | 0.833 | 10.366 | 0.138 | 0.259 | 0.176 |
| 1991 | 0.837 | 10.418 | 0.139 | 0.260 | 0.177 |
| 1992 | 0.842 | 10.470 | 0.140 | 0.261 | 0.178 |
| 1993 | 0.846 | 10.522 | 0.140 | 0.262 | 0.178 |
| 1994 | 0.850 | 10.575 | 0.141 | 0.264 | 0.179 |
| 1995 | 0.854 | 10.628 | 0.142 | 0.265 | 0.180 |
| 1996 | 0.859 | 10.681 | 0.143 | 0.266 | 0.181 |
| 1997 | 0.863 | 10.734 | 0.143 | 0.268 | 0.182 |
| 1998 | 0.867 | 10.788 | 0.144 | 0.269 | 0.183 |
| 1999 | 0.872 | 10.842 | 0.145 | 0.270 | 0.184 |
| 2000 | 0.876 | 10.896 | 0.145 | 0.272 | 0.185 |
| 2001 | 0.880 | 10.950 | 0.146 | 0.273 | 0.186 |
| 2002 | 0.885 | 11.005 | 0.147 | 0.275 | 0.187 |
| 2003 | 0.889 | 11.060 | 0.148 | 0.276 | 0.188 |
| 2004 | 0.894 | 11.116 | 0.148 | 0.277 | 0.188 |
| 2005 | 0.898 | 11.171 | 0.149 | 0.279 | 0.189 |
| 2006 | 0.902 | 11.227 | 0.150 | 0.280 | 0.190 |
| 2007 | 0.907 | 11.283 | 0.151 | 0.281 | 0.191 |
| 2008 | 0.912 | 11.340 | 0.151 | 0.283 | 0.192 |
| 2009 | 0.916 | 11.396 | 0.152 | 0.284 | 0.193 |
| 2010 | 0.921 | 11.453 | 0.153 | 0.286 | 0.194 |
| 2011 | 0.925 | 11.511 | 0.154 | 0.287 | 0.195 |
| 2012 | 0.930 | 11.568 | 0.154 | 0.289 | 0.196 |
| 2013 | 0.935 | 11.626 | 0.155 | 0.290 | 0.197 |
| 2014 | 0.939 | 11.684 | 0.156 | 0.291 | 0.198 |
| 2015 | 0.944 | 11.742 | 0.157 | 0.293 | 0.199 |

SOURCE: MAP MODEL CASE CIV.S90
VARIABLES: G01 G02 G04 G05 G06

TABLE D.5. (CONTINUED)

| | CORDOVA/ MCCARTHY | FAIRBANKS | HAINES | JUNEAU | KENAI/ COOK INLET |
|------|----------------------|-----------|--------|--------|----------------------|
| 1988 | 0.037 | 2.772 | 0.009 | 1.044 | 0.203 |
| 1989 | 0.037 | 2.786 | 0.009 | 1.049 | 0.204 |
| 1990 | 0.037 | 2.800 | 0.009 | 1.054 | 0.205 |
| 1991 | 0.038 | 2.814 | 0.009 | 1.060 | 0.206 |
| 1992 | 0.038 | 2.828 | 0.009 | 1.065 | 0.207 |
| 1993 | 0.038 | 2.842 | 0.009 | 1.070 | 0.208 |
| 1994 | 0.038 | 2.856 | 0.009 | 1.076 | 0.209 |
| 1995 | 0.038 | 2.870 | 0.009 | 1.081 | 0.210 |
| 1996 | 0.039 | 2.885 | 0.009 | 1.086 | 0.211 |
| 1997 | 0.039 | 2.899 | 0.009 | 1.092 | 0.212 |
| 1998 | 0.039 | 2.914 | 0.009 | 1.097 | 0.213 |
| 1999 | 0.039 | 2.928 | 0.010 | 1.103 | 0.214 |
| 2000 | 0.039 | 2.943 | 0.010 | 1.108 | 0.216 |
| 2001 | 0.039 | 2.958 | 0.010 | 1.114 | 0.217 |
| 2002 | 0.040 | 2.972 | 0.010 | 1.119 | 0.218 |
| 2003 | 0.040 | 2.987 | 0.010 | 1.125 | 0.219 |
| 2004 | 0.040 | 3.002 | 0.010 | 1.131 | 0.220 |
| 2005 | 0.040 | 3.017 | 0.010 | 1.136 | 0.221 |
| 2006 | 0.040 | 3.032 | 0.010 | 1.142 | 0.222 |
| 2007 | 0.041 | 3.048 | 0.010 | 1.148 | 0.223 |
| 2008 | 0.041 | 3.063 | 0.010 | 1.154 | 0.224 |
| 2009 | 0.041 | 3.078 | 0.010 | 1.159 | 0.225 |
| 2010 | 0.041 | 3.093 | 0.010 | 1.165 | 0.227 |
| 2011 | 0.041 | 3.109 | 0.010 | 1.171 | 0.228 |
| 2012 | 0.042 | 3.124 | 0.010 | 1.177 | 0.229 |
| 2013 | 0.042 | 3.140 | 0.010 | 1.183 | 0.230 |
| 2014 | 0.042 | 3.156 | 0.010 | 1.189 | 0.231 |
| 2015 | 0.042 | 3.172 | 0.010 | 1.194 | 0.232 |

SOURCE: MAP MODEL CASE CIV.S90
 VARIABLES: G08 G09 G10 G11 G12

TABLE D.5. (CONTINUED)

| | KETCHIKAN | NORTHWEST ARCTIC | KODIAK | KUSKOKWIM | MATANUSKA/ SUSITNA |
|------|-----------|---------------------|--------|-----------|-----------------------|
| 1988 | 0.251 | 0.101 | 0.193 | 0.078 | 0.099 |
| 1989 | 0.252 | 0.102 | 0.194 | 0.078 | 0.099 |
| 1990 | 0.254 | 0.102 | 0.195 | 0.079 | 0.100 |
| 1991 | 0.255 | 0.103 | 0.196 | 0.079 | 0.100 |
| 1992 | 0.256 | 0.103 | 0.197 | 0.080 | 0.101 |
| 1993 | 0.257 | 0.104 | 0.198 | 0.080 | 0.101 |
| 1994 | 0.259 | 0.104 | 0.199 | 0.080 | 0.102 |
| 1995 | 0.260 | 0.105 | 0.200 | 0.081 | 0.103 |
| 1996 | 0.261 | 0.105 | 0.201 | 0.081 | 0.103 |
| 1997 | 0.263 | 0.106 | 0.202 | 0.082 | 0.104 |
| 1998 | 0.264 | 0.106 | 0.203 | 0.082 | 0.104 |
| 1999 | 0.265 | 0.107 | 0.204 | 0.082 | 0.105 |
| 2000 | 0.266 | 0.107 | 0.205 | 0.083 | 0.105 |
| 2001 | 0.268 | 0.108 | 0.206 | 0.083 | 0.106 |
| 2002 | 0.269 | 0.108 | 0.207 | 0.084 | 0.106 |
| 2003 | 0.270 | 0.109 | 0.208 | 0.084 | 0.107 |
| 2004 | 0.272 | 0.109 | 0.209 | 0.084 | 0.107 |
| 2005 | 0.273 | 0.110 | 0.210 | 0.085 | 0.108 |
| 2006 | 0.275 | 0.110 | 0.211 | 0.085 | 0.108 |
| 2007 | 0.276 | 0.111 | 0.212 | 0.086 | 0.109 |
| 2008 | 0.277 | 0.112 | 0.213 | 0.086 | 0.109 |
| 2009 | 0.279 | 0.112 | 0.214 | 0.087 | 0.110 |
| 2010 | 0.280 | 0.113 | 0.215 | 0.087 | 0.110 |
| 2011 | 0.282 | 0.113 | 0.216 | 0.087 | 0.111 |
| 2012 | 0.283 | 0.114 | 0.218 | 0.088 | 0.112 |
| 2013 | 0.284 | 0.114 | 0.219 | 0.088 | 0.112 |
| 2014 | 0.286 | 0.115 | 0.220 | 0.089 | 0.113 |
| 2015 | 0.287 | 0.116 | 0.221 | 0.089 | 0.113 |

SOURCE: MAP MODEL CASE CIV.S90
 VARIABLES: G13 G14 G15 G16 G17

TABLE D.5. (CONTINUED)

| | NOME | PRINCE OF WALES/ OUTER KETCHIKAN | SEWARD | SITKA | SKAGWAY/ YAKUTAT/ ANGOON |
|------|-------|-------------------------------------------|--------|-------|--------------------------------|
| 1988 | 0.094 | 0.110 | 0.045 | 0.255 | 0.121 |
| 1989 | 0.094 | 0.111 | 0.045 | 0.256 | 0.122 |
| 1990 | 0.095 | 0.111 | 0.045 | 0.258 | 0.122 |
| 1991 | 0.095 | 0.112 | 0.046 | 0.259 | 0.123 |
| 1992 | 0.096 | 0.112 | 0.046 | 0.260 | 0.123 |
| 1993 | 0.096 | 0.113 | 0.046 | 0.261 | 0.124 |
| 1994 | 0.097 | 0.113 | 0.046 | 0.263 | 0.125 |
| 1995 | 0.097 | 0.114 | 0.047 | 0.264 | 0.125 |
| 1996 | 0.098 | 0.114 | 0.047 | 0.265 | 0.126 |
| 1997 | 0.098 | 0.115 | 0.047 | 0.267 | 0.127 |
| 1998 | 0.099 | 0.116 | 0.047 | 0.268 | 0.127 |
| 1999 | 0.099 | 0.116 | 0.048 | 0.269 | 0.128 |
| 2000 | 0.100 | 0.117 | 0.048 | 0.271 | 0.128 |
| 2001 | 0.100 | 0.117 | 0.048 | 0.272 | 0.129 |
| 2002 | 0.101 | 0.118 | 0.048 | 0.273 | 0.130 |
| 2003 | 0.101 | 0.119 | 0.048 | 0.275 | 0.130 |
| 2004 | 0.102 | 0.119 | 0.049 | 0.276 | 0.131 |
| 2005 | 0.102 | 0.120 | 0.049 | 0.278 | 0.132 |
| 2006 | 0.103 | 0.120 | 0.049 | 0.279 | 0.132 |
| 2007 | 0.103 | 0.121 | 0.049 | 0.280 | 0.133 |
| 2008 | 0.104 | 0.122 | 0.050 | 0.282 | 0.134 |
| 2009 | 0.104 | 0.122 | 0.050 | 0.283 | 0.134 |
| 2010 | 0.105 | 0.123 | 0.050 | 0.285 | 0.135 |
| 2011 | 0.105 | 0.123 | 0.050 | 0.286 | 0.136 |
| 2012 | 0.106 | 0.124 | 0.051 | 0.287 | 0.136 |
| 2013 | 0.106 | 0.125 | 0.051 | 0.289 | 0.137 |
| 2014 | 0.107 | 0.125 | 0.051 | 0.290 | 0.138 |
| 2015 | 0.108 | 0.126 | 0.051 | 0.292 | 0.138 |

SOURCE: MAP MODEL CASE CIV.S90
 VARIABLES: G18 G19 G21 G22 G23

TABLE D.5. (CONTINUED)

| | SOUTHEAST FAIRBANKS | UPPER YUKON | VALDEZ/ CHITINA/ WHITTIER | WADE HAMPTON | WRANGELL/ PETERSBURG |
|------|------------------------|----------------|---------------------------------|-----------------|-------------------------|
| 1988 | 0.328 | 0.061 | 0.058 | 0.026 | 0.164 |
| 1989 | 0.330 | 0.061 | 0.058 | 0.026 | 0.165 |
| 1990 | 0.331 | 0.062 | 0.059 | 0.026 | 0.166 |
| 1991 | 0.333 | 0.062 | 0.059 | 0.026 | 0.166 |
| 1992 | 0.335 | 0.062 | 0.059 | 0.027 | 0.167 |
| 1993 | 0.336 | 0.063 | 0.059 | 0.027 | 0.168 |
| 1994 | 0.338 | 0.063 | 0.060 | 0.027 | 0.169 |
| 1995 | 0.340 | 0.063 | 0.060 | 0.027 | 0.170 |
| 1996 | 0.341 | 0.063 | 0.060 | 0.027 | 0.171 |
| 1997 | 0.343 | 0.064 | 0.061 | 0.027 | 0.172 |
| 1998 | 0.345 | 0.064 | 0.061 | 0.027 | 0.172 |
| 1999 | 0.346 | 0.064 | 0.061 | 0.027 | 0.173 |
| 2000 | 0.348 | 0.065 | 0.062 | 0.028 | 0.174 |
| 2001 | 0.350 | 0.065 | 0.062 | 0.028 | 0.175 |
| 2002 | 0.352 | 0.065 | 0.062 | 0.028 | 0.176 |
| 2003 | 0.353 | 0.066 | 0.063 | 0.028 | 0.177 |
| 2004 | 0.355 | 0.066 | 0.063 | 0.028 | 0.178 |
| 2005 | 0.357 | 0.066 | 0.063 | 0.028 | 0.179 |
| 2006 | 0.359 | 0.067 | 0.063 | 0.028 | 0.179 |
| 2007 | 0.361 | 0.067 | 0.064 | 0.029 | 0.180 |
| 2008 | 0.362 | 0.067 | 0.064 | 0.029 | 0.181 |
| 2009 | 0.364 | 0.068 | 0.064 | 0.029 | 0.182 |
| 2010 | 0.366 | 0.068 | 0.065 | 0.029 | 0.183 |
| 2011 | 0.368 | 0.068 | 0.065 | 0.029 | 0.184 |
| 2012 | 0.370 | 0.069 | 0.065 | 0.029 | 0.185 |
| 2013 | 0.372 | 0.069 | 0.066 | 0.029 | 0.186 |
| 2014 | 0.373 | 0.069 | 0.066 | 0.030 | 0.187 |
| 2015 | 0.375 | 0.070 | 0.066 | 0.030 | 0.188 |

SOURCE: MAP MODEL CASE CIV.S90
 VARIABLES: G24 G25 G26 G27 G28

TABLE D.5. (CONTINUED)

| | YUKON KOYUKUK ----- | TOTAL CIVILIAN FEDERAL EMPLOYMENT ----- |
|------|---------------------------|-----------------------------------------------------|
| 1988 | 0.170 | 17.874 |
| 1989 | 0.171 | 17.963 |
| 1990 | 0.172 | 18.053 |
| 1991 | 0.173 | 18.143 |
| 1992 | 0.173 | 18.234 |
| 1993 | 0.174 | 18.325 |
| 1994 | 0.175 | 18.417 |
| 1995 | 0.176 | 18.509 |
| 1996 | 0.177 | 18.602 |
| 1997 | 0.178 | 18.695 |
| 1998 | 0.179 | 18.788 |
| 1999 | 0.180 | 18.882 |
| 2000 | 0.180 | 18.976 |
| 2001 | 0.181 | 19.071 |
| 2002 | 0.182 | 19.167 |
| 2003 | 0.183 | 19.262 |
| 2004 | 0.184 | 19.359 |
| 2005 | 0.185 | 19.456 |
| 2006 | 0.186 | 19.553 |
| 2007 | 0.187 | 19.651 |
| 2008 | 0.188 | 19.749 |
| 2009 | 0.189 | 19.848 |
| 2010 | 0.190 | 19.947 |
| 2011 | 0.191 | 20.046 |
| 2012 | 0.192 | 20.147 |
| 2013 | 0.193 | 20.247 |
| 2014 | 0.194 | 20.349 |
| 2015 | 0.195 | 20.450 |

SOURCE: MAP MODEL CASE CIV.S90
 VARIABLES: G29 EMGC

TABLE D.6. TRANS-ALASKA PIPELINE CORROSION REPAIR
(THOUSANDS OF EMPLOYEES)

| | BARROW/ NORTH SLOPE | FAIRBANKS | JUNEAU | VALDEZ/ CHITINA/ WHITTIER | YUKON KOYUKUK | TOTAL HIGH-WAGE CONSTRUCTION EMPLOYMENT |
|------|---------------------------|-----------|--------|---------------------------------|------------------|-----------------------------------------------|
| 1988 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.100 |
| 1990 | 0.056 | 0.058 | 0.000 | 0.000 | 0.112 | 0.226 |
| 1991 | 0.630 | 0.058 | 0.000 | 0.000 | 0.112 | 0.800 |
| 1992 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.050 |
| 1993 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.050 |
| 1994 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1995 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1996 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1997 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1998 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1999 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2009 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

SOURCE: MAP MODEL CASE COR.S90N
VARIABLES: B04 B09 B11 B26 B29 EMCNX1

TABLE D.7. LOGGING AND LUMBER
(THOUSANDS OF EMPLOYEES)

| | ANCHORAGE | BARROW/ NORTH SLOPE | BETHEL | CORDOVA/ MCCARTHY | FAIRBANKS |
|------|-----------|---------------------------|--------|----------------------|-----------|
| 1988 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1989 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1990 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1991 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1992 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1993 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1994 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1995 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1996 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1997 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1998 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 1999 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2000 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2001 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2002 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2003 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2004 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2005 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2006 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2007 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2008 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2009 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2010 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2011 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2012 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2013 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2014 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |
| 2015 | 0.039 | 0.004 | 0.004 | 0.000 | 0.018 |

SOURCE: MAP MODEL CASE FML.S90
VARIABLES: B02 B04 B05 B08 B09

TABLE D.7. (CONTINUED)

| | HAINES | JUNEAU | KENAI/ COOK INLET | KETCHIKAN | KODIAK |
|------|--------|--------|----------------------|-----------|--------|
| 1988 | 0.170 | 0.300 | 0.009 | 0.445 | 0.048 |
| 1989 | 0.170 | 0.300 | 0.015 | 0.445 | 0.050 |
| 1990 | 0.170 | 0.300 | 0.020 | 0.445 | 0.050 |
| 1991 | 0.170 | 0.280 | 0.025 | 0.445 | 0.050 |
| 1992 | 0.170 | 0.260 | 0.030 | 0.445 | 0.050 |
| 1993 | 0.170 | 0.240 | 0.035 | 0.445 | 0.050 |
| 1994 | 0.170 | 0.220 | 0.040 | 0.445 | 0.050 |
| 1995 | 0.170 | 0.200 | 0.040 | 0.445 | 0.040 |
| 1996 | 0.170 | 0.200 | 0.040 | 0.445 | 0.030 |
| 1997 | 0.170 | 0.200 | 0.040 | 0.445 | 0.020 |
| 1998 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 1999 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2000 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2001 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2002 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2003 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2004 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2005 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2006 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2007 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2008 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2009 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2010 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2011 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2012 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2013 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2014 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |
| 2015 | 0.170 | 0.200 | 0.040 | 0.445 | 0.010 |

SOURCE: MAP MODEL CASE FML.S90
 VARIABLES: B10 B11 B12 B13 B15

TABLE D.7. (CONTINUED)

| | MATANUSKA/ SUSITNA | PRINCE OF WALES/ OUTER KETCHIKAN | SEWARD | SKAGWAY/ YAKUTAT/ ANGOON | SOUTHEAST FAIRBANKS |
|------|-----------------------|-------------------------------------------|--------|--------------------------------|------------------------|
| 1988 | 0.018 | 0.600 | 0.000 | 0.250 | 0.004 |
| 1989 | 0.020 | 0.600 | 0.000 | 0.250 | 0.004 |
| 1990 | 0.025 | 0.600 | 0.050 | 0.250 | 0.004 |
| 1991 | 0.030 | 0.540 | 0.110 | 0.230 | 0.004 |
| 1992 | 0.035 | 0.480 | 0.110 | 0.210 | 0.004 |
| 1993 | 0.040 | 0.420 | 0.110 | 0.190 | 0.004 |
| 1994 | 0.040 | 0.360 | 0.110 | 0.170 | 0.004 |
| 1995 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 1996 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 1997 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 1998 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 1999 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2000 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2001 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2002 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2003 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2004 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2005 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2006 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2007 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2008 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2009 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2010 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2011 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2012 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2013 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2014 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |
| 2015 | 0.040 | 0.300 | 0.110 | 0.150 | 0.004 |

SOURCE: MAP MODEL CASE FML.S90
 VARIABLES: B17 B20 B21 B23 B24

TABLE D.7. (CONTINUED)

| | VALDEZ/ CHITINA/ WHITTIER | WRANGELL/ PETERSBURG | YUKON KOYUKUK | TOTAL LOW-WAGE MANUFACTURING EMPLOYMENT |
|------|---------------------------------|-------------------------|------------------|--------------------------------------------------|
| | ----- | ----- | ----- | ----- |
| 1988 | 0.004 | 0.800 | 0.004 | 2.717 |
| 1989 | 0.010 | 0.800 | 0.004 | 2.733 |
| 1990 | 0.050 | 0.800 | 0.004 | 2.833 |
| 1991 | 0.075 | 0.740 | 0.004 | 2.768 |
| 1992 | 0.100 | 0.680 | 0.004 | 2.643 |
| 1993 | 0.100 | 0.620 | 0.004 | 2.493 |
| 1994 | 0.100 | 0.560 | 0.004 | 2.338 |
| 1995 | 0.100 | 0.500 | 0.004 | 2.168 |
| 1996 | 0.075 | 0.500 | 0.004 | 2.133 |
| 1997 | 0.050 | 0.500 | 0.004 | 2.098 |
| 1998 | 0.025 | 0.500 | 0.004 | 2.063 |
| 1999 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2000 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2001 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2002 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2003 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2004 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2005 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2006 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2007 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2008 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2009 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2010 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2011 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2012 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2013 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2014 | 0.010 | 0.500 | 0.004 | 2.048 |
| 2015 | 0.010 | 0.500 | 0.004 | 2.048 |

SOURCE: MAP MODEL CASE FML.S90
 VARIABLES: B26 B28 B29 EMMX2

TABLE D.8. PULP AND PAPER
(THOUSANDS OF EMPLOYEES)

| | KETCHIKAN | SITKA | TOTAL LOW-WAGE MANUFACTURING EMPLOYMENT |
|------|-----------|-------|--------------------------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.635 | 0.313 | 0.948 |
| 1989 | 0.635 | 0.313 | 0.948 |
| 1990 | 0.635 | 0.313 | 0.948 |
| 1991 | 0.635 | 0.313 | 0.948 |
| 1992 | 0.629 | 0.310 | 0.939 |
| 1993 | 0.622 | 0.307 | 0.929 |
| 1994 | 0.616 | 0.304 | 0.920 |
| 1995 | 0.610 | 0.301 | 0.911 |
| 1996 | 0.604 | 0.298 | 0.902 |
| 1997 | 0.598 | 0.295 | 0.893 |
| 1998 | 0.592 | 0.292 | 0.884 |
| 1999 | 0.586 | 0.289 | 0.875 |
| 2000 | 0.580 | 0.286 | 0.866 |
| 2001 | 0.574 | 0.283 | 0.857 |
| 2002 | 0.569 | 0.280 | 0.849 |
| 2003 | 0.563 | 0.277 | 0.840 |
| 2004 | 0.557 | 0.275 | 0.832 |
| 2005 | 0.552 | 0.272 | 0.824 |
| 2006 | 0.546 | 0.269 | 0.815 |
| 2007 | 0.541 | 0.267 | 0.807 |
| 2008 | 0.535 | 0.264 | 0.799 |
| 2009 | 0.530 | 0.261 | 0.791 |
| 2010 | 0.525 | 0.259 | 0.783 |
| 2011 | 0.519 | 0.256 | 0.775 |
| 2012 | 0.514 | 0.253 | 0.768 |
| 2013 | 0.509 | 0.251 | 0.760 |
| 2014 | 0.504 | 0.248 | 0.752 |
| 2015 | 0.499 | 0.246 | 0.745 |

SOURCE: MAP MODEL CASE FMP.S90
VARIABLES: B13 B22 EMMX2

TABLE D.9. GREENS CREEK MINE
(THOUSANDS OF EMPLOYEES)

| | JUNEAU | TOTAL LOW-WAGE CONSTRUCTION EMPLOYMENT | TOTAL MINING EMPLOYMENT |
|------|--------|-------------------------------------------------|-------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.130 | 0.080 | 0.050 |
| 1989 | 0.200 | 0.000 | 0.200 |
| 1990 | 0.250 | 0.000 | 0.250 |
| 1991 | 0.250 | 0.000 | 0.250 |
| 1992 | 0.250 | 0.000 | 0.250 |
| 1993 | 0.250 | 0.000 | 0.250 |
| 1994 | 0.250 | 0.000 | 0.250 |
| 1995 | 0.250 | 0.000 | 0.250 |
| 1996 | 0.250 | 0.000 | 0.250 |
| 1997 | 0.250 | 0.000 | 0.250 |
| 1998 | 0.250 | 0.000 | 0.250 |
| 1999 | 0.250 | 0.000 | 0.250 |
| 2000 | 0.250 | 0.000 | 0.250 |
| 2001 | 0.250 | 0.000 | 0.250 |
| 2002 | 0.250 | 0.000 | 0.250 |
| 2003 | 0.250 | 0.000 | 0.250 |
| 2004 | 0.250 | 0.000 | 0.250 |
| 2005 | 0.250 | 0.000 | 0.250 |
| 2006 | 0.250 | 0.000 | 0.250 |
| 2007 | 0.250 | 0.000 | 0.250 |
| 2008 | 0.250 | 0.000 | 0.250 |
| 2009 | 0.250 | 0.000 | 0.250 |
| 2010 | 0.250 | 0.000 | 0.250 |
| 2011 | 0.250 | 0.000 | 0.250 |
| 2012 | 0.250 | 0.000 | 0.250 |
| 2013 | 0.250 | 0.000 | 0.250 |
| 2014 | 0.250 | 0.000 | 0.250 |
| 2015 | 0.250 | 0.000 | 0.250 |

SOURCE: MAP MODEL CASE GCM.S90
VARIABLES: B11 EMCNX2 EMPMINE

TABLE D.9. GREENS CREEK MINE
(THOUSANDS OF EMPLOYEES)

| | JUNEAU | TOTAL LOW-WAGE CONSTRUCTION EMPLOYMENT | TOTAL MINING EMPLOYMENT |
|------|--------|-------------------------------------------------|-------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.130 | 0.080 | 0.050 |
| 1989 | 0.200 | 0.000 | 0.200 |
| 1990 | 0.250 | 0.000 | 0.250 |
| 1991 | 0.250 | 0.000 | 0.250 |
| 1992 | 0.250 | 0.000 | 0.250 |
| 1993 | 0.250 | 0.000 | 0.250 |
| 1994 | 0.250 | 0.000 | 0.250 |
| 1995 | 0.250 | 0.000 | 0.250 |
| 1996 | 0.250 | 0.000 | 0.250 |
| 1997 | 0.250 | 0.000 | 0.250 |
| 1998 | 0.250 | 0.000 | 0.250 |
| 1999 | 0.250 | 0.000 | 0.250 |
| 2000 | 0.250 | 0.000 | 0.250 |
| 2001 | 0.250 | 0.000 | 0.250 |
| 2002 | 0.250 | 0.000 | 0.250 |
| 2003 | 0.250 | 0.000 | 0.250 |
| 2004 | 0.250 | 0.000 | 0.250 |
| 2005 | 0.250 | 0.000 | 0.250 |
| 2006 | 0.250 | 0.000 | 0.250 |
| 2007 | 0.250 | 0.000 | 0.250 |
| 2008 | 0.250 | 0.000 | 0.250 |
| 2009 | 0.250 | 0.000 | 0.250 |
| 2010 | 0.250 | 0.000 | 0.250 |
| 2011 | 0.250 | 0.000 | 0.250 |
| 2012 | 0.250 | 0.000 | 0.250 |
| 2013 | 0.250 | 0.000 | 0.250 |
| 2014 | 0.250 | 0.000 | 0.250 |
| 2015 | 0.250 | 0.000 | 0.250 |

SOURCE: MAP MODEL CASE GCM.S90
VARIABLES: B11 EMCNX2 EMPMINE

TABLE D.10. KENSINGTON MINE
(THOUSANDS OF EMPLOYEES)

| | JUNEAU | TOTAL HIGH-WAGE CONSTRUCTION EMPLOYMENT | TOTAL MINING EMPLOYMENT |
|------|--------|--------------------------------------------------|-------------------------------|
| 1988 | 0.050 | 0.050 | 0.000 |
| 1989 | 0.040 | 0.040 | 0.000 |
| 1990 | 0.070 | 0.070 | 0.000 |
| 1991 | 0.150 | 0.150 | 0.000 |
| 1992 | 0.300 | 0.300 | 0.000 |
| 1993 | 0.250 | 0.100 | 0.150 |
| 1994 | 0.340 | 0.000 | 0.340 |
| 1995 | 0.340 | 0.000 | 0.340 |
| 1996 | 0.340 | 0.000 | 0.340 |
| 1997 | 0.340 | 0.000 | 0.340 |
| 1998 | 0.340 | 0.000 | 0.340 |
| 1999 | 0.340 | 0.000 | 0.340 |
| 2000 | 0.340 | 0.000 | 0.340 |
| 2001 | 0.340 | 0.000 | 0.340 |
| 2002 | 0.340 | 0.000 | 0.340 |
| 2003 | 0.340 | 0.000 | 0.340 |
| 2004 | 0.340 | 0.000 | 0.340 |
| 2005 | 0.340 | 0.000 | 0.340 |
| 2006 | 0.340 | 0.000 | 0.340 |
| 2007 | 0.340 | 0.000 | 0.340 |
| 2008 | 0.340 | 0.000 | 0.340 |
| 2009 | 0.340 | 0.000 | 0.340 |
| 2010 | 0.340 | 0.000 | 0.340 |
| 2011 | 0.340 | 0.000 | 0.340 |
| 2012 | 0.340 | 0.000 | 0.340 |
| 2013 | 0.340 | 0.000 | 0.340 |
| 2014 | 0.340 | 0.000 | 0.340 |
| 2015 | 0.340 | 0.000 | 0.340 |

SOURCE: MAP MODEL CASE KEN.S90
VARIABLES: B11 EMCNX1 EMPMINE

TABLE D.11. LIGHT ARMY DIVISION DEPLOYMENT
(THOUSANDS OF EMPLOYEES)

| | PRIVATE SECTOR | | GOVERNMENT | |
|------|----------------|-----------|------------|-----------|
| | ANCHORAGE | FAIRBANKS | ANCHORAGE | FAIRBANKS |
| 1988 | 0.125 | 0.375 | 3.420 | 3.510 |
| 1989 | 0.075 | 0.225 | 3.430 | 3.540 |
| 1990 | 0.050 | 0.150 | 3.170 | 3.430 |
| 1991 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1992 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1993 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1994 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1995 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1996 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1997 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1998 | 0.000 | 0.000 | 2.920 | 3.810 |
| 1999 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2000 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2001 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2002 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2003 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2004 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2005 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2006 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2007 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2008 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2009 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2010 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2011 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2012 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2013 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2014 | 0.000 | 0.000 | 2.920 | 3.810 |
| 2015 | 0.000 | 0.000 | 2.920 | 3.810 |

SOURCE: MAP MODEL CASE LID.S90
VARIABLES: B02 B09 G02 G09

TABLE D.11. (CONTINUED)

| | TOTAL LOW-WAGE CONSTRUCTION EMPLOYMENT ----- | TOTAL CIVILIAN FEDERAL EMPLOYMENT ----- | TOTAL ACTIVE DUTY MILITARY EMPLOYMENT ----- |
|------|----------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| 1988 | 0.500 | 0.210 | 6.720 |
| 1989 | 0.300 | 0.250 | 6.720 |
| 1990 | 0.200 | 0.250 | 6.350 |
| 1991 | 0.000 | 0.300 | 6.430 |
| 1992 | 0.000 | 0.300 | 6.430 |
| 1993 | 0.000 | 0.300 | 6.430 |
| 1994 | 0.000 | 0.300 | 6.430 |
| 1995 | 0.000 | 0.300 | 6.430 |
| 1996 | 0.000 | 0.300 | 6.430 |
| 1997 | 0.000 | 0.300 | 6.430 |
| 1998 | 0.000 | 0.300 | 6.430 |
| 1999 | 0.000 | 0.300 | 6.430 |
| 2000 | 0.000 | 0.300 | 6.430 |
| 2001 | 0.000 | 0.300 | 6.430 |
| 2002 | 0.000 | 0.300 | 6.430 |
| 2003 | 0.000 | 0.300 | 6.430 |
| 2004 | 0.000 | 0.300 | 6.430 |
| 2005 | 0.000 | 0.300 | 6.430 |
| 2006 | 0.000 | 0.300 | 6.430 |
| 2007 | 0.000 | 0.300 | 6.430 |
| 2008 | 0.000 | 0.300 | 6.430 |
| 2009 | 0.000 | 0.300 | 6.430 |
| 2010 | 0.000 | 0.300 | 6.430 |
| 2011 | 0.000 | 0.300 | 6.430 |
| 2012 | 0.000 | 0.300 | 6.430 |
| 2013 | 0.000 | 0.300 | 6.430 |
| 2014 | 0.000 | 0.300 | 6.430 |
| 2015 | 0.000 | 0.300 | 6.430 |

SOURCE: MAP MODEL CASE LID.S90
 VARIABLES: EMCNX2 EMGC EMGM

TABLE D.12. FEDERAL MILITARY
(THOUSANDS OF EMPLOYEES)

| | ALEUTIAN ISLANDS | ANCHORAGE | BARROW/ NORTH SLOPE | BETHEL | BRISTOL BAY |
|------|---------------------|-----------|---------------------------|--------|----------------|
| 1988 | 2.698 | 7.678 | 0.000 | 0.000 | 0.283 |
| 1989 | 2.698 | 7.678 | 0.000 | 0.000 | 0.283 |
| 1990 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1991 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1992 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1993 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1994 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1995 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1996 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1997 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1998 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 1999 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2000 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2001 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2002 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2003 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2004 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2005 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2006 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2007 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2008 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2009 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2010 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2011 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2012 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2013 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2014 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |
| 2015 | 2.698 | 7.598 | 0.000 | 0.000 | 0.283 |

SOURCE: MAP MODEL CASE MIL.S90
VARIABLES: G01 G02 G04 G05 G06

TABLE D.12. (CONTINUED)

| | CORDOVA/ MCCARTHY | FAIRBANKS | HAINES | JUNEAU | KENAI/ COOK INLET |
|------|----------------------|-----------|--------|--------|----------------------|
| 1988 | 0.043 | 3.757 | 0.000 | 0.195 | 0.067 |
| 1989 | 0.043 | 3.757 | 0.000 | 0.195 | 0.067 |
| 1990 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1991 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1992 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1993 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1994 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1995 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1996 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1997 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1998 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 1999 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2000 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2001 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2002 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2003 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2004 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2005 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2006 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2007 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2008 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2009 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2010 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2011 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2012 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2013 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2014 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |
| 2015 | 0.043 | 3.967 | 0.000 | 0.195 | 0.067 |

SOURCE: MAP MODEL CASE MIL.S90
 VARIABLES: G08 G09 G10 G11 G12

TABLE D.12. (CONTINUED)

| | NORTHWEST | | | MATANUSKA/ | |
|------|-----------|--------|--------|------------|---------|
| | KETCHIKAN | ARCTIC | KODIAK | KUSKOKWIM | SUSITNA |
| 1988 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1989 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1990 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1991 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1992 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1993 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1994 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1995 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1996 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1997 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1998 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 1999 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2000 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2001 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2002 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2003 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2004 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2005 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2006 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2007 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2008 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2009 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2010 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2011 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2012 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2013 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2014 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |
| 2015 | 0.205 | 0.000 | 0.992 | 0.027 | 0.000 |

SOURCE: MAP MODEL CASE MIL.S90
 VARIABLES: G13 G14 G15 G16 G17

TABLE D.12. (CONTINUED)

| | NOME | PRINCE OF WALES/OUTER KETCHIKAN | SEWARD | SITKA | SKAGWAY/ YAKUTAT/ ANGOON |
|------|-------|---------------------------------------|--------|-------|--------------------------------|
| 1988 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1989 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1990 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1991 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1992 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1993 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1994 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1995 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1996 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1997 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1998 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 1999 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2000 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2001 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2002 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2003 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2004 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2005 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2006 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2007 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2008 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2009 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2010 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2011 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2012 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2013 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2014 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |
| 2015 | 0.027 | 0.000 | 0.018 | 0.214 | 0.000 |

SOURCE: MAP MODEL CASE MIL.S90
 VARIABLES: G18 G19 G21 G22 G23

TABLE D.12. (CONTINUED)

| | SOUTHEAST FAIRBANKS | UPPER YUKON | VALDEZ/ CHITINA/ WHITTIER | WADE HAMPTON | WRANGELL/ PETERSBURG |
|------|------------------------|----------------|---------------------------------|-----------------|-------------------------|
| 1988 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1989 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1990 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1991 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1992 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1993 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1994 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1995 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1996 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1997 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1998 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 1999 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2000 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2001 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2002 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2003 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2004 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2005 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2006 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2007 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2008 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2009 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2010 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2011 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2012 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2013 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2014 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |
| 2015 | 0.658 | 0.027 | 0.033 | 0.000 | 0.028 |

SOURCE: MAP MODEL CASE MIL.S90
 VARIABLES: G24 G25 G26 G27 G28

TABLE D.12. (CONTINUED)

| | YUKON KOYUKUK ----- | TOTAL ACTIVE DUTY MILITARY EMPLOYMENT ----- |
|------|---------------------------|---------------------------------------------------------|
| 1988 | 0.394 | 17.344 |
| 1989 | 0.394 | 17.344 |
| 1990 | 0.394 | 17.474 |
| 1991 | 0.394 | 17.474 |
| 1992 | 0.394 | 17.474 |
| 1993 | 0.394 | 17.474 |
| 1994 | 0.394 | 17.474 |
| 1995 | 0.394 | 17.474 |
| 1996 | 0.394 | 17.474 |
| 1997 | 0.394 | 17.474 |
| 1998 | 0.394 | 17.474 |
| 1999 | 0.394 | 17.474 |
| 2000 | 0.394 | 17.474 |
| 2001 | 0.394 | 17.474 |
| 2002 | 0.394 | 17.474 |
| 2003 | 0.394 | 17.474 |
| 2004 | 0.394 | 17.474 |
| 2005 | 0.394 | 17.474 |
| 2006 | 0.394 | 17.474 |
| 2007 | 0.394 | 17.474 |
| 2008 | 0.394 | 17.474 |
| 2009 | 0.394 | 17.474 |
| 2010 | 0.394 | 17.474 |
| 2011 | 0.394 | 17.474 |
| 2012 | 0.394 | 17.474 |
| 2013 | 0.394 | 17.474 |
| 2014 | 0.394 | 17.474 |
| 2015 | 0.394 | 17.474 |

SOURCE: MAP MODEL CASE MIL.S90
 VARIABLES: G29 EMGM

**TABLE D.13. NORTH SLOPE PETROLEUM
(THOUSANDS OF EMPLOYEES)**

| | BARROW/ NORTH SLOPE | TOTAL HIGH-WAGE CONSTRUCTION EMPLOYMENT | TOTAL PETROLEUM MINING EMPLOYMENT |
|------|------------------------------------|------------------------------------------------------------|------------------------------------------------------|
| | ----- | ----- | ----- |
| 1988 | 3.096 | 0.272 | 2.824 |
| 1989 | 3.200 | 0.300 | 2.900 |
| 1990 | 3.300 | 0.300 | 3.000 |
| 1991 | 3.500 | 0.400 | 3.100 |
| 1992 | 3.700 | 0.500 | 3.200 |
| 1993 | 3.900 | 0.600 | 3.300 |
| 1994 | 4.100 | 0.700 | 3.400 |
| 1995 | 4.300 | 0.800 | 3.500 |
| 1996 | 4.400 | 0.900 | 3.500 |
| 1997 | 4.500 | 1.000 | 3.500 |
| 1998 | 4.500 | 1.000 | 3.500 |
| 1999 | 4.500 | 1.000 | 3.500 |
| 2000 | 4.500 | 1.000 | 3.500 |
| 2001 | 4.500 | 1.000 | 3.500 |
| 2002 | 4.500 | 1.000 | 3.500 |
| 2003 | 4.500 | 1.000 | 3.500 |
| 2004 | 4.500 | 1.000 | 3.500 |
| 2005 | 4.500 | 1.000 | 3.500 |
| 2006 | 4.500 | 1.000 | 3.500 |
| 2007 | 4.500 | 1.000 | 3.500 |
| 2008 | 4.500 | 1.000 | 3.500 |
| 2009 | 4.500 | 1.000 | 3.500 |
| 2010 | 4.500 | 1.000 | 3.500 |
| 2011 | 4.500 | 1.000 | 3.500 |
| 2012 | 4.500 | 1.000 | 3.500 |
| 2013 | 4.500 | 1.000 | 3.500 |
| 2014 | 4.500 | 1.000 | 3.500 |
| 2015 | 4.500 | 1.000 | 3.500 |

**SOURCE: MAP MODEL CASE NSO.S90H
VARIABLES: B04 EMCNX1 EMPP**

TABLE D.14. OIL INDUSTRY HEADQUARTERS
(THOUSANDS OF EMPLOYEES)

| | ANCHORAGE | FAIRBANKS | TOTAL PETROLEUM MINING EMPLOYMENT |
|------|-----------|-----------|--------------------------------------------|
| | ----- | ----- | ----- |
| 1988 | 4.662 | 0.050 | 4.712 |
| 1989 | 4.755 | 0.051 | 4.806 |
| 1990 | 4.850 | 0.052 | 4.902 |
| 1991 | 4.947 | 0.053 | 5.000 |
| 1992 | 5.046 | 0.054 | 5.100 |
| 1993 | 5.147 | 0.055 | 5.202 |
| 1994 | 5.250 | 0.056 | 5.306 |
| 1995 | 5.355 | 0.057 | 5.413 |
| 1996 | 5.462 | 0.059 | 5.521 |
| 1997 | 5.572 | 0.060 | 5.631 |
| 1998 | 5.683 | 0.061 | 5.744 |
| 1999 | 5.797 | 0.062 | 5.859 |
| 2000 | 5.913 | 0.063 | 5.976 |
| 2001 | 6.031 | 0.065 | 6.096 |
| 2002 | 6.151 | 0.066 | 6.217 |
| 2003 | 6.274 | 0.067 | 6.342 |
| 2004 | 6.400 | 0.069 | 6.469 |
| 2005 | 6.528 | 0.070 | 6.598 |
| 2006 | 6.659 | 0.071 | 6.730 |
| 2007 | 6.792 | 0.073 | 6.865 |
| 2008 | 6.928 | 0.074 | 7.002 |
| 2009 | 7.066 | 0.076 | 7.142 |
| 2010 | 7.207 | 0.077 | 7.285 |
| 2011 | 7.352 | 0.079 | 7.430 |
| 2012 | 7.499 | 0.080 | 7.579 |
| 2013 | 7.649 | 0.082 | 7.731 |
| 2014 | 7.802 | 0.084 | 7.885 |
| 2015 | 7.958 | 0.085 | 8.043 |

SOURCE: MAP MODEL CASE OHQ.S90
VARIABLES: B02 B09 EMPP

TABLE D.15. OTHER MINING
(THOUSANDS OF EMPLOYEES)

| | ALEUTIAN ISLANDS | ANCHORAGE | BARROW/ NORTH SLOPE | BETHEL | BRISTOL BAY |
|------|---------------------|-----------|---------------------------|--------|----------------|
| 1988 | 0.003 | 0.183 | 0.000 | 0.020 | 0.002 |
| 1989 | 0.003 | 0.188 | 0.000 | 0.021 | 0.002 |
| 1990 | 0.003 | 0.194 | 0.000 | 0.021 | 0.002 |
| 1991 | 0.003 | 0.200 | 0.000 | 0.022 | 0.002 |
| 1992 | 0.003 | 0.206 | 0.000 | 0.023 | 0.002 |
| 1993 | 0.003 | 0.212 | 0.000 | 0.023 | 0.002 |
| 1994 | 0.004 | 0.219 | 0.000 | 0.024 | 0.002 |
| 1995 | 0.004 | 0.225 | 0.000 | 0.025 | 0.002 |
| 1996 | 0.004 | 0.232 | 0.000 | 0.025 | 0.003 |
| 1997 | 0.004 | 0.239 | 0.000 | 0.026 | 0.003 |
| 1998 | 0.004 | 0.246 | 0.000 | 0.027 | 0.003 |
| 1999 | 0.004 | 0.253 | 0.000 | 0.028 | 0.003 |
| 2000 | 0.004 | 0.261 | 0.000 | 0.029 | 0.003 |
| 2001 | 0.004 | 0.269 | 0.000 | 0.029 | 0.003 |
| 2002 | 0.005 | 0.277 | 0.000 | 0.030 | 0.003 |
| 2003 | 0.005 | 0.285 | 0.000 | 0.031 | 0.003 |
| 2004 | 0.005 | 0.294 | 0.000 | 0.032 | 0.003 |
| 2005 | 0.005 | 0.302 | 0.000 | 0.033 | 0.003 |
| 2006 | 0.005 | 0.312 | 0.000 | 0.034 | 0.003 |
| 2007 | 0.005 | 0.321 | 0.000 | 0.035 | 0.004 |
| 2008 | 0.005 | 0.331 | 0.000 | 0.036 | 0.004 |
| 2009 | 0.006 | 0.340 | 0.000 | 0.037 | 0.004 |
| 2010 | 0.006 | 0.351 | 0.000 | 0.038 | 0.004 |
| 2011 | 0.006 | 0.361 | 0.000 | 0.039 | 0.004 |
| 2012 | 0.006 | 0.372 | 0.000 | 0.041 | 0.004 |
| 2013 | 0.006 | 0.383 | 0.000 | 0.042 | 0.004 |
| 2014 | 0.006 | 0.395 | 0.000 | 0.043 | 0.004 |
| 2015 | 0.007 | 0.406 | 0.000 | 0.044 | 0.004 |

SOURCE: MAP MODEL CASE OMN.S90
VARIABLES: B01 B02 B04 B05 B06

TABLE D.15. (CONTINUED)

| | CORDOVA/ MCCARTHY | FAIRBANKS | JUNEAU | KENAI/ COOK INLET | NORTHWEST ARCTIC |
|------|----------------------|-----------|--------|----------------------|---------------------|
| 1988 | 0.002 | 0.130 | 0.090 | 0.002 | 0.030 |
| 1989 | 0.002 | 0.134 | 0.093 | 0.002 | 0.031 |
| 1990 | 0.002 | 0.138 | 0.095 | 0.002 | 0.032 |
| 1991 | 0.002 | 0.142 | 0.098 | 0.002 | 0.033 |
| 1992 | 0.002 | 0.146 | 0.101 | 0.002 | 0.034 |
| 1993 | 0.002 | 0.151 | 0.104 | 0.002 | 0.035 |
| 1994 | 0.002 | 0.155 | 0.107 | 0.002 | 0.036 |
| 1995 | 0.002 | 0.160 | 0.111 | 0.002 | 0.037 |
| 1996 | 0.003 | 0.165 | 0.114 | 0.003 | 0.038 |
| 1997 | 0.003 | 0.170 | 0.117 | 0.003 | 0.039 |
| 1998 | 0.003 | 0.175 | 0.121 | 0.003 | 0.040 |
| 1999 | 0.003 | 0.180 | 0.125 | 0.003 | 0.042 |
| 2000 | 0.003 | 0.185 | 0.128 | 0.003 | 0.043 |
| 2001 | 0.003 | 0.191 | 0.132 | 0.003 | 0.044 |
| 2002 | 0.003 | 0.197 | 0.136 | 0.003 | 0.045 |
| 2003 | 0.003 | 0.203 | 0.140 | 0.003 | 0.047 |
| 2004 | 0.003 | 0.209 | 0.144 | 0.003 | 0.048 |
| 2005 | 0.003 | 0.215 | 0.149 | 0.003 | 0.050 |
| 2006 | 0.003 | 0.221 | 0.153 | 0.003 | 0.051 |
| 2007 | 0.004 | 0.228 | 0.158 | 0.004 | 0.053 |
| 2008 | 0.004 | 0.235 | 0.163 | 0.004 | 0.054 |
| 2009 | 0.004 | 0.242 | 0.167 | 0.004 | 0.056 |
| 2010 | 0.004 | 0.249 | 0.172 | 0.004 | 0.057 |
| 2011 | 0.004 | 0.257 | 0.178 | 0.004 | 0.059 |
| 2012 | 0.004 | 0.264 | 0.183 | 0.004 | 0.061 |
| 2013 | 0.004 | 0.272 | 0.188 | 0.004 | 0.063 |
| 2014 | 0.004 | 0.280 | 0.194 | 0.004 | 0.065 |
| 2015 | 0.004 | 0.289 | 0.200 | 0.004 | 0.067 |

SOURCE: MAP MODEL CASE OMN.S90
 VARIABLES: B08 B09 B11 B12 B14

TABLE D.15. (CONTINUED)

| | KUSKOKWIM | MATANUSKA/ SUSITNA | NOME | PRINCE OF WALES/OUTER KETCHIKAN | SEWARD |
|------|-----------|-----------------------|-------|---------------------------------------|--------|
| | ----- | ----- | ----- | ----- | ----- |
| 1988 | 0.010 | 0.020 | 0.271 | 0.002 | 0.010 |
| 1989 | 0.010 | 0.021 | 0.279 | 0.002 | 0.010 |
| 1990 | 0.011 | 0.021 | 0.288 | 0.002 | 0.011 |
| 1991 | 0.011 | 0.022 | 0.296 | 0.002 | 0.011 |
| 1992 | 0.011 | 0.023 | 0.305 | 0.002 | 0.011 |
| 1993 | 0.012 | 0.023 | 0.314 | 0.002 | 0.012 |
| 1994 | 0.012 | 0.024 | 0.324 | 0.002 | 0.012 |
| 1995 | 0.012 | 0.025 | 0.333 | 0.002 | 0.012 |
| 1996 | 0.013 | 0.025 | 0.343 | 0.003 | 0.013 |
| 1997 | 0.013 | 0.026 | 0.354 | 0.003 | 0.013 |
| 1998 | 0.013 | 0.027 | 0.364 | 0.003 | 0.013 |
| 1999 | 0.014 | 0.028 | 0.375 | 0.003 | 0.014 |
| 2000 | 0.014 | 0.029 | 0.386 | 0.003 | 0.014 |
| 2001 | 0.015 | 0.029 | 0.398 | 0.003 | 0.015 |
| 2002 | 0.015 | 0.030 | 0.410 | 0.003 | 0.015 |
| 2003 | 0.016 | 0.031 | 0.422 | 0.003 | 0.016 |
| 2004 | 0.016 | 0.032 | 0.435 | 0.003 | 0.016 |
| 2005 | 0.017 | 0.033 | 0.448 | 0.003 | 0.017 |
| 2006 | 0.017 | 0.034 | 0.461 | 0.003 | 0.017 |
| 2007 | 0.018 | 0.035 | 0.475 | 0.004 | 0.018 |
| 2008 | 0.018 | 0.036 | 0.489 | 0.004 | 0.018 |
| 2009 | 0.019 | 0.037 | 0.504 | 0.004 | 0.019 |
| 2010 | 0.019 | 0.038 | 0.519 | 0.004 | 0.019 |
| 2011 | 0.020 | 0.039 | 0.535 | 0.004 | 0.020 |
| 2012 | 0.020 | 0.041 | 0.551 | 0.004 | 0.020 |
| 2013 | 0.021 | 0.042 | 0.567 | 0.004 | 0.021 |
| 2014 | 0.022 | 0.043 | 0.584 | 0.004 | 0.022 |
| 2015 | 0.022 | 0.044 | 0.602 | 0.004 | 0.022 |

SOURCE: MAP MODEL CASE OMN.S90
 VARIABLES: B16 B17 B18 B19 B21

TABLE D.15. (CONTINUED)

| | SITKA | SOUTHEAST FAIRBANKS | UPPER YUKON | VALDEZ/ CHITINA/ WHITTIER | WADE HAMPTON |
|------|-------|------------------------|----------------|---------------------------------|-----------------|
| 1988 | 0.005 | 0.010 | 0.010 | 0.002 | 0.002 |
| 1989 | 0.005 | 0.010 | 0.010 | 0.002 | 0.002 |
| 1990 | 0.005 | 0.011 | 0.011 | 0.002 | 0.002 |
| 1991 | 0.005 | 0.011 | 0.011 | 0.002 | 0.002 |
| 1992 | 0.006 | 0.011 | 0.011 | 0.002 | 0.002 |
| 1993 | 0.006 | 0.012 | 0.012 | 0.002 | 0.002 |
| 1994 | 0.006 | 0.012 | 0.012 | 0.002 | 0.002 |
| 1995 | 0.006 | 0.012 | 0.012 | 0.002 | 0.002 |
| 1996 | 0.006 | 0.013 | 0.013 | 0.003 | 0.003 |
| 1997 | 0.007 | 0.013 | 0.013 | 0.003 | 0.003 |
| 1998 | 0.007 | 0.013 | 0.013 | 0.003 | 0.003 |
| 1999 | 0.007 | 0.014 | 0.014 | 0.003 | 0.003 |
| 2000 | 0.007 | 0.014 | 0.014 | 0.003 | 0.003 |
| 2001 | 0.007 | 0.015 | 0.015 | 0.003 | 0.003 |
| 2002 | 0.008 | 0.015 | 0.015 | 0.003 | 0.003 |
| 2003 | 0.008 | 0.016 | 0.016 | 0.003 | 0.003 |
| 2004 | 0.008 | 0.016 | 0.016 | 0.003 | 0.003 |
| 2005 | 0.008 | 0.017 | 0.017 | 0.003 | 0.003 |
| 2006 | 0.009 | 0.017 | 0.017 | 0.003 | 0.003 |
| 2007 | 0.009 | 0.018 | 0.018 | 0.004 | 0.004 |
| 2008 | 0.009 | 0.018 | 0.018 | 0.004 | 0.004 |
| 2009 | 0.009 | 0.019 | 0.019 | 0.004 | 0.004 |
| 2010 | 0.010 | 0.019 | 0.019 | 0.004 | 0.004 |
| 2011 | 0.010 | 0.020 | 0.020 | 0.004 | 0.004 |
| 2012 | 0.010 | 0.020 | 0.020 | 0.004 | 0.004 |
| 2013 | 0.010 | 0.021 | 0.021 | 0.004 | 0.004 |
| 2014 | 0.011 | 0.022 | 0.022 | 0.004 | 0.004 |
| 2015 | 0.011 | 0.022 | 0.022 | 0.004 | 0.004 |

SOURCE: MAP MODEL CASE OMN.S90

VARIABLES: B22 B24 B25 B26 B27

TABLE D.15. (CONTINUED)

| | YUKON KOYUKUK | TOTAL MINING EMPLOYMENT | TOTAL TRANSPORTATION EMPLOYMENT |
|------|------------------|-------------------------------|---------------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.125 | 0.921 | 0.008 |
| 1989 | 0.129 | 0.949 | 0.008 |
| 1990 | 0.133 | 0.977 | 0.008 |
| 1991 | 0.137 | 1.006 | 0.009 |
| 1992 | 0.141 | 1.037 | 0.009 |
| 1993 | 0.145 | 1.068 | 0.009 |
| 1994 | 0.149 | 1.100 | 0.010 |
| 1995 | 0.154 | 1.133 | 0.010 |
| 1996 | 0.158 | 1.167 | 0.010 |
| 1997 | 0.163 | 1.202 | 0.010 |
| 1998 | 0.168 | 1.238 | 0.011 |
| 1999 | 0.173 | 1.275 | 0.011 |
| 2000 | 0.178 | 1.313 | 0.011 |
| 2001 | 0.184 | 1.353 | 0.012 |
| 2002 | 0.189 | 1.393 | 0.012 |
| 2003 | 0.195 | 1.435 | 0.012 |
| 2004 | 0.201 | 1.478 | 0.013 |
| 2005 | 0.207 | 1.522 | 0.013 |
| 2006 | 0.213 | 1.568 | 0.014 |
| 2007 | 0.219 | 1.615 | 0.014 |
| 2008 | 0.226 | 1.663 | 0.014 |
| 2009 | 0.233 | 1.713 | 0.015 |
| 2010 | 0.240 | 1.765 | 0.015 |
| 2011 | 0.247 | 1.818 | 0.016 |
| 2012 | 0.254 | 1.872 | 0.016 |
| 2013 | 0.262 | 1.928 | 0.017 |
| 2014 | 0.270 | 1.986 | 0.017 |
| 2015 | 0.278 | 2.046 | 0.018 |

SOURCE: MAP MODEL CASE OMN.S90
 VARIABLES: B29 EMPMINE EMT9X

TABLE D.16. RED DOG MINE
(THOUSANDS OF EMPLOYEES)

| | ANCHORAGE | FAIRBANKS | NORTHWEST ARCTIC |
|------|-----------|-----------|---------------------|
| | ----- | ----- | ----- |
| 1988 | 0.230 | 0.160 | 0.000 |
| 1989 | 0.230 | 0.160 | 0.000 |
| 1990 | 0.030 | 0.020 | 0.340 |
| 1991 | 0.000 | 0.000 | 0.390 |
| 1992 | 0.000 | 0.000 | 0.390 |
| 1993 | 0.000 | 0.000 | 0.390 |
| 1994 | 0.000 | 0.000 | 0.390 |
| 1995 | 0.000 | 0.000 | 0.390 |
| 1996 | 0.000 | 0.000 | 0.390 |
| 1997 | 0.000 | 0.000 | 0.390 |
| 1998 | 0.000 | 0.000 | 0.390 |
| 1999 | 0.000 | 0.000 | 0.390 |
| 2000 | 0.000 | 0.000 | 0.390 |
| 2001 | 0.000 | 0.000 | 0.390 |
| 2002 | 0.000 | 0.000 | 0.390 |
| 2003 | 0.000 | 0.000 | 0.390 |
| 2004 | 0.000 | 0.000 | 0.390 |
| 2005 | 0.000 | 0.000 | 0.390 |
| 2006 | 0.000 | 0.000 | 0.390 |
| 2007 | 0.000 | 0.000 | 0.390 |
| 2008 | 0.000 | 0.000 | 0.390 |
| 2009 | 0.000 | 0.000 | 0.390 |
| 2010 | 0.000 | 0.000 | 0.390 |
| 2011 | 0.000 | 0.000 | 0.390 |
| 2012 | 0.000 | 0.000 | 0.390 |
| 2013 | 0.000 | 0.000 | 0.390 |
| 2014 | 0.000 | 0.000 | 0.390 |
| 2015 | 0.000 | 0.000 | 0.390 |

SOURCE: MAP MODEL CASE RED.S90
VARIABLES: B02 B09 B14

TABLE D.16. (CONTINUED)

| | TOTAL LOW-WAGE CONSTRUCTION EMPLOYMENT ----- | TOTAL MINING EMPLOYMENT ----- | TOTAL TRANSPORTATION EMPLOYMENT ----- |
|------|----------------------------------------------------------|----------------------------------------|------------------------------------------------|
| 1988 | 0.390 | 0.000 | 0.000 |
| 1989 | 0.390 | 0.000 | 0.000 |
| 1990 | 0.050 | 0.300 | 0.040 |
| 1991 | 0.000 | 0.350 | 0.040 |
| 1992 | 0.000 | 0.350 | 0.040 |
| 1993 | 0.000 | 0.350 | 0.040 |
| 1994 | 0.000 | 0.350 | 0.040 |
| 1995 | 0.000 | 0.350 | 0.040 |
| 1996 | 0.000 | 0.350 | 0.040 |
| 1997 | 0.000 | 0.350 | 0.040 |
| 1998 | 0.000 | 0.350 | 0.040 |
| 1999 | 0.000 | 0.350 | 0.040 |
| 2000 | 0.000 | 0.350 | 0.040 |
| 2001 | 0.000 | 0.350 | 0.040 |
| 2002 | 0.000 | 0.350 | 0.040 |
| 2003 | 0.000 | 0.350 | 0.040 |
| 2004 | 0.000 | 0.350 | 0.040 |
| 2005 | 0.000 | 0.350 | 0.040 |
| 2006 | 0.000 | 0.350 | 0.040 |
| 2007 | 0.000 | 0.350 | 0.040 |
| 2008 | 0.000 | 0.350 | 0.040 |
| 2009 | 0.000 | 0.350 | 0.040 |
| 2010 | 0.000 | 0.350 | 0.040 |
| 2011 | 0.000 | 0.350 | 0.040 |
| 2012 | 0.000 | 0.350 | 0.040 |
| 2013 | 0.000 | 0.350 | 0.040 |
| 2014 | 0.000 | 0.350 | 0.040 |
| 2015 | 0.000 | 0.350 | 0.040 |

SOURCE: MAP MODEL CASE RED.S90
 VARIABLES: EMCNX2 EMPMINE EMT9X

TABLE D.17. COMMERCIAL FISH HARVESTING AND PROCESSING--BOTTOMFISH
(THOUSANDS OF EMPLOYEES)

| | ALEUTIAN ISLANDS | ANCHORAGE | BRISTOL BAY | KENAI/ COOK INLET | KODIAK |
|------|---------------------|-----------|----------------|----------------------|--------|
| 1988 | 1.200 | 0.200 | 0.300 | 0.138 | 0.260 |
| 1989 | 1.200 | 0.200 | 0.300 | 0.138 | 0.270 |
| 1990 | 1.200 | 0.200 | 0.300 | 0.138 | 0.280 |
| 1991 | 1.200 | 0.200 | 0.300 | 0.138 | 0.290 |
| 1992 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 1993 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 1994 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 1995 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 1996 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 1997 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 1998 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 1999 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2000 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2001 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2002 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2003 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2004 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2005 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2006 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2007 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2008 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2009 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2010 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2011 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2012 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2013 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2014 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |
| 2015 | 1.200 | 0.200 | 0.300 | 0.138 | 0.300 |

SOURCE: MAP MODEL CASE SBO.S90

VARIABLES: B01 B02 B06 B12 B15

TABLE D.17. (CONTINUED)

| | TOTAL FISH HARVESTING EMPLOYMENT | TOTAL LOW-WAGE MANUFACTURING EMPLOYMENT |
|------|----------------------------------------|-----------------------------------------------|
| | ----- | ----- |
| 1988 | 0.839 | 1.259 |
| 1989 | 0.843 | 1.265 |
| 1990 | 0.847 | 1.271 |
| 1991 | 0.851 | 1.277 |
| 1992 | 0.855 | 1.283 |
| 1993 | 0.855 | 1.283 |
| 1994 | 0.855 | 1.283 |
| 1995 | 0.855 | 1.283 |
| 1996 | 0.855 | 1.283 |
| 1997 | 0.855 | 1.283 |
| 1998 | 0.855 | 1.283 |
| 1999 | 0.855 | 1.283 |
| 2000 | 0.855 | 1.283 |
| 2001 | 0.855 | 1.283 |
| 2002 | 0.855 | 1.283 |
| 2003 | 0.855 | 1.283 |
| 2004 | 0.855 | 1.283 |
| 2005 | 0.855 | 1.283 |
| 2006 | 0.855 | 1.283 |
| 2007 | 0.855 | 1.283 |
| 2008 | 0.855 | 1.283 |
| 2009 | 0.855 | 1.283 |
| 2010 | 0.855 | 1.283 |
| 2011 | 0.855 | 1.283 |
| 2012 | 0.855 | 1.283 |
| 2013 | 0.855 | 1.283 |
| 2014 | 0.855 | 1.283 |
| 2015 | 0.855 | 1.283 |

SOURCE: MAP MODEL CASE SBO.S90
 VARIABLES: EMPFISH EMMX2

TABLE D.18. COMMERCIAL FISH HARVESTING--NONBOTTOMFISH
(THOUSANDS OF EMPLOYEES)

| | ALEUTIAN ISLANDS | ANGOON | BETHEL | BRISTOL BAY | CORDOVA/ MCCARTHY |
|------|---------------------|--------|--------|----------------|----------------------|
| 1988 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1989 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1990 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1991 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1992 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1993 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1994 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1995 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1996 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1997 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1998 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 1999 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2000 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2001 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2002 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2003 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2004 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2005 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2006 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2007 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2008 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2009 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2010 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2011 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2012 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2013 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2014 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |
| 2015 | 1.300 | 0.049 | 0.323 | 1.106 | 0.263 |

SOURCE: MAP MODEL CASE SFH.S88
VARIABLES: B01 B03 B05 B06 B08

TABLE D.18. (CONTINUED)

| | HAINES | JUNEAU | KENAI/ COOK INLET | KETCHIKAN | NORTHWEST ARCTIC |
|------|--------|--------|----------------------|-----------|---------------------|
| 1988 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1989 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1990 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1991 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1992 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1993 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1994 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1995 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1996 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1997 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1998 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 1999 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2000 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2001 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2002 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2003 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2004 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2005 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2006 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2007 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2008 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2009 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2010 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2011 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2012 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2013 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2014 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |
| 2015 | 0.092 | 0.388 | 0.866 | 0.384 | 0.192 |

SOURCE: MAP MODEL CASE SFH.S88
 VARIABLES: B10 B11 B12 B13 B14

TABLE D.18. (CONTINUED)

| | KODIAK | KUSKOKWIM | NOME | OUTER KETCHIKAN | PRINCE OF WALES |
|------|--------|-----------|-------|--------------------|--------------------|
| 1988 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1989 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1990 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1991 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1992 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1993 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1994 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1995 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1996 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1997 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1998 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 1999 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2000 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2001 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2002 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2003 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2004 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2005 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2006 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2007 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2008 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2009 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2010 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2011 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2012 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2013 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2014 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |
| 2015 | 1.207 | 0.035 | 0.008 | 0.060 | 0.138 |

SOURCE: MAP MODEL CASE SFH.S88

VARIABLES: B15 B16 B18 B19 B20

TABLE D.18. (CONTINUED)

| | SEWARD | SITKA | SKAGWAY/ YAKUTAT/ ANGOON | VALDEZ/ CHITINA/ WHITTIER | WADE HAMPTON |
|------|--------|-------|--------------------------------|---------------------------------|-----------------|
| 1988 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1989 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1990 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1991 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1992 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1993 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1994 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1995 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1996 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1997 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1998 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 1999 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2000 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2001 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2002 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2003 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2004 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2005 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2006 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2007 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2008 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2009 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2010 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2011 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2012 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2013 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2014 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |
| 2015 | 0.262 | 0.423 | 0.154 | 0.026 | 0.315 |

SOURCE: MAP MODEL CASE SFH.S88
 VARIABLES: B21 B22 B23 B26 B27

TABLE D.18. (CONTINUED)

| | WRANGELL/ PETERSBURG ----- | TOTAL FISH HARVESTING EMPLOYMENT ----- |
|------|----------------------------------|-------------------------------------------------|
| 1988 | 0.609 | 8.200 |
| 1989 | 0.609 | 8.200 |
| 1990 | 0.609 | 8.200 |
| 1991 | 0.609 | 8.200 |
| 1992 | 0.609 | 8.200 |
| 1993 | 0.609 | 8.200 |
| 1994 | 0.609 | 8.200 |
| 1995 | 0.609 | 8.200 |
| 1996 | 0.609 | 8.200 |
| 1997 | 0.609 | 8.200 |
| 1998 | 0.609 | 8.200 |
| 1999 | 0.609 | 8.200 |
| 2000 | 0.609 | 8.200 |
| 2001 | 0.609 | 8.200 |
| 2002 | 0.609 | 8.200 |
| 2003 | 0.609 | 8.200 |
| 2004 | 0.609 | 8.200 |
| 2005 | 0.609 | 8.200 |
| 2006 | 0.609 | 8.200 |
| 2007 | 0.609 | 8.200 |
| 2008 | 0.609 | 8.200 |
| 2009 | 0.609 | 8.200 |
| 2010 | 0.609 | 8.200 |
| 2011 | 0.609 | 8.200 |
| 2012 | 0.609 | 8.200 |
| 2013 | 0.609 | 8.200 |
| 2014 | 0.609 | 8.200 |
| 2015 | 0.609 | 8.200 |

SOURCE: MAP MODEL CASE SFH.S88

VARIABLES: B28 EMFISH

TABLE D.19. COMMERCIAL FISH PROCESSING--NONBOTTOMFISH
(THOUSANDS OF EMPLOYEES)

| | ALEUTIAN ISLANDS | ANCHORAGE | ANGOON | BETHEL | BRISTOL BAY |
|------|---------------------|-----------|--------|--------|----------------|
| 1988 | 1.084 | 0.539 | 0.033 | 0.016 | 1.232 |
| 1989 | 1.109 | 0.539 | 0.033 | 0.016 | 1.257 |
| 1990 | 1.134 | 0.539 | 0.033 | 0.016 | 1.282 |
| 1991 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1992 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1993 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1994 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1995 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1996 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1997 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1998 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 1999 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2000 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2001 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2002 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2003 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2004 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2005 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2006 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2007 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2008 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2009 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2010 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2011 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2012 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2013 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2014 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |
| 2015 | 1.159 | 0.539 | 0.033 | 0.016 | 1.307 |

SOURCE: MAP MODEL CASE SFP.S90
VARIABLES: B01 B02 B03 B05 B06

TABLE D.19. (CONTINUED)

| | CORDOVA/ MCCARTHY | HAINES | JUNEAU | KENAI/ COOK INLET | KETCHIKAN |
|------|----------------------|--------|--------|----------------------|-----------|
| 1988 | 0.313 | 0.060 | 0.050 | 0.853 | 0.300 |
| 1989 | 0.313 | 0.060 | 0.050 | 0.853 | 0.312 |
| 1990 | 0.313 | 0.060 | 0.050 | 0.853 | 0.325 |
| 1991 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 1992 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 1993 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 1994 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 1995 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 1996 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 1997 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 1998 | 0.313 | 0.060 | 0.050 | 0.853 | 0.388 |
| 1999 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2000 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2001 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2002 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2003 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2004 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2005 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2006 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2007 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2008 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2009 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2010 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2011 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2012 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2013 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2014 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |
| 2015 | 0.313 | 0.060 | 0.050 | 0.853 | 0.338 |

SOURCE: MAP MODEL CASE SFP.S90
 VARIABLES: B08 B10 B11 B12 B13

TABLE D.19. (CONTINUED)

| | NORTHWEST ARCTIC | KODIAK | KUSKOKWIM | NOME | OUTER KETCHIKAN |
|------|---------------------|--------|-----------|-------|--------------------|
| 1988 | 0.000 | 1.635 | 0.000 | 0.011 | 0.080 |
| 1989 | 0.000 | 1.660 | 0.000 | 0.011 | 0.080 |
| 1990 | 0.000 | 1.685 | 0.000 | 0.011 | 0.080 |
| 1991 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1992 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1993 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1994 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1995 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1996 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1997 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1998 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 1999 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2000 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2001 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2002 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2003 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2004 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2005 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2006 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2007 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2008 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2009 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2010 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2011 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2012 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2013 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2014 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |
| 2015 | 0.000 | 1.710 | 0.000 | 0.011 | 0.080 |

SOURCE: MAP MODEL CASE SFP.S90
 VARIABLES: B14 B15 B16 B18 B19

TABLE D.19. (CONTINUED)

| | PRINCE OF WALES | SEWARD | SITKA | SKAGWAY/ YAKUTAT/ ANGOON | VALDEZ/ CHITINA/ WHITTIER |
|------|--------------------|--------|-------|--------------------------------|---------------------------------|
| 1988 | 0.030 | 0.205 | 0.200 | 0.150 | 0.205 |
| 1989 | 0.030 | 0.205 | 0.213 | 0.150 | 0.205 |
| 1990 | 0.030 | 0.205 | 0.225 | 0.150 | 0.205 |
| 1991 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1992 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1993 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1994 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1995 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1996 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1997 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1998 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 1999 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2000 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2001 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2002 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2003 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2004 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2005 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2006 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2007 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2008 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2009 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2010 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2011 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2012 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2013 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2014 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |
| 2015 | 0.030 | 0.205 | 0.237 | 0.150 | 0.205 |

SOURCE: MAP MODEL CASE SFP.S90
 VARIABLES: B20 B21 B22 B23 B26

TABLE D.19. (CONTINUED)

| | WADE HAMPTON | WRANGELL/ PETERSBURG | TOTAL LOW-WAGE MANUFACTURING EMPLOYMENT |
|------|-----------------|-------------------------|--------------------------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.050 | 0.154 | 7.200 |
| 1989 | 0.050 | 0.154 | 7.300 |
| 1990 | 0.050 | 0.154 | 7.400 |
| 1991 | 0.050 | 0.154 | 7.500 |
| 1992 | 0.050 | 0.154 | 7.500 |
| 1993 | 0.050 | 0.154 | 7.500 |
| 1994 | 0.050 | 0.154 | 7.500 |
| 1995 | 0.050 | 0.154 | 7.500 |
| 1996 | 0.050 | 0.154 | 7.500 |
| 1997 | 0.050 | 0.154 | 7.500 |
| 1998 | 0.050 | 0.154 | 7.500 |
| 1999 | 0.050 | 0.154 | 7.500 |
| 2000 | 0.050 | 0.154 | 7.500 |
| 2001 | 0.050 | 0.154 | 7.500 |
| 2002 | 0.050 | 0.154 | 7.500 |
| 2003 | 0.050 | 0.154 | 7.500 |
| 2004 | 0.050 | 0.154 | 7.500 |
| 2005 | 0.050 | 0.154 | 7.500 |
| 2006 | 0.050 | 0.154 | 7.500 |
| 2007 | 0.050 | 0.154 | 7.500 |
| 2008 | 0.050 | 0.154 | 7.500 |
| 2009 | 0.050 | 0.154 | 7.500 |
| 2010 | 0.050 | 0.154 | 7.500 |
| 2011 | 0.050 | 0.154 | 7.500 |
| 2012 | 0.050 | 0.154 | 7.500 |
| 2013 | 0.050 | 0.154 | 7.500 |
| 2014 | 0.050 | 0.154 | 7.500 |
| 2015 | 0.050 | 0.154 | 7.500 |

SOURCE: MAP MODEL CASE SFP.S90
 VARIABLES: B27 B28 EMMX2

**TABLE D.20. STATE HYDROELECTRIC PROJECTS
(THOUSANDS OF EMPLOYEES)**

| | KENAI/ COOK INLET ----- | TOTAL LOW-WAGE CONSTRUCTION EMPLOYMENT ----- |
|------|-------------------------------|----------------------------------------------------------|
| 1988 | 0.300 | 0.300 |
| 1989 | 0.300 | 0.300 |
| 1990 | 0.200 | 0.200 |
| 1991 | 0.100 | 0.100 |
| 1992 | 0.000 | 0.000 |
| 1993 | 0.000 | 0.000 |
| 1994 | 0.000 | 0.000 |
| 1995 | 0.000 | 0.000 |
| 1996 | 0.000 | 0.000 |
| 1997 | 0.000 | 0.000 |
| 1998 | 0.000 | 0.000 |
| 1999 | 0.000 | 0.000 |
| 2000 | 0.000 | 0.000 |
| 2001 | 0.000 | 0.000 |
| 2002 | 0.000 | 0.000 |
| 2003 | 0.000 | 0.000 |
| 2004 | 0.000 | 0.000 |
| 2005 | 0.000 | 0.000 |
| 2006 | 0.000 | 0.000 |
| 2007 | 0.000 | 0.000 |
| 2008 | 0.000 | 0.000 |
| 2009 | 0.000 | 0.000 |
| 2010 | 0.000 | 0.000 |
| 2011 | 0.000 | 0.000 |
| 2012 | 0.000 | 0.000 |
| 2013 | 0.000 | 0.000 |
| 2014 | 0.000 | 0.000 |
| 2015 | 0.000 | 0.000 |

**SOURCE: MAP MODEL CASE SHP.S90
VARIABLES: B12 EMCNX2**

TABLE D.21. EXXON VALDEZ OIL SPILL CLEANUP
(THOUSANDS OF EMPLOYEES)

| | ANCHORAGE | CORDOVA/ MCCARTHY | FAIRBANKS | JUNEAU | KENAI/ COOK INLET |
|------|-----------|----------------------|-----------|--------|----------------------|
| 1988 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.828 | 0.057 | 0.199 | 0.050 | 0.282 |
| 1990 | 0.200 | 0.000 | 0.050 | 0.000 | 0.050 |
| 1991 | 0.075 | 0.000 | 0.015 | 0.000 | 0.020 |
| 1992 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1993 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1994 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1995 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1996 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1997 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1998 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1999 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2009 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

SOURCE: MAP MODEL CASE SPL.S90
VARIABLES: B02 B08 B09 B11 B12

TABLE D.21. (CONTINUED)

| | KODIAK | MATANUSKA/ SUSITNA | SOUTHEAST FAIRBANKS | VALDEZ/ CHITINA/ WHITTIER | TOTAL TRANSPORTATION EMPLOYMENT |
|------|--------|-----------------------|------------------------|---------------------------------|---------------------------------------|
| 1988 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.467 | 0.182 | 0.050 | 0.535 | 2.650 |
| 1990 | 0.050 | 0.050 | 0.000 | 0.100 | 0.500 |
| 1991 | 0.025 | 0.015 | 0.000 | 0.050 | 0.200 |
| 1992 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1993 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1994 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1995 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1996 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1997 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1998 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1999 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2009 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

SOURCE: MAP MODEL CASE SPL.S90
 VARIABLES: B15 B17 B24 B26 EMT9X

TABLE D.22. TRANS-ALASKA PIPELINE
(THOUSANDS OF EMPLOYEES)

| | ANCHORAGE | BARROW/ NORTH SLOPE | FAIRBANKS | SOUTHEAST FAIRBANKS | VALDEZ/ CHITINA/ WHITTIER |
|------|-----------|---------------------------|-----------|------------------------|---------------------------------|
| 1988 | 0.390 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1989 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1990 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1991 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1992 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1993 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1994 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1995 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1996 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1997 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1998 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 1999 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2000 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2001 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2002 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2003 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2004 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2005 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2006 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2007 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2008 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2009 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2010 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2011 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2012 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2013 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2014 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |
| 2015 | 0.430 | 0.101 | 0.040 | 0.026 | 0.252 |

SOURCE: MAP MODEL CASE TAP.S90
VARIABLES: B02 B04 B09 B24 B26

TABLE D.22. (CONTINUED)

| | YUKON KOYUKUK | TOTAL HIGH-WAGE CONSTRUCTION EMPLOYMENT | TOTAL TRANSPORTATION EMPLOYMENT |
|------|------------------|--------------------------------------------------|---------------------------------------|
| | ----- | ----- | ----- |
| 1988 | 0.076 | 0.000 | 0.885 |
| 1989 | 0.076 | 0.000 | 0.925 |
| 1990 | 0.076 | 0.000 | 0.925 |
| 1991 | 0.076 | 0.000 | 0.925 |
| 1992 | 0.076 | 0.000 | 0.925 |
| 1993 | 0.076 | 0.000 | 0.925 |
| 1994 | 0.076 | 0.000 | 0.925 |
| 1995 | 0.076 | 0.000 | 0.925 |
| 1996 | 0.076 | 0.000 | 0.925 |
| 1997 | 0.076 | 0.000 | 0.925 |
| 1998 | 0.076 | 0.000 | 0.925 |
| 1999 | 0.076 | 0.000 | 0.925 |
| 2000 | 0.076 | 0.000 | 0.925 |
| 2001 | 0.076 | 0.000 | 0.925 |
| 2002 | 0.076 | 0.000 | 0.925 |
| 2003 | 0.076 | 0.000 | 0.925 |
| 2004 | 0.076 | 0.000 | 0.925 |
| 2005 | 0.076 | 0.000 | 0.925 |
| 2006 | 0.076 | 0.000 | 0.925 |
| 2007 | 0.076 | 0.000 | 0.925 |
| 2008 | 0.076 | 0.000 | 0.925 |
| 2009 | 0.076 | 0.000 | 0.925 |
| 2010 | 0.076 | 0.000 | 0.925 |
| 2011 | 0.076 | 0.000 | 0.925 |
| 2012 | 0.076 | 0.000 | 0.925 |
| 2013 | 0.076 | 0.000 | 0.925 |
| 2014 | 0.076 | 0.000 | 0.925 |
| 2015 | 0.076 | 0.000 | 0.925 |

SOURCE: MAP MODEL CASE TAP.S90
 VARIABLES: B29 EMCNX1 EMT9X

**TABLE D.23. NUMBER OF TOURISTS
(THOUSANDS OF EMPLOYEES)**

| TOURISTS ENTERING ALASKA | |
|-------------------------------------|----------|
| ----- | |
| 1988 | 610.700 |
| 1989 | 629.021 |
| 1990 | 647.891 |
| 1991 | 667.328 |
| 1992 | 687.347 |
| 1993 | 707.967 |
| 1994 | 729.206 |
| 1995 | 751.082 |
| 1996 | 773.614 |
| 1997 | 796.822 |
| 1998 | 820.727 |
| 1999 | 845.348 |
| 2000 | 870.708 |
| 2001 | 896.829 |
| 2002 | 923.733 |
| 2003 | 951.445 |
| 2004 | 979.988 |
| 2005 | 1009.387 |
| 2006 | 1039.668 |
| 2007 | 1070.858 |
| 2008 | 1102.983 |
| 2009 | 1136.073 |
| 2010 | 1170.154 |
| 2011 | 1205.259 |
| 2012 | 1241.416 |
| 2013 | 1278.658 |
| 2014 | 1317.017 |
| 2015 | 1356.527 |

**SOURCE: MAP MODEL CASE TRS.S90
VARIABLE: TOURIST**

TABLE D.23. COOK INLET PETROLEUM
(THOUSANDS OF EMPLOYEES)

| | KENAI/ COOK INLET ----- | TOTAL PETROLEUM MINING EMPLOYMENT ----- |
|------|-------------------------------|-----------------------------------------------------|
| 1988 | 0.833 | 0.833 |
| 1989 | 0.850 | 0.850 |
| 1990 | 0.841 | 0.841 |
| 1991 | 0.833 | 0.833 |
| 1992 | 0.825 | 0.825 |
| 1993 | 0.817 | 0.817 |
| 1994 | 0.808 | 0.808 |
| 1995 | 0.800 | 0.800 |
| 1996 | 0.792 | 0.792 |
| 1997 | 0.784 | 0.784 |
| 1998 | 0.776 | 0.776 |
| 1999 | 0.769 | 0.769 |
| 2000 | 0.761 | 0.761 |
| 2001 | 0.753 | 0.753 |
| 2002 | 0.746 | 0.746 |
| 2003 | 0.738 | 0.738 |
| 2004 | 0.731 | 0.731 |
| 2005 | 0.724 | 0.724 |
| 2006 | 0.717 | 0.717 |
| 2007 | 0.709 | 0.709 |
| 2008 | 0.702 | 0.702 |
| 2009 | 0.695 | 0.695 |
| 2010 | 0.688 | 0.688 |
| 2011 | 0.681 | 0.681 |
| 2012 | 0.675 | 0.675 |
| 2013 | 0.668 | 0.668 |
| 2014 | 0.661 | 0.661 |
| 2015 | 0.655 | 0.655 |

SOURCE: MAP MODEL CASE UPC.S90
VARIABLES: B12 EMPP

**TABLE D.24. PETROLEUM SETTLEMENT REVENUES
(MILLIONS OF CURRENT \$)**

| | STATE SETTLEMENT REVENUES |
|------|------------------------------------------|
| | ----- |
| 1988 | 329.000 |
| 1989 | 259.700 |
| 1990 | 111.000 |
| 1991 | 200.000 |
| 1992 | 210.000 |
| 1993 | 221.000 |
| 1994 | 232.000 |
| 1995 | 243.000 |
| 1996 | 255.000 |
| 1997 | 268.000 |
| 1998 | 281.000 |
| 1999 | 295.000 |
| 2000 | 310.000 |
| 2001 | 0.000 |
| 2002 | 0.000 |
| 2003 | 0.000 |
| 2004 | 0.000 |
| 2005 | 0.000 |
| 2006 | 0.000 |
| 2007 | 0.000 |
| 2008 | 0.000 |
| 2009 | 0.000 |
| 2010 | 0.000 |
| 2011 | 0.000 |
| 2012 | 0.000 |
| 2013 | 0.000 |
| 2014 | 0.000 |
| 2015 | 0.000 |

**SOURCE: MAP MODEL CASE WIN.S90
VARIABLE: RP9X**

TABLE D.25. WISHBONE MINE
(THOUSANDS OF EMPLOYEES)

| | MATANUSKA/ SUSITNA | SEWARD | TOTAL LOW-WAGE CONSTRUCTION EMPLOYMENT | TOTAL MINING EMPLOYMENT | TOTAL TRANSPORTATION EMPLOYMENT |
|------|-----------------------|--------|-------------------------------------------------|-------------------------------|---------------------------------------|
| 1988 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1989 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1990 | 0.020 | 0.000 | 0.010 | 0.010 | 0.000 |
| 1991 | 0.205 | 0.000 | 0.080 | 0.110 | 0.015 |
| 1992 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 1993 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 1994 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 1995 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 1996 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 1997 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 1998 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 1999 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2000 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2001 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2002 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2003 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2004 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2005 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2006 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2007 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2008 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2009 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2010 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2011 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2012 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2013 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2014 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |
| 2015 | 0.240 | 0.010 | 0.000 | 0.220 | 0.030 |

SOURCE: MAP MODEL CASE WIS.S90
VARIABLES: B17 B21 EMCNX2 EMPMINE EMT9X

APPENDIX E

OCS PRODUCTION AND REVENUE ASSUMPTIONS

TABLE E.1. OCS PRODUCTION AND PROPERTY ASSUMPTIONS

| | CHUKCHI SEA OIL PRODUCTION MMBLS | | DEPRECIATED PROPERTY (\$MM) OIL | | BERING SEA OIL PRODUCTION MMBLS | | DEPRECIATED PROPERTY (\$MM) |
|------------|----------------------------------------|--------|---------------------------------------|-----------|---------------------------------------|--------|-----------------------------------|
| | ANNUAL | CUMUL. | PIPELINE | SHOREBASE | ANNUAL | CUMUL. | SHOREBASE |
| 1990 | | | | | | | |
| 1991 | | | | | | | |
| 1992 | | | | | | | |
| 1993 | | | | | | | 5 |
| 1994 | | | | 24 | | | 5 |
| 1995 | | | | 73 | | | 5 |
| 1996 | | | | 122 | | | 5 |
| 1997 | | | | 122 | | | 5 |
| 1998 | | | 567 | 122 | | | 20 |
| 1999 | | 0 | 1133 | 122 | | 0 | 40 |
| 2000 | 161 | 161 | 1700 | 122 | 21 | 21 | 50 |
| 2001 | 214 | 375 | 1593 | 114 | 29 | 50 | 47 |
| 2002 | 214 | 589 | 1450 | 104 | 29 | 79 | 43 |
| 2003 | 214 | 803 | 1307 | 94 | 29 | 108 | 38 |
| 2004 | 214 | 1017 | 1165 | 84 | 29 | 137 | 34 |
| 2005 | 214 | 1231 | 1022 | 73 | 29 | 166 | 30 |
| 2006 | 189 | 1420 | 879 | 63 | 24 | 190 | 26 |
| 2007 | 163 | 1583 | 753 | 54 | 21 | 211 | 22 |
| 2008 | 145 | 1728 | 645 | 46 | 20 | 231 | 19 |
| 2009 | 130 | 1858 | 548 | 39 | 17 | 248 | 16 |
| 2010 | 115 | 1973 | 461 | 33 | 15 | 263 | 14 |
| 2011 | 102 | 2075 | 385 | 28 | 14 | 277 | 11 |
| 2012 | 92 | 2167 | 317 | 23 | 12 | 289 | 9 |
| 2013 | 82 | 2249 | 255 | 18 | 11 | 300 | 8 |
| 2014 | 74 | 2323 | 201 | 14 | 10 | 310 | 6 |
| 2015 | 66 | 2389 | 151 | 11 | 9 | 319 | 4 |
| 2016 | 59 | 2448 | 107 | 8 | 8 | 327 | 3 |
| 2017 | 54 | 2502 | 68 | 5 | 7 | 334 | 2 |
| 2018 | 48 | 2550 | 32 | 2 | 6 | 340 | 1 |
| 2019 | | | | | | | |
| 2020 | | | | | | | |
| CUMULATIVE | | 2550 | | | | 340 | |

| ASSUMPTIONS: | Type of Facility | Area | Year Completed | Cost (\$mm) |
|--------------|------------------|---------|----------------|-------------|
| | shorebase | NSB | 1996 | 122 |
| | onshore pipeline | NSB | 1999 | 1700 |
| | shorebase | Al. Is. | 1999 | 50 |

Source: Kevin Banks, 4/16/90

- Notes: 1. Depreciation calculated over life of production of oil and gas.
 2. Capital cost figures assume instantaneous build, 4th quarter 1989 prices.

TABLE E.2. TAX BASE AND PETROLEUM PROPERTY TAXES
(\$ MILLIONS)

| | CHUKCHI PROPERTY (1989\$) | CHUKCHI TAX 0.02*Ti | BERING PROPERTY (1989\$) | BERING TAX 0.02*Ti | GROWTH RATE OF US CPI | PRICE INDEX | TOTAL TAX (NOMINAL \$) | TOTAL TAX BASE (1989 \$) | TOTAL TAX BASE (NOMINAL \$) |
|------|---------------------------------|---------------------------|--------------------------------|--------------------------|-----------------------------|----------------|---------------------------------|--------------------------------|-----------------------------------|
| 1990 | 0 | 0.000 | 0 | 0.000 | 5.0% | 1.000 | 0.000 | 0 | 0 |
| 1991 | 0 | 0.000 | 0 | 0.000 | 5.0% | 1.050 | 0.000 | 0 | 0 |
| 1992 | 0 | 0.000 | 0 | 0.000 | 5.0% | 1.103 | 0.000 | 0 | 0 |
| 1993 | 0 | 0.000 | 5 | 0.100 | 5.0% | 1.158 | 0.116 | 5 | 6 |
| 1994 | 24 | 0.488 | 5 | 0.100 | 5.0% | 1.216 | 0.715 | 29 | 36 |
| 1995 | 73 | 1.464 | 5 | 0.100 | 5.0% | 1.276 | 1.996 | 78 | 100 |
| 1996 | 122 | 2.440 | 5 | 0.100 | 5.0% | 1.340 | 3.404 | 127 | 170 |
| 1997 | 689 | 13.773 | 5 | 0.100 | 5.0% | 1.407 | 19.521 | 694 | 976 |
| 1998 | 1255 | 25.107 | 20 | 0.400 | 5.0% | 1.477 | 37.685 | 1275 | 1884 |
| 1999 | 1255 | 25.107 | 40 | 0.800 | 5.0% | 1.551 | 40.190 | 1295 | 2009 |
| 2000 | 1822 | 36.440 | 50 | 1.000 | 5.0% | 1.629 | 60.986 | 1872 | 3049 |
| 2001 | 1707 | 34.139 | 47 | 0.938 | 5.0% | 1.710 | 59.994 | 1754 | 3000 |
| 2002 | 1554 | 31.081 | 43 | 0.853 | 5.0% | 1.796 | 57.349 | 1597 | 2867 |
| 2003 | 1401 | 28.023 | 38 | 0.768 | 5.0% | 1.886 | 54.289 | 1440 | 2714 |
| 2004 | 1248 | 24.965 | 34 | 0.682 | 5.0% | 1.980 | 50.780 | 1282 | 2539 |
| 2005 | 1095 | 21.907 | 30 | 0.597 | 5.0% | 2.079 | 46.784 | 1125 | 2339 |
| 2006 | 942 | 18.849 | 26 | 0.512 | 5.0% | 2.183 | 42.262 | 968 | 2113 |
| 2007 | 807 | 16.148 | 22 | 0.441 | 5.0% | 2.292 | 38.023 | 829 | 1901 |
| 2008 | 691 | 13.819 | 19 | 0.379 | 5.0% | 2.407 | 34.169 | 710 | 1708 |
| 2009 | 587 | 11.747 | 16 | 0.321 | 5.0% | 2.527 | 30.493 | 603 | 1525 |
| 2010 | 494 | 9.889 | 14 | 0.271 | 5.0% | 2.653 | 26.956 | 508 | 1348 |
| 2011 | 412 | 8.245 | 11 | 0.226 | 5.0% | 2.786 | 23.602 | 424 | 1180 |
| 2012 | 339 | 6.788 | 9 | 0.185 | 5.0% | 2.925 | 20.398 | 349 | 1020 |
| 2013 | 274 | 5.473 | 8 | 0.150 | 5.0% | 3.072 | 17.272 | 281 | 864 |
| 2014 | 215 | 4.301 | 6 | 0.118 | 5.0% | 3.225 | 14.252 | 221 | 713 |
| 2015 | 162 | 3.244 | 4 | 0.088 | 5.0% | 3.386 | 11.284 | 167 | 564 |
| 2016 | 115 | 2.301 | 3 | 0.062 | 5.0% | 3.556 | 8.400 | 118 | 420 |
| 2017 | 73 | 1.458 | 2 | 0.038 | 5.0% | 3.733 | 5.585 | 75 | 279 |
| 2018 | 34 | 0.686 | 1 | 0.018 | 5.0% | 3.920 | 2.758 | 35 | 138 |
| 2019 | 0 | 0.000 | 0 | 0.000 | 5.0% | 4.116 | 0.000 | 0 | 0 |
| 2020 | 0 | 0.000 | 0 | 0.000 | 5.0% | 4.322 | 0.000 | 0 | 0 |

Note: Property tax figures represent the combined state and local government shares.

TABLE E.3
TAPS TARIFF AND INCREMENTAL STATE PETROLEUM REVENUES
WITH AND WITHOUT OCS PRODUCTION
 (current dollars)

| Year | Wellhead Oil Price (\$/bbl) | Projected Thruput (MMbbls) | TAPS Tariff (\$/bbl) | With OCS Thruput (MMbbls) | TAPS Tariff (\$/bbl) | Incr. NS Production (MMbbls) | Marginal Tariff (\$/bbl) | State Share of Revenue | Incr. Production | Incremental Revenues (1989 \$) | Royalties | Severance Taxes |
|------|-----------------------------|----------------------------|----------------------|---------------------------|----------------------|------------------------------|--------------------------|------------------------|------------------|--------------------------------|-----------|-----------------|
| 1989 | 11 | 669 | 3.05 | 669 | 3.05 | 0 | 0.00 | 0.25 | 0 | 0 | 0 | 0 |
| 1990 | 11.5 | 685 | 3.90 | 685 | 3.90 | 0 | 0.00 | 0.25 | 0 | 0 | 0 | 0 |
| 1991 | 12.3 | 666 | 3.63 | 666 | 3.63 | 0 | 0.00 | 0.24 | 0 | 0 | 0 | 0 |
| 1992 | 13.1 | 645 | 3.86 | 645 | 3.86 | 0 | 0.00 | 0.24 | 0 | 0 | 0 | 0 |
| 1993 | 14.1 | 603 | 3.89 | 603 | 3.89 | 0 | 0.00 | 0.23 | 0 | 0 | 0 | 0 |
| 1994 | 15.3 | 544 | 3.88 | 544 | 3.88 | 0 | 0.00 | 0.23 | 0 | 0 | 0 | 0 |
| 1995 | 16.5 | 484 | 3.93 | 484 | 3.93 | 0 | 0.00 | 0.22 | 0 | 0 | 0 | 0 |
| 1996 | 18.0 | 430 | 3.82 | 430 | 3.82 | 0 | 0.00 | 0.22 | 0 | 0 | 0 | 0 |
| 1997 | 19.6 | 379 | 3.60 | 379 | 3.60 | 0 | 0.00 | 0.21 | 0 | 0 | 0 | 0 |
| 1998 | 21.3 | 368 | 3.39 | 368 | 3.39 | 0 | 0.00 | 0.21 | 0 | 0 | 0 | 0 |
| 1999 | 22.7 | 352 | 3.61 | 352 | 3.61 | 0 | 0.00 | 0.20 | 0 | 0 | 0 | 0 |
| 2000 | 24.3 | 330 | 3.69 | 330 | 3.69 | 0 | 0.00 | 0.20 | 0 | 0 | 0 | 0 |
| 2001 | 25.9 | 304 | 3.89 | 489 | 3.08 | 8 | -0.81 | 0.20 | 89.4 | 49.8 | 57.0 | 32.4 |
| 2002 | 27.6 | 277 | 4.11 | 513 | 3.13 | 7 | -0.98 | 0.19 | 89.6 | 47.5 | 58.2 | 31.3 |
| 2003 | 29.5 | 250 | 4.35 | 485 | 3.17 | 6 | -1.18 | 0.19 | 89.6 | 45.3 | 59.5 | 30.2 |
| 2004 | 31.3 | 232 | 4.71 | 467 | 3.36 | 5 | -1.36 | 0.18 | 89.5 | 43.0 | 60.6 | 28.9 |
| 2005 | 33.4 | 228 | 4.94 | 462 | 3.51 | 5 | -1.43 | 0.18 | 87.4 | 40.0 | 60.4 | 27.0 |
| 2006 | 35.4 | 238 | 5.03 | 471 | 3.64 | 3 | -1.39 | 0.18 | 80.8 | 35.2 | 56.9 | 23.8 |
| 2007 | 37.5 | 251 | 5.07 | 456 | 3.84 | 3 | -1.23 | 0.17 | 73.2 | 30.4 | 52.6 | 20.5 |
| 2008 | 39.7 | 264 | 5.12 | 444 | 4.04 | 2 | -1.08 | 0.17 | 65.4 | 25.9 | 48.0 | 17.4 |
| 2009 | 42.0 | 245 | 5.53 | 403 | 4.37 | 2 | -1.16 | 0.17 | 63.2 | 23.8 | 47.3 | 15.9 |
| 2010 | 44.2 | 236 | 5.84 | 374 | 4.68 | 2 | -1.16 | 0.16 | 58.9 | 21.2 | 45.0 | 13.9 |
| 2011 | 46.5 | 227 | 6.22 | 349 | 5.04 | 2 | -1.18 | 0.16 | 56.0 | 19.1 | 43.7 | 12.3 |
| 2012 | 49.0 | 219 | 6.44 | 327 | 5.30 | 2 | -1.14 | 0.16 | 52.0 | 16.9 | 41.4 | 10.6 |
| 2013 | 51.5 | 211 | 6.90 | 305 | 5.73 | 1 | -1.16 | 0.15 | 49.2 | 15.2 | 39.9 | 9.2 |
| 2014 | 54.2 | 203 | 7.39 | 286 | 6.20 | 1 | -1.19 | 0.15 | 47.5 | 14.0 | 39.3 | 8.1 |
| 2015 | 57.1 | 196 | 7.92 | 268 | 6.72 | 1 | -1.21 | 0.15 | 44.4 | 12.5 | 37.5 | 6.9 |
| 2016 | 60.0 | 189 | 8.49 | 252 | 7.26 | 1 | -1.23 | 0.14 | 42.6 | 11.4 | 36.7 | 5.8 |
| 2017 | 63.2 | 182 | 9.11 | 240 | 7.82 | 1 | -1.29 | 0.14 | 41.5 | 10.6 | 36.5 | 5.0 |
| 2018 | 66.5 | 175 | 9.78 | 228 | 8.44 | 1 | -1.34 | 0.14 | 40.2 | 9.8 | 36.1 | 4.1 |
| 2019 | 70.0 | 169 | 10.49 | 216 | 9.11 | 1 | -1.38 | 0.14 | 39.5 | 9.1 | 36.2 | 3.3 |
| 2020 | 73.6 | 162 | 11.27 | 204 | 9.86 | 1 | -1.40 | 0.13 | 37.5 | 8.3 | 35.1 | 2.4 |

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

