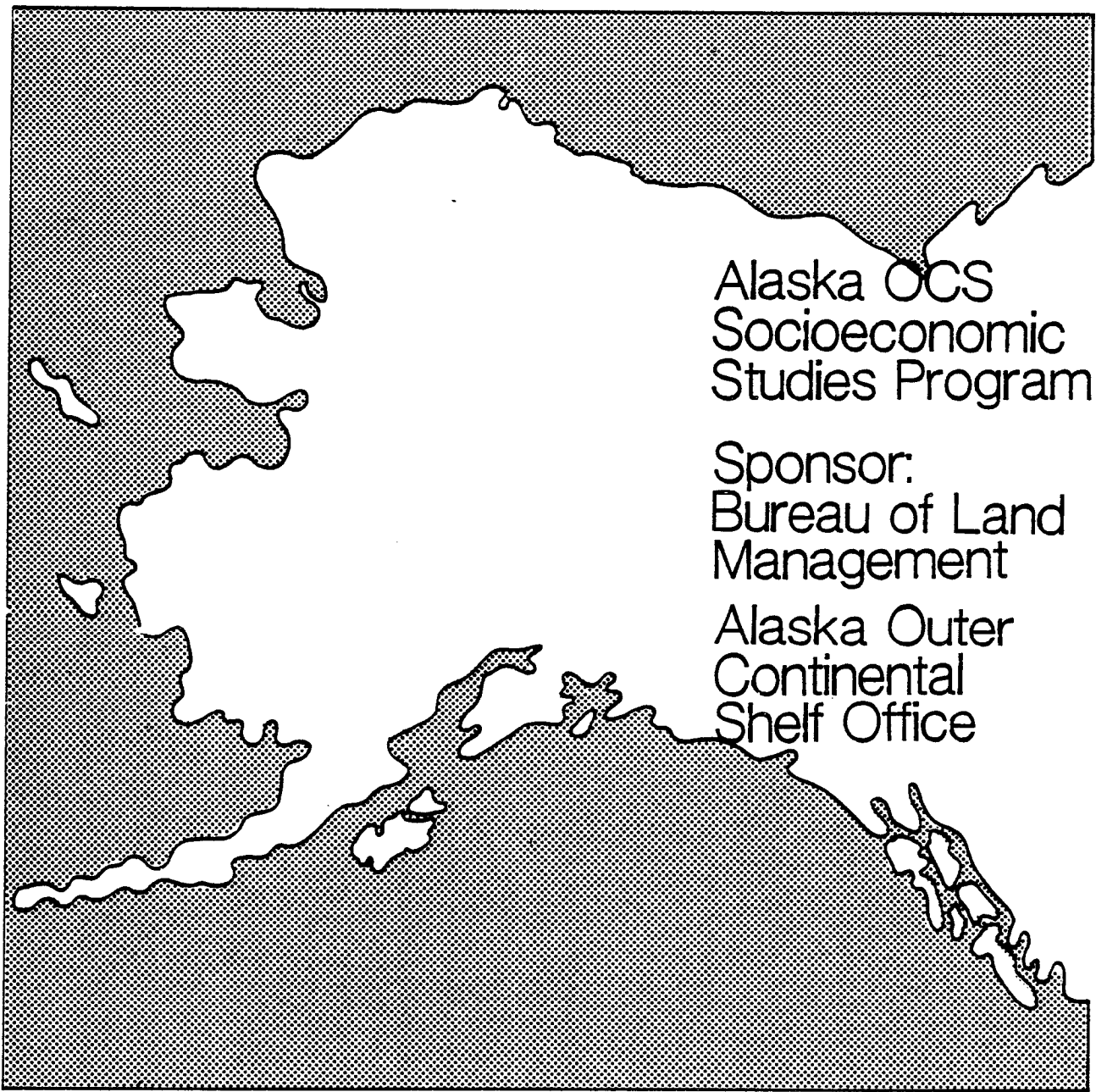


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# Technical Report Number 78



Alaska OCS  
Socioeconomic  
Studies Program

Sponsor:  
Bureau of Land  
Management

Alaska Outer  
Continental  
Shelf Office

## Navarin Basin

# Statewide & Regional Demographic & Economic Systems Impacts Forecast

The United States Department of the Interior was designated by the Outer Continental Shelf (OCS) Lands Act of 1953 to carry out the majority of the Act's provisions for administering the mineral leasing and development of offshore areas of the United States under federal jurisdiction. Within the Department, the Bureau of Land Management (BLM) has the responsibility to meet requirements of the National Environmental Policy Act of 1969 (NEPA) as well as other legislation and regulations dealing with the effects of offshore development. In Alaska, unique cultural differences and climatic conditions create a need for developing additional socioeconomic and environmental information to improve OCS decision making at all governmental levels. In fulfillment of its federal responsibilities and with an awareness of these additional information needs, the BLM has initiated several investigative programs, one of which is the Alaska OCS Socioeconomic Studies Program (SESP).

The Alaska OCS Socioeconomic Studies Program is a multi-year research effort which attempts to predict and evaluate the effects of Alaska OCS Petroleum Development upon the physical, social, and economic environments within the state. The overall methodology is divided into three broad research components. The first component identifies an alternative set of assumptions regarding the location, the nature, and the timing of future petroleum events and related activities. In this component, the program takes into account the particular needs of the petroleum industry and projects the human, technological, economic, and environmental offshore and onshore development requirements of the regional petroleum industry.

The second component focuses on data gathering that identifies those quantifiable and qualifiable facts by which OCS-induced changes can be assessed. The critical community and regional components are identified and evaluated. Current endogenous and exogenous sources of change and functional organization among different sectors of community and regional life are analyzed. Susceptible community relationships, values, activities, and processes also are included.

The third research component focuses on an evaluation of the changes that could occur due to the potential oil and gas development. Impact evaluation concentrates on an analysis of the impacts at the statewide, regional, and local level.

In general, program products are sequentially arranged in accordance with BLM's proposed OCS lease sale schedule, so that information is timely to decisionmaking. Reports are available through the National Technical Information Service, and the BLM has a limited number of copies available through the Alaska OCS Office. Inquiries for information should be directed to: Program Coordinator (COAR), Socioeconomic Studies Program, Alaska OCS Office, P. O. Box 1159, Anchorage, Alaska 99510.

Alaska OCS Socioeconomic Studies Program

STATEWIDE AND CENSUS DIVISION  
DEMOGRAPHIC AND ECONOMIC SYSTEMS,  
NAVARIN BASIN (SALE 83)  
IMPACT ANALYSIS

Prepared for

Bureau of Land Management  
Alaska Outer Continental Shelf Office

Prepared by

Gunnar Knapp, Ed Porter, and Brian Reeder  
Institute of Social and Economic Research  
University of Alaska  
March, 1983

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Alaska OCS Socioeconomic Studies Program  
Statewide and Census Division Demographic and Economic Systems,  
Navarin Basin (Sale 83) Impacts Analysis

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## ABSTRACT

This study examines economic and population impacts of the proposed Outer Continental Shelf (OCS) petroleum development of the Navarin Basin (Sale 83). The study begins with historical baseline analyses of the population and economies of the State of Alaska and the Aleutian Islands. Next, base case projections of conditions in the absence of OCS development are proposed. Subsequently, the impacts of OCS development are examined. The projections were done using the MAP and SCIMP models developed at the University of Alaska's Institute of Social and Economic Research.

In the base case, statewide population increases to over 590 thousand by the year 2010. In the 1.2 Bbbl oil discovery case, the maximum percentage impact upon statewide population is 3 percent, or 16,800, in 1993. The Aleutian Islands' base case resident population is predicted to rise from 3,654 in 1980 to 8,348 in 2000 due to growth in the bottomfish industry. The maximum increase in population is 281, or 4 percent, in 1996.

The maximum impact upon Aleutian Islands' resident employment is 12 percent (291) in 1996. The maximum impact upon Aleutian Islands' nonresident or enclave employment is 45 percent (770) in 1989 during the construction of OCS facilities.



## I. INTRODUCTION

This study discusses the economic and demographic effects of the proposed Outer Continental Shelf (OCS) petroleum development in the Navarin Basin. The Navarin Basin is located in the western Bering Sea. A lease sale for this area is scheduled for March 1984 (Sale 83).

The analysis of the study is carried out both for the state of Alaska as a whole, and for the Aleutian Islands census division. Chapter II provides a historical review of the statewide and Aleutian economies. Chapter III discusses the projection methodology, which is based on the MAP and SCIMP models developed at the University of Alaska's Institute of Social and Economic Research. Chapter IV discusses the basic assumptions about the structure of the statewide and regional economies, the independent factors which would determine economic growth in the absence of the lease sale, and the direct impacts of the sale. Chapter V discusses the statewide base case and impact projections, and Chapter VI discusses the Aleutian Islands base case and impact projections. Finally, Chapter VII briefly reviews the results of the study. Supporting materials are provided in the appendixes.





## II. STATEWIDE AND ALEUTIAN ISLANDS GROWTH:

### A HISTORICAL REVIEW

This chapter provides a historical review of economic growth for the state of Alaska and for the Aleutian Islands.

#### The Statewide Economy

At the risk of oversimplification, the economic history of Alaska can be summarized as one of resources, defense, disaster, more resources, and government. Prior to World War II, interest in the state focused largely on natural resource exploitation, primarily based on furs, fish, and hard rock minerals. World War II and the cold war aftermath lead to a sizable military-government involvement in the state, both in terms of population and economic activity.

The advent of statehood found an economy reflecting a narrowly based private sector, largely dependent upon limited natural resource activity, and a large federal civilian and military presence. In 1960, for example, federal civilian wages and salaries accounted for 25 percent of the total civilian wage bill, while state government (5.9 percent) and local government (5.1 percent) made up an additional 11 percent of total wage and salary payments. When military payrolls are included, 42.5 percent of wage and salary income was accounted for by government.

Discovery of the Swanson River oil field in 1957 had done much to raise expectations about future economic prospects, but it was not until major discoveries in Cook Inlet during 1965 that the oil and gas industry became firmly established and significant levels of production were assured. The emergence of petroleum resources as a significant factor in the Alaska economy considerably improved the potential for private sector development and, more importantly, helped to shore up the extremely shaky fiscal base of state government.

For the mid and latter part of the decade of the 1960s, it was to be natural disaster that provided much of the impetus for economic growth. The Good Friday earthquake of 1964 resulted in a major reconstruction effort which supported levels of economic activity that probably would not have been achieved otherwise. A second disaster, of lesser statewide magnitude but of great consequence for the Fairbanks region, was the flood of 1967. Disaster relief and reconstruction funds, followed later by flood control projects, provided a needed boost for the region's economy.

Discovery of oil at Prudhoe Bay in 1968 marks the beginning of the latest phase of Alaska economic history. Development of the super-giant field, construction of the oil pipeline, and the related flows of revenue to state government are providing the impetus for sustained economic growth and diversification that should carry the state well into the 21st century.

Against this backdrop, we can now look more specifically at several important dimensions of growth and change in the Alaska economy. As suggested earlier, there are certain key measures of economic activity that are central to the analysis. Personal income and employment data provide insight into the overall growth of the economy and changes in the composition of economic activity. In addition, these data can be used as general indicators of changes in economic well-being over time. An important corollary variable is population growth. It is also instructive to review aggregate measures of production for the economy.

In addition to these general measures of economic activity, there are several specific attributes of the economy that need to be considered. These include such topics as secular and seasonal unemployment, the structure of costs and prices, and the role of state government with respect to determining overall economic activity. Finally, we must consider issues related to potential future economic activity. We now turn to specific measures of the economy.

## PRODUCTION

Data measuring the gross value of production by industrial classification are not available for recent years. However, various measures of the value of output for selected industries have been compiled and are presented in Table 1. Except for agriculture, the industries reflect the primary "export base" components of the private sector economy.

Table 1. Value of Production for Selected Industries  
Various Years, 1960-1979  
(millions of current dollars)

Year	Industry	Agriculture		Forestry	Fisheries			Wholesale Value		Oil & Gas			Federal Government Outlays in Alaska (FY)	Total Government Spending in Alaska (FY)
		5.6	47.3		Value to Fishermen	Salmon	Shellfish	Total	Crude Oil	Dry Gas	Gas			
1960					33.6	3.1	40.9	96.7	1.2	.03		155.8	N.A.	
1961					35.7	5.1	46.5	128.7	17.7	.129		N.A.	N.A.	
1962					42.1	7.1	58.4	131.9	31.2	.467		N.A.	N.A.	
1963					31.3	9.6	46.9	109.0	32.7	1.1		N.A.	N.A.	
1964					41.4	10.0	56.8	140.9	33.6	1.7		N.A.	N.A.	
1965					48.3	14.5	70.1	166.6	34.1	1.8		533.7	N.A.	
1966					54.2	17.6	81.9	197.3	44.1	6.3		N.A.	N.A.	
1967					24.6	18.3	48.8	126.7	88.2	7.3		N.A.	N.A.	
1968					49.5	27.9	79.9	191.7	186.7	4.4		N.A.	N.A.	
1969					40.6	20.8	68.1	144.2	214.5	12.7		N.A.	N.A.	
1970					68.0	20.5	97.5	213.9	232.8	18.2		728.7	N.A.	
1971					51.4	25.0	85.5	198.7	234.3	18.0		852.9	N.A.	
1972					45.3	33.6	92.4	185.7	221.7	18.0		989.4	N.A.	
1973					60.1	61.4	142.4	283.0	239.6	19.5		1018.6	1592	
1974					65.7	62.8	144.8	254	347.4	22.5		1135.9	1730	
1975					55.3	55.4	129.4	293	364.6	42.8		1326.8	2000	
1976					118.0	96.5	239.6	452	318.8	60.5		1368.1	2226	
1977					171	157	349	723P	988.9	66.6		1544.9	2524	
1978					238P	272P	543P	1118P	2701.5	89.6		1753.0	2845	
1979					317P	231P	606P	1243P	5493.6P	91.5		1932.2	3147e	

p = preliminary  
e = estimate  
N.A. = not available

SOURCE: See Table 1 Notes

Table 1 Notes

The data are primarily obtained from selected tables in The Alaska Economy: Year-End Performance Report 1978 (Alaska Department of Commerce and Economic Development, Division of Economic Enterprise; Juneau, Alaska) and Alaska Statistical Review (Alaska Department of Commerce and Economic Development, Division of Economic Enterprise; Juneau, Alaska, 1980). The latter source is a preliminary report. Specific sources for each column of the table follow.

Agriculture: page B-13 Alaska Statistical Review (ASR). Value of sales is approximately 74 percent of value of production, with the balance being used on farm.

Forestry: Data from 1960-1971 are from Alaska Statistical Review (1972), p. 90, and reflect total end product value. For 1972-1977, the data are from the 1978 Year End Performance Report and reflect only forest product exports. Here the series are not comparable, but individually reflect growth in the periods in question. Comparable series are not available over the full period.

Fisheries: Data for 1972-1975 are from the 1978 Year End Performance Report, p. 58. 1976 data are from Alaska Catch and Production: 1976 (Alaska Department of Fish and Game). 1977-1979 data are from ASR (1980). 1960-1971 data are from ASR (1972) p. 74. Data for 1960-71, 1976-79 are comparable. Data for 1972-75 represent approximately 92 percent of total wholesale value.

Oil and Gas: ASR (1980) p. B-3. It should be noted that these data do not include value added in transportation and here reflect approximate wellhead value.

Federal Government Outlays in Alaska: 1960-1977 data are from 1978 Year End Report, p. 105. 1978-1979 data are from ASR (1980), p. E-2. Data are for fiscal year ending in given calendar year.

Total Government Spending in Alaska: Data from ASR (1980) p. E-1. The total is net of intergovernmental transfers.

Data on federal and total government expenditures have also been included for comparative purposes. Furthermore, a large portion of federal government outlays indirectly reflects an export of goods and services by the private sector economy of Alaska.

Fisheries and petroleum have clearly dominated growth in the value of production in the private sector. Value of catch to fishermen has grown at an average annual rate of 15 percent over the period, and wholesale value has grown almost as rapidly (14.4 percent), reflecting both the substantial growth of shellfishing and rising product prices. When deflated by the consumer price index (which is appropriate if we are interested in implicit purchasing power), the value of catch grew at almost 10.3 percent and the wholesale value by 9.5 percent. Crude oil and natural gas percentage growth rates are relatively meaningless since the base in 1960 is negligible, but their significance is obvious. It is also worth noting that in 1978 (the last year for which data are available) production of minerals other than oil and gas and sand and gravel amounted to 18.4 million dollars, or about 0.6 percent of the total value of mineral production. Neither has there been any significant change in the value of this dimension of mining over the past two decades. In deflated dollars, federal government expenditures have grown at about 9.3 percent.

Government expenditures are not directly comparable to the value of production in other industries since they reflect not only government production (wages and salaries) but purchases of goods and services

and transfer payments to individuals. However, in another sense these expenditures do reflect a measure of demand for production of goods and services throughout the economy as a whole and underscore the continuing importance of government spending in the economy.

Of particular significance in overall government spending is the role of state government spending. The state fiscal history can roughly be divided into three periods: early post-statehood, Prudhoe Bay sale to pipeline completion, and Prudhoe Bay production.

During the first period, federal government grants, both statehood transition grants and others, were an important component of state government revenues. The relative decline in federal grants were more than offset by revenues linked to general economic growth and the development of Cook Inlet petroleum resources, but expenditures were constrained by available revenues.

The \$900 million Prudhoe Bay lease sale in the fall of 1969 ushered in the second period and led to an immediate doubling of state government expenditures. Growth in expenditures continued rapidly, although still constrained by available revenues and the rapidly diminishing balance of the lease sale. The third period is marked by the commencement of production from Prudhoe Bay; and, for the first time, the state has significant potential surplus revenues.

The rapid expansion of revenues since 1969 has resulted in a closely correlated growth of state government expenditures. This is reflected not only in expanding state government employment and wages but also by total government expenditures for purchases of goods and services and transfers to local government. The net result has been that state government spending (both directly and through local government) has assumed a significant role in the overall determination of economic activity in Alaska. This is a pattern which will prevail for some time into the future.

In summary, the role of natural resources in the growth of the Alaska economy has been dominated by fisheries and petroleum. Forest products have remained regionally important, primarily for Southeast Alaska, but have not demonstrated significant growth. Agriculture has remained stagnant, and, in real terms, the value of production has declined. Government has remained a major force in the economy, with state and local government increasing in relative proportion to total government.

#### EMPLOYMENT, UNEMPLOYMENT, AND WORK FORCE

Analysis of employment, unemployment, and work force data is important for several reasons. First, since labor is one of the key factors of production, employment data provide a general indicator of the growth and composition of production over time. The main deficiency with these data for such purposes is that they ignore changes in factor proportions over time and differences in factor proportions between



industries. This omission is particularly important in industries that are highly capital-intensive, such as the petroleum industry. Also, since these data are based on job counts, they do not reflect actual man hours of production and, hence, provide only an approximate measure of labor input.

Second, work force data, in conjunction with total employment data, determine unemployment. It is instructive to observe the patterns of unemployment over time and in response to changes in total economic activity. Third, the data are useful in measuring seasonal patterns of economic activity and how this may have changed over time.

Tables 2 and 3 provide summary data on employment, labor force, and unemployment for selected years over the 1960-1978 period. Total employment over this period grew at an annual average rate of 4.9 percent. However, substantial variation in the growth rate is evident. From 1960-1973, the rate was 3 percent; while for 1974-1978 (reflecting the pipeline boom) the rate was 8.6 percent. The growth of the civilian labor force shows a similar pattern, although increasing at a slightly higher rate. The result of this is that total unemployment has grown at about 7 percent per year over the period and the unemployment rate has also increased.

TABLE 2. CIVILIAN EMPLOYMENT, UNEMPLOYMENT AND LABOR FORCE  
1960, 1965, 1970-1978, BY BROAD INDUSTRY CLASSIFICATION  
(IN THOUSANDS)

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978
Total Civilian Labor Force	73.6	89.8	91.6	97.7	103.6	109.1	125.6	156.0	168.0	174.0	181.0
Total Unemployment	5.9	7.7	6.5	8.0	8.6	9.3	9.9	10.8	14.0	16.0	20.0
% of Total Labor Force	8.0%	8.6%	7.1%	8.2%	8.3%	8.5%	7.9%	6.9%	8.3%	9.2%	11.0%
Total Employment	67.7	82.1	85.1	89.6	95.0	99.9	115.7	145.3	154.0	158.0	161.0
	Emp. %	Emp. %	Emp. %	Emp. %	Emp. %	Emp. %	Emp. %	Emp. %	Emp. %	Emp. %	Emp. %
Nonagricultural Wage and Salary Employment	56.9	100.0	92.5	100.0	105.4	100.0	111.2	100.0	129.7	100.0	163.7
Mining	1.1	1.9	1.6	3.0	2.5	2.1	2.0	1.8	3.0	2.3	3.8
Contract Construction	5.9	10.4	6.5	9.2	6.9	7.5	7.8	7.0	14.1	10.9	25.9
Manufacturing	5.8	10.1	6.2	8.8	7.8	8.0	8.1	7.7	9.4	8.5	9.6
Food Processing	2.8	4.9	3.0	4.3	3.7	3.7	3.5	4.6	4.1	4.3	3.3
Logging, Lumber, Pulp	2.2	3.9	2.3	3.3	2.8	2.9	2.8	2.7	3.2	2.9	3.6
Transportation, Communications, Public Utilities	6.8	12.0	7.3	10.4	9.1	9.8	9.8	10.0	9.4	12.4	9.6
Trade	7.7	13.5	10.0	14.2	15.4	16.6	16.1	16.5	17.1	16.2	18.3
Finance, Insurance, Real Estate	1.4	2.5	2.2	3.1	3.1	3.4	3.2	3.3	3.7	3.5	4.2
Services	5.6	9.8	7.5	10.6	11.4	12.3	12.5	12.8	14.0	13.3	15.2
Government	22.7	39.9	29.7	42.1	35.5	38.5	38.0	38.9	41.7	39.6	42.8
Federal	15.6	27.4	17.4	24.7	17.1	18.5	17.3	17.7	17.2	16.3	17.2
State	3.9	6.9	7.0	9.9	10.4	11.2	11.7	12.0	13.3	12.6	13.8
Local	3.2	5.6	5.3	7.5	8.1	8.8	9.0	9.2	11.2	10.6	11.9
	10.7	13.1	10.7	13.1	10.1	15.8	9.7	17.6	10.1	19.1	11.5
	18.3	11.2	17.9	10.3	17.7	10.7	18.1	11	17.9	10.3	17.7
	15.5	9.5	14.1	8.1	13.9	8.4	14.3	8	14.1	8.1	13.9
	28.6	17.2	28.6	15.9	28.5	17.2	28.6	17	28.6	15.9	28.6
	30.2	49.5	30.2	49.7	28.6	50.7	30.5	52.2	32	30.5	52.2
	3.7	6.0	3.7	7.1	4.1	7.8	4.7	8.2	5	7.8	8.2
	15.3	27.4	16.0	27.4	16.5	27.6	16.5	27.6	16	27.4	16.5
	26.2	16.0	26.2	16.0	27.6	15.9	28.5	17.2	28.6	17	28.6
	49.5	30.2	49.5	30.2	49.7	28.6	50.7	30.5	52.2	32	30.5
	4.9	3.8	4.9	3.8	6.0	3.7	7.1	4.1	7.8	4.7	8.2
	14.1	25.1	15.3	27.4	16.0	27.4	16.5	27.6	16	27.4	16.5
	34.9	49.5	30.2	49.7	28.6	50.7	30.5	52.2	32	30.5	52.2
	45.3	38.5	45.3	38.5	42.8	38.5	45.3	34.9	49.5	30.2	49.7
	18.0	13.9	18.3	11.2	17.9	10.3	17.7	10.7	18.1	11	17.7
	14.2	10.9	15.5	9.5	14.1	8.1	13.9	8.4	14.3	8	14.3
	13.1	10.1	15.8	9.7	17.6	10.1	19.1	11.5	19.8	12	19.8

Table 2 Notes

Sources of data: 1960, 1965 ASR (1972) p. 16. It should be noted that the "labor force" data are actually work force data for these two years and are not directly comparable with the data for 1970-1978. The basic difference between the two series is that work force estimates are based on job counts and, hence, a worker may be counted more than once if holding two or more jobs. Labor force estimates are supposed to eliminate this double counting. Thus, the work force data for 1960 and 1965 somewhat overstate the actual number of employed.

In 1970-1978, labor force and total employment estimates are obtained from Alaska Labor Force Estimates by Area (Alaska Department of Labor), various years.

Non-agricultural wage and salary data are obtained from the Statistical Quarterly (Alaska Department of Labor) for the various years.

TABLE 3. INDEX OF SEASONAL VARIATION IN NONAGRICULTURAL  
EMPLOYMENT: SELECTED YEARS 1960-1978

	<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1972</u>	<u>1974</u>	<u>1976</u>	<u>1978</u>
Total Nonagricultural Employment	39.4	30.6	22.7	24.6	32.0	23.1	14.0
Contract Construction	156.2	91.7	69.5	77.6	108.2	64.7	47.2
Manufacturing	136.3	116.3	107.9	105.2	70.8	78.2	86.5
Food Processing	211.5	195.2	196.3	175.3	100.6	112.0	125.0
Trade	20.8	20.0	15.6	14.8	25.1	13.5	12.0
Services	28.4	17.2	10.7	16.2	26.8	13.3	17.8
Unemployment Rate, All Industries	117.5	74.4	59.2	65.1	82.3	45.8	30.0
Labor Force	28.2	26.5	21.8	21.0	27.1	21.2	12.0

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SOURCE: Compiled from Statistical Quarterly (Alaska Department of Labor), selected years. Seasonal variation is measured as the high month minus the low month divided by average annual figure, stated as a percent. Unemployment data are from Labor Force Estimates (Alaska Department of Labor), various years.

It is also worth noting that during the pre-pipeline period the unemployment rate was relatively stable and that the somewhat higher rates of 1977 and 1978 reflect in large part a readjustment to a more normal post-pipeline period. These data clearly illustrate the openness of the Alaska labor market. Large variations in the demand for labor are primarily met by significant in- and out-migration and by changes in labor force participation rates. As a consequence, the long-run rate of unemployment is quite stable and the simple expansion of economic activity has little effect in terms of reducing unemployment. The second block of data in Table 2 provides annual average employment data by broad industry classification. In addition to illustrating the sustained growth of employment and production in all industry categories, these data also indicate relative changes in the significance of specific industries.

Employment in mining is the one basic sector industry that has increased its share of total employment. The federal government share has declined substantially over the period, while both state and local government have grown, with much of the growth in state government employment occurring during the 1960s and the early 1970s. Local government growth lagged state government in the early years, but by 1975 local government employment exceeded state government employment. Of particular interest is the growth of support sector activity, including trade, finance, insurance and real estate, and services. This growth reflects a steady diversification of support sector activity and the process of import substitution in response to increasing

market size, growth of incomes, and opportunities for specialization. In short, the data reflect a general maturation of the economy.

It is also of interest to consider changes in seasonal patterns of economic activity. Table 3 summarizes seasonal activity in selected industries, as well as for total nonagricultural wage and salary employment, labor force, and unemployment. Seasonal variation is measured as the high month minus the low month divided by the average annual figure for the respective variable. Because of secular growth in the variables, the index tends to overstate seasonality for any given year, but for comparative purposes, over time, the index is satisfactory.

The data reflect two important dimensions of the Alaska economy. First, seasonality varies drastically from industry to industry, with construction and manufacturing (especially food processing) showing the greatest seasonal swings. Second, while significant seasonality remains in all industry, there has been a major reduction over time.

In summary, the data on labor force, employment, and unemployment illustrate several important features of the Alaska economy. First, while growth has been uneven, aggregate economic activity has increased substantially since statehood. Contract construction, mining, and support sector industries grew rapidly during pipeline construction. With the exception of contract construction, levels of employment achieved at the peak of pipeline construction have generally been sustained or have increased.

Second, structural change that reflects a general maturing of the economy has occurred, as evidenced by the increased share of total employment accounted for by support sector activity, including trade, finance, insurance and real estate, and services. Coupled with the greatly reduced dependence of the state on federal government activity and the growth of petroleum and fisheries, the data indicate a general broadening and diversification of economic activity.

Third, in addition to sustained secular growth, there has been a marked decrease in seasonal swings in economic activity. In part, this reflects the relative growth of industries with smaller seasonal variations. In addition, construction and fish processing seasonality have also reduced substantially.

Finally, the relative stability of unemployment rates over time clearly indicates the openness of the Alaska labor market. The generally higher than national average unemployment rates have not responded to aggregate economic expansion historically and probably will not in the future.

#### PERSONAL INCOME

Personal income measures that part of the total value of production that accrues to individuals and includes: wage and salary income; other labor income; proprietor's income; income from dividends, interest, and rent; and personal transfer payments. While deficient in many respects as a measure of economic well-being, it is nevertheless

a useful indicator of the degree to which individuals share in the total benefits of production. Table 4 presents estimates of personal income for Alaska, by major source, for selected years covering the period from 1960 through 1978.

Personal income has grown steadily over the entire period, at an average annual rate of 11.3 percent, while for the pipeline period the growth was about 17 percent per year. Wage and salary income accounted for the majority of personal income throughout the period, averaging 80 percent. In contrast, about 68 percent of U.S. personal income is accounted for by wages and salaries. Proprietor income as a share of total personal income has declined somewhat; while that of dividends, interest, and rent has increased modestly. The share accounted for by transfer payments has increased substantially but still remains well below the national figure of 12.6 percent. The data also generally confirm the relative changes in the composition of industry activity that were observed in the employment data.

The growth of aggregate personal income in Table 4 reflects not only aggregate growth of production but also the influence of inflation. Table 5 presents aggregate personal income in both current and constant dollars. Growth of constant dollar personal income has been significant and has averaged 7.8 percent per year. During the 1974-1977 period, the growth was even more dramatic at 11.8 percent in real terms. The combined effects of inflation and the plateauing of economic activity following completion of pipeline construction have resulted in a slight decline in real personal income in 1978.



TABLE 4. PERSONAL INCOME BY MAJOR COMPONENT:  
ALASKA, SELECTED YEARS 1960-1978

(millions of current dollars)

COMPONENT	1960		1965		1970		1975		1978	
	\$	% Total	\$	% Total	\$	% Total	\$	% Total	\$	% Total
Wages & Salary	567.9	84.1	778.2	88.8	1293.9	84.7	3620	85.0	3954.9	80.6
Private, Total	281.5	41.7	463.2	52.8	773.1	50.6	2771	65.1	2907.2	59.2
Mining	10.3	1.5	14.3	1.6	54.2	3.5	116	2.7	248.4	5.1
Contract Construction	77.3	11.5	98.0	11.2	140.2	9.2	1095	25.7	537.8	11.0
Manufacturing	47.1	7.0	59.7	6.8	90.9	5.9	161	3.8	260.9	5.3
Fisheries	17.7	2.6	22.9	2.6	31.4	2.1	46.2	1.1	100.5	2.0
Forest Products	8.4	1.2	22.8	2.6	38.6	2.5	64.8	1.5	50.0	1.0
Support Sector	142.1	21.1	265.3	30.3	457.4	29.9	1364	32.0	1817.0	37.0
Government	286.6	42.5	376.0	42.9	593.6	38.8	993	23.3	1301.8	26.5
Federal Civilian	104.7	15.5	137.6	15.7	195.1	12.8	308	7.2	383.2	7.8
Military	136.0	20.1	143.9	16.4	225.7	14.8	258	6.1	287.5	5.9
State & Local	45.9	6.8	94.4	10.8	172.9	11.3	427	10.0	631.0	12.9
Proprietors' Income	50.1	7.4	62.1	7.1	73.9	4.8	143	3.4	260.5	5.3
Dividend, Interest & Rent	33.0	4.9	52.1	5.9	81.4	5.3	220	5.2	333.4	6.8
Transfer Payments	24.0	3.6	34.2	3.9	79.3	5.2	274	6.4	358.3	7.3
TOTAL	675.0	100.0	876.6	100.0	1528.5	100.0	4257	100.0	3907.1	100.0
Less										
Cont. for Soc. Ins.	11.0		22.3		49.2		172.0		223.5	
Residence Adj.	31.5		45.9		67.1		637.0		314.6	
Resident Personal Income	632.5		900.2		1412.2		3447.0		4369.0	

#### Table 4 Notes

SOURCE: Major components of the table are obtained from U. S. Department of Commerce, Bureau of Economic Analysis reports of personal income by state. Wages and salary figures (row 1) include wage and salary plus other labor income components of personal income. Except for 1960, the private, total row and subcomponents thereunder, contain wage and salary income, other labor income, and proprietors' income. Total income is the sum of the wages and salary row plus proprietors' income; dividends, interest and rents; and transfer payments. Resident personal income is equal to total income less contribution for social insurance and the residence adjustment.

TABLE 5. ALASKA RESIDENT ADJUSTED PERSONAL INCOME  
 IN CURRENT AND CONSTANT 1979 DOLLARS  
 - 1960, 1965, and 1970-1978

	<u>Millions of Dollars of Personal Income, Total</u>		<u>Per Capita Personal Income</u>	
	<u>Current \$</u>	<u>Constant 1979 \$</u>	<u>Current \$</u>	<u>Constant 1979 \$</u>
1960	632.5	1,470.6	2,797	6,503
1965	858.4	1,982.8	3,168	7,318
1970	1,411.9	2,700.3	4,644	8,882
1971	1,557.2	2,954.8	4,939	9,372
1972	1,698.5	3,036.4	5,234	9,631
1973	2,001.5	3,570.0	6,046	10,784
1974	2,436.7	3,822.9	7,138	11,199
1975	3,527.7	4,493.5	9,673	12,321
1976	4,194.8	5,421.4	10,274	13,278
1977	4,313.4	5,346.5	10,455	12,959
1978	4,369.0	4,875.2	10,849	12,106
	<u>Average Annual Percent Growth</u>			
	11.3	7.8	6.9	3.5

SOURCE: Current dollar personal and per capita income from U.S. Department of Commerce, Bureau of Economic Analysis. Deflated by Anchorage Consumer Price Index, U.S. Department of Labor.

There are two other dimensions of personal income that are particularly important in assessing individual economic well-being: per capita income and the distribution of income. Table 5 includes data on the growth of per capita personal income in real and current dollars.

Real per capita income from 1960-1973 grew at an average annual rate of 4 percent. The 1973-1978 period, encompassing pipeline construction and the post-boom readjustment, shows rapid expansion until 1976 and then a substantial drop during 1977 and 1978. The net growth over the period is only 2 percent per year. Two points are worth noting in this respect. First, the rapid expansion of activity occurred during a period of high national inflation and was of sufficient magnitude to lead to additional regional inflation in the Alaska economy. Thus, the real value of per capita income growth was greatly diminished. Second, the rapid expansion of total economic activity had only a minimal effect in raising per capita income, again reflecting the ease of entry into the Alaska labor market.

Data on the distribution of personal income are not available for recent years, but it is instructive to look at the pattern of wages over time. Table 6 presents data on relative wages, by industry, for selected years over the 1965-1978 period.

TABLE 6. DISTRIBUTION OF RELATIVE WAGE RATES,  
 BY INDUSTRY, FOR ALASKA,  
 -SELECTED YEARS, 1965-1978

<u>Industry</u>	<u>1965</u>	<u>1970</u>	<u>1976</u>	<u>1978</u>
Total Nonagriculture Wage and Salary	100	100	100	100
Mining	147	164	140	193
Contract Construction	165	169	210	157
Manufacturing	106	99	73	93
Food Processing	97	78	55	71
Logging, Lumber, and Pulp	115	124	96	119
Other Manufacturing	112	110	83	109
Transportation, Communication, and Public Utilities	115	114	105	128
Wholesale Trade	127	117	94	111
Retail Trade	78	70	50	62
Finance, Insurance, Real Estate	88	81	62	81
Services	74	72	78	75
Government	91	97	74	97
Federal	91	100	70	94
State	91	96	79	111
Local	91	93	72	89

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SOURCE: Computed from average monthly wage data from the Statistical Quarterly (Alaska Department of Labor), selected years.  
 Relative wages are the respective industry wage divided by the average wage for all industries x 100.

The numbers reflect the ratio of the average monthly wage for the respective industry divided by the average monthly wage for all non-agricultural wage and salary employment. The data must be interpreted with caution since several factors are at work that may account for year-to-year variability. First, the average monthly wage data reflect both straight time and overtime earnings and are thus sensitive to variation in the ratio of straight time to overtime work.

Second, the average monthly wage is computed by dividing total wages by average monthly employment; and average monthly employment, in turn, reflects both full- and part-time work. Thus, the employment data are only an approximation of man hours worked. We are also looking at fairly aggregate data. Some of the variation within industries may be accounted for by changes in composition of activity within the broad industry classifications.

The data first indicate the growing disparity of average wage rates, which would suggest a trend toward a less equal distribution of income. More significant are the changes that occurred at the peak of pipeline construction in 1976. Major distortions in the structure of wages are present, and this suggests that the distribution of benefits during a boom is not uniform, but rather that a small segment of the economy appears to reap a large proportion of the gains. This feature of boom economics is further demonstrated by an analysis of changes in real wages over the 1973-1976 period.

Table 7 shows average monthly wages, by broad industry classification, deflated by the Anchorage consumer price index (CPI). Use of the Anchorage CPI is dictated because there is no statewide index. Hence, the deflation is subject to some error since price changes are not uniform throughout Alaska. As an approximation, however, the data are adequate.

It is clear that drastic differences exist among industries and that the economic benefits of rapid economic expansion tend to be concentrated in a select few industries. A major portion of income implied in the growth of construction wages was also earned by nonresidents or temporary resident employees. With the exception of business services, all components of the support sector and government badly lagged the average growth of wages and, implicitly, relative income. Federal government and finance, insurance, and real estate real wages actually declined.

While much of the inflation that occurred during the period is attributable to national inflation, significant regional inflation resulting from pipeline construction activity also occurred. Prior to pipeline construction, the Anchorage CPI had been growing at a less rapid rate than the U.S. CPI. However, during pipeline construction, this relationship was reversed, and the Anchorage CPI grew more rapidly. After the pipeline, however, the inflation rate in Anchorage again fell below that of the United States. Except for periods of

TABLE 7. CHANGE IN REAL AVERAGE MONTHLY WAGE  
1973-1976, ALASKA (1973 DOLLARS)

<u>Industry</u>	<u>Average Wage 1973</u>	<u>Average Wage 1976</u>	<u>Average Wage Percent Change</u>
Total Nonagriculture Wage and Salary	\$1,006	\$1,424	12.3%
Oil and Gas Mining	1,661	2,068	7.6
Contract Construction	1,635	2,985	22.2
Manufacturing	961	1,041	2.7
Transportation, Communication, and Public Utilities	1,141	1,494	9.4
Wholesale Trade	1,177	1,341	4.4
Retail Trade	687	709	1.1
Finance, Insurance, Real Estate	897	884	- 0.5
Services	751	1,107	13.8
Hotels, Motels, Lodging	527	537	0.6
Business Services	732	1,706	32.6
Government	1,024	1,047	0.7
Federal	1,062	1,002	- 1.9
State	992	1,132	4.5
Local	1,003	1,024	0.7

SOURCE: Computed from average monthly wage data, Statistical Quarterly  
(Alaska Department of Labor), selected years.



relative boom in Alaska, consumer prices have tended to rise noticeably slower in Anchorage than outside Alaska. Over the long run, this will tend to narrow price differentials between Alaska and the Lower 48 states. Table 8 presents relative rates of growth in the Anchorage and United States CPIs for selected years, and clearly illustrates this pattern.

As one final indication of income distribution patterns, a distribution relating percentage of total wage and salary income to percentage of employment has been constructed for 1965 and 1978 (see Figure 1). The distribution was constructed by ranking industries according to average monthly wage. The percentage of total employment and total wage income accounted for by the respective industry was then computed. The cumulative employment and income percentages were then plotted, yielding the typical Lorenz-type distribution figure.

A comparison of the two distributions reveals a clear shift toward a less uniform distribution of income. This shift is probably accounted for by two factors. First, as indicated earlier, there has been a sizable increase in the share of total activity accounted for by support sector industries, and these industries generally have lower than average wage rates. Second, there has been a substantial growth in the range of relative wages between industries over time.

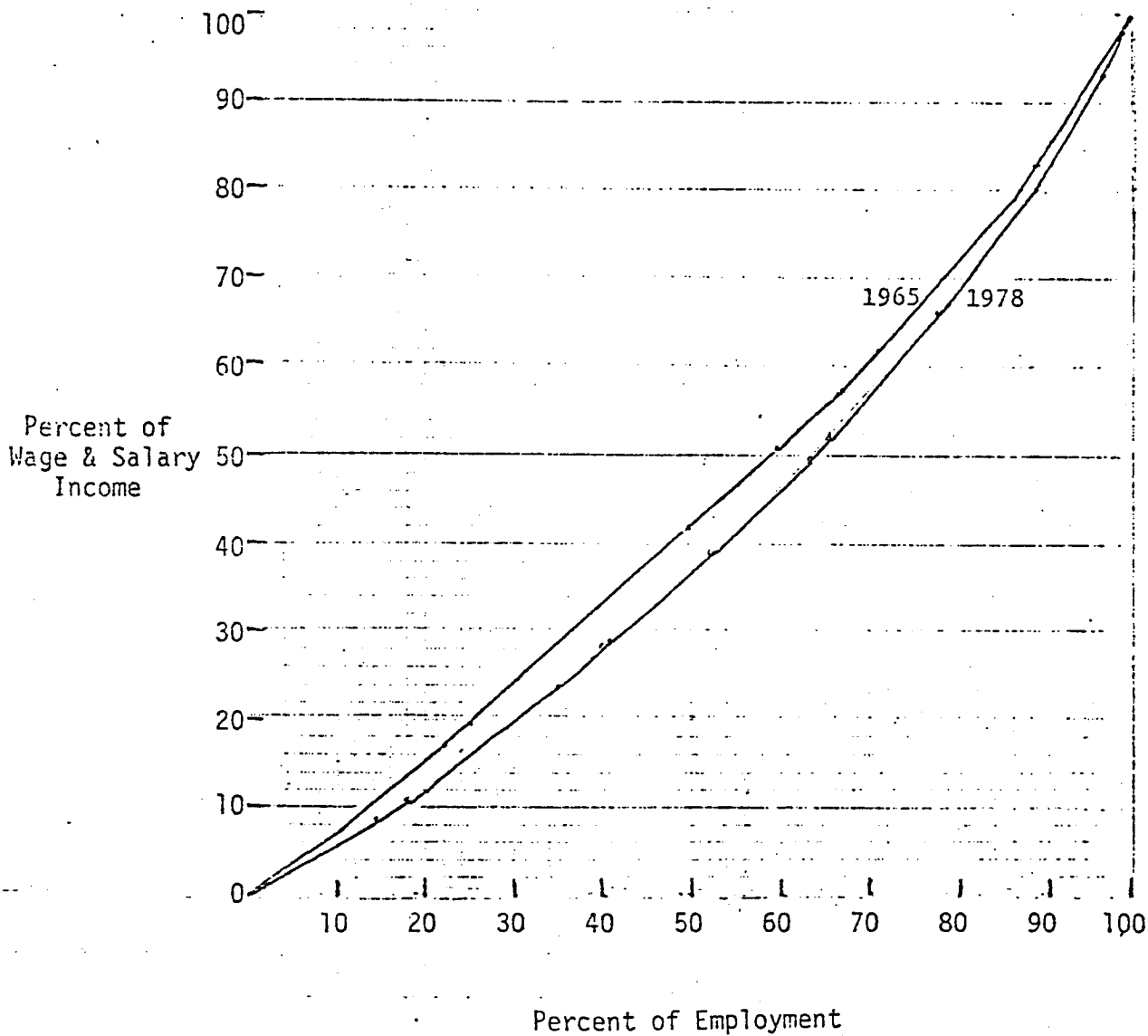
TABLE 8. RATES OF CHANGE FOR THE ANCHORAGE  
AND U.S. CONSUMER PRICE INDEX,  
SELECTED YEARS, 1960-1981

	<u>1960-1970</u>	<u>1970-73</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976-77</u>
Anchorage	1.8	4.1	13.3	12.3	6.5	5.8
United States	2.8	5.6	12.0	7.6	5.3	6.5
	<u>1977-78</u>	<u>1978-79</u>	<u>1979-80</u>	<u>1980-81</u>		
Anchorage	6.3	9.4	8.9	7.5		
United States	7.7	11.5	13.0	10.7		

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SOURCE: Derived from the Bureau of Labor Statistics reports on Anchorage and United States CPIs.

FIGURE 1. DISTRIBUTION OF WAGE AND SALARY INCOME  
ALASKA, 1965 and 1978



SOURCE: See text.

In summary, real personal income has shown sustained growth over the entire 1960-1978 period, both in aggregate and per capita terms. The growth has not been uniformly distributed, however, and the wage component has become less uniform over time. This was particularly evident during pipeline construction and supports the hypothesis that the benefits of pipeline construction were largely concentrated in a few sectors.

#### POPULATION

The remaining dimension of growth to be considered is population. Changes in population are divided into two components, natural increase (or decrease) and in/out-migration. Natural population growth results from an excess of births over deaths and is, hence, determined by birth and death rates.

Alaska exhibits both the highest birth rate and the lowest death rate in the United States; and as a result, the rate of natural population increase is the highest in the United States. This phenomenon is largely accounted for by the relative youthfulness of the population, with over 34 percent of the population between the ages of 14 and 30. This age group has both the highest fertility rate and the lowest death rate.

Net migration (in-migration minus out-migration) is the second factor contributing to population change. Many factors influence the migration decision; but for the Alaska case, it appears that (with the

exception of military-related migration) migration occurs largely in response to economic opportunity. In the aggregate, relative rates of unemployment and relative wage differentials in Alaska and elsewhere should be important in determining the migration decision. At the individual level, the economic component of the decision is related to the expected gain resulting from the move. Basically, this is the expected wage differential times the probability of getting a job, less the cost of making the change. Thus, either a change in relative wage rates or relative employment opportunities can influence the decision.

That migration is sensitive to economic opportunity is clearly demonstrated by patterns of migration that occur during and after pipeline construction. Data summarizing population and changes in population for Alaska for the years 1965 through 1978 are presented in Table 9. Both the relative stability of natural increase and the volatility of net migration are clear. Natural increase has averaged about 1.5 percent per year; while large variations, even in pre-pipeline years, are evident in the net migration component.

Table 10 presents the age distribution of Alaska in juxtaposition to the overall U.S. age distribution. As would be expected, the middle age groups are significantly larger in Alaska than for the United States as a whole; almost 34 percent of the Alaska population is

TABLE 9. ALASKA POPULATION AND COMPONENTS  
OF CHANGE: 1965-1978

(thousands)

<u>Year</u>	<u>Total</u>	<u>Natural Increase</u>	<u>Total Change</u>	<u>Net Migration</u>
1965	265.2	5.7	10.2	4.5
1966	271.5	5.3	6.3	1.0
1967	277.9	5.0	6.4	1.4
1968	284.9	5.1	7.0	1.9
1969	294.6	5.6	9.7	4.1
1970	302.4	6.1	7.8	1.7
1971	312.9	5.9	10.6	4.7
1972	324.3	5.5	11.4	5.9
1973	330.4	5.1	6.1	0.9
1974	351.2	5.6	20.8	15.2
1975	404.6	5.9	53.4	47.5
1976	413.3	6.3	8.7	2.4
1977	411.2	6.8	- 2.1	- 8.9
1978	407.0	6.7	- 4.3	-11.0
1979	406.2	7.4	- .8	- 8.2
1980	400.5*		- 5.7	

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\*U.S. Census figure for 1980, so comparability is more difficult.

SOURCE: Alaska Department of Labor

TABLE 10  
ALASKA POPULATION BY AGE, 1980

<u>Age Cohort</u>	<u>Total</u>	<u>Alaska Age Distribution (% of Total)</u>	<u>U.S. Age Distribution (% of Total)</u>
0 - 4	38,777	9.68	7.21
5 - 9	84,917	8.72	7.37
10 - 14	34,166	8.53	8.05
15 - 19	36,980	9.23	9.34
20 - 24	45,058	11.25	9.40
25 - 29	48,452	12.10	7.29
30 - 34	41,916	10.46	7.75
35 - 39	31,182	7.79	6.16
40 - 44	22,570	5.63	5.15
45 - 49	18,355	4.58	4.89
50 - 54	15,801	3.95	5.16
55 - 59	12,592	3.14	5.13
60 - 64	8,095	2.02	4.45
65 +	11,530	2.88	11.28

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SOURCE: U.S. Department of Commerce, 1980 Census of Population: Age, Sex, Race, and Spanish Origin by Regions, Divisions and States: 1980, PC 80-51-1, p. 4-5.

between ages 20 and 35, where the comparable figure for the United States is less than 25 percent. This age group is extremely mobile, and accounts for a good deal of the migration that occurred during the pipeline boom.

In summary, Alaska's natural population growth is substantially above that of the nation as a whole. Furthermore, the response of migration to economic opportunity is clearly evident. Once again, this emphasizes the openness of the Alaska labor market.



### The Aleutian Islands Census Division

The Aleutian Islands Census Division encompasses all of the Aleutian Islands, the Pribilof Islands, and the Alaska Peninsula from Port Heiden west. This is the definition used by the 1970 Census and the Alaska Department of Labor Statistical Quarterly (the 1980 Census used a slightly different definition).

The economy of the Aleutian Islands Census Division in no sense reflects a cohesive, functional economic area. This economic area is composed of several relatively isolated communities and Federal government military installations. Private sector activity is almost totally dependent upon utilization of the abundant fish resources and includes both harvesting and processing. Harvesting of fur seals on St. Paul Island is also an important local activity. Minor amounts of sheep ranching also occur in the region. Military installations at Shemya and Adak, as well as elsewhere in the region, swell the population, employment, and income figures for the census division but have no perceptible links with other economic units within the census division.

#### PRODUCTION

Basic sector private production is mostly composed of fisheries-related activity. Both commercial fishing and processing are widely dispersed throughout the region, although processing is more highly concentrated in the eastern portion of the census division. Tables 11 through 13 provide summary data on commercial fishing. In Table 11 the salmon, shellfish, total catch, and value of catch to fishermen

TABLE 11. CATCH AND VALUE TO FISHERMEN,  
ALEUTIAN ISLANDS CENSUS DIVISION  
1970 TO 1976, SELECTED YEARS

(catch in million pounds; value in million dollars)

<u>Year</u>	<u>Salmon</u>		<u>Shellfish</u>		<u>Total</u> <sup>1</sup>	
	<u>Pounds</u>	<u>Value</u>	<u>Pounds</u>	<u>Value</u>	<u>Pounds</u>	<u>Value</u>
1976	20.910	7.155	154.262	61.032	175.921	69.029
1973	6.993	1.815	60.966	25.135	71.261	29.243
1970	28.695	5.102	44.082	9.108	74.540	14.793

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<sup>1</sup>Totals include minor amounts of other fish. There is also an unreconciled discrepancy for the weight of shellfish in Table 14 and Table 15 for 1973.

SOURCE: Alaska Catch and Production (Alaska Department of Fish and Game, Division of Commercial Fisheries), selected years. Data prior to 1970 not available on a comparable basis.

TABLE 12. SHELLFISH HARVEST, ALEUTIAN ISLANDS  
CENSUS DIVISION, 1962, 1965-1976

(millions of pounds)

<u>Year</u>	<u>Kingcrab</u>	<u>Dungeness</u>	<u>Tanner</u>	<u>Shrimp</u>	<u>Total</u>
1962	6.840	-	-	-	6.840
1965	50.704	.017	-	-	50.717
1966	63.993	.025	.000	.000	64.018
1967	61.990	.000	.003	.000	61.993
1968	53.060	.953	.142	4.375	58.530
1969	39.895	1.380	1.662	2.657	45.594
1970	35.408	.717	3.558	4.399	44.082
1971	53.997	.022	2.307	5.228	61.554
1972	52.957	.000	4.054	14.891	71.902
1973	56.620	.201	6.183	18.947	81.951
1974	66.812	.061	13.998	31.245	112.116
1975	70.002	.004	12.592	20.504	103.102
1976	82.943	.000	30.202	41.117	154.262

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SOURCE: Alaska Catch and Production: Commercial Fisheries Statistics (Alaska Department of Fish and Game, Division of Commercial Fisheries), various years. Areas included are South Alaska Peninsula, Aleutians East-Unalaska, Aleutians West-Adak, and Bering Sea. These boundaries are not strictly comparable to the census division boundaries, but are adequate for present purposes.

TABLE 13. SHELLFISH HARVEST, BY AREA,  
SELECTED YEARS 1962 - 1976  
(millions of pounds)

<u>South Peninsula</u>									
<u>Year</u>	<u>King Crab</u>	<u>Dungeness</u>	<u>Tanner</u>	<u>Shrimp</u>	<u>Total</u>				
1967	16.9	-	.0	-	16.9				
1972	4.2	-	3.9	14.8	22.9				
1976	.7	-	7.3	37.4	45.4				
<u>Aleutians East-Unalaska</u>									
<u>Year</u>	<u>King Crab</u>	<u>Dungeness</u>	<u>Tanner</u>	<u>Shrimp</u>	<u>Total</u>				
1967	27.1	-	-	-	27.1				
1972	10.7	-	.0	.1	10.8				
1976	11.4	-	.5	3.7	15.6				
<u>Aleutians West-Adak</u>									
<u>Year</u>	<u>King Crab</u>	<u>Dungeness</u>	<u>Tanner</u>	<u>Shrimp</u>	<u>Total</u>				
1967	12.5	-	-	-	12.5				
1972	16.2	-	-	-	16.2				
1976	.4	-	.1	-	.5				
<u>Bering Sea</u>									
<u>Year</u>	<u>King Crab</u>	<u>Dungeness</u>	<u>Tanner</u>	<u>Shrimp</u>	<u>Total</u>				
1967	4.4	-	-	-	4.4				
1972	21.9	-	.1	-	22.0				
1976	70.4	-	22.3	-	92.7				
<u>Area Totals</u>									
<u>Year</u>	<u>S. Peninsula</u>		<u>Aleutians-E.</u>		<u>Aleutians-W.</u>		<u>Bering Sea</u>		<u>Total</u>
	<u>Total</u>	<u>%</u>	<u>Total</u>	<u>%</u>	<u>Total</u>	<u>%</u>	<u>Total</u>	<u>%</u>	
1967	16.9	27.8	27.1	44.5	12.5	20.5	4.4	7.2	60.9
1972	22.9	31.8	10.8	15.0	16.2	22.5	22.0	30.6	71.9
1976	45.4	29.4	15.6	10.1	.5	.3	92.7	60.1	154.2

SOURCE: Alaska Catch and Production (Alaska Department of Fish and Game, Division of Commercial Fisheries), selected years.

are indicated for recent years. The data clearly show the rapid increase in both the value and volume of shellfish harvested in the region.

A longer-run view of shellfish harvest is shown in Table 12 and highlights the growth in the diversity of shellfish caught. In particular, both tanner crab and shrimp have provided much of the growth in the shellfish harvest, helping to offset significant declines in king crab catches that occurred during the late 1960s and early 1970s. Finally, Table 17 provides data on the disparities of catch within areas of the region and how these have changed over recent years. Significant declines in king crab harvests in all areas are noted, with the exception of the Bering Sea which has more than offset the declines in other areas. Tanner crab and shrimp have been increasingly important for the South Peninsula and Aleutian-East areas.

In short, major changes in the pattern of harvests, both regionally and by species, have occurred. The South Peninsula and Bering Sea areas show overall gains and the Aleutian-East and Aleutian West areas show net declines. These patterns are also indicated by the percentage shares of total shellfish harvest shown in Table 13.

A second, important dimension of understanding commercial fishing in the Aleutian economy is an analysis of who does the fishing. Data on this point is fragmentary and is presented in Table 14. The king crab

TABLE 14. RESIDENCE OF BOATS AND GEAR LICENSE  
HOLDERS FISHING THE ALEUTIANS

<u>Proportion of King Crab Catch Value by Boat Residence</u>		<u>Proportion of Salmon Catch by Residence of Gear License Holder</u>	
<u>Place</u>	<u>Percentage</u>	<u>Place</u>	<u>Percentage</u>
Kodiak	26.8	Kodiak	41.5
Alaska Peninsula	4.0	Aleutians	20.0
Dutch Harbor	4.3	South Central Alaska	3.2
Out of State	64.9	Anchorage	2.6
		Other Alaska	7.1
		Non-resident	19.2
		Unknown	6.5

SOURCE: King Crab: Western Alaska King Crab: Draft Fishery Management Plan (North Pacific Fishery Management Council, Anchorage; Council Review Draft, May 1980). Derived from data on page 30.

Salmon: Derived from Table 9-8, Measuring The Socioeconomic Impacts of Alaska's Fisheries, by George W. Rogers, et al, (Institute of Social and Economic Research; April 1980).

and shellfish industry tends to be dominated by nonresident boats and crews, and the area of concentration for these vessels is the Bering Sea. Much of the remainder of the catch is accounted for by Kodiak-based boats.

The information on the salmon harvest is even less precise since the region covered is southwest Alaska (the Aleutian Census Division plus Kodiak). It is assumed, -with some uncertainty, that the regional proportions apply to the Aleutians.

The overall picture that emerges is one in which the bulk of the commercial fishing in the Aleutians is carried out by fishermen and vessels which are not resident to the Aleutians. More precise information would be desirable but is simply not available.

A final dimension of commercial fishing to be considered is that of employment. No systematic, periodic estimates of commercial fishing employment are made for the Aleutians (nor for the rest of the State). Estimates for the 1969 through 1976 period, however, have been compiled for the State and regions (Rogers, 1980) and in turn have been used to estimate employment in the Aleutians for 1978. This has resulted in an estimate of 756 for average annual employment in commercial fishing. Of these, 251 are estimated to be residents of the Aleutian Islands Census Division.

The procedure used to develop these estimates was to compute the ratio of the 1978 to 1976 catch, by species (salmon, shellfish), and apply this ratio to the Rogers' estimates of employment for 1976. Since his employment estimate was for the southwest region, it was then necessary to allocate to the Aleutians the total employment thus estimated. This was accomplished by apportioning total employment on the basis of

Aleutian to total southwest region catch and implies uniform productivity throughout the southwest region. The result of these manipulations is an estimate of total Aleutian Islands commercial fishing employment. The estimate of resident employment was developed using ratios presented in Table 14. It goes without saying that these estimates of employment are very approximate and subject to considerable error.

The second major component of the fishing industry in the Aleutians is processing. The present structure of the processing industry reflects a mix of shore-based and floating processors engaged in canning and freezing. The trend is toward freezing an increasing proportion of the catch.

A tally of processor permits for 1980 compiled from Alaska Department of Fish and Game records indicates seven shore-based facilities at Dutch Harbor; two at Sand Point; and one each at King Cove, False Pass, Squaw Harbor, and Port Moller. Some of these permits may cover firms that are only buying fish for transshipment.

Several floating processor permits are held as well: Dutch Harbor (4), Sand Point (1), and False Pass (1). In addition, some 31 permits are held that allow for floating processors to operate throughout the region. Not all permit holders necessarily utilize their permits, and several may actually be nothing more than buyers. It is clear, however, that processing is geographically well dispersed throughout the Aleutians.



Employment data for processing is available for the Aleutians Census Division from the Statistical Quarterly (Alaska Department of Labor). For 1978, 1,621 was the average annual employment in manufacturing, which for the Aleutians is largely synonymous with fish processing. As is the case with commercial fishing, it is important to determine what proportion of the employment was held by residents of the region.

Data regarding this question are fragmentary. In conversations with industry and local government people, it was estimated that somewhere between 5 and 15 percent of the employment was held by residents. A second source of information is The Recommended Community Development Plan: City of Unalaska, Alaska (Trick, Nyman, and Hayes: November 1977). According to this study, 72 out of 875 basic sector jobs (1976) were held by residents, and these jobs were primarily in fish processing. This would indicate that about 8.2 percent of processing jobs were held by residents. Community profiles prepared by the Arctic Environmental Information and Data Center for King Cove, False Pass, and Akutan also contain data that tend to support the above sources regarding resident to nonresident ratios.

Using what appears to be a reasonable estimate of the resident share of processing jobs, 10 percent, then 162 of 1,621 jobs were held by residents. The remainder (1,459) were held by nonresidents. Of these, almost all were from outside of Alaska.

Significant seasonal variation exists in processing employment, although to a much lesser degree than is generally the case in the salmon industry. For 1978, average employment for the four quarters was, respectively: 1,255 (January-March), 1,782 (April-June), 1,649 (July-September), and 1,798 (October-December). The low first quarter, followed by substantial gains in the second through fourth quarters, is typical of recent years. Available data do not indicate how seasonal patterns may vary between residents and nonresidents.

The second element of basic sector production in the Aleutians is Federal government and national defense-related activity. Major installations are located at Adak, Shemya, and Cold Bay. The largest of these is the naval station at Adak. According to data supplied by the Office of Information, Alaska Air Command, there are 1,781 active duty military and civilian defense-related personnel at Adak, as well as 1,400 dependents. These figures do not include additional civilian personnel associated with nondefense activity such as officers' clubs, post-exchanges, etc. Shemya and Cold Bay do not have resident dependents, and military and civilian defense-related personnel number approximately 490. Table 15 summarizes military and related federal civilian employment data for the census division as a whole for 1978.

While the military presence is numerically large, its economic impact on the economy of the Aleutians is negligible. The units are largely self-supporting and the only identifiable ties with the Aleutian or Alaska economy are transportation services provided by Reeve Aleutian

TABLE 15. MILITARY AND RELATED FEDERAL-CIVILIAN  
EMPLOYMENT AND WAGES, ALEUTIAN ISLANDS  
CENSUS DIVISION, 1978

	<u>Employment</u>	<u>Wages</u> (thousands)
Military and Related Civilian Employment	3,939	45,952
Military Personnel (Active Duty)	3,453	38,950
Military-Related Federal Civilian Employment	486	7,072
PX and NAF (Largely Part-time) <sup>1</sup>	330	1,875
Other Military Related Federal Employment	156	5,127

<sup>1</sup>Post exchange and nonappropriate fund activities, including officers' clubs, etc.

SOURCE: Numbers: Basic Economic Statistics of Alaska Census Divisions  
(Alaska Department of Commerce and Economic Development,  
Division of Economic Enterprise: November 1979).

Airways (RAA) and some contract construction. One benefit that does result from the military contracts with RAA is the feasibility of providing more frequent air service to other communities in the Aleutians. Contract construction work at the military installations is generally carried out by non-Aleutian based firms, either from Alaska or out-of-state.

In summary, basic sector production in the Aleutians is almost entirely related to fisheries resources or Federal government military-related activity. Fisheries activity has shown substantial growth but

is still largely dominated by non-Aleutian resident participants. The military presence, while substantial, has no significant relationships with the rest of the census division.

#### EMPLOYMENT, UNEMPLOYMENT, AND LABOR FORCE

Analysis of employment in the Aleutians is important for the same reasons that it was important at the statewide level. Table 16 summarizes average monthly employment for the Aleutian Census Division for the years 1965-1978. Over the period, total employment has grown substantially at an average annual rate of 5.9 percent. This growth has been largely dependent upon growth of the fisheries industry and State and local government. Employment in fish processing grew at an average annual rate of 14.1 percent, while State and local government grew at a rate of 8.5 percent. Federal government employment, primarily related to national defense, fluctuated considerably over the period but has shown no appreciable growth. The same is true for contract construction and transportation, communications, and public utilities. The support sector components of wholesale-retail trade; finance, insurance, and real estate; and services have also expanded as would be expected. Finance, insurance, and real estate grew at an average annual rate of 18.9 percent, although much of this growth occurred after 1973. Services grew at 22.7 percent over the period, but this growth rate must be interpreted with caution. The data for early years were not reported in the Statistical Quarterly (the source document) because of disclosure rules and, hence, were estimated. The large variation in this series also raises the question of inconsistency in the data, possibly due to classification difficulties.

TABLE 16. AVERAGE CIVILIAN MONTHLY EMPLOYMENT  
ALEUTIAN ISLANDS CENSUS DIVISION, 1965-1978

<u>Industry</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Construction	174	54	137	125	142	195	285	187	181	180	235	221	116	140
Manufacturing	292	411	422	471	349	476	657	610	675	851	783	991	1130	1621
Transportation, Communications, and Utilities	83	55	51	46	57	45	61	41	93	93	87	88	38	31
Wholesale Retail	117	138	152	138	134	136	125	124	142	137	148	149	110 <sup>e</sup>	101 <sup>e</sup>
Finance, Insurance and Real Estate	4 <sup>e</sup>	4 <sup>e</sup>	4 <sup>e</sup>	1 <sup>e</sup>	5 <sup>e</sup>	7 <sup>e</sup>	7 <sup>e</sup>	8 <sup>e</sup>	7 <sup>e</sup>	12	27	32	37	38
Services	12 <sup>e</sup>	13 <sup>e</sup>	108 <sup>e</sup>	232 <sup>e</sup>	268	143	240	82	47	33	20	93	150	171
Federal Government	678	707	633	550	523	528	574	640	704	813	626	618	569	682
State, Local Government	128	138	157	160	174	168	178	206	227	257	316	330	287	371
Total <sup>1</sup>	1494	1526	1714	1835	1727	1721	2178	1982	2186	2473	2349	2621	2474	3155

<sup>e</sup> = estimated.

<sup>1</sup>Total includes minor amounts of mining and miscellaneous employment for some years.

SOURCE: Statistical Quarterly (Alaska Department of Labor).

Independent series on wholesale and retail trade are not available for the entire period. For those years in which retail trade data were available, there is steady growth indicated. Wholesale trade appears to be a much higher proportion of total wholesale-retail trade than is the case statewide, and this is apparently linked to wholesale trade activity associated with fisheries. There may also be problems with the industrial classification of wholesale trade.

Firms may engage in both buying or processing of fish and also wholesaling of fish or fish products. The firm's industrial classification would depend on which activity was of greater proportional significance, and this may change from year-to-year. The result is that the wholesale-retail sector reflects a strong mix of basic and support sector activity. In conjunction with possible industrial classification problems, this would account for the apparent lack of growth in this sector.

There is one significant omission in the employment data; this is employment in commercial fishing. Such employment is not included in the Statistical Quarterly data, and as indicated above, a consistent series is not available elsewhere. Estimated commercial fishing employment for 1978, however, was 756. If we include this figure with total reported employment of 3,155, the commercial fishing employment accounted for about 19 percent of total employment for 1978. Commercial fishing plus processing employment amounts to 61 percent of total employment.

A second issue of concern relates to the residency of job holders. Table 17 presents estimates of resident and nonresident employment for 1978. The resident/nonresident breakdown for commercial fishing and processing has already been explained. Allocation of the remainder of employment has been accomplished as follows: State and local government is assumed to be resident employment, as is also the case for transportation, communications, and public utilities; finance, insurance, and real estate; and services. Federal government civilian employment was divided between defense-related and other Federal government activity. Defense-related employment was assigned to the nonresident category (in the sense that incomes earned had no impact on the Aleutian economy), while other Federal government employment was treated as resident employment.

Retail trade was assumed to reflect resident employment. Wholesale trade includes both resident and nonresident employment, and one-half of the employment in wholesale was treated as resident. This division was based on discussions of wholesale trade activity in the Aleutians with the Alaska Department of Labor.

The final industry of concern is contract construction. In conversations with several labor unions and contractors who operate in the Aleutians, it was clear that the vast majority of construction workers in the Aleutians are not residents of the area. Based on a synthesis of these conversations, it was estimated that 5 percent of contract

TABLE 17. ALEUTIAN ISLANDS CENSUS DIVISION  
ESTIMATED RESIDENT AND NON-RESIDENT  
EMPLOYMENT, 1978

<u>Industry</u>	<u>Resident</u>	<u>Non-Resident</u>	<u>Total</u>
Commercial Fishing	251	505	756
Manufacturing	162	1459	1621
Construction	7	133	140
Transportation, Communication, and Utilities	31	-0-	31
Wholesale/Retail	89	12	101 <sup>e</sup>
Finance, Insurance, and Real Estate	38	-0-	38
Services	171	-0-	171
Federal Government Civilian, Military- Related	-0-	484	484
Other Federal Government	198	-0-	198
State Government	88	-0-	88
Local Government	283	-0-	283
Total	1318	2593	3911

---

e = estimated.

SOURCE: Commercial fishing; see text on production. Manufacturing total from Statistical Quarterly; see text on production for allocation. Federal government civilian military related; Table 18. All other data on tables from Statistical Quarterly (Alaska Department of Labor). For division of allocation to resident and nonresident, see text.



construction employment in the Aleutians was accounted for by residents. The remainder was divided as follows: Anchorage (65 percent), southcentral Alaska (15 percent), the rest of the State (10 percent), and non-Alaska (10 percent). While this breakdown is necessarily an approximation, it does reflect the collective judgment of a wide variety of participants in contract construction in the Aleutians.

Using the above delineation of employment between resident and nonresident, it appears that just under 34 percent of the civilian employment in the Aleutians is held by residents. The remaining 66 percent is held by nonresidents. Available data do not permit us to estimate comparable breakdowns of employment for other years, and it is not possible to speculate on how the ratio of resident-to-nonresident employment may have changed over time.

Summary data on labor force, unemployment, and employment for 1970-78 are presented in Table 18. It should be noted that the employment data in this table are not consistent with the data of the previous tables. First, the present table does not include estimates of commercial fishing employment. Second, the data reflect the number of job holders, whereas the previous tables reflect numbers of jobs. The data are also supposed to be resident adjusted, although the resident employment estimate is substantially above that obtained in the previous table.

Of particular interest are the data on unemployment and the unemployment rate. Given the seasonal variation in total activity, the rates are surprisingly low. This would suggest that several factors are at work. First, a high degree of seasonal migration is present. Second, Aleutian residents may tend to drop out of the labor force when employment opportunities are not present. Third, the data include a large proportion of government employment which tends to be seasonally stable.

TABLE 18. ALEUTIAN ISLANDS CENSUS DIVISION:  
CIVILIAN RESIDENT LABOR FORCE,  
TOTAL EMPLOYMENT, AND UNEMPLOYMENT  
1970-1975

<u>Year</u>	<u>Labor Force</u>	<u>Employment</u>	<u>Unemployment</u>	<u>Unemployment Rate (%)</u>
1970	1688	1575	113	6.7
1971	2041	1930	111	5.4
1972	1880	1763	117	6.2
1973	2109	1945	164	7.8
1974	1968	1830	138	7.0
1975	2371	2207	164	6.9
1976	2302	2147	155	6.7
1977	2102	1964	138	6.6
1978	2343	2196	147	6.3

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SOURCE: Alaska Labor Force Estimates by Area (Alaska Department of Labor) various years.

A 1978 survey of potential labor force and employment of the Aleut population in the Aleutian region indicates that published data on unemployment may considerably understate the actual situation. Table 19 presents a summary of the survey results. Of the potential labor of 575, only 278 were employed; only 222 earned \$5,000 or more for that year; and 297 were not employed.

This implies an unemployment rate of 51.7 percent. This probably overstates the "true" rate since only those of the potential labor force actually employed or seeking employment should be included in the labor force figures used to determine employment rates. There is no way to tell what proportion of the potential labor force would actually seek employment if employment opportunities were available, but it appears that substantial real unemployment exists that is not reflected in published statistics.

In summary, considerable growth in employment in the Aleutians has been evident. This has occurred mainly in response to growth of fisheries-related activity. This growth has also led to growth of employment in the support sector. While historical data are not available to indicate trends, nonresident employment accounts for a dominant proportion of total employment. It also appears that the Native Aleut population has not participated fully in the employment opportunities reflected by overall growth in total employment. Whether this is by choice or due to other reasons is not known.

TABLE 19. REPORT OF LABOR FORCE 1978  
 COMPILED BY BUREAU OF INDIAN AFFAIRS  
 ANCHORAGE AGENCY

	<u>Total</u>	<u>Male</u>	<u>Female</u>
a. Total Aleut population within the Aleutian region	2,139	1,155	984
b. Total under 16 years of age included on line "a"	963	520	443
Resident Population of Working Age within the Aleutian Region			
c. Total 16 years and over (a minus b)	1,176	635	541
d. 16-24 years	447	241	206
e. 25-34 years	235	127	108
f. 35-44 years	212	114	98
g. 45-64 years	212	114	98
h. 65 years and over	70	38	32
i. Not in labor force (16 years and over) Total (j+k+l+m)	601	243	357
j. Students (16 years and over, including those away at school)	364	196	167
k. Men, physically or mentally disabled, retired, institutionalized, etc.	47	47	
l. Women for whom no child care substitutes are available	133		133
m. Women, housewives, physically or mentally disabled, institutionalized, etc.	57		57
n. Potential labor force (16 years and over) (c minus i)	575	392	183
o. Employed, Total (p+q)	278	185	93
p. Employed, earning 5,000 or more a year (all jobs)	222	148	74
q. Employed, earning less than 5,000 a year (all jobs)	56	37	19
r. Not employed (n minus o)	297	207	90

SOURCE: Tribal Specific Health Plan (Aleutian-Pribilof Islands Association Health Department, undated).

## PERSONAL INCOME

Personal income data for the Aleutian Census Division have been compiled for the years 1965-1978 and are presented in Table 20. Growth in current dollar total personal income has been at a rate of about 7.4 percent per year, while per capita income has grown at about 7.2 percent per year. When measured in constant dollars, however, the growth has been substantially less. Real per capita income grew at 1.4 percent, while real total personal income grew at 1.6 percent over the period.

Several aspects of the data suggest that the numbers be interpreted with caution. First, the Anchorage Consumer Price Index was used to deflate the personal income series since no more specific index is available. Hence, the adjustment is only approximate. Second, a large proportion of the income is related to military and federal civilian employment directly linked to military activity. Since this income does not enter the Aleutian economy in any meaningful sense, its inclusion is misleading in terms of considering overall economic activity.

Third, while the Bureau of Economic Analysis (BEA) which compiles the data makes a resident adjustment, there is some question as to the validity of the adjustment. In particular, it is not clear to what extent the adjustment captures the effects of commercial fishing and processing incomes flowing out of the region. Finally, an analysis of

TABLE 20. PERSONAL INCOME BY PLACE OF RESIDENCE:  
ALEUTIAN ISLANDS CENSUS DIVISION, 1965-1978

	<u>Current Dollars</u>		<u>Constant (1978) Dollars</u>	
	<u>Total (millions)</u>	<u>Per Capita</u>	<u>Total (millions)</u>	<u>Per Capita</u>
1965	33.951	4,721	70.207	9,763
1966	36.093	4,735	71.818	9,422
1967	38.886	4,727	75.750	9,208
1968	41.688	5,256	79.149	9,979
1969	43.677	5,484	79.296	9,956
1970	53.671	6,627	93.763	11,577
1971	50.655	6,447	86.255	10,978
1972	49.968	6,580	83.267	10,965
1973	60.849	8,235	95.746	12,958
1974	66.084	8,280	91.949	11,520
1975	72.717	9,250	89.995	11,448
1976				
1977	79.765	9,932	87.638	10,912
1978	85.734	11,619	85.734	11,619

SOURCE: Current dollar income figures from U.S. Department of Commerce, Bureau of Economic Analysis. Constant dollar figures deflated by authors, using Anchorage Consumer Price Index.

transfer payments reported for the region shows sizable amounts related to federal military and related civilian employment that probably had no effect on the Aleutian economy.

For these and other reasons, we have attempted to develop an estimate of personal income for 1978 that more accurately reflects the sources and disposition of personal income for the region. These estimates are shown in Table 21.

TABLE 21. ALEUTIAN ISLANDS PERSONAL INCOME, 1978  
BY SECTOR, COMPONENTS, AND GEOGRAPHIC DISPOSITION

Income From To	Support Sector	Contract Construction	Commercial Fishing	Fish Processing	Fed. Gov. Civilian	Fed. Gov. Military	State & Local Govt.	Total
ENDOGENOUS HOUSEHOLDS:								
TOTAL ALLOCATED BY INDUSTRY								
Wages & Salaries	3.715	0.381	0	2.353	3.022	0	5.206	14.677
Other Labor Income	0.695	0.071	0	0.440	0	0	0	1.206
Proprietors' Income	0.951	0.098	12.250	0	0	0	0	13.259
UNALLOCATED COMPONENTS:								
Dividends, Interest, and Rents								0.317
Transfer Payments								3.501
OUT OF REGION:								
Wages & Salaries								
Anchorage	0	4.709	0	0	0	0	0	4.709
Southcentral	0	1.087	0	0	0	0	0	1.087
Rest of State	0	0.725	0	0	0	0	0	0.725
Rest of World	0.275	0.725	0	21.173	5.867	40.584	0	68.624
Other Labor Income								
Anchorage	0	0.881	0	0	0	0	0	0.881
Southcentral	0	0.203	0	0	0	0	0	0.203
Rest of State	0	0.136	0	0	0	0	0	0.136
Rest of World	0.051	0.136	0	3.958	0	0	0	4.145
Proprietors' Income								
Anchorage	0	0	0.780	0	0	0	0	0.780
Southcentral	0	0	33.600	0	0	0	0	33.600
Rest of State	0	0	2.130	0	0	0	0	2.130
Rest of World	0	0	56.870	0	0	0	0	56.870
UNALLOCATED, OUT OF REGION:								
Dividends, Interest, and Rents								
Rest of World								1.623
Transfers								
Rest of World								4.813
TOTAL	5.687	9.152	105.630	27.924	8.889	40.584	5.206	213.326

SOURCE: See text on personal income.

As shown in the table, we have indicated personal income sources by type, accruing from the broad industrial classifications designated at the top of the table. The left hand column of the table indicates the estimated breakdown of income to resident and nonresident recipients. Inclusion of the military and related civilian federal income as nonresident is a judgmental decision based on the fact that these incomes do not appear to enter the general income stream of the Aleutian economy, but rather reflect enclave activity.

While much of the basis for allocating income has already been established in preceding sections of this study dealing with the Aleutians, there are several points that need to be expanded. In general, data on wages and salary income were obtained from the Statistical Quarterly for appropriate years. The Bureau of Economic Analysis data on "other labor income" were apportioned to specific private sector industries on a proportional basis and then assigned to either resident or nonresident categories in proportion to resident/nonresident wage and salary incomes. Dividends, interest, and rent were allocated to residents and nonresidents on the basis of total wage and salary income. Total transfer payments were adjusted to assign military transfers (except for veterans' pensions) to the nonresident category. In addition, 10 percent of federal civilian retirement payments were assigned to residents, with the remainder assigned to nonresidents. With the exception of these adjustments, the remainder of transfer payments were assigned to residents.



Proprietor's income is the income of self-employed and unincorporated enterprises. A large portion of this component for the Aleutians should reflect commercial-fishing income, and it was felt that BEA figures did not adequately reflect this income. An estimate of non-commercial fishing proprietor's income was made by assuming that the proportion of proprietor's income to wage and salary plus other labor income was the same for the State as for the Aleutians. This led to an estimate of noncommercial fishing proprietor's income of 4.1 million dollars.

Proprietor's income from commercial fishing was based on the value of catch. No reliable data exist on net profits from commercial fishing. It has been estimated, however, that about 35 to 40 percent of the value of catch is reflected in labor income (Scott, Prospects for a Bottomfishing Industry in Alaska); hence, 35 percent of the value of catch has been used to estimate proprietor's income. This figure has been used in conjunction with the estimated 1978 southwest region value of catch to estimate proprietor's income, as shown in the table, and was allocated by factors established in Table 18.

In general, the data for 1978 show total personal income of 213.3 million. Of this total, residents who are part of the nonenclave economy of the region accrued 33 million dollars. Of the 180 million dollars accruing to nonresidents, about 46.5 million dollars represent wage and salary payments to military personnel and related federal civilian employees, with the remainder (133.9 million dollars) going to other nonresidents.

In terms of the regional allocation of the 180 million dollars, about 6.4 million dollars flowed to the Anchorage region; while 34.9 million dollars went to the southcentral region (primarily Kodiak), with an additional 3.0 million dollars going to the rest of the State. About 136.1 million dollars primarily from commercial fishing and defense-related activities appeared to flow outside the State. Thus, while total personal income was substantial, over 84 percent of the income created by production in the Aleutians flowed out of the Aleutian region. These are indeed very high leakages and present a different picture of the Aleutian economy than that indicated by the BEA personal income data.

In addition to the analysis of total and per capita income, it is again appropriate to consider the distribution of income. Recent data on income distribution are not available, but the Bureau of Indian Affairs prepared an estimate of the 1974 distribution of income which is presented in Table 22. The distribution is shown for both Native and white families. Median income for the two groups is similar, and both are well below the statewide figure of 12,443 dollars for the same year. The greatest disparity between Native and white families appears in the under-5,000 dollar groups, with 26 percent of the Native families and 13.8 percent of white families with incomes below 5,000 dollars. It should be noted that the non-Native families include military personnel, whose incomes tend to flatten the distribution somewhat; whereas for the Native distribution, the under-5,000 dollar and over-15,000 dollar income categories are proportionately more important.

TABLE 22. FAMILY INCOME: NUMBER AND PERCENT OF NATIVE  
AND WHITE FAMILIES BY INCOME LEVELS  
- ALEUT CORPORATION AREA

	<u>Native</u>		<u>White</u>	
	<u>No. of Families</u>	<u>Percent</u>	<u>No. of Families</u>	<u>Percent</u>
Under 1,000	7	2.1	0	0
1,000-1,999	16	4.9	6	1.0
2,000-2,999	13	4.0	7	1.1
3,000-3,999	30	9.2	31	4.9
4,000-4,999	19	5.8	45	7.1
5,000-5,999	20	6.1	55	8.7
6,000-6,999	26	8.0	65	10.3
7,000-7,999	25	7.7	63	10.0
8,000-8,999	21	6.4	72	11.4
9,000-9,999	18	5.5	37	5.9
10,000-11,999	40	12.2	88	13.9
12,000-14,999	31	9.5	102	16.2
15,000-24,999	56	17.1	43	6.8
25,000-49,999	5	1.5	17	2.7
50,000	0	-	0	0
Median Income	\$8,357		\$8,604	

SOURCE: Tribal Specific Health Plan (Aleutian-Pribilof Islands Association Health Department, undated).

## POPULATION

Aggregate population data for 1960 and the years 1970-78 are presented in Table 23; it includes total resident and civilian population and military population. Considerable variation in the military population is evident; although for most of the period, it averaged a little over 3,000. For recent years, it has been somewhat lower, dropping to 1,655 in 1978. Total civilian population has shown a steady increase, attributable to both natural increase and net in-migration. Table 28 shows the component of change in both civilian and military population over the 1970-78 period. Civilian population has grown at about 4.8 percent, with natural increase accounting for 47 percent of the total increase. The remainder is accounted for by net in-migration.

Table 24 provides data on population by community and by Native and non-Native components. The data totals are not in strict agreement with the other population data presented but do provide a generally accurate picture of the population distribution in the census division, with major nongovernment-based communities at King Cove, Sand Point, St. Paul, and Unalaska. It is no coincidence that (with the exception of St. Paul) these are the major centers of commercial fishing activity in the Aleutians.

TABLE 23. ALEUTIAN ISLANDS CIVILIAN AND TOTAL RESIDENT  
POPULATION: 1960, 1970-1978

	<u>Total Resident Population</u>	<u>Total Civilian Population</u>	<u>Military</u>
1960	6,011	2,633	3,378
1970	8,057	4,368	3,689
1971	7,896	4,285	3,611
1972	7,245	4,634	2,611
1973	6,914	3,994	2,920
1974	7,714	4,506	3,208
1975	7,086	4,208	2,878
1976	8,282	5,300	2,982
1977	7,686	4,896	2,790
1978	8,000	6,345	1,655

TABLE 28. ALEUTIAN ISLANDS: COMPONENTS OF  
POPULATION CHANGE, 1970-78

1970 Population	8,057
Births	1,106
Deaths	176
Natural Increase	930
Net Migration	
Civilian	1,047
Military	- 2,034
1978 Population	8,000

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SOURCE: Alaska Department of Labor

TABLE 24. ALEUT REGION POPULATION  
BY COMMUNITY, 1977

	<u>Native</u>	<u>Non-Native</u>	<u>Total</u>	<u>Transient</u>
Akutan	69	5	74	360 - 800
Atka	92	3	95	
Belkofski	14	-	14	120
False Pass	55	2	57	
King Cove <sup>1</sup>	425	142	567	60
Nelson Lagoon	49	6	55	
Nikolski	56	2	58	65
Sand Point <sup>1</sup>	490	339	829	
St. George	175	9	184	
St. Paul	437	63	500	
Unalaska	168	557	725	700 - 3,000
Other	126	5,700 <sup>2</sup>	5,826	
Total	2,156	6,828	8,984	1,305 - 4,045

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<sup>1</sup>City Manager's figures.

<sup>2</sup>Includes military population.

SOURCE: Tribal Specific Health Plan (Aleutian-Pribilof Islands Association Health Department, undated).

### III. METHODOLOGY

#### Introduction

The remainder of this study develops projections of economic and demographic impacts of OCS lease sale 83, scheduled for March 1984 in the Navarin Basin. The projections are calculated using the MAP and SCIMP models developed at the University of Alaska's Institute of Social and Economic Research. The SCIMP model is used for projecting impacts for the Aleutian Islands, and the MAP model is used for projecting statewide impacts.

The procedure followed in using each model is roughly the same. Each model's projections are based on numerous assumptions about the structure of the economy and factors determining population growth, as well as assumptions about the exogenous or independent factors which will drive growth in the economy. The models do not predict the future; they merely calculate the consequences of the assumptions which are put into them.

Impact analysis, as carried out in the present study, is based upon a comparison of sets of economic and demographic projections, where one set is the standard or base case set. The base case serves as a frame of reference against which the economic and demographic changes resulting from the proposed OCS lease sale can be measured and evaluated.

There are two components of this process that are of particular concern. First is the question of the accuracy and consistency of the projections. Generally speaking, this is dependent upon the validity of the assumptions utilized regarding future economic growth of the exogenous variables and the projection methodology employed. More will be said on both of these points below.

The second concern relates to the degree of information contained in the projections. Specifically, do the projections contain the information that is necessary to adequately interpret and evaluate the impacts?

While aggregate data on economic and demographic variables generated using the projections methodology employed in this study will answer many questions, it must be recognized that there will be omissions as well.

At the root of impact analysis is the issue of how economic well-being, both individually and collectively, will be affected by the proposed action. Two major problems are associated with this process. First it is not possible to measure all impacts that will result from the lease sale. In part this is due to the volume of information that would be required and the inadequacy of the existing methodology to capture all effects at an acceptable level of cost.



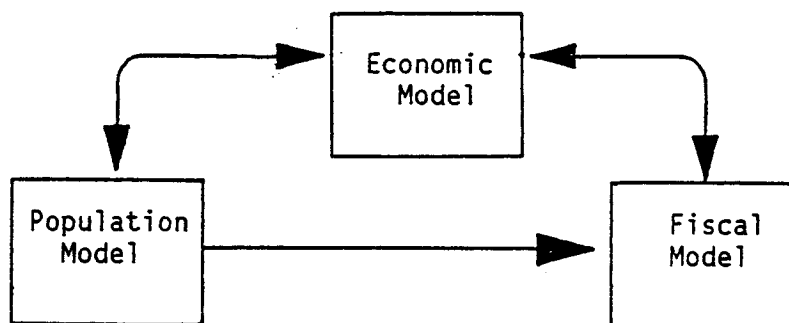
The more serious problem is that many of the effects are not measurable. While reallocation of resources within the context of the functioning of the market, in response to economic change, is desirable from the perspective of efficiency, change on the order of magnitude implied by OCS activity may also lead to situations of market failure and the presence of externalities. These are often difficult to identify and are certainly difficult to measure.

Even if these effects could be isolated they are usually inseparable from a further problem, that of income redistribution. Changes in income distribution and the relative economic position of individuals resulting from OCS activity necessarily implies that there will be losers and gainers and associated changes in economic welfare. These are problems that involve normative economic judgements and cannot be dealt with by impact analysis alone. In short, comparative impact analysis provides only part of the information necessary for decision making.

#### The MAP Model

We can now turn to a discussion of the models utilized in developing the projections. At the statewide level, the MAP econometric model has been used. For documentation of the MAP model, see Goldsmith, Man-in-the-Arctic Program: Alaska Economic Model Documentation. The MAP statewide model is actually a system of models composed of economic, fiscal, and population models. The three are interdependent, as shown schematically in Figure 2.

FIGURE 2: The MAP Statewide Model



In essence, this states that the economic model receives input from the fiscal and population models, the fiscal model receives input from the economic and population models, and the population model utilizes input from the economic models, but not directly from the fiscal model. Thus, when we talk about the economic model we are really describing the interaction of three models. To simplify things somewhat we can describe the important linkages between submodels and then consider the economic model in more detail.

The population-economic model link is the source of population estimates that are of direct interest, and reflect both natural population change and migration induced by changes in economic conditions. The population estimates are also used by the economic model for purposes of computing various per capita values for economic variables.

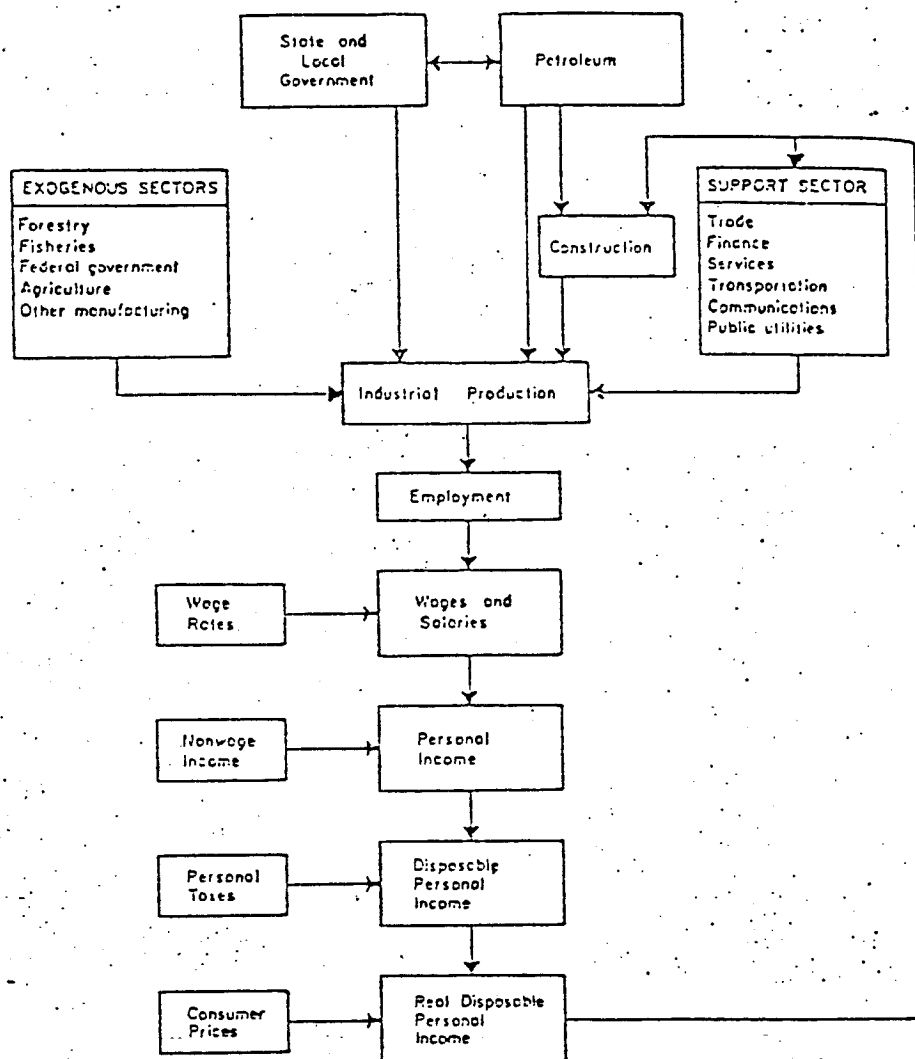
The significant link with the fiscal model relates to the role of State government expenditures as a source of major economic stimulus to the aggregate level of economic activity. In turn, State government (and local government) expenditures are dependent upon two key factors, the overall level of economic activity and the level of activity in the petroleum industry. The system allows for a variety of policy choices regarding state government spending and is one of the key points to consider in assessing economic forecasts.

We can now turn to a consideration of the economic model component of the system.

The MAP model belongs to a class of econometric models that are known as disaggregate economic base models. In essence, economic activity is classified as either endogenous or exogenous (or basic). Exogenous activity determines the level of endogenous activity, and the specific relationships between the two components of economic activity are what make up the system of equations that are the econometric model. These models can be quite simple or rather complex, and the MAP model falls in this latter category.

As can be seen in Figure 3, determination of industrial production involves the impact of exogenous sector activity, which includes forestry, fisheries, agriculture and other manufacturing, as well as Federal government wages and salaries. Other exogenous sector activity includes the petroleum industry and components of contract construction such as major pipelines. State and local government expenditures may also be considered as exogenous for discussion purposes, although there is some interdependence between these expenditures and total economic activity. It should be noted that in constructing scenarios for forecasting or projection purposes it is primarily these exogenous variables that must be provided.

FIGURE 3. THE MAP STATEWIDE ECONOMIC MODEL



SOURCE: Man-In-The-Arctic Program Alaskan Economic Model Documentation

(ISER, 1979).

These exogenous variables combine with demand from the support sector and endogenous construction to generate total industrial production. Industrial production, through a series of steps, determines employment and income, and finally real disposable personal income, which in turn is a determinant of support sector and endogenous construction economic activity. This means that aggregate production depends on both exogenously determined and endogenously determined economic activity, where endogenous activity depends on total activity. As such, the system is a simultaneous equation structure.

It should also be noted that certain other variables enter the model as well. In particular, wage rates are used in determining total wage and salary payments, where the wage rates are in part dependent upon U.S. wage rates, which are determined exogenously. It should also be observed that the model is particularly sensitive to the wage rates used.

#### The SCIMP Model

For the Aleutian Islands Census Division projections have been developed using the small community population impact model (SCIMP). For documentation see Gunnar Knapp, "The Small Community Impact Model: Structure, Variable Definitions, and Input Assumptions," May 1982. Whereas the MAP model is classified as an econometric model, SCIMP is technically an accounting model. A system of equations describes the economic and demographic structure of the economic system. In turn parameters of the equations and a set of exogenous variable inputs

provide the numerical basis for utilizing the model for projection purposes. It is the determination of parameters for the model that distinguishes SCIMP from econometric models.

In an econometric model, parameters are typically determined by the application of econometric methods to historical time series or cross section data, and the parameter estimates are an integral component of the model. In the case of SCIMP the parameters are determined exogenously by a variety of means, including point estimates, assumptions based on other research, and in some instances by econometric estimation techniques. In other words, in SCIMP both the parameters and exogenous variable data are inputs, while in an econometric model the parameter estimates are an integral part of the model.

There are both advantages and shortcomings to this approach. On the positive side, SCIMP is generally applicable to small regional economies, rather than being region specific, as would be the case with an econometric model. This results in substantially more limited data requirements than is the case for a fully estimated econometric model. The shortcoming is also indicated by the less stringent data requirements. Specifically, the quality of the parameter estimates may not be as great as that obtained by econometric techniques.

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#### IV. MODEL ASSUMPTIONS

This chapter discusses the assumptions used in running the MAP and SCIMP models. These include assumptions about the structure of the statewide and regional economies, the independent factors which would determine economic growth in the absence of OCS development, and the direct impacts of OCS development.

##### MAP Model Assumptions

Four types of assumptions are required as the premises upon which a forecast of economic activity using the MAP statewide model is based. First, several assumptions about the performance of the national economy are required. Secondly, an assumption is required as to the number of tourists who will visit Alaska. Third, assumptions are required about employment in specific sectors and development projects. Finally, assumptions are required about state revenues and expenditure policies, which are major factors in the development of the Alaskan economy. This section describes these assumptions.

Inasmuch as Alaska is an open economy, developments in the state hinge at least in part on the performance of the national economy. In particular, three assumptions about the U.S. economy are required. First, a forecast of weekly earnings in the United States

is needed to estimate Alaskan wage rates. Second, insofar as most goods consumed in Alaska are imported from the Lower 48, the U.S. price level is an important determinant of Alaskan prices, so that estimates of such prices require some forecast of the U.S. consumer price index. Finally, insofar as the income differential between Alaska and the Lower 48 is a major determinant of migration between Alaska and the Lower 48, a forecast is required of real per capita disposable income in the United States.

In the base case, it is estimated that the growth in U.S. consumer prices slows to a long run rate of 7.5 percent by 1985, that the growth in average weekly earnings rises to a long run rate of 8.0 percent by 1985, and that real per capita personal income growth rises slightly to 2 percent annually by the mid-80s.

Assumptions concerning exogenous employment are of two types--those concerned with employment generated by specific projects affecting several industries simultaneously, and those concerned with the development of particular industries in the Alaskan economy.

With regard to specific industries, a modest level of growth is assumed in the base case. State subsidization results in expansion of agriculture in the state over the forecast period; traditional commercial fisheries and their associated processing employment maintain their current levels while a new bottomfishing industry

emerges in the state. Federal military employment is assumed to stay constant at its current level throughout the forecast period, while civilian federal employment grows slowly at its historical rate.

With regard to specific projects, several major sources of employment are included in the base case. In addition to the employment associated with existing major resource developments in Upper Cook Inlet, Prudhoe Bay field, and the TAPS pipeline, new discoveries of .75 billion barrels of oil and 1.625 trillion cubic feet of gas are assumed for acreage leased in the 1979 joint state-federal lease sale in the Beaufort Sea, while employment from unsuccessful exploration in areas leased in past federal lease sales 55, CI, and 60 is assumed to wind down quickly as leases are abandoned. Furthermore, several new developments are included in the base case, the most significant being construction of the Alaska Natural Gas Transportation System, assumed to begin operations in 1989. Other developments include construction of small hydroelectric projects at Tyee Lake and Terror Lake, development of a molybdenum mine in Southeastern Alaska by U.S. Borax, development of the Red Dog Mine in Northwestern Alaska, and construction of a major coal mining facility in the Beluga/Chuitna area of Cook Inlet. Finally, it is assumed that 1.85 billion barrels of oil and 3.73 trillion cubic feet of gas are discovered and developed as a consequence of ongoing exploration of the National Petroleum Reserve in Alaska (NPRA).

The final set of assumptions required for developing a base case forecast involves describing the course of future state government fiscal policy. With regard to revenues, the first quarter 1982 petroleum production revenue forecast, prepared by the Alaska Department of Revenue, was utilized. These revenues, however, are inadequate to finance expenditure growth at rates comparable to those of recent experience without provoking a state government fiscal crisis by the late '90s. On the other hand, major cuts in state spending, in particular, operating expenditures, are not especially plausible to expect in the face of accumulating petroleum revenues. Consequently, in the base case a two-phase expenditure policy is assumed over the forecast period. As long as the real per capita accumulated balances are growing, nominal expenditures grow at eight percent annually, approximately the growth rate required to maintain current per capita service levels. Once such balances begin to decline, however, capital expenditures are cut at a rate of ten percent annually, and the personal income tax is reintroduced with its historical structure. The combination of tax increases and capital budget cuts limits the decline in state government employment to a very small rate.

Table 25 summarizes these assumptions. For a more detailed description of the assumptions, see Appendix I.

TABLE 25. ASSUMPTIONS USED FOR MAP MODEL RUNS

<u>Assumptions</u>	<u>Description*</u>
<u>National Variables Assumptions</u>	
U.S. Inflation Rate	Consumer prices rise at 7.5 percent annually after 1985.
Average Weekly Earnings	Growth in average weekly earnings rises to 8 percent annually by 1985.
Real Per Capita Income	Growth in real per capita income rises to 2 percent annually by 1985.
<u>Tourism Assumptions</u>	
	Number of tourists visiting Alaska rises at 4 percent annual rate from 505,400 in 1979 to over 1.1 million by 2000.
<u>Fiscal Policy Assumptions</u>	
	State revenue projections are based upon Department of Revenue projections published in March 1982. Operating expenditures are assumed to grow at a nominal rate of 8 percent, approximately the rate required to maintain real per capita expenditures. Capital expenditures also grow at a nominal rate of 8 percent until the per capita permanent fund balance begins to fall, after which they decline at an annual rate of 10 percent.
<u>Basic Employment Assumptions</u>	
Trans-Alaska Pipeline	Construction of 4 additional pumping stations provides 90 jobs through 1982; operating employment remains constant at 1,500.
Alaska Natural Gas Transportation System	Construction employment peaks at 10,589 in 1988. Long-term transportation and petroleum sector employment average 319.
Prudhoe Bay Petroleum Production	Construction employment on Prudhoe water flooding project peaks at over 1,000 in 1983. Permanent operating employment rises to 1,667 in 1983.

TABLE 25. ASSUMPTIONS USED FOR MAP MODEL RUNS  
(Continued)

<u>Assumptions</u>	<u>Description</u>
Upper Cook Inlet Petroleum Production	Employment remains at 1979 level of 778.
National Petroleum Reserve in Alaska	Development and production from 5 oil fields and construction of 525 miles of pipeline provide between 500 and 1,000 jobs after 1985.
OCS Development	Exploration employment only for sales CI, 55, 57, 60, 70. Development of Sale 71 lease (Beaufort Sea) area results in maximum employment of 1,756 in 1994. Development of Sale BF lease area results in maximum employment of 1,082 in 1989.
Beluga-Chuitna Coal Production	Eventual export of 4.4 million tons per year provides total employment of 524.
Hydroelectric Projects	Total construction employment on the Tye Lake and Terror Lake hydroelectric projects reaches a maximum of 520 in 1984.
U.S. Borax	The U.S. Borax Mine near Ketchikan is brought into production with operating employment of 790 by 1988.
Red Dog Mine	The Red Dog Mine in the Western Brooks Range reaches full production with operating employment of 448 by 1988.
Other Mining Activity	Employment increases from a 1979 level of 3,140 at 1 percent annually.
Agriculture	Moderate state support results in expansion of agriculture to employment of 508 in 2000.
Logging and Sawmill Employment	Employment increases from 2,204 in 1980 to 4,103 in 2000.
Commercial Fishing: Non-Bottomfish	Employment levels in fishing and fish processing remain constant at 1979 levels of 6,323 and 6,874, respectively.

TABLE 25. ASSUMPTIONS USED FOR MAP MODEL RUNS  
(Continued)

<u>Assumptions</u>	<u>Description</u>
Bottomfish Harvesting and harvesting Processing	By 2000, resident bottomfish increases to 924 in the Aleutians and 213 in Kodiak. Total onshore bottom- fish processing employment increases to 3,149 in the Aleutians and 724 in Kodiak.
Federal Civilian Employment	Rises at 0.5 percent annual rate from 17,915 in 1979 to 19,893 in 2000.
Federal Military	Employment remains constant at 23,333.

\*NOTE: Employment assumptions are in annual full-time equivalent jobs.

### SCIMP Model Assumptions

Utilization of the SCIMP model requires a variety of assumptions. Among these are initial period population figures, projected exogenous employment, employment multipliers, unemployment rates, and labor force participation rates. These assumptions are discussed in this section.

The assumption was made throughout that there is no interaction between the military and civilian populations on Adak and Shemya and the rest of the economy of the Aleutian Islands. These populations were assumed to remain constant over the entire period. They were subtracted from total population of the region before running the SCIMP model, and added back into the final population figures. In addition, OCS offshore employment was assumed to have no interaction with the rest of the local economy.

#### POPULATION

1980 population data used by the SCIMP model are shown in Table 26. The population figures are based on 1980 census data, but a number of assumptions were made in order to obtain breakdowns by age, sex, and race. "Resident" population was defined to exclude military personnel and dependents. An estimate of this figure was obtained from the combined populations of Attu, Shemya, and Adak. In addition, an attempt was made to exclude from resident population those persons counted by the census who were engaged in fish



TABLE 26. SCIMP MODEL RESIDENT POPULATION  
ASSUMPTIONS FOR 1980

<u>Age Class</u>	Non-Native		Native	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
0 - 14	153	147	325	311
15 - 19	78	62	165	131
20 - 24	88	63	188	133
25 - 29	82	52	175	112
30 - 44	142	71	304	152
45 - 64	90	47	192	101
64 +	7	7	54	52
Subtotal	640	449	1,403	992
Subtotal	1,089		2,395	
Total	3,484			

SOURCE: 1980 census; covered area is 1970 census division. Populations of Adak, Shemya, and Attu not included. Also not included are people living in group quarters. 1980 figures adjusted upwards by 15.78 percent to include the population of Chignik, Chignik Lagoon, Chignik Lake, and Perryville, which were part of 1970 census area, but not of 1980 census area. See text for other notes.

processing and are temporarily living in fish processing plant camps or onboard processor ships. An estimate of this figure was obtained by subtracting the 861 people living in group quarters on April 1, 1980. Finally, the population was increased by 475 to include the populations of Chignik, Chignik Lagoon, Chignik Lake, and Perryville, which were part of the 1970 census area, but not of the 1980 census area. The breakdowns by age, sex, and race assume that, for each sex, the share of natives by age class was the same as for the total population.

#### EMPLOYMENT ASSUMPTIONS

SCIMP model employment assumptions were developed based on Tables 27 and 28. Exogenous employment was assumed. The endogenous components of services and government employment were calculated using multipliers.

Exogenous employment in the Aleutians may be divided into two categories: resident exogenous employment and nonresident exogenous employment. Nonresident employees work in the Aleutians but have their homes elsewhere; examples are fishermen who fish in the Aleutian Islands but have their homes in Kodiak or Seattle; cannery and processing boat workers who are flown up for the season and live in company quarters; and oil industry employees living in company camps, enclaves, or hotels who are regularly flown home on leave. SCIMP model assumptions about base case resident and exogenous employment are shown in Table 29.

TABLE 27. ALEUTIAN ISLANDS 1980 EMPLOYMENT\*

Category	Total	Assumed Resident Share	Assumed Exogenous Share	Resident Employment		Nonresident Employment (Exogenous)
				Exogenous	Endogenous	
<u>Basic</u>						
Fish Harvesting <sup>c</sup>	251	1.0	1.0	251	-	-
Fish Processing	1,739	.1	1.0	174	-	1,565
Other <sup>d</sup>	11	1.0	1.0	11	-	-
<u>Secondary</u>						
Construction	109	.1	a	-	11	98
Transportation, Com- munication, Utilities	81	1.0	0	-	81	-
Wholesale & Retail Trade	87	1.0	.2	17	70	-
Finance, Insurance, Real Estate	105	1.0	0	-	105	-
Services	168	1.0	0	-	168	-
<u>Government</u>						
Federal Government	196 <sup>b</sup>	1.0	1.0	196	-	-
State & Local Gov't	395	1.0	1.0	-	395	-
<u>Total</u>	<u>3,142</u>	-	-	<u>649</u>	<u>880</u>	<u>1,663</u>
<u>Basic</u>	<u>2,001</u>	-	-	<u>436</u>	-	<u>1,565</u>
Secondary	550	-	-	17	435	98
Government	591	-	-	196	395	-

\*Primary source is Alaska Department of Labor, Statistical Quarterly, 1979 IV - 1980 III.

<sup>a</sup>All resident employment was assumed to be endogenous. All nonresident employment was assumed to be exogenous.

<sup>b</sup>Based on figure for 1978 in Alaska Division of Economic Enterprises Numbers Basic Economic Statistics of Alaska Census Divisions (November 1979), p. 12, which is the latest figure available for federal government nonmilitary-related employment.

<sup>c</sup>Based on estimates in Table 17. Does not include nonresident fishermen.

<sup>d</sup>Based on assumed employment of 11 in agriculture.

TABLE 28. ALEUTIAN ISLANDS 1980 EMPLOYMENT  
 ASSUMPTIONS USED IN DEVELOPING SCIMP  
 MODEL ASSUMPTIONS

	<u>Resident</u>	<u>Nonresident</u>
<u>Exogenous:</u>		
Fishing industry	426	1565
Fish harvesting	251	-
Fish processing	174	1565
Nonfishing Basic	11	98
Exogenous Services	17	-
Exogenous Government	196	-
<u>TOTAL</u>	<u>650</u>	<u>1,663</u>
<u>Endogenous:</u>		
Services	435	-
Government	395	-

SOURCE: Table 27.

TABLE 29. SCIMP MODEL BASE CASE  
RESIDENT EXOGENOUS EMPLOYMENT ASSUMPTIONS

YEAR	EMPRV	EMPRON	TRFHEMP	TRFPEMP	REMPSGS	NFREMP
1981	24.	1.	251.	174.	0.	11.
1982	30.	1.	251.	174.	0.	11.
1983	45.	2.	251.	174.	9.	11.
1984	66.	3.	251.	174.	15.	11.
1985	87.	4.	251.	174.	17.	11.
1986	109.	6.	251.	174.	15.	11.
1987	132.	9.	251.	174.	9.	11.
1988	156.	12.	251.	174.	0.	11.
1989	173.	18.	251.	174.	0.	11.
1990	183.	25.	251.	174.	0.	11.
1991	196.	35.	251.	174.	0.	11.
1992	213.	50.	251.	174.	0.	11.
1993	234.	71.	251.	174.	0.	11.
1994	260.	101.	251.	174.	0.	11.
1995	294.	142.	251.	174.	0.	11.
1996	336.	201.	251.	174.	0.	11.
1997	390.	283.	251.	174.	0.	11.
1998	459.	398.	251.	174.	0.	11.
1999	547.	560.	251.	174.	0.	11.
2000	595.	787.	251.	174.	0.	11.

EMPRV	RESIDENT BOTTOMFISHERMEN
EMPRON	BOTTOMFISH PROCESSING RESIDENT EMPLOYMENT
TRFHEMP	TRADITIONAL FISHING RESIDENT EMPLOYMENT
TRFPEMP	TRADITIONAL PROCESSING RESIDENT EMPLOYMENT
REMPSGS	ST. GEORGE SALE RESIDENT EMPLOYMENT
NFREMP	OTHER BASIC SECTOR RESIDENT EMPLOYMENT

Fishing accounts for the largest component of exogenous resident employment by far. Traditional fish harvesting and processing resident employment is assumed to remain constant at 1980 levels of 251 and 174. Obviously, this assumption does not take account of major fluctuations that may occur in response to fluctuations in total catch and new harvesting and processing technology. However, since the effects of these changes on employment are very difficult to predict, our best guess is simply to assume that employment will remain constant while realizing that actual employment may be quite different.

In the latter part of the projection period, bottomfishing employment becomes even more significant than traditional fishing employment. The bottomfishing employment assumptions are also highly uncertain. They reflect a number of assumptions with respect to total American catch, allocation of catch among harvesting methods, employment coefficients, and residency patterns of employees. These assumptions are discussed in Appendix K.

Resident exogenous employment assumptions also include a small amount of employment in St. George Sale OCS oil exploration and other mining and agriculture. In addition, exogenous services and government employment was assumed to remain constant at 1980 levels of 17 and 196, respectively (these figures are not shown in Table 29).

The nonresident exogenous employment assumptions are shown in Table 30. The procedures used to develop these assumptions were the same as for the resident employment assumptions. Again, fishing and fish processing employment dominate nonresident exogenous employment assumptions.

The SCIMP model calculates endogenous services employment by multiplying exogenous resident and nonresident employment by multipliers which reflect an assumed ratio of endogenous to exogenous employment. The services employment multipliers were calculated by assuming that the services employment multiplier for nonresident exogenous employment would be equal to .1, and that the services employment multiplier for resident employment would remain unchanged at the level implied by present employment. The formula for calculating the resident employment multiplier is then:

$$\left( \begin{array}{c} \text{Endogenous} \\ \text{Services} \\ \text{Employment} \end{array} \right) = (\text{Multiplier}) \times \left( \begin{array}{c} \text{Resident} \\ \text{Exogenous} \\ \text{Employment} \\ + \\ \text{Gov't} \\ \text{Employment} \end{array} \right) + .1 \left( \begin{array}{c} \text{Nonresident} \\ \text{Exogenous} \\ \text{Employment} \end{array} \right)$$

Using 1980 figures, we have

$$435 = (\text{Multiplier}) (650 + 395) + .1 (1663),$$

which implies a multiplier of .257.

TABLE 30. SCIMP MODEL BASE CASE NONRESIDENT  
EXOGENOUS EMPLOYMENT ASSUMPTIONS

YEAR	TEFPEMP	EMPNRON	EEMPSGS	NFEEMP
1981	1565.	3.	0.	98.
1982	1565.	4.	0.	98.
1983	1565.	5.	85.	98.
1984	1565.	7.	131.	98.
1985	1565.	10.	154.	98.
1986	1565.	13.	131.	98.
1987	1565.	18.	80.	98.
1988	1565.	24.	0.	98.
1989	1565.	32.	0.	98.
1990	1565.	43.	0.	98.
1991	1565.	57.	0.	98.
1992	1565.	77.	0.	98.
1993	1565.	103.	0.	98.
1994	1565.	139.	0.	98.
1995	1565.	185.	0.	98.
1996	1565.	248.	0.	98.
1997	1565.	331.	0.	98.
1998	1565.	442.	0.	98.
1999	1565.	590.	0.	98.
2000	1565.	787.	0.	98.

TEFPEMP      TRADITIONAL PROCESSING ENCLAVE EMPLOYMENT  
EMPNRON      BOTTOMFISH PROCESSING ENCLAVE EMPLOYMENT  
EEMPSGS      ST. GEORGE SALE ENCLAVE EMPLOYMENT  
NFEEMP      OTHER ENCLAVE EMPLOYMENT



The SCIMP model calculates government employment by multiplying past period resident and nonresident population by government employment multipliers. The procedure for calculating the government employment multipliers is similar to that used to calculate the services employment multiplier. The nonresident population government employment multiplier was assumed to be one-tenth that of the resident population government employment multiplier. Thus, we have

$$\begin{aligned} \left( \begin{array}{c} \text{Endogenous Gov't} \\ \text{Employment} \end{array} \right) &= (\text{Multiplier}) \times \left( \begin{array}{c} \text{Previous Year} \\ \text{Resident Population} \end{array} \right) + \\ &\quad .1 (\text{Multiplier}) \left( \begin{array}{c} \text{Previous Year Non-} \\ \text{resident Population} \end{array} \right) \end{aligned}$$

Using 1980 figures, we have

$$(395) = (\text{Multiplier}) (3484) + .1 (\text{Multiplier}) (1663),$$

which implies a multiplier of .108.

## UNEMPLOYMENT AND LABOR FORCE PARTICIPATION RATES

An unemployment rate of 6.6 percent was assumed, based on the average for the period 1970-1978, as discussed in Chapter II. Labor force participation rates were assumed for Non-Natives. Native labor force participation rates were then calculated based on total employment, total population, and the Non-Native labor force participation rates. These rates are shown in Table 31. The procedure used to calculate these rates is described in greater detail in Appendix L.

### OCS Impact Assumptions

OCS impacts were examined for four different "cases." These cases differ with respect to the oil and gas resources which are assumed to be discovered and developed as well as the location of facilities. The cases are referred to as the .6 Bbbl case, the 1.2 Bbbl remote case, the 1.2 Bbbl road-connected case, and the 2.4 Bbbl case. All cases involve the discovery of economically recoverable quantities of oil. The 1.2 Bbbl and 2.4 Bbbl cases also assume the discovery of economically recoverable quantities of gas.

The development scenarios for these resources were provided by the Minerals Management Service Alaska OCS Office. In the .6 Bbbl case, the oil is loaded directly onto tankers at the offshore platforms and transferred to larger tankers at a remote transshipment point in the Aleutian Islands. In the 1.2 Bbbl cases, the oil and gas are first taken by pipeline to oil and LNG terminals on St. Matthew, and

TABLE 31. LABOR FORCE PARTICIPATION RATE  
ASSUMPTIONS FOR SCIMP MODEL

	Non-Native <sup>a</sup>		Native <sup>b</sup>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
0 - 14	0	0	0	0
15 - 19	.25	.25	.169	.169
20 - 24	1	.9	.675	.608
25 - 29	1	.9	.675	.608
30 - 44	1	.8	.675	.540
45 - 64	1	.8	.675	.540
65 +	.5	.1	.338	.068

<sup>a</sup>Assumed.

<sup>b</sup>Calculated by multiplying Non-Native rates by .675, as discussed in Appendix L.

subsequently shipped to the transshipment terminal in the Aleutian Islands. In one of these cases, the transshipment terminal is road-connected to an Aleutian Island community. In the 2.4 Bbbl case, the oil and LNG terminals are located on St. Paul instead of St. Matthew.

OCS impacts enter the MAP and SCIMP models primarily through the assumption of increases in direct resident and nonresident employment associated with the OCS project. The employment assumptions used were based on figures provided by the Alaska OCS office. These assumptions are discussed in detail in Appendix J. For the MAP model in the 1.2 Bbbl cases, maximum resident employment of 6,927 occurs in 1993 during the construction phase, with long-run operating employment of 3,022. Employment assumptions are roughly 50 percent higher in the 2.4 Bbbl case and 50 percent lower in the .6 Bbbl case. For the SCIMP model, local resident employment is considerably less. Maximum direct local OCS employment is less than 300 in all cases. This much lower figure is due to the fact that most of the OCS employment is either offshore or else outside of the Aleutians, and that many workers located in the Aleutians are not residents.

In the MAP model, some additional impacts are generated by oil and gas property tax revenues collected by the state. The development of these revenue assumptions is discussed in Appendix M. In the 1.2 Bbbl case, the maximum property tax revenues (in nominal dollars) are \$209 million in 2004.

## CHAPTER V.

### MAP MODEL STATEWIDE BASE CASE AND IMPACT PROJECTIONS

This chapter discusses the MAP model statewide projections. The first section of the chapter discusses the projections in the absence of the Navarin Basin OCS sale (the base case projections). The second section of the chapter discusses projections when the Navarin Basin OCS sale is included (the impact projections).

Tables of the MAP model projection results are provided in Appendixes A-D. Appendix A provides tables of the base case projections. Appendix B provides tables showing base case projections, impact case projections, absolute impacts, and percentage impacts, by variable, for each of the four OCS cases. The tables in Appendix C compare the absolute impact projections for all four cases for each variable, and the tables in Appendix D compare the percentage impact projections for all four cases for each variable. A table of contents is provided at the beginning of each appendix.

#### MAP Model Base Case Projections

In the base case, statewide population expands to over 590 thousand by the year 2010, as shown in Table A-2. Population growth is spurred by both high rates of natural increase and in-migration

during the "boom" years of the mid-80s. As state government trims its growth with the depletion of resource revenues, and the major resource developments pass their peak employment years, outmigration begins to dominate from the late 80s to the end of the period. This outmigration, combined with the aging of the remaining population, reduces population growth rates throughout the period after 1990.

Employment projections are shown in Table A-3. Employment in the state expands by about 40 percent over the 30-year forecast period, with most of the growth occurring during the 80s. Primarily due to construction of the gas pipeline, employment peaks in 1988, followed by a sharp decline of nearly 10,000 in 1990 and a more gradual decline throughout the 90s. Subsequently, employment slowly recovers to nearly the 1988 level by the end of the forecast period.

As shown in Table A-4, personal income in the base case peaks at over 10 billion dollars in 1988, followed by a sharp decline through the early 90s, and a gradual recovery from the mid-90s to the end of the period. However, it does not recover to its 1988 level until 2010, and in per capita terms, income never again reaches its more than \$20,000 peak realized in 1988.

As shown in Table A-6, state government revenues in the base case peak in 1989 at over five billion dollars annually, but decline steadily thereafter. At the peak, petroleum revenues and interest

earnings on accumulated balances make up nearly 83 percent of total revenues, but fall by the end of the period to less than 47 percent of the total as resources are progressively exhausted and the income tax is reinstated. State expenditures, however, do not peak until the mid-90s in both total and per capita terms, as seen in Table A-7. As a consequence, real accumulated balances in the general and permanent funds are being drawn down slowly from the late 90s until the end of the period, with about 11 billion dollars, or \$18,600 per person, remaining accumulated by the end of the period (Table A-8).

The model's projections of state government expenditures and the combined funds balance are direct results of the assumptions which were used about state expenditure policies. If a more conservative spending policy had been assumed along with an earlier reinstatement of the income tax, the projected combined funds balance at the end of the period would have been larger. Conversely, if a less conservative spending policy had been assumed, the projected combined funds balance at the end of the period would have been smaller.

#### MAP Model Impact Projections

This section discusses the impacts of the proposed Sale 83 for the four different cases. Tables showing the impacts are provided in Appendixes B-D. We will center our discussion around the 1.2 Bbb1

cases (the impacts of which are identical at the statewide level). For the .6 and 2.4 cases, impacts are slightly smaller and larger, respectively.

#### POPULATION IMPACTS

Population impacts are shown in Tables C-1 and D-1. Population increases by a maximum of 16,800, or just under 3 percent, in 1993. The population increase occurs as a result of migration into the state of workers seeking to fill new jobs in the OCS industry and new jobs indirectly generated by OCS industry. The long-run absolute population impacts remain nearly constant at slightly below the maximum levels.

#### EMPLOYMENT IMPACTS

Total employment impacts are shown in Tables C-5 and D-5. Total employment increases by a maximum of 6.4 percent, or 16,600 jobs, in 1993. The long-run employment impacts decline to approximately half this level.

#### INCOME IMPACTS

Sale 83 development increases total personal income by a maximum of 8 percent, or \$706 million, in 1993 (Tables C-6 and D-6). Due to the accompanying increase in population, the percentage increase in per capita income is only about half as great, at 4.7 percent, or \$787 per capita (Tables C-7 and D-7).



## REVENUE IMPACTS

Tables C-11 and D-11 show impacts upon total real state government revenues. The impact of OCS development upon total revenues increases steadily over the period to over 6 percent. In absolute terms, the impact upon revenues increases rapidly from \$14 million in 1991 to \$132 million in 1994, and then rises gradually to \$190 million by the end of the period.

There are a number of causes for this increase in revenues. These include larger income tax and federal transfer revenues due to a larger population, direct oil and gas property taxes, and increased interest income on the larger fund balances which accumulate as a result of increased income. Of these, higher interest earnings account for over 60 percent of the increase in revenues by the end of the period.

## EXPENDITURE IMPACTS

The projected impacts upon expenditures are very low because nominal expenditures were assumed to be held constant between the base case and the impact cases. Real state government expenditures are projected to increase by a maximum of \$34 million, or just under 1 percent, in 1993 (Tables C-12 and D-12). Real expenditures increase slightly as a result of higher subsidies, which are population linked and endogenous to the model, and a slightly lower price level due to the expansion in the economy.

## COMBINED FUNDS BALANCE

The impact upon the combined permanent and general funds balance increases steadily to almost \$1.7 billion, or 15 percent, in 2010 (Tables C-14 and D-14). OCS development would have no effect upon the permanent fund, but under the policy assumptions used, the balance in the general fund would rise since the increase in revenues is not matched by the increase in expenditures. The per capita combined funds balance would also rise, by \$2,200 (Tables C-15 and D-15). However, the percentage impact would be smaller (12 percent) due to the accompanying increase in population. Again, we emphasize that these effects upon the combined funds result solely from our assumptions about state government expenditure policies, which did not allow for an increase in expenditures commensurate with the increase in revenues.

### Conclusions

The MAP statewide model projections suggest that OCS development in the Navarin Basin would lead to a moderate increase in the state population of just under 3 percent in the maximum year. The model projections also suggest that state revenues would rise by about 7 percent. This appears at first to be a positive impact, with revenues expanding faster than population. However, this effect is largely illusory since most of the increase in revenues results from higher interest earnings on the general fund. If expenditures were to increase to match the increase in population, the fund balance would be lower, resulting in a much smaller impact upon revenues.

## VI. SCIMP MODEL PROJECTIONS FOR THE ALEUTIAN ISLANDS

This chapter discusses the SCIMP model projections for the Aleutian Islands. The first part of the chapter discusses the base case projections, while the second part of the chapter discusses the impact projections. Tables of the SCIMP model projections are presented in Appendixes E through H.

### SCIMP Model Base Case Projections

The base case projections for the Aleutian Islands show a pattern of smoothly accelerating population and employment growth. This growth is the direct result of the assumptions made about the growth pattern in the bottomfish industry.

Table E-1 shows population projections for the Aleutian Islands. There are a variety of components of population, including permanent residents, onshore enclave workers, nonresident fishermen, and military. Resident population is projected to rise steadily from 3,654 in 1980 to 8,348 in 2000.

The enclave, nonresident fishermen, and military populations were all assumed. Military population remains constant. The enclave population rises from 1,666 to 2,450, and the nonresident fishermen population rises from 717 to 4,473.

Table E-2 presents projections for resident employment. All basic sector employment was assumed, as discussed in Chapter IV. Support sector employment is projected to rise from 461 to 1,000, while government employment is projected to rise from 600 to 1,035.

Table E-3 provides projections of nonresident employment. Nonresident employment is projected to rise from 1,656 in 1980 to 2,440 in 2000. All of these values were assumed. Finally, Table E-4 provides a summary of employment totals by different categories.

#### SCIMP Model Impact Projections

Appendixes F, G and H present tables showing the SCIMP model OCS impact projections for eight variables. These are resident population, enclave population, total population, total resident employment, basic sector employment, support sector employment, government employment, and total resident and enclave employment. Appendix F includes separate tables for each case and variables which show the base case projections, impact projections, absolute impacts, and percentage impacts. Appendixes G and H show the absolute and percentage impacts for all four cases together, facilitating comparison of the effects of different cases. Our discussion is based on appendixes G and H.

Resident population impacts are shown in Table G-1. In all cases, the maximum population impacts occur in 1995 or 1996. The maximum impacts are 441 in the .6 Bbbl case, 281 in the 1.2 Bbbl road-connected case, 259 in the 1.2 Bbbl remote case, and 551 in the 2.4 Bbbl case. In percentage terms, the maximum population impacts are 6 percent, 4 percent, 3 percent, and 7 percent, respectively (Table H-1). The impacts are higher in the .6 Bbbl case than the 1.2 Bbbl cases because all of the air support activities occur in the Aleutian Islands instead of some support being based on St. Matthew or St. Paul. Thus, a lower level of discovery might actually have a slightly greater impact if it resulted in the establishment of fewer "forward" support bases. However, the greater level of activity in the 2.4 Bbbl case results in this case having the highest impact, even though only some of the support is based in the Aleutians. The 1.2 Bbbl road-connected case has a slightly greater impact than the remote case. This is because, with a remote or nonroad-connected transshipment terminal, fewer of the employees are assumed to be local residents.

Similar patterns as for resident population may be seen in the impacts for all of the other variables examined. Enclave population impacts (Tables G-2 and H-2) are highest during the construction year of 1989, when they are 770 in the 1.2 Bbbl cases. Enclave employment impacts then fall before rising again to long-term operations phase employment levels in 1996. Operations phase enclave employment impacts are 549 in the 1.2 Bbbl cases. In

percentage terms, enclave employment rises by between 45 and 48 percent in all cases during the peak construction year of 1989. Thus, the total number of OCS industry enclave workers would equal about half the number of fishing industry enclave workers projected for that year.

Combined resident and enclave population (Tables G-3 and H-3) rises by a maximum of between 821 and 1,312, or 15-19 percent. Peak absolute and percentage impacts occur in different years for different cases. This is because impacts upon resident population tend to rise over the projection period, whereas impacts upon enclave population occur earlier.

Impacts upon total resident employment (Tables G-4 and H-4) generally rise over the period, with early peaks occurring in 1985 and 1989. Maximum impacts are between 351 and 387, or 12 percent and 13 percent for the different cases. The largest component of the increase in total resident employment is basic resident employment (Tables G-9 and H-9). This direct OCS employment was assumed. Long-run resident operations phase OCS employment is between 225 and 298, causing an increase of 12 to 16 percent in total basic employment. The increases in basic resident employment are roughly paralleled by similar but smaller increases in services and government employment (Tables G-10, G-11, H-10 and H-11). The impacts do not exactly correspond since services and government

employment are also affected, to a lesser degree, by enclave employment. Services employment increases by a maximum of between 120 and 164, or between 19 and 24 percent. Government employment increases by a maximum of between 28 and 61, or between 3 and 7 percent.

In summary, OCS development of the Navarin Basin would increase resident employment by a maximum of about 370 in 2000. Impacts in earlier years would be lower, with a maximum percentage increase of about 12 percent occurring in the mid-1990s. Resident population would increase by a maximum of between 200 and 400, with the maximum percentage increases of 3 to 7 percent also occurring in the mid-1990s. In general, the projected increases in employment exceed the projected increases in population, which suggests that many of the jobs would go to Aleutian Islands residents.





## CHAPTER VII.

### LIMITATIONS OF THE MODEL PROJECTIONS

The model projections developed in this report do, we believe, provide a useful indication of several kinds of basic impacts upon the state and the Aleutian Islands which OCS development of the Navarin Basin might have. However, since large amounts of information printed by computers can sometimes convey an unwarranted impression of accuracy, it is useful to review briefly several limitations of the modeling process used. These are the lack of seasonality, the uncertainty of structural assumptions, and the uncertainty of policy assumptions. Finally, we add a few comments about limitations in the interpretation of the model results.

#### LACK OF SEASONALITY

Work on OCS development in the Navarin Basin would be highly seasonal, especially during the construction phase. Trading off accuracy for practicality, the MAP and SCIMP models are annual models which average employment inputs over the year. As a result, they tend to underestimate the maximum employment effects which might be felt at peak construction seasons. The strain on facilities and social tensions implied by the impact population figures might be considerably higher during the peak construction seasons.

#### UNCERTAINTY OF STRUCTURAL ASSUMPTIONS

Both the MAP and SCIMP models incorporate numerous assumptions about the structure of the economy and the factors leading to demographic change. The MAP model assumptions are based on sophisticated econometric analysis of past historical data, while the SCIMP model assumptions are generally based on conditions in 1980. In most cases, the models do not allow for the fact that the structure of the economy might change considerably as it grows. This is because it is very difficult to predict these structural changes. As a result, an uncertain degree of error is introduced into the projections.

This problem is likely to be much greater for the SCIMP model projections than for the MAP model projections. Factors which might change significantly include labor force participation rates, employment rates, and residency patterns.

#### UNCERTAINTY OF POLICY ASSUMPTIONS

Luckily, our future is not totally predetermined--or if it is, we are mercifully unable to trace the infinite number of events which determine human behavior in its entirety. We retain at least the illusion of self-determination and the ability to affect our future.

State and local government policies as well as oil industry policies will greatly affect the future of the state and of the Aleutian Islands, as well as the nature of the impacts which OCS development

might have. We have had to make assumptions about those policies, some of which are explicit as in the case of state expenditures in the MAP model, but most of which are implicit--generally, government is assumed to continue to behave as it has in the past. Thus, many of the impacts projected by this study could be changed by different government policies. We have not attempted to consider such mitigating impacts in this study.

#### OCS IMPACTS AND "WELL-BEING"

In themselves, the model results say relatively little about what OCS development might really mean for Alaska or the Aleutians. Changes in employment and population are only a first, albeit necessary, step toward answering more interesting questions. Some of these can be answered in a fairly straightforward manner, such as what additional housing, transportation, and government revenue requirements might result from OCS development. Other questions are much more subtle, such as how the well-being of different groups might be affected by OCS development. We will not attempt to address this question at all, other than to point out the limitations of the model projections in answering it.

One problem is that impacts may be extremely localized. For example, in percentage terms, the impacts projected for Alaska and for the Aleutian Islands appear relatively small. However, many of the impacts would be concentrated in Dutch Harbor. For this community, they would be proportionately larger.

A still greater problem arises in trying to define what constitutes "well-being," or desirable and undesirable impacts. Different groups will have greatly differing interpretations about what is desirable. Even the same groups may find their attitudes changing over time so that impacts which were at one time viewed as undesirable are later viewed in a positive light--or vice versa. Thus, our model projections cannot really tell us very much about "well-being." They do, however, provide basic information which, properly interpreted and allowing for the limitations of the projection methodology, can allow different groups to begin to make their own assessments of the effects of OCS development.

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APPENDIX A

MAP MODEL STATEWIDE BASE CASE PROJECTIONS





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Table A.8.	Combined Fund Balance



TABLE A.1.

MAP MODEL STATEWIDE BASE CASE PROJECTIONS:

SUMMARY

	TOTAL POPULATION (1000)	TOTAL EMPLOYMENT (1000)	PER CAPITA GOVERNMENT REVENUES (1982 \$)	PER CAPITA GOVERNMENT EXPENDIT (1982 \$)	PER CAPITA COMBINED FUNDS BALANCE (1982 \$)
1980	402.057	204.449	7269.398	4988.141	6021.180
1981	414.914	213.195	9383.090	7135.969	8375.668
1982	432.986	227.129	10924.210	8423.418	10826.410
1983	442.533	231.699	8268.402	7689.957	11351.250
1984	448.370	232.710	8177.957	7616.098	11923.450
1985	455.174	234.784	9219.220	7559.332	13563.130
1986	467.163	241.543	9538.270	7421.047	15332.830
1987	488.532	256.718	9740.860	7132.063	17036.600
1988	512.275	274.161	9178.290	6814.824	18129.840
1989	514.974	272.387	9902.260	6755.988	20596.140
1990	508.807	262.494	9059.730	6832.105	22415.820
1991	511.458	260.395	8577.871	6830.012	23338.500
1992	513.459	257.748	8210.949	6841.039	23842.310
1993	518.054	258.040	7985.105	6221.980	24003.330
1994	523.384	259.263	7550.453	6797.277	23714.420
1995	523.903	255.591	7256.965	6435.066	23626.260
1996	525.685	253.602	7325.785	6119.316	23830.690
1997	525.219	250.087	7180.313	5866.688	24142.440
1998	532.327	253.462	6956.805	5598.656	24205.990
1999	537.519	255.428	6681.500	5378.625	24222.710
2000	544.060	258.821	6400.359	5178.746	24081.450
2001	547.317	258.755	6132.301	5033.56	23922.130
2002	551.955	260.235	5907.602	4894.858	23623.530
2003	556.669	261.836	5695.043	4774.172	23238.760
2004	561.621	263.724	5436.777	4666.340	22713.230
2005	566.708	265.783	5278.398	4571.125	22150.930
2006	571.914	267.995	5133.059	4486.660	21559.540
2007	577.231	270.347	4999.219	4411.340	20945.540
2008	582.651	272.826	4875.676	4343.805	20314.840
2009	588.012	275.266	4761.973	4283.878	19676.540
2010	593.509	277.869	4655.180	4229.348	19028.370

SOURCE: MAP MODEL SIMULATION SBASE83N—CREATED 9/21/82

TABLE A.2.

MAP MODEL STATEWIDE BASE CASE PROJECTIONS:

POPULATION AND COMPONENTS OF CHANGE

(THOUSANDS)

	TOTAL POPULATION	CHANGE IN POPULATION	NET MIGRATION	NATURAL INCREASE
1980	402.057			
1981	414.914	12.857	-7.400	6.482
1982	432.986	18.072	6.727	6.111
1983	442.533	9.548	11.772	6.304
1984	448.370	5.837	2.882	6.678
1985	455.174	6.804	-0.842	6.676
1986	467.163	11.989	0.250	6.544
1987	488.532	21.369	5.505	6.476
1988	512.275	23.743	14.740	6.630
1989	514.974	2.698	16.602	7.156
1990	508.807	-6.167	-5.016	7.733
1991	511.458	2.652	-13.599	7.414
1992	513.459	2.000	-4.178	6.798
1993	518.054	4.595	-4.623	6.606
1994	523.384	5.330	-1.818	6.395
1995	523.903	0.519	-0.998	6.314
1996	525.685	1.781	-5.766	6.272
1997	525.819	0.135	-4.283	6.043
1998	532.327	6.508	-5.781	5.896
1999	537.519	5.192	0.791	5.695
2000	544.060	6.541	-0.594	5.775
2001	547.317	3.257	0.738	5.787
2002	551.955	4.638	-2.613	5.857
2003	556.669	4.714	-1.167	5.786
2004	561.621	4.952	-1.085	5.781
2005	566.708	5.087	-0.841	5.775
2006	571.914	5.206	-0.709	5.777
2007	577.231	5.317	-0.595	5.783
2008	582.651	5.420	-0.493	5.790
2009	588.012	5.362	-0.399	5.800
2010	593.509	5.496	-0.469	5.811
			-0.343	5.818

NOTE: TOTALS MAY NOT ADD DUE TO ROUNDING

SOURCE: MAP MODEL SIMULATION SBASE83N--CREATED 9/21/88

TABLE A.3.

## MAP MODEL STATEWIDE BASE CASE PROJECTIONS:

## EMPLOYMENT

(THOUSANDS)

	BASIC SECTOR EMPLOYMENT	SERVICES SECTOR EMPLOYMENT	GOVERNMENT EMPLOYMENT	TOTAL WAGE AND SALARY EMPLOYMENT	TOTAL EMPLOYMENT
1980	46.048	79.812	78.589	190.192	204.449
1981	48.409	81.714	83.071	198.449	213.195
1982	52.733	86.641	87.755	211.629	227.129
1983	53.327	90.060	88.312	215.944	231.699
1984	52.330	91.951	88.379	216.891	232.710
1985	53.015	93.617	88.153	218.841	234.784
1986	56.660	97.298	87.586	225.217	241.543
1987	64.528	105.326	86.863	239.531	256.713
1988	71.854	114.964	87.343	255.967	274.161
1989	66.829	115.800	89.758	254.271	272.387
1990	59.252	113.160	90.083	244.911	262.494
1991	59.961	112.063	88.371	242.896	260.395
1992	60.117	109.831	87.800	240.359	257.749
1993	60.496	110.354	87.191	240.585	258.746
1994	60.881	111.365	87.017	241.681	259.753
1995	59.381	108.826	86.884	238.144	255.761
1996	59.834	108.199	85.569	236.182	253.733
1997	57.736	107.122	85.229	232.759	250.737
1998	60.345	108.322	84.796	235.826	253.463
1999	61.019	109.573	84.835	237.536	255.439
2000	62.484	111.566	84.771	240.564	258.121
2001	62.611	111.332	84.812	240.502	258.759
2002	63.734	112.871	84.630	241.899	260.779
2003	62.896	114.367	84.573	243.410	261.876
2004	63.119	116.078	84.527	245.191	263.724
2005	63.389	117.888	84.506	247.134	265.733
2006	63.695	119.798	84.502	249.221	267.995
2007	64.038	121.797	84.512	251.439	270.347
2008	64.411	123.881	84.534	253.777	272.826
2009	64.724	125.975	84.567	256.078	275.266
2010	65.097	128.183	84.589	258.531	277.869

SOURCE: MAP MODEL SIMULATION SBASE83N--CREATED 9/21/82





TABLE A.6.

## MAP MODEL STATEWIDE BASE CASE PROJECTIONS:

## STATE GOVERNMENT REVENUES

MILLIONS OF 1982 DOLLARS

	PETROLEUM REVENUES	FEDERAL GRANTS	INTEREST EARNINGS	OTHER REVENUES	TOTAL REVENUES
1980	2187.410	375.199	133.949	365.764	2922.715
1981	3388.680	393.466	225.919	227.908	3893.173
1982	3764.649	419.140	305.649	240.592	4730.027
1983	2572.653	432.704	403.452	250.235	3659.045
1984	2555.936	440.997	420.443	249.379	3666.755
1985	3063.411	450.663	429.812	252.475	4196.351
1986	3221.494	467.695	491.533	275.206	4455.921
1987	3402.429	498.054	559.315	298.926	4759.716
1988	3208.371	531.787	636.309	325.348	4701.808
1989	3521.116	535.620	702.673	339.997	5099.402
1990	2954.484	526.859	797.604	330.707	4609.652
1991	2683.025	530.626	853.646	319.933	4387.226
1992	2477.430	533.468	888.695	316.394	4215.984
1993	2373.869	539.997	908.585	314.268	4136.718
1994	2167.733	547.569	920.166	316.320	3951.787
1995	1977.134	548.307	915.316	361.193	3801.947
1996	1730.295	550.838	911.233	658.685	3851.055
1997	1646.453	551.029	919.078	658.988	3775.547
1998	1552.829	560.275	930.396	659.799	3703.297
1999	1408.474	567.651	941.424	673.886	3591.435
2000	1270.014	576.943	949.304	685.916	3482.177
2001	1122.492	581.571	952.337	699.912	3356.313
2002	1014.550	588.160	950.343	707.680	3260.732
2003	910.891	594.857	944.909	719.596	3170.253
2004	784.278	601.893	936.160	731.079	3053.410
2005	715.635	609.120	922.048	744.510	2991.311
2006	654.145	616.516	906.383	758.624	2935.668
2007	598.871	624.070	889.391	773.372	2885.704
2008	549.062	631.770	871.277	788.709	2840.818
2009	504.050	639.387	852.190	804.474	2800.101
2010	463.309	647.196	832.335	820.049	2762.889

SOURCE: MAP MODEL SIMULATION SBASE83N--CREATED 9/21/82



TABLE A.7.

## MAP MODEL STATEWIDE BASE CASE PROJECTIONS:

## STATE GOVERNMENT EXPENDITURES

	TOTAL (MILLIONS 1982 \$)	PER CAPITA (1982 \$)
1980	2005.519	4988.140
1981	2960.817	7135.968
1982	3651.551	8433.417
1983	3403.064	7689.957
1984	3414.833	7616.097
1985	3440.812	7559.332
1986	3466.836	7421.046
1987	3484.240	7132.062
1988	3491.066	6814.824
1989	3479.157	6755.988
1990	3476.221	6832.105
1991	3493.268	6830.011
1992	3512.592	6841.039
1993	3534.157	6821.980
1994	3557.588	6797.277
1995	3371.354	6435.066
1996	3216.832	6119.316
1997	3084.819	5866.687
1998	2980.318	5598.656
1999	2891.114	5378.625
2000	2817.548	5179.746
2001	2754.956	5033.566
2002	2701.743	4894.859
2003	2657.634	4774.171
2004	2620.714	4666.339
2005	2590.493	4571.125
2006	2565.985	4486.660
2007	2546.362	4411.339
2008	2530.923	4343.804
2009	2518.975	4283.878
2010	2510.156	4229.347

SOURCE: MAP MODEL SIMULATION SBASE83N--CREATED 9/21/88

TABLE A.8.

MAP MODEL STATEWIDE BASE CASE PROJECTIONS

COMBINED FUNDS BALANCE

	TOTAL (MILLIONS 1982 \$)	PER CAPITA (1982 \$)
1980	2420.861	6021.179
1981	3475.185	8375.667
1982	4687.683	10826.410
1983	5023.308	11351.250
1984	5346.121	11923.440
1985	6173.585	13563.120
1986	7162.925	15332.820
1987	8322.921	17036.590
1988	9287.470	18129.820
1989	10606.470	20596.140
1990	11405.320	22415.800
1991	11936.670	23338.490
1992	12242.040	23842.300
1993	12435.020	24003.320
1994	12411.750	23714.410
1995	12377.870	23626.250
1996	12527.430	23830.680
1997	12694.560	24142.430
1998	12885.500	24205.980
1999	13020.160	24222.700
2000	13101.740	24081.440
2001	13092.980	23922.110
2002	13039.120	23623.520
2003	12936.290	23238.750
2004	12756.220	22713.210
2005	12553.100	22150.920
2006	12330.200	21559.520
2007	12090.410	20945.530
2008	11836.460	20314.830
2009	11570.050	19676.520
2010	11293.500	19028.360

SOURCE: MAP MODEL SIMULATION SBASE83N--CREATED 9/21/88

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MAP MODEL IMPACT PROJECTIONS



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TABLE B.3.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## .6 BBBL CASE

## SERVICES SECTOR EMPLOYMENT

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	79.812	79.812	0.000	0.000
1981	81.714	81.714	0.000	0.000
1982	86.641	86.641	0.000	0.000
1983	90.060	90.060	0.000	0.000
1984	91.951	91.951	0.000	0.000
1985	93.617	93.734	0.117	0.125
1986	97.298	97.797	0.499	0.513
1987	105.326	105.969	0.643	0.610
1988	114.964	115.791	0.827	0.719
1989	115.800	116.863	1.063	0.918
1990	113.160	114.359	1.199	1.060
1991	112.063	113.680	1.617	1.443
1992	109.831	112.302	2.471	2.250
1993	110.354	114.440	4.087	3.703
1994	111.365	115.927	4.562	4.096
1995	108.826	113.808	4.982	4.578
1996	108.199	112.909	4.710	4.353
1997	107.122	111.777	4.655	4.346
1998	108.322	112.835	4.513	4.167
1999	109.573	113.934	4.361	3.980
2000	111.566	115.618	4.052	3.632
2001	111.332	115.152	3.820	3.431
2002	112.871	116.476	3.604	3.193
2003	114.367	117.890	3.523	3.080
2004	116.078	119.567	3.488	3.005
2005	117.888	121.385	3.497	2.967
2006	119.798	123.316	3.518	2.937
2007	121.797	125.341	3.545	2.910
2008	123.881	127.455	3.574	2.885
2009	125.975	129.580	3.605	2.862
2010	128.183	131.820	3.637	2.838

SOURCE: MAP MODEL SIMULATIONS SEAS883M AND 003.83L--CREATED 10/11/88

TABLE B.4.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

.6 BBBL CASE

GOVERNMENT EMPLOYMENT

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	78.589	78.589	0.000	0.000
1981	83.071	83.071	0.000	0.000
1982	87.755	87.755	0.000	0.000
1983	88.312	88.312	0.000	0.000
1984	88.379	88.379	0.000	0.000
1985	88.153	88.156	0.003	0.004
1986	87.586	87.634	0.048	0.055
1987	86.863	86.937	0.074	0.085
1988	87.343	87.445	0.102	0.116
1989	89.758	89.903	0.145	0.162
1990	90.083	90.287	0.204	0.226
1991	88.371	88.581	0.210	0.238
1992	87.800	88.155	0.355	0.405
1993	87.191	87.803	0.612	0.702
1994	87.017	87.994	0.977	1.123
1995	86.884	87.808	0.924	1.063
1996	85.569	86.516	0.947	1.107
1997	85.229	86.076	0.847	0.994
1998	84.796	85.630	0.835	0.985
1999	84.835	85.637	0.802	0.945
2000	84.771	85.516	0.745	0.879
2001	84.812	85.468	0.657	0.774
2002	84.630	85.242	0.612	0.723
2003	84.573	85.145	0.572	0.676
2004	84.527	85.089	0.562	0.665
2005	84.506	85.064	0.557	0.660
2006	84.502	85.058	0.556	0.658
2007	84.512	85.068	0.556	0.658
2008	84.534	85.091	0.557	0.658
2009	84.567	85.124	0.557	0.659
2010	84.589	85.147	0.558	0.660

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83L--CREATED 10/11/82

TABLE B.5.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

.6 BBBL CASE

TOTAL EMPLOYMENT

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	204.449	204.449	0.000	0.000
1981	213.195	213.195	0.000	0.000
1982	227.129	227.129	0.000	0.000
1983	231.699	231.699	0.000	0.000
1984	232.710	232.710	0.000	0.000
1985	234.784	235.164	0.379	0.162
1986	241.543	242.255	0.712	0.295
1987	256.718	257.672	0.954	0.372
1988	274.161	275.456	1.295	0.473
1989	272.387	274.304	1.916	0.704
1990	262.494	264.561	2.067	0.787
1991	260.395	263.660	3.265	1.254
1992	257.748	263.338	5.590	2.169
1993	258.040	267.376	9.335	3.618
1994	259.263	268.537	9.274	3.577
1995	255.591	265.588	9.996	3.911
1996	253.602	262.654	9.052	3.569
1997	250.087	258.983	8.896	3.557
1998	253.462	262.087	8.625	3.403
1999	255.428	263.609	8.181	3.203
2000	258.821	266.207	7.386	2.854
2001	258.755	265.661	6.906	2.669
2002	260.235	266.720	6.486	2.492
2003	261.836	268.190	6.354	2.427
2004	263.724	270.032	6.308	2.392
2005	265.783	272.100	6.317	2.377
2006	267.995	274.339	6.344	2.367
2007	270.347	276.725	6.378	2.359
2008	272.826	279.243	6.416	2.352
2009	275.266	281.723	6.457	2.346
2010	277.869	284.368	6.499	2.339

SOURCE: MAP MODEL SIMULATIONS BASE930N AND OCS.93L--CREATED 10/11/88

TABLE B.6.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

.6 BBBL CASE

REAL PERSONAL INCOME

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6247.679	6247.679	0.000	0.000
1981	6551.144	6551.144	0.000	0.000
1982	7081.304	7081.304	0.000	0.000
1983	7300.878	7300.878	0.000	0.000
1984	7339.421	7339.421	0.000	0.000
1985	7480.527	7497.429	16.902	0.226
1986	7990.835	8017.527	26.691	0.334
1987	9179.180	9216.210	37.031	0.403
1988	10462.730	10513.440	50.711	0.485
1989	9922.060	10000.730	78.672	0.793
1990	8886.261	8966.402	80.141	0.902
1991	8779.230	8915.601	136.371	1.553
1992	8682.132	8921.277	239.145	2.754
1993	8769.375	9174.250	404.879	4.617
1994	8877.281	9262.470	385.188	4.339
1995	8821.000	9247.100	426.102	4.831
1996	8827.140	9211.580	384.438	4.355
1997	8764.835	9149.880	385.039	4.393
1998	8945.421	9321.060	375.637	4.199
1999	9070.840	9427.190	356.344	3.928
2000	9261.790	9581.030	319.246	3.447
2001	9329.610	9632.190	302.574	3.243
2002	9462.750	9749.050	286.297	3.026
2003	9599.870	9884.700	284.832	2.967
2004	9749.930	10035.950	286.023	2.934
2005	9908.360	10197.450	289.090	2.918
2006	10074.460	10367.200	292.738	2.906
2007	10248.010	10544.750	296.746	2.896
2008	10428.700	10729.610	300.918	2.885
2009	10604.090	10909.320	305.227	2.878
2010	10795.460	11105.090	309.633	2.868

SOURCE: MAP MODEL SIMULATIONS BASE83N AND 003.83L--CREATED 10/11/83

TABLE B.7.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

0.6 EBEL CASE

REAL PER CAPITA PERSONAL INCOME

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	15539.26	15539.26	0.00	0.00
1981	15789.14	15789.14	0.00	0.00
1982	16354.58	16354.58	0.00	0.00
1983	16497.91	16497.91	0.00	0.00
1984	16369.10	16369.10	0.00	0.00
1985	16434.42	16458.33	23.91	0.15
1986	17105.03	17136.42	31.39	0.18
1987	18789.32	18827.96	38.64	0.21
1988	20424.05	20470.95	46.90	0.23
1989	19267.11	19346.67	79.56	0.41
1990	17464.90	17547.67	82.77	0.47
1991	17165.08	17316.92	151.84	0.88
1992	16909.10	17182.57	273.46	1.62
1993	16927.52	17387.98	460.46	2.72
1994	16961.31	17369.43	408.12	2.41
1995	16837.07	17289.82	452.75	2.69
1996	16791.69	17183.15	391.46	2.33
1997	16668.90	17058.18	389.28	2.34
1998	16804.36	17167.71	363.34	2.16
1999	16875.38	17203.20	327.82	1.94
2000	17023.47	17293.64	270.17	1.59
2001	17046.08	17291.99	245.91	1.44
2002	17144.05	17363.92	219.87	1.28
2003	17245.21	17457.81	212.60	1.23
2004	17360.33	17567.74	207.41	1.19
2005	17484.06	17687.89	203.84	1.17
2006	17615.34	17815.91	200.57	1.14
2007	17753.74	17951.23	197.49	1.11
2008	17898.69	18092.97	194.28	1.09
2009	18033.79	18225.14	191.36	1.06
2010	18189.23	18377.25	188.03	1.03

SOURCE: MAP MODEL SIMULATIONS BASE830N AND 005.83L--CREATED 10/11/88

TABLE B.B.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

BASE CASE

BASIC SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	27201.58	27201.58	0.00	0.00
1981	27253.51	27253.51	0.00	0.00
1982	28596.71	28596.71	0.00	0.00
1983	29226.08	29226.08	0.00	0.00
1984	28819.58	28819.58	0.00	0.00
1985	29281.75	29353.08	71.33	0.24
1986	32184.88	32206.96	22.09	0.07
1987	38377.82	38390.11	12.30	0.03
1988	43599.71	43603.67	3.96	0.01
1989	39702.80	39777.32	74.52	0.19
1990	32580.52	32719.56	139.04	0.43
1991	32014.25	32351.81	337.56	1.05
1992	31852.62	32509.00	656.38	2.06
1993	32165.57	33276.49	1110.92	3.45
1994	32375.26	33335.23	959.97	2.97
1995	32346.14	33477.75	1131.61	3.50
1996	32418.13	33446.27	1028.14	3.17
1997	32598.90	33701.35	1102.45	3.38
1998	32549.13	33605.89	1056.76	3.25
1999	32587.14	33568.72	981.58	3.01
2000	32758.00	33580.02	822.02	2.51
2001	33125.32	33911.49	786.17	2.37
2002	33423.47	34168.88	745.41	2.23
2003	33730.13	34491.35	761.21	2.26
2004	34047.55	34822.19	774.64	2.28
2005	34376.77	35163.08	786.31	2.29
2006	34713.44	35510.68	797.24	2.30
2007	35057.91	35865.76	807.86	2.30
2008	35409.80	36227.70	817.90	2.31
2009	35688.05	36519.33	831.29	2.33
2010	36069.95	36910.71	840.76	2.33

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83L--CREATED 10/11/88

TABLE B.9.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

.6 BBBL CASE

SERVICES SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	22624.87	22624.87	0.00	0.00
1981	22465.76	22465.76	0.00	0.00
1982	22158.36	22158.36	0.00	0.00
1983	22355.64	22355.64	0.00	0.00
1984	22476.25	22476.25	0.00	0.00
1985	22645.47	22642.72	-2.75	-0.01
1986	23291.60	23305.51	23.91	0.10
1987	24791.66	24814.96	23.30	0.09
1988	26136.07	26151.87	15.79	0.06
1989	25216.85	25222.12	5.27	0.02
1990	23952.98	23963.74	10.76	0.04
1991	23527.14	23539.53	12.39	0.05
1992	23146.93	23147.37	0.44	0.00
1993	23263.69	23253.60	-10.09	-0.04
1994	23358.05	23347.25	-10.80	-0.05
1995	23516.07	23529.59	13.52	0.06
1996	23700.33	23711.67	11.34	0.05
1997	23757.03	23780.95	23.92	0.10
1998	23866.83	23887.63	20.80	0.09
1999	23945.29	23972.15	26.86	0.11
2000	24058.77	24091.37	32.61	0.14
2001	24000.35	24043.93	43.57	0.18
2002	24130.42	24172.75	42.33	0.18
2003	24236.32	24279.56	43.24	0.18
2004	24350.14	24391.88	41.74	0.17
2005	24463.09	24504.81	41.71	0.17
2006	24576.96	24618.57	41.60	0.17
2007	24691.34	24732.98	41.64	0.17
2008	24806.23	24847.88	41.65	0.17
2009	24922.65	24964.30	41.64	0.17
2010	25040.28	25081.89	41.61	0.17

SOURCE: MAP MODEL SIMULATIONS BASE83M AND OCS.83L--OPERATED 10/11/82

TABLE B.10.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

.6 BBBL CASE

GOVERNMENT SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	23469.32	23469.32	0.00	0.00
1981	23665.52	23665.52	0.00	0.00
1982	24451.50	24451.50	0.00	0.00
1983	24813.00	24813.00	0.00	0.00
1984	25148.11	25148.11	0.00	0.00
1985	25508.86	25508.62	-0.25	-0.00
1986	25974.68	25974.21	-0.47	-0.00
1987	26573.26	26572.18	-1.08	-0.00
1988	27122.75	27120.89	-1.86	-0.01
1989	27304.00	27301.33	-2.67	-0.01
1990	27379.02	27376.98	-2.05	-0.01
1991	27763.93	27760.67	-3.26	-0.01
1992	28179.68	28173.55	-6.13	-0.02
1993	28612.79	28601.19	-11.60	-0.04
1994	29048.10	29031.39	-16.71	-0.06
1995	29490.98	29471.89	-19.09	-0.06
1996	29960.84	29939.31	-21.53	-0.07
1997	30433.24	30410.88	-22.36	-0.07
1998	30915.46	30891.12	-24.34	-0.08
1999	31399.30	31373.75	-25.55	-0.08
2000	31894.02	31868.14	-25.89	-0.08
2001	32398.59	32373.34	-25.25	-0.08
2002	32918.60	32893.00	-25.60	-0.08
2003	33446.18	33420.11	-26.07	-0.08
2004	33983.82	33956.36	-27.46	-0.08
2005	34531.57	34502.41	-29.16	-0.08
2006	35089.44	35058.45	-30.99	-0.09
2007	35657.73	35624.85	-32.88	-0.09
2008	36236.54	36201.64	-34.90	-0.10
2009	36826.35	36789.38	-36.97	-0.10
2010	37428.28	37389.19	-39.09	-0.10

SOURCE: MAP MODEL SIMULATIONS BASEE33M AND ODS.33L--CREATED 10/11/82



TABLE B.11.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

.6 BBBL CASE

TOTAL REAL STATE GOVERNMENT REVENUES

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2922.715	2922.715	0.000	0.000
1981	3893.178	3893.178	0.000	0.000
1982	4730.027	4730.027	0.000	0.000
1983	3659.045	3659.045	0.000	0.000
1984	3666.755	3666.755	0.000	0.000
1985	4196.351	4197.593	1.242	0.030
1986	4455.921	4458.914	29.992	0.067
1987	4758.718	4763.074	4.355	0.092
1988	4701.808	4707.855	6.047	0.129
1989	5099.402	5108.359	8.957	0.176
1990	4609.652	4619.562	9.910	0.215
1991	4387.226	4400.824	13.598	0.310
1992	4215.984	4237.734	21.750	0.516
1993	4136.718	4171.968	35.250	0.852
1994	3951.787	3995.426	43.639	1.104
1995	3801.949	3850.352	48.402	1.273
1996	3651.055	3914.756	63.701	1.654
1997	3775.547	3839.019	63.471	1.681
1998	3703.297	3768.707	65.410	1.766
1999	3591.435	3657.656	66.222	1.844
2000	3482.177	3547.651	65.474	1.880
2001	3356.313	3420.679	64.366	1.918
2002	3260.732	3325.274	64.542	1.979
2003	3170.253	3235.664	65.410	2.063
2004	3053.408	3120.716	67.308	2.204
2005	2991.311	3060.923	69.612	2.327
2006	2935.669	3007.785	72.116	2.457
2007	2885.704	2960.433	74.729	2.590
2008	2840.818	2918.244	77.426	2.725
2009	2800.101	2880.287	80.186	2.864
2010	2762.889	2845.898	83.010	3.004

SOURCE: MAP MODEL SIMULATIONS (BASE63N AND DCS.93L)--CREATED 10/11/88





TABLE B.14.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

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 .6BBL CASE  
 -----

REAL COMBINED FUNDS BALANCE  
 -----

MILLIONS OF 1982 \$  
 -----

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2420.661	2420.861	0.000	0.000
1981	3475.185	3475.185	0.000	0.000
1982	4687.683	4687.683	0.000	0.000
1983	5023.308	5023.308	0.000	0.000
1984	5346.121	5346.121	0.000	0.000
1985	6173.585	6174.679	1.094	0.018
1986	7162.925	7166.148	3.223	0.045
1987	8322.921	8328.925	6.004	0.072
1988	9287.470	9297.340	9.875	0.106
1989	10606.470	10622.300	15.836	0.149
1990	11405.320	11426.140	20.820	0.183
1991	11936.670	11966.390	29.715	0.249
1992	12242.040	12287.340	45.301	0.370
1993	12435.020	12505.720	70.695	0.569
1994	12411.750	12502.410	90.668	0.731
1995	12377.870	12495.980	118.102	0.954
1996	12527.430	12683.550	156.117	1.246
1997	12694.560	12889.700	195.145	1.537
1998	12885.500	13119.510	234.004	1.816
1999	13020.160	13292.020	271.859	2.088
2000	13101.740	13408.290	306.551	2.340
2001	13092.980	13432.830	339.852	2.596
2002	13039.120	13411.190	372.070	2.853
2003	12936.290	13340.740	404.449	3.126
2004	12756.220	13193.440	437.227	3.428
2005	12553.100	13023.680	470.582	3.749
2006	12330.200	12834.660	504.461	4.091
2007	12090.410	12629.320	538.906	4.457
2008	11836.460	12410.330	573.879	4.848
2009	11570.050	12179.420	609.375	5.267
2010	11293.500	11938.870	645.375	5.715

SOURCE: MAP MODEL SIMULATIONS SBASEB3N AND DCS.83L--CREATED 10/11/87

TABLE B.15.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

-----  
 .88BL CASE  
 -----

REAL PER CAPITA COMBINED FUNDS BALANCE  
 -----

1982 \$  
 -----

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6021.18	6021.18	0.00	0.00
1981	8375.67	8375.67	0.00	0.00
1982	10826.41	10826.41	0.00	0.00
1983	11351.25	11351.25	0.00	0.00
1984	11923.44	11923.44	0.00	0.00
1985	13563.12	13554.64	-8.49	-0.06
1986	15332.82	15316.71	-16.11	-0.11
1987	17036.60	17015.31	-21.29	-0.12
1988	18129.83	18103.05	-26.79	-0.15
1989	20596.14	20549.13	-47.01	-0.23
1990	22415.82	22361.49	-54.33	-0.24
1991	23338.50	23242.52	-95.97	-0.41
1992	23842.30	23665.69	-176.62	-0.74
1993	24003.33	23702.12	-301.20	-1.25
1994	23714.42	23445.14	-269.28	-1.14
1995	23626.26	23364.44	-261.82	-1.11
1996	23830.69	23659.72	-170.96	-0.72
1997	24142.43	24030.37	-112.06	-0.46
1998	24205.99	24163.77	-42.21	-0.17
1999	24222.70	24255.96	33.26	0.14
2000	24081.45	24201.81	120.36	0.50
2001	23922.12	24115.03	192.91	0.81
2002	23623.52	23886.54	263.02	1.11
2003	23238.76	23561.67	322.91	1.39
2004	22713.22	23094.89	381.66	1.68
2005	22150.92	22590.13	439.20	1.98
2006	21559.53	22056.21	496.68	2.30
2007	20945.53	21499.96	554.43	2.65
2008	20314.83	20927.12	612.29	3.01
2009	19676.53	20346.98	670.45	3.41
2010	19028.37	19757.03	728.67	3.83

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83L--CREATED 10/11/82

TABLE B.16.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

TOTAL POPULATION

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	402.057	402.057	0.000	0.000
1981	414.914	414.914	0.000	0.000
1982	432.986	432.986	0.000	0.000
1983	442.533	442.533	0.000	0.000
1984	448.370	448.370	0.000	0.000
1985	455.174	455.540	0.366	0.080
1986	467.163	467.967	0.804	0.172
1987	488.532	490.057	1.525	0.312
1988	512.275	514.221	1.946	0.380
1989	514.974	517.647	2.673	0.519
1990	508.807	511.207	2.400	0.472
1991	511.458	514.913	3.459	0.676
1992	513.459	525.005	11.546	2.249
1993	518.054	534.906	16.852	3.253
1994	523.384	538.744	15.360	2.935
1995	523.903	539.272	15.369	2.934
1996	525.685	540.980	15.295	2.910
1997	525.819	541.499	15.679	2.982
1998	532.327	548.081	15.754	2.959
1999	537.519	553.064	15.545	2.892
2000	544.060	558.957	14.898	2.738
2001	547.317	561.554	14.237	2.601
2002	551.955	565.875	13.920	2.522
2003	556.669	570.605	13.936	2.503
2004	561.621	575.715	14.094	2.510
2005	566.708	581.027	14.319	2.527
2006	571.914	586.485	14.571	2.548
2007	577.231	592.067	14.836	2.570
2008	582.651	597.762	15.111	2.594
2009	588.012	603.406	15.393	2.618
2010	593.509	609.189	15.680	2.642

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83R--CREATED 10/11/82

TABLE B.17.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

BASIC SECTOR EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	46.048	46.048	0.000	0.000
1981	48.409	48.409	0.000	0.000
1982	52.733	52.733	0.000	0.000
1983	53.327	53.327	0.000	0.000
1984	52.380	52.380	0.000	0.000
1985	53.015	53.274	0.259	0.488
1986	56.660	56.878	0.219	0.386
1987	64.528	65.045	0.517	0.800
1988	71.854	72.463	0.610	0.848
1989	66.829	67.786	0.957	1.432
1990	59.252	59.889	0.637	1.075
1991	59.961	61.292	1.331	2.220
1992	60.117	66.790	6.672	11.098
1993	60.496	68.789	8.293	13.708
1994	60.881	66.077	5.197	8.536
1995	59.881	64.964	5.083	8.488
1996	59.834	64.811	4.977	8.318
1997	57.736	62.728	4.992	8.646
1998	60.345	65.095	4.750	7.872
1999	61.019	65.397	4.378	7.175
2000	62.484	66.302	3.818	6.111
2001	62.611	65.975	3.364	5.373
2002	62.734	65.920	3.186	5.079
2003	62.896	66.063	3.167	5.036
2004	63.119	66.284	3.165	5.015
2005	63.389	66.561	3.172	5.004
2006	63.695	66.877	3.181	4.994
2007	64.038	67.231	3.192	4.985
2008	64.411	67.616	3.205	4.975
2009	64.724	67.941	3.217	4.970
2010	65.097	68.328	3.230	4.962

TABLE B.18.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

SERVICES SECTOR EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	79.812	79.812	0.000	0.000
1981	81.714	81.714	0.000	0.000
1982	86.641	86.641	0.000	0.000
1983	90.060	90.060	0.000	0.000
1984	91.951	91.951	0.000	0.000
1985	93.617	93.734	0.117	0.125
1986	97.298	97.848	0.551	0.566
1987	105.326	106.251	0.925	0.878
1988	114.964	116.114	1.151	1.001
1989	115.800	117.240	1.440	1.244
1990	113.160	114.472	1.313	1.160
1991	112.063	113.762	1.700	1.517
1992	109.831	114.321	4.490	4.088
1993	110.354	117.353	7.000	6.343
1994	111.365	118.816	7.451	6.691
1995	108.826	116.162	7.336	6.741
1996	108.199	115.131	6.932	6.407
1997	107.122	113.993	6.871	6.414
1998	108.322	115.066	6.745	6.226
1999	109.573	116.097	6.524	5.954
2000	111.566	117.675	6.109	5.475
2001	111.332	116.997	5.665	5.088
2002	112.871	118.213	5.341	4.732
2003	114.367	119.555	5.187	4.536
2004	116.078	121.218	5.140	4.428
2005	117.888	123.037	5.149	4.368
2006	119.798	124.975	5.178	4.322
2007	121.797	127.012	5.215	4.282
2008	123.881	129.137	5.256	4.243
2009	125.975	131.274	5.299	4.206
2010	128.183	133.528	5.345	4.170

SOURCE: MAP MODEL SIMULATIONS \$BASE83N AND DCS.83R--CREATED 10/11/88



TABLE B.19.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

GOVERNMENT EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	78.589	78.589	0.000	0.000
1981	83.071	83.071	0.000	0.000
1982	87.755	87.755	0.000	0.000
1983	88.312	88.312	0.000	0.000
1984	88.379	88.379	0.000	0.000
1985	88.153	88.156	0.003	0.004
1986	87.586	87.635	0.049	0.056
1987	86.863	86.956	0.092	0.106
1988	87.343	87.515	0.172	0.197
1989	89.758	89.974	0.216	0.240
1990	90.083	90.356	0.273	0.303
1991	88.371	88.587	0.216	0.245
1992	87.800	88.190	0.391	0.445
1993	87.191	88.486	1.296	1.486
1994	87.017	88.707	1.690	1.942
1995	86.884	88.250	1.365	1.572
1996	85.569	86.848	1.279	1.495
1997	85.229	86.470	1.240	1.455
1998	84.796	86.025	1.229	1.450
1999	84.835	86.011	1.176	1.386
2000	84.771	85.865	1.094	1.291
2001	84.812	85.787	0.975	1.150
2002	84.630	85.502	0.873	1.031
2003	84.573	85.393	0.821	0.970
2004	84.527	85.331	0.804	0.951
2005	84.506	85.303	0.797	0.943
2006	84.502	85.297	0.795	0.941
2007	84.512	85.307	0.795	0.940
2008	84.534	85.329	0.795	0.941
2009	84.567	85.363	0.796	0.941
2010	84.589	85.385	0.797	0.942

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83R--CREATED 10/11/82

TABLE B.20.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL ROAD-CONNECTED CASE

## TOTAL EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	204.449	204.449	0.000	0.000
1981	213.195	213.195	0.000	0.000
1982	227.129	227.129	0.000	0.000
1983	231.699	231.699	0.000	0.000
1984	232.710	232.710	0.000	0.000
1985	234.784	235.164	0.379	0.162
1986	241.543	242.362	0.819	0.339
1987	256.718	258.252	1.534	0.597
1988	274.161	276.093	1.933	0.705
1989	272.387	275.000	2.613	0.959
1990	262.494	264.717	2.222	0.847
1991	260.395	263.642	3.247	1.247
1992	257.748	269.301	11.552	4.482
1993	258.040	274.628	16.588	6.428
1994	259.263	273.600	14.337	5.530
1995	255.591	269.376	13.784	5.393
1996	253.602	266.790	13.188	5.200
1997	250.087	263.191	13.104	5.240
1998	253.462	266.186	12.724	5.020
1999	255.428	267.506	12.078	4.728
2000	258.821	269.842	11.021	4.258
2001	258.755	268.759	10.004	3.866
2002	260.235	269.635	9.400	3.612
2003	261.836	271.011	9.175	3.504
2004	263.724	272.833	9.109	3.454
2005	265.783	274.901	9.118	3.431
2006	267.995	277.149	9.154	3.416
2007	270.347	279.549	9.202	3.404
2008	272.826	282.082	9.256	3.393
2009	275.266	284.578	9.312	3.383
2010	277.869	287.241	9.372	3.373

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83R--CREATED 10/11/83

TABLE B.21.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL ROAD-CONNECTED CASE

## REAL PERSONAL INCOME

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6247.679	6247.679	0.000	0.000
1981	6551.144	6551.144	0.000	0.000
1982	7081.304	7081.304	0.000	0.000
1983	7300.878	7300.878	0.000	0.000
1984	7339.421	7339.421	0.000	0.000
1985	7480.527	7497.429	16.902	0.226
1986	7990.835	8022.390	31.555	0.395
1987	9179.180	9243.130	63.941	0.697
1988	10462.730	10540.050	77.320	0.739
1989	9922.060	10029.770	106.711	1.075
1990	8886.261	8968.636	82.375	0.927
1991	8779.230	8912.386	133.156	1.517
1992	8682.132	9196.670	514.539	5.926
1993	8769.375	9475.610	706.238	8.053
1994	8877.281	9452.890	575.605	6.484
1995	8821.000	9396.020	575.016	6.519
1996	8827.140	9390.090	562.953	6.378
1997	8764.835	9332.120	567.285	6.472
1998	8945.421	9497.050	551.625	6.167
1999	9070.840	9594.530	523.684	5.773
2000	9261.790	9737.190	475.406	5.133
2001	9329.610	9762.020	432.410	4.635
2002	9462.750	9874.530	411.777	4.352
2003	9599.870	10008.180	408.305	4.253
2004	9749.930	10159.890	409.965	4.205
2005	9908.360	10322.540	414.184	4.180
2006	10074.460	10493.780	419.320	4.162
2007	10248.010	10672.980	424.977	4.147
2008	10428.700	10859.570	430.883	4.132
2009	10604.090	11041.110	437.020	4.121
2010	10795.460	11238.590	443.129	4.105

TABLE B.22.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

REAL PER CAPITA PERSONAL INCOME

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	15539.26	15539.26	0.00	0.00
1981	15789.14	15789.14	0.00	0.00
1982	16354.58	16354.58	0.00	0.00
1983	16497.91	16497.91	0.00	0.00
1984	16369.10	16369.10	0.00	0.00
1985	16434.42	16458.33	23.91	0.15
1986	17105.03	17143.06	38.02	0.22
1987	18789.32	18861.32	72.00	0.38
1988	20424.05	20497.13	73.09	0.36
1989	19267.11	19373.75	106.64	0.55
1990	17464.90	17544.04	79.14	0.45
1991	17165.08	17308.35	143.27	0.83
1992	16909.10	17517.31	608.20	3.60
1993	16927.52	17714.52	787.00	4.65
1994	16961.31	17546.15	584.84	3.45
1995	16837.07	17423.50	586.43	3.48
1996	16791.69	17357.55	565.86	3.37
1997	16668.90	17233.87	564.97	3.39
1998	16804.36	17327.80	523.44	3.11
1999	16875.38	17347.95	472.57	2.80
2000	17023.47	17420.27	396.80	2.33
2001	17046.08	17383.93	337.84	1.98
2002	17144.05	17450.00	305.95	1.78
2003	17245.21	17539.58	294.38	1.71
2004	17360.33	17647.43	287.10	1.65
2005	17484.06	17766.03	281.97	1.61
2006	17615.34	17892.68	277.34	1.57
2007	17753.74	18026.64	272.91	1.54
2008	17898.69	18167.05	268.36	1.50
2009	18033.79	18297.99	264.20	1.47
2010	18189.23	18448.44	259.22	1.43

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND CCS.83R--CREATED 10/11/83

TABLE B.23.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL ROAD-CONNECTED CASE

## BASIC SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	27201.58	27201.58	0.00	0.00
1981	27253.51	27253.51	0.00	0.00
1982	28596.71	28596.71	0.00	0.00
1983	29226.08	29226.08	0.00	0.00
1984	28819.58	28819.58	0.00	0.00
1985	29281.75	29353.08	71.33	0.24
1986	32184.88	32223.34	38.46	0.12
1987	38377.82	38447.76	69.95	0.18
1988	43599.71	43625.61	25.90	0.06
1989	39702.80	39807.37	104.57	0.26
1990	32580.52	32694.79	114.27	0.35
1991	32014.25	32317.00	302.75	0.95
1992	31852.62	33321.14	1468.52	4.61
1993	32165.57	33919.58	1754.02	5.45
1994	32375.26	33600.41	1225.14	3.78
1995	32346.14	33731.40	1385.26	4.28
1996	32418.13	33890.55	1472.42	4.54
1997	32598.90	34175.64	1576.75	4.84
1998	32549.13	34029.69	1480.56	4.55
1999	32587.14	33964.40	1377.26	4.23
2000	32758.00	33937.73	1179.73	3.60
2001	33125.32	34166.19	1040.88	3.14
2002	33423.47	34433.25	1009.77	3.02
2003	33730.13	34762.19	1032.05	3.06
2004	34047.55	35097.82	1050.27	3.08
2005	34376.77	35443.08	1066.32	3.10
2006	34713.44	35794.92	1081.48	3.12
2007	35057.91	36153.64	1095.74	3.13
2008	35409.80	36519.04	1109.25	3.13
2009	35688.05	36815.74	1127.69	3.16
2010	36069.95	37210.53	1140.58	3.16

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83R--CREATED 10/11/82

TABLE B.24.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

SERVICES SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	22624.87	22624.87	0.00	0.00
1981	22465.76	22465.76	0.00	0.00
1982	22158.36	22158.36	0.00	0.00
1983	22355.64	22355.64	0.00	0.00
1984	22476.25	22476.25	0.00	0.00
1985	22645.47	22642.72	-2.75	-0.01
1986	23281.60	23306.69	25.10	0.11
1987	24791.66	24817.43	25.77	0.10
1988	26136.07	26145.14	9.07	0.03
1989	25216.85	25218.55	1.70	0.01
1990	23952.98	23958.66	5.68	0.02
1991	23527.14	23545.92	18.79	0.08
1992	23146.93	23129.97	-16.96	-0.07
1993	23263.69	23206.58	-57.11	-0.25
1994	23358.05	23359.27	1.22	0.01
1995	23516.07	23564.41	48.34	0.21
1996	23700.33	23735.82	35.49	0.15
1997	23757.03	23797.21	40.18	0.17
1998	23866.83	23908.57	41.74	0.17
1999	23945.29	23996.48	51.20	0.21
2000	24058.77	24117.40	58.63	0.24
2001	24000.35	24076.49	76.14	0.32
2002	24130.42	24207.63	77.21	0.32
2003	24236.32	24312.41	76.09	0.31
2004	24350.14	24424.68	74.54	0.31
2005	24463.09	24537.42	74.33	0.30
2006	24576.96	24651.18	74.22	0.30
2007	24691.34	24765.59	74.25	0.30
2008	24806.23	24880.48	74.25	0.30
2009	24922.65	24996.91	74.26	0.30
2010	25040.28	25114.46	74.18	0.30

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83R--CREATED 10/11/83

TABLE B.25.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

GOVERNMENT SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	23469.32	23469.32	0.00	0.00
1981	23665.52	23665.52	0.00	0.00
1982	24451.50	24451.50	0.00	0.00
1983	24813.00	24813.00	0.00	0.00
1984	25148.11	25148.11	0.00	0.00
1985	25508.86	25508.62	-0.25	-0.00
1986	25974.68	25974.10	-0.58	-0.00
1987	26573.26	26571.19	-2.07	-0.01
1988	27122.75	27120.33	-2.43	-0.01
1989	27304.00	27300.50	-3.51	-0.01
1990	27379.02	27376.70	-2.32	-0.01
1991	27763.93	27760.57	-3.36	-0.01
1992	28179.68	28169.41	-10.27	-0.04
1993	28612.79	28590.93	-21.86	-0.08
1994	29048.10	29020.47	-27.64	-0.10
1995	29490.98	29463.28	-27.70	-0.09
1996	29960.84	29930.96	-29.88	-0.10
1997	30433.24	30400.58	-32.65	-0.11
1998	30915.46	30879.71	-35.75	-0.12
1999	31399.30	31361.82	-37.47	-0.12
2000	31894.02	31855.95	-38.07	-0.12
2001	32398.59	32361.33	-37.27	-0.12
2002	32918.60	32881.92	-36.68	-0.11
2003	33446.13	33408.75	-37.44	-0.11
2004	33983.82	33944.40	-39.42	-0.12
2005	34531.57	34489.80	-41.77	-0.12
2006	35089.44	35045.08	-44.36	-0.13
2007	35657.73	35610.67	-47.05	-0.13
2008	36236.54	36186.65	-49.89	-0.14
2009	36826.35	36773.46	-52.89	-0.14
2010	37428.28	37372.41	-55.87	-0.15

TABLE B.26.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

TOTAL REAL STATE GOVERNMENT REVENUES

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2922.715	2922.715	0.000	0.000
1981	3893.178	3893.178	0.000	0.000
1982	4730.027	4730.027	0.000	0.000
1983	3659.045	3659.045	0.000	0.000
1984	3666.755	3666.755	0.000	0.000
1985	4196.351	4197.593	1.242	0.030
1986	4455.921	4459.265	3.344	0.075
1987	4758.718	4765.183	6.465	0.136
1988	4701.808	4710.847	9.039	0.192
1989	5099.402	5111.824	12.422	0.244
1990	4609.652	4621.386	11.734	0.255
1991	4387.226	4401.570	14.344	0.327
1992	4215.984	4255.691	39.707	0.942
1993	4136.718	4200.339	63.621	1.538
1994	3951.787	4083.873	132.086	3.342
1995	3801.949	3936.067	134.118	3.528
1996	3851.055	4007.968	156.913	4.075
1997	3775.547	3936.585	161.038	4.265
1998	3703.297	3868.656	165.359	4.465
1999	3591.435	3758.966	167.532	4.665
2000	3482.177	3649.854	167.677	4.815
2001	3356.313	3522.585	166.272	4.954
2002	3260.732	3426.707	165.975	5.090
2003	3170.253	3337.926	167.672	5.289
2004	3053.408	3223.913	170.505	5.584
2005	2991.311	3165.137	173.825	5.811
2006	2935.669	3112.926	177.257	6.038
2007	2885.704	3066.376	180.672	6.261
2008	2840.818	3024.845	184.027	6.478
2009	2800.101	2987.399	187.298	6.689
2010	2762.889	2953.361	190.472	6.894

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83R--CREATED 10/11/82



TABLE B.27.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

TOTAL REAL STATE GOVERNMENT EXPENDITURES

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2005.519	2005.519	0.000	0.000
1981	2960.817	2960.817	0.000	0.000
1982	3651.551	3651.551	0.000	0.000
1983	3403.064	3403.064	0.000	0.000
1984	3414.833	3414.833	0.000	0.000
1985	3440.812	3441.589	0.777	0.023
1986	3466.836	3468.543	1.707	0.049
1987	3484.240	3487.497	3.257	0.093
1988	3491.066	3495.322	4.256	0.122
1989	3479.157	3484.957	5.800	0.167
1990	3476.221	3481.505	5.284	0.152
1991	3493.263	3500.611	7.348	0.210
1992	3512.592	3535.934	23.342	0.665
1993	3534.157	3567.676	33.519	0.948
1994	3557.588	3587.721	30.133	0.847
1995	3371.354	3397.886	26.532	0.787
1996	3216.832	3240.211	23.379	0.727
1997	3084.819	3105.987	21.168	0.686
1998	2980.318	2999.167	18.849	0.632
1999	2891.114	2907.829	16.715	0.578
2000	2817.548	2832.075	14.527	0.516
2001	2754.956	2767.681	12.725	0.462
2002	2701.743	2713.115	11.372	0.421
2003	2657.634	2668.078	10.444	0.393
2004	2620.714	2630.458	9.744	0.372
2005	2590.493	2599.690	9.197	0.355
2006	2565.985	2574.733	8.748	0.341
2007	2546.362	2554.740	8.378	0.329
2008	2530.923	2538.991	8.068	0.319
2009	2518.975	2526.789	7.814	0.310
2010	2510.156	2517.755	7.599	0.303

SOURCE: MAP MODEL SIMULATIONS BASE83M AND OCS.93R--CREATED 10/11/82

TABLE B.28.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL ROAD-CONNECTED CASE

REAL PER CAPITA STATE GOVERNMENT EXPENDITURES

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	4988.14	4988.14	0.00	0.00
1981	7135.97	7135.97	0.00	0.00
1982	8433.42	8433.42	0.00	0.00
1983	7689.96	7689.96	0.00	0.00
1984	7616.10	7616.10	0.00	0.00
1985	7559.33	7554.97	-4.36	-0.06
1986	7421.05	7411.94	-9.11	-0.12
1987	7132.06	7116.51	-15.55	-0.22
1988	6814.82	6797.32	-17.51	-0.26
1989	6755.99	6732.30	-23.69	-0.35
1990	6832.11	6810.36	-21.74	-0.32
1991	6830.01	6798.38	-31.63	-0.46
1992	6841.04	6735.05	-105.99	-1.55
1993	6821.98	6669.72	-152.26	-2.23
1994	6797.28	6659.42	-137.86	-2.03
1995	6435.07	6300.87	-134.20	-2.09
1996	6119.32	5989.52	-129.80	-2.12
1997	5866.69	5735.91	-130.78	-2.23
1998	5598.66	5472.12	-126.54	-2.26
1999	5378.63	5257.67	-120.95	-2.25
2000	5178.75	5066.71	-112.04	-2.16
2001	5033.57	4928.61	-104.96	-2.09
2002	4894.86	4794.54	-100.32	-2.05
2003	4774.17	4675.88	-98.30	-2.06
2004	4666.34	4569.03	-97.31	-2.09
2005	4571.13	4474.30	-96.82	-2.12
2006	4486.66	4390.11	-96.55	-2.15
2007	4411.34	4314.95	-96.39	-2.19
2008	4343.80	4247.49	-96.31	-2.22
2009	4283.88	4187.54	-96.34	-2.25
2010	4229.35	4132.96	-96.39	-2.28

SOURCE: MAP MODEL SIMULATIONS 23A0303M AND DCS.83R--CREATED 10/11/82

TABLE B.29.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BEBL ROAD-CONNECTED CASE

## REAL COMBINED FUNDS BALANCE

MILLIONS OF 1982 \$\$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2420.861	2420.861	0.000	0.000
1981	3475.185	3475.185	0.000	0.000
1982	4687.683	4687.683	0.000	0.000
1983	5023.308	5023.308	0.000	0.000
1984	5346.121	5346.121	0.000	0.000
1985	6173.585	6174.679	1.094	0.018
1986	7162.925	7166.484	3.559	0.050
1987	8322.921	8331.179	8.258	0.099
1988	9287.470	9301.430	13.957	0.150
1989	10606.470	10628.340	21.871	0.206
1990	11405.320	11431.690	26.371	0.231
1991	11936.670	11971.520	34.848	0.292
1992	12242.040	12316.640	74.602	0.609
1993	12435.020	12551.300	116.281	0.935
1994	12411.750	12616.570	204.824	1.650
1995	12377.870	12676.050	298.172	2.409
1996	12527.430	12937.820	410.387	3.276
1997	12694.560	13217.170	522.609	4.117
1998	12885.500	13517.750	632.250	4.907
1999	13020.160	13757.830	737.668	5.666
2000	13101.740	13938.320	836.637	6.386
2001	13092.980	14021.990	929.008	7.095
2002	13039.120	14056.600	1017.477	7.803
2003	12936.290	14040.010	1103.718	8.532
2004	12756.220	13944.300	1188.085	9.314
2005	12553.100	13823.870	1270.769	10.123
2006	12330.200	13681.900	1351.703	10.963
2007	12090.410	13521.310	1430.902	11.835
2008	11836.460	13344.790	1508.328	12.743
2009	11570.050	13153.980	1583.933	13.690
2010	11293.500	12951.220	1657.722	14.679

SOURCE: MAP MODEL SIMULATIONS SBASE83M AND DCS.83R--CREATED 10/11/82

TABLE B.30.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL ROAD-CONNECTED CASE

## REAL PER CAPITA COMBINED FUNDS BALANCE

1982 \$\$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6021.18	6021.18	0.00	0.00
1981	8375.67	8375.67	0.00	0.00
1982	10826.41	10826.41	0.00	0.00
1983	11351.25	11351.25	0.00	0.00
1984	11923.44	11923.44	0.00	0.00
1985	13563.12	13554.64	-8.49	-0.06
1986	15332.82	15314.07	-18.75	-0.12
1987	17036.60	17000.42	-36.18	-0.21
1988	18129.83	18068.39	-41.45	-0.23
1989	20596.14	20532.02	-64.12	-0.31
1990	22415.82	22362.16	-53.66	-0.24
1991	23338.50	23249.37	-89.12	-0.38
1992	23842.30	23460.06	-382.24	-1.60
1993	24003.33	23464.50	-538.83	-2.24
1994	23714.42	23418.50	-295.92	-1.25
1995	23626.26	23505.84	-120.42	-0.51
1996	23830.69	23915.51	84.82	0.36
1997	24142.43	24408.50	266.07	1.10
1998	24205.99	24663.77	457.79	1.89
1999	24222.70	24875.67	652.97	2.70
2000	24081.45	24936.39	854.95	3.55
2001	23922.12	24969.96	1047.84	4.38
2002	23623.52	24840.46	1216.94	5.15
2003	23238.76	24605.49	1366.73	5.88
2004	22713.22	24220.85	1507.63	6.64
2005	22150.92	23792.15	1641.22	7.41
2006	21559.53	23328.66	1769.13	8.21
2007	20945.53	22837.46	1891.93	9.03
2008	20314.83	22324.58	2009.75	9.89
2009	19676.53	21799.56	2123.03	10.79
2010	19028.37	21259.78	2231.41	11.73

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83R--CREATED 10/11/82

TABLE B.31.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

TOTAL POPULATION

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	402.057	402.057	0.000	0.000
1981	414.914	414.914	0.000	0.000
1982	432.986	432.986	0.000	0.000
1983	442.533	442.533	0.000	0.000
1984	448.370	448.370	0.000	0.000
1985	455.174	455.540	0.366	0.080
1986	467.163	467.967	0.804	0.172
1987	488.532	490.057	1.525	0.312
1988	512.275	514.221	1.946	0.380
1989	514.974	517.647	2.673	0.519
1990	508.807	511.207	2.400	0.472
1991	511.458	514.918	3.459	0.676
1992	513.459	525.005	11.546	2.249
1993	518.054	534.906	16.852	3.253
1994	523.384	538.744	15.360	2.935
1995	523.903	539.272	15.369	2.934
1996	525.685	540.980	15.295	2.910
1997	525.819	541.499	15.679	2.982
1998	532.327	548.081	15.754	2.959
1999	537.519	553.064	15.545	2.892
2000	544.060	558.957	14.897	2.738
2001	547.317	561.554	14.237	2.601
2002	551.955	565.875	13.920	2.522
2003	556.669	570.605	13.936	2.503
2004	561.621	575.715	14.094	2.510
2005	566.708	581.027	14.319	2.527
2006	571.914	586.485	14.571	2.548
2007	577.231	592.067	14.836	2.570
2008	582.651	597.762	15.111	2.594
2009	588.012	603.406	15.393	2.618
2010	593.509	609.189	15.680	2.642

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DC2.93M--CREATED 10/11/82

TABLE B.32.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

BASIC SECTOR EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	46.048	46.048	0.000	0.000
1981	48.409	48.409	0.000	0.000
1982	52.733	52.733	0.000	0.000
1983	53.327	53.327	0.000	0.000
1984	52.380	52.380	0.000	0.000
1985	53.015	53.274	0.259	0.488
1986	56.660	56.878	0.219	0.386
1987	64.528	65.045	0.517	0.800
1988	71.854	72.463	0.610	0.848
1989	66.829	67.786	0.957	1.432
1990	59.252	59.889	0.637	1.075
1991	59.961	61.292	1.331	2.220
1992	60.117	66.790	6.672	11.098
1993	60.496	68.789	8.293	13.708
1994	60.881	66.077	5.197	8.536
1995	59.881	64.964	5.083	8.488
1996	59.834	64.811	4.977	8.318
1997	57.736	62.728	4.992	8.646
1998	60.345	65.095	4.750	7.872
1999	61.019	65.397	4.378	7.175
2000	62.484	66.302	3.818	6.111
2001	62.611	65.975	3.364	5.373
2002	62.734	65.920	3.186	5.079
2003	62.896	66.063	3.167	5.036
2004	63.113	66.284	3.165	5.015
2005	63.383	66.561	3.172	5.004
2006	63.595	66.877	3.181	4.994
2007	64.032	67.231	3.192	4.985
2008	64.411	67.616	3.205	4.975
2009	64.734	67.941	3.217	4.970
2010	65.097	68.328	3.230	4.962

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCC.83M--CREATED 10/11/82

TABLE B.33

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL REMOTE CASE

## SERVICES SECTOR EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	79.812	79.812	0.000	0.000
1981	81.714	81.714	0.000	0.000
1982	86.641	86.641	0.000	0.000
1983	90.060	90.060	0.000	0.000
1984	91.951	91.951	0.000	0.000
1985	93.617	93.734	0.117	0.125
1986	97.298	97.848	0.551	0.566
1987	105.326	106.251	0.925	0.878
1988	114.964	116.114	1.151	1.001
1989	115.800	117.240	1.440	1.244
1990	113.160	114.472	1.313	1.160
1991	112.063	113.762	1.700	1.517
1992	109.931	114.321	4.490	4.088
1993	110.354	117.353	7.000	6.343
1994	111.365	118.816	7.451	6.691
1995	108.826	116.162	7.336	6.741
1996	108.199	115.131	6.932	6.407
1997	107.122	113.993	6.871	6.414
1998	108.322	115.066	6.745	6.226
1999	109.573	116.097	6.524	5.954
2000	111.566	117.675	6.109	5.475
2001	111.332	116.997	5.665	5.088
2002	112.871	118.213	5.341	4.732
2003	114.367	119.555	5.187	4.536
2004	116.078	121.218	5.140	4.428
2005	117.898	123.037	5.149	4.368
2006	119.798	124.975	5.178	4.322
2007	121.797	127.012	5.215	4.282
2008	123.881	129.137	5.256	4.243
2009	125.975	131.274	5.299	4.206
2010	128.183	133.528	5.345	4.170

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83M--CREATED 10/11/88

TABLE B.34.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

GOVERNMENT EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	78.589	78.589	0.000	0.000
1981	83.071	83.071	0.000	0.000
1982	87.755	87.755	0.000	0.000
1983	88.312	88.312	0.000	0.000
1984	88.379	88.379	0.000	0.000
1985	88.153	88.156	0.003	0.004
1986	87.586	87.635	0.049	0.056
1987	86.863	86.956	0.092	0.106
1988	87.343	87.515	0.172	0.197
1989	89.758	89.974	0.216	0.240
1990	90.083	90.356	0.273	0.303
1991	88.371	88.587	0.216	0.245
1992	87.800	88.190	0.391	0.445
1993	87.191	88.486	1.296	1.486
1994	87.017	88.707	1.690	1.942
1995	86.884	88.250	1.365	1.572
1996	85.569	86.848	1.279	1.495
1997	85.229	86.470	1.240	1.455
1998	84.796	86.025	1.229	1.450
1999	84.835	86.011	1.176	1.386
2000	84.771	85.865	1.094	1.291
2001	84.812	85.787	0.975	1.150
2002	84.630	85.502	0.873	1.031
2003	84.573	85.393	0.821	0.970
2004	84.527	85.331	0.804	0.951
2005	84.506	85.303	0.797	0.943
2006	84.502	85.297	0.795	0.941
2007	84.512	85.307	0.795	0.940
2008	84.534	85.329	0.795	0.941
2009	84.567	85.363	0.796	0.941
2010	84.589	85.385	0.797	0.942

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83M--CREATED 10/11/82



TABLE B.35.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

TOTAL EMPLOYMENT

THOUSANDS

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	204.449	204.449	0.000	0.000
1981	213.195	213.195	0.000	0.000
1982	227.129	227.129	0.000	0.000
1983	231.699	231.699	0.000	0.000
1984	232.710	232.710	0.000	0.000
1985	234.784	235.164	0.379	0.162
1986	241.543	242.362	0.819	0.339
1987	256.718	258.252	1.534	0.597
1988	274.161	276.093	1.933	0.705
1989	272.387	275.000	2.613	0.959
1990	262.494	264.717	2.222	0.847
1991	260.395	263.642	3.247	1.247
1992	257.748	269.301	11.552	4.482
1993	258.040	274.628	16.588	6.428
1994	259.263	273.600	14.337	5.530
1995	255.591	269.376	13.784	5.393
1996	253.602	266.790	13.188	5.200
1997	250.087	263.191	13.104	5.240
1998	253.462	266.186	12.724	5.020
1999	255.428	267.506	12.078	4.728
2000	258.821	269.842	11.021	4.258
2001	258.755	268.759	10.004	3.866
2002	260.235	269.635	9.400	3.612
2003	261.836	271.011	9.175	3.504
2004	263.724	272.833	9.109	3.454
2005	265.783	274.901	9.118	3.431
2006	267.995	277.149	9.154	3.416
2007	270.347	279.549	9.202	3.404
2008	272.826	282.082	9.256	3.393
2009	275.266	284.578	9.312	3.383
2010	277.869	287.241	9.372	3.373

SOURCE: MAP MODEL SIMULATIONS @BASE83M AND @CS.83M--CREATED 10/11/88

TABLE B.36.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL REMOTE CASE

## REAL PERSONAL INCOME

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6247.679	6247.679	0.000	0.000
1981	6551.144	6551.144	0.000	0.000
1982	7081.304	7081.304	0.000	0.000
1983	7300.878	7300.878	0.000	0.000
1984	7339.421	7339.421	0.000	0.000
1985	7480.527	7497.429	16.902	0.226
1986	7990.835	8022.390	31.555	0.395
1987	9179.180	9243.130	63.941	0.697
1988	10462.730	10540.050	77.320	0.739
1989	9922.060	10028.770	106.711	1.075
1990	8886.261	8968.636	82.375	0.927
1991	8779.230	8912.386	133.156	1.517
1992	8682.132	9196.670	514.539	5.926
1993	8769.375	9475.610	706.238	8.053
1994	8877.281	9452.890	575.605	6.484
1995	8821.000	9396.020	575.016	6.519
1996	8827.140	9390.090	562.953	6.378
1997	8764.835	9332.120	567.285	6.472
1998	8945.421	9497.050	551.625	6.167
1999	9070.840	9594.530	523.684	5.773
2000	9261.790	9737.190	475.406	5.133
2001	9329.610	9762.020	432.410	4.635
2002	9462.750	9874.530	411.777	4.352
2003	9599.870	10008.180	408.305	4.253
2004	9749.930	10159.890	409.965	4.205
2005	9908.360	10322.540	414.184	4.180
2006	10074.460	10493.780	419.320	4.162
2007	10248.010	10672.980	424.977	4.147
2008	10428.700	10859.570	430.883	4.132
2009	10604.090	11041.110	437.020	4.121
2010	10795.460	11238.590	443.129	4.105

TABLE B. 37.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

REAL PER CAPITA PERSONAL INCOME

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	15539.26	15539.26	0.00	0.00
1981	15789.14	15789.14	0.00	0.00
1982	16354.58	16354.58	0.00	0.00
1983	16497.91	16497.91	0.00	0.00
1984	16369.10	16369.10	0.00	0.00
1985	16434.42	16458.33	23.91	0.15
1986	17105.03	17143.06	38.02	0.22
1987	18789.32	18861.32	72.00	0.38
1988	20424.05	20497.13	73.09	0.36
1989	19267.11	19373.75	106.64	0.55
1990	17464.90	17544.04	79.14	0.45
1991	17165.08	17308.35	143.27	0.83
1992	16909.10	17517.31	608.20	3.60
1993	16927.52	17714.52	787.00	4.65
1994	16961.31	17546.15	584.84	3.45
1995	16837.07	17423.50	586.43	3.48
1996	16791.69	17357.55	565.86	3.37
1997	16668.90	17233.87	564.97	3.39
1998	16804.36	17327.80	523.44	3.11
1999	16875.38	17347.95	472.57	2.80
2000	17023.47	17420.27	396.80	2.33
2001	17046.08	17383.93	337.84	1.98
2002	17144.05	17450.00	305.95	1.78
2003	17245.21	17539.58	294.38	1.71
2004	17360.33	17647.43	287.10	1.65
2005	17484.06	17766.03	281.97	1.61
2006	17615.34	17892.68	277.34	1.57
2007	17753.74	18026.64	272.91	1.54
2008	17898.69	18167.05	268.36	1.50
2009	18033.79	18297.99	264.20	1.47
2010	18189.23	18448.44	259.22	1.43

SOURCE: MAP MODEL SIMULATIONS @BASE83N AND OCC.83M--CREATED 10/11/88

TABLE B.38.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL REMOTE CASE

## BASIC SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	27201.58	27201.58	0.00	0.00
1981	27253.51	27253.51	0.00	0.00
1982	28596.71	28596.71	0.00	0.00
1983	29226.08	29226.08	0.00	0.00
1984	28819.58	28819.58	0.00	0.00
1985	29281.75	29353.08	71.33	0.24
1986	32184.88	32223.34	38.46	0.12
1987	38377.82	38447.76	69.95	0.18
1988	43599.71	43625.61	25.90	0.06
1989	39702.80	39807.37	104.57	0.26
1990	32580.52	32694.79	114.27	0.35
1991	32014.25	32317.00	302.75	0.95
1992	31852.62	33321.14	1468.52	4.61
1993	32165.57	33919.58	1754.02	5.45
1994	32375.26	33600.41	1225.14	3.78
1995	32346.14	33731.40	1385.26	4.28
1996	32418.13	33890.55	1472.42	4.54
1997	32598.90	34175.64	1576.75	4.84
1998	32549.13	34029.69	1480.56	4.55
1999	32587.14	33964.40	1377.26	4.23
2000	32758.00	33937.73	1179.73	3.60
2001	33125.32	34166.19	1040.88	3.14
2002	33423.47	34433.25	1009.77	3.02
2003	33730.13	34762.19	1032.05	3.06
2004	34047.55	35097.82	1050.27	3.08
2005	34376.77	35443.08	1066.32	3.10
2006	34713.44	35794.92	1081.48	3.12
2007	35057.91	36153.64	1095.74	3.13
2008	35409.80	36519.04	1109.25	3.13
2009	35688.05	36815.74	1127.69	3.16
2010	36069.95	37210.53	1140.58	3.16

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83M--CREATED 10/11/82

TABLE B.39.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

SERVICES SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	22624.87	22624.87	0.00	0.00
1981	22465.76	22465.76	0.00	0.00
1982	22158.36	22158.36	0.00	0.00
1983	22355.64	22355.64	0.00	0.00
1984	22476.25	22476.25	0.00	0.00
1985	22645.47	22642.72	-2.75	-0.01
1986	23281.60	23306.69	25.10	0.11
1987	24791.66	24817.43	25.77	0.10
1988	26136.07	26145.14	9.07	0.03
1989	25216.85	25218.55	1.70	0.01
1990	23952.98	23958.66	5.68	0.02
1991	23527.14	23545.92	18.79	0.08
1992	23146.93	23129.97	-16.96	-0.07
1993	23263.69	23206.58	-57.11	-0.25
1994	23358.05	23359.27	1.22	0.01
1995	23516.07	23564.41	48.34	0.21
1996	23700.33	23735.82	35.49	0.15
1997	23757.03	23797.21	40.18	0.17
1998	23866.83	23908.57	41.74	0.17
1999	23945.29	23996.48	51.20	0.21
2000	24058.77	24117.40	58.63	0.24
2001	24000.35	24076.49	76.14	0.32
2002	24130.42	24207.63	77.21	0.32
2003	24236.32	24312.41	76.09	0.31
2004	24350.14	24424.68	74.54	0.31
2005	24463.09	24537.42	74.33	0.30
2006	24576.96	24651.18	74.22	0.30
2007	24691.34	24765.59	74.25	0.30
2008	24806.23	24880.48	74.25	0.30
2009	24922.65	24996.91	74.26	0.30
2010	25040.28	25114.46	74.18	0.30

SOURCE: MAP MODEL SIMULATIONS SBASE93N AND OPS.93M--CREATED 10/11/92

TABLE B.40.

\*\*\* MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

GOVERNMENT SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	23469.32	23469.32	0.00	0.00
1981	23665.52	23665.52	0.00	0.00
1982	24451.50	24451.50	0.00	0.00
1983	24813.00	24813.00	0.00	0.00
1984	25148.11	25148.11	0.00	0.00
1985	25508.86	25508.62	-0.25	-0.00
1986	25974.68	25974.10	-0.58	-0.00
1987	26573.26	26571.19	-2.07	-0.01
1988	27122.75	27120.33	-2.43	-0.01
1989	27304.00	27300.50	-3.51	-0.01
1990	27379.02	27376.70	-2.32	-0.01
1991	27763.93	27760.57	-3.36	-0.01
1992	28179.68	28169.41	-10.27	-0.04
1993	28612.79	28590.93	-21.86	-0.08
1994	29048.10	29020.47	-27.64	-0.10
1995	29490.98	29463.28	-27.70	-0.09
1996	29960.84	29930.96	-29.88	-0.10
1997	30433.24	30400.58	-32.65	-0.11
1998	30915.46	30879.71	-35.75	-0.12
1999	31399.30	31361.82	-37.47	-0.12
2000	31894.02	31855.95	-38.07	-0.12
2001	32398.59	32361.33	-37.27	-0.12
2002	32918.60	32881.92	-36.68	-0.11
2003	33446.18	33408.75	-37.44	-0.11
2004	33983.82	33944.40	-39.42	-0.12
2005	34531.57	34489.80	-41.77	-0.12
2006	35089.44	35045.08	-44.36	-0.13
2007	35657.73	35610.67	-47.05	-0.13
2008	36236.54	36186.65	-49.89	-0.14
2009	36826.35	36773.46	-52.89	-0.14
2010	37428.28	37372.41	-55.87	-0.15

TABLE B.41

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL REMOTE CASE

## TOTAL REAL STATE GOVERNMENT REVENUES

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2922.715	2922.715	0.000	0.000
1981	3893.178	3893.178	0.000	0.000
1982	4730.027	4730.027	0.000	0.000
1983	3659.045	3659.045	0.000	0.000
1984	3666.755	3666.755	0.000	0.000
1985	4196.351	4197.593	1.242	0.030
1986	4455.921	4459.265	3.344	0.075
1987	4758.718	4765.183	6.465	0.136
1988	4701.808	4710.847	9.039	0.192
1989	5099.402	5111.824	12.422	0.244
1990	4609.652	4621.386	11.734	0.255
1991	4387.226	4401.570	14.344	0.327
1992	4215.984	4255.691	39.707	0.942
1993	4136.718	4200.339	63.621	1.538
1994	3951.787	4083.873	132.086	3.342
1995	3801.949	3936.067	134.118	3.528
1996	3851.055	4007.968	156.913	4.075
1997	3775.547	3936.585	161.038	4.265
1998	3703.297	3868.656	165.359	4.465
1999	3591.435	3758.966	167.532	4.665
2000	3482.177	3649.854	167.677	4.815
2001	3356.313	3522.585	166.272	4.954
2002	3260.732	3426.707	165.975	5.090
2003	3170.253	3337.926	167.672	5.289
2004	3053.403	3223.913	170.505	5.584
2005	2991.311	3165.137	173.825	5.811
2006	2935.669	3112.926	177.257	6.038
2007	2885.704	3066.376	180.672	6.261
2008	2840.818	3024.845	184.027	6.478
2009	2800.101	2987.399	187.298	6.689
2010	2762.889	2953.361	190.472	6.894

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83M--CREATED 10/11/82

TABLE B.42.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 1.2 BBBL REMOTE CASE

## TOTAL REAL STATE GOVERNMENT EXPENDITURES

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2005.519	2005.519	0.000	0.000
1981	2960.817	2960.817	0.000	0.000
1982	3651.551	3651.551	0.000	0.000
1983	3403.064	3403.064	0.000	0.000
1984	3414.833	3414.833	0.000	0.000
1985	3440.812	3441.589	0.777	0.023
1986	3466.836	3468.543	1.707	0.049
1987	3484.240	3487.497	3.257	0.093
1988	3491.066	3495.322	4.256	0.122
1989	3479.157	3484.957	5.800	0.167
1990	3476.221	3481.505	5.284	0.152
1991	3493.268	3500.611	7.342	0.210
1992	3512.592	3535.934	23.342	0.665
1993	3534.157	3567.676	33.519	0.948
1994	3557.588	3587.721	30.133	0.847
1995	3371.354	3397.886	26.532	0.787
1996	3216.832	3240.211	23.379	0.727
1997	3084.819	3105.987	21.168	0.686
1998	2980.318	2999.167	18.849	0.632
1999	2891.114	2907.829	16.715	0.578
2000	2817.548	2832.075	14.527	0.516
2001	2754.956	2767.681	12.725	0.462
2002	2701.743	2713.115	11.372	0.421
2003	2657.634	2668.078	10.444	0.393
2004	2620.714	2630.458	9.744	0.372
2005	2590.493	2599.690	9.197	0.355
2006	2565.985	2574.733	8.748	0.341
2007	2546.362	2554.740	8.378	0.329
2008	2530.923	2538.991	8.068	0.319
2009	2518.975	2526.789	7.814	0.310
2010	2510.156	2517.755	7.599	0.303

SOURCE: MAP MODEL SIMULATIONS SBASE83M AND JCS.93M--CREATED 10/11/82



TABLE B.43.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

REAL PER CAPITA STATE GOVERNMENT EXPENDITURES

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	4988.14	4988.14	0.00	0.00
1981	7135.97	7135.97	0.00	0.00
1982	8433.42	8433.42	0.00	0.00
1983	7689.96	7689.96	0.00	0.00
1984	7616.10	7616.10	0.00	0.00
1985	7559.33	7554.97	-4.36	-0.06
1986	7421.05	7411.94	-9.11	-0.12
1987	7132.06	7116.51	-15.55	-0.22
1988	6814.82	6797.32	-17.51	-0.26
1989	6755.99	6732.30	-23.69	-0.35
1990	6832.11	6810.36	-21.74	-0.32
1991	6830.01	6798.38	-31.63	-0.46
1992	6841.04	6735.05	-105.99	-1.55
1993	6821.98	6669.72	-152.26	-2.23
1994	6797.28	6659.42	-137.86	-2.03
1995	6435.07	6300.87	-134.20	-2.09
1996	6119.32	5989.52	-129.80	-2.12
1997	5866.69	5735.91	-130.78	-2.23
1998	5598.66	5472.12	-126.54	-2.26
1999	5378.63	5257.67	-120.95	-2.25
2000	5178.75	5066.71	-112.04	-2.16
2001	5033.57	4928.61	-104.96	-2.09
2002	4894.86	4794.54	-100.32	-2.05
2003	4774.17	4675.88	-98.30	-2.06
2004	4666.34	4569.03	-97.31	-2.09
2005	4571.13	4474.30	-96.82	-2.12
2006	4486.66	4390.11	-96.55	-2.15
2007	4411.34	4314.95	-96.39	-2.19
2008	4343.80	4247.49	-96.31	-2.22
2009	4283.88	4187.54	-96.34	-2.25
2010	4229.35	4132.96	-96.39	-2.28

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83M--CREATED 10/11/88

TABLE B.4.

MAP MODEL STATEWIDE IMPACT PROJECTIONS::

1.2 BBBL REMOTE CASE

REAL COMBINED FUNDS BALANCE

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2420.861	2420.861	0.000	0.000
1981	3475.185	3475.185	0.000	0.000
1982	4687.683	4687.683	0.000	0.000
1983	5023.308	5023.308	0.000	0.000
1984	5346.121	5346.121	0.000	0.000
1985	6173.565	6174.679	1.094	0.018
1986	7162.925	7166.484	3.559	0.050
1987	8322.921	8331.179	8.258	0.099
1988	9287.470	9301.430	13.957	0.150
1989	10606.470	10629.340	21.871	0.206
1990	11405.320	11431.690	26.371	0.231
1991	11936.670	11971.520	34.848	0.292
1992	12242.040	12316.640	74.602	0.609
1993	12435.020	12551.300	116.281	0.935
1994	12411.750	12616.570	204.824	1.650
1995	12377.870	12676.050	298.172	2.409
1996	12527.430	12937.820	410.387	3.276
1997	12694.560	13217.170	522.609	4.117
1998	12885.500	13517.750	632.250	4.907
1999	13020.160	13757.830	737.668	5.666
2000	13101.740	13938.380	836.637	6.386
2001	13092.980	14021.990	929.008	7.095
2002	13039.120	14056.600	1017.477	7.803
2003	12936.290	14040.010	1103.718	8.532
2004	12756.220	13944.300	1188.085	9.314
2005	12553.100	13823.870	1270.769	10.123
2006	12330.200	13681.900	1351.703	10.963
2007	12090.410	13521.310	1430.902	11.835
2008	11836.460	13344.780	1508.328	12.743
2009	11570.050	13153.980	1583.939	13.690
2010	11293.500	12951.220	1657.722	14.679

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.33M--CREATED 10/11/82

TABLE B.45.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

1.2 BBBL REMOTE CASE

REAL PER CAPITA COMBINED FUNDS BALANCE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6021.18	6021.18	0.00	0.00
1981	8375.67	8375.67	0.00	0.00
1982	10826.41	10826.41	0.00	0.00
1983	11351.25	11351.25	0.00	0.00
1984	11923.44	11923.44	0.00	0.00
1985	13563.12	13554.64	-8.49	-0.06
1986	15332.82	15314.07	-18.75	-0.12
1987	17036.60	17000.42	-36.18	-0.21
1988	18129.83	18088.39	-41.45	-0.23
1989	20596.14	20532.02	-64.12	-0.31
1990	22415.82	22362.16	-53.66	-0.24
1991	23338.50	23249.37	-89.12	-0.38
1992	23842.30	23460.06	-382.24	-1.60
1993	24003.33	23464.50	-538.83	-2.24
1994	23714.42	23418.50	-295.92	-1.25
1995	23626.26	23505.84	-120.42	-0.51
1996	23830.69	23915.51	84.82	0.36
1997	24142.43	24408.50	266.07	1.10
1998	24205.99	24663.77	457.79	1.89
1999	24222.70	24875.67	652.97	2.70
2000	24081.45	24936.39	854.95	3.55
2001	23922.12	24969.96	1047.84	4.38
2002	23623.52	24840.46	1216.94	5.15
2003	23239.76	24605.49	1366.73	5.88
2004	22713.22	24220.85	1507.63	6.64
2005	22150.92	23792.15	1641.22	7.41
2006	21559.53	23328.66	1769.13	8.21
2007	20945.53	22837.46	1891.93	9.03
2008	20314.83	22324.52	2009.75	9.89
2009	19676.53	21799.56	2123.03	10.79
2010	19028.37	21259.78	2231.41	11.73

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83M--CREATED 10/11/82

TABLE B.46.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

2.4 BBBL CASE

TOTAL POPULATION

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	402.057	402.057	0.000	0.000
1981	414.914	414.914	0.000	0.000
1982	432.986	432.986	0.000	0.000
1983	442.533	442.533	0.000	0.000
1984	448.370	448.370	0.000	0.000
1985	455.174	455.540	0.366	0.080
1986	467.163	468.171	1.008	0.216
1987	488.532	490.548	2.017	0.413
1988	512.275	514.205	1.929	0.377
1989	514.974	517.907	2.933	0.570
1990	508.807	511.610	2.804	0.551
1991	511.458	515.211	3.753	0.734
1992	513.459	529.850	16.391	3.192
1993	518.054	541.793	23.739	4.582
1994	523.384	537.603	14.219	2.717
1995	523.903	539.482	15.579	2.974
1996	525.685	542.976	17.291	3.289
1997	525.819	545.107	19.288	3.668
1998	532.327	552.381	20.054	3.767
1999	537.519	557.635	20.115	3.742
2000	544.060	563.631	19.572	3.597
2001	547.317	566.214	18.897	3.453
2002	551.955	570.462	18.507	3.353
2003	556.669	575.060	18.391	3.304
2004	561.621	580.216	18.595	3.311
2005	566.708	585.625	18.917	3.338
2006	571.914	591.214	19.300	3.375
2007	577.231	596.934	19.703	3.413
2008	582.651	602.767	20.116	3.452
2009	588.012	608.546	20.534	3.492
2010	593.509	614.465	20.957	3.531

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83H--CREATED 10/11/87

TABLE B.47.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBBL CASE

## BASIC SECTOR EMPLOYMENT

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	46.048	46.048	0.000	0.000
1981	48.409	48.409	0.000	0.000
1982	52.733	52.733	0.000	0.000
1983	53.327	53.327	0.000	0.000
1984	52.380	52.380	0.000	0.000
1985	53.015	53.274	0.259	0.488
1986	56.660	56.986	0.327	0.577
1987	64.528	65.272	0.743	1.152
1988	71.854	72.369	0.516	0.718
1989	66.829	67.900	1.070	1.602
1990	59.252	60.059	0.807	1.362
1991	59.961	61.362	1.401	2.337
1992	60.117	70.023	9.906	16.478
1993	60.496	72.419	11.923	19.709
1994	60.881	65.606	4.726	7.762
1995	59.881	65.828	5.947	9.931
1996	59.834	66.260	6.426	10.740
1997	57.736	64.243	6.507	11.270
1998	60.345	66.739	6.394	10.596
1999	61.019	66.983	5.964	9.774
2000	62.484	67.822	5.344	8.553
2001	62.611	67.408	4.797	7.661
2002	62.734	67.248	4.515	7.197
2003	62.896	67.270	4.374	6.954
2004	63.119	67.506	4.387	6.951
2005	63.389	67.801	4.412	6.960
2006	63.695	68.136	4.441	6.972
2007	64.038	68.508	4.470	6.980
2008	64.411	68.910	4.499	6.984
2009	64.724	69.250	4.526	6.993
2010	65.097	69.651	4.553	6.994

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83H--CREATED 10/11/82

TABLE B-48

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBBL CASE

## SERVICES SECTOR EMPLOYMENT

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	79.812	79.812	0.000	0.000
1981	81.714	81.714	0.000	0.000
1982	86.641	86.641	0.000	0.000
1983	90.060	90.060	0.000	0.000
1984	91.951	91.951	0.000	0.000
1985	93.617	93.734	0.117	0.125
1986	97.298	97.950	0.653	0.671
1987	105.326	106.498	1.171	1.112
1988	114.964	116.108	1.144	0.995
1989	115.800	117.381	1.581	1.365
1990	113.160	114.655	1.495	1.321
1991	112.063	113.903	1.840	1.642
1992	109.831	116.022	6.191	5.637
1993	110.354	120.039	9.685	8.777
1994	111.365	116.885	5.519	4.956
1995	108.826	116.123	7.297	6.706
1996	108.199	115.264	7.065	6.530
1997	107.122	115.563	8.441	7.880
1998	108.322	116.991	8.670	8.004
1999	109.573	118.120	8.606	7.855
2000	111.566	119.779	8.213	7.362
2001	111.332	119.051	7.719	6.933
2002	112.871	120.185	7.313	6.479
2003	114.367	121.419	7.052	6.166
2004	116.078	123.041	6.963	5.998
2005	117.888	124.848	6.961	5.905
2006	119.798	126.806	7.008	5.850
2007	121.797	128.868	7.071	5.806
2008	123.881	131.022	7.141	5.765
2009	125.975	133.188	7.213	5.726
2010	128.183	135.468	7.286	5.684

SOURCE: MAP MODEL SIMULATIONS SBASE93N AND DCS.83H--CREATED 10/11/82

TABLE B. 49

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

2.4 BBBL CASE

GOVERNMENT EMPLOYMENT

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	78.589	78.589	0.000	0.000
1981	83.071	83.071	0.000	0.000
1982	87.755	87.755	0.000	0.000
1983	88.312	88.312	0.000	0.000
1984	88.379	88.379	0.000	0.000
1985	88.153	88.156	0.003	0.004
1986	87.586	87.637	0.052	0.059
1987	86.863	86.985	0.121	0.140
1988	87.343	87.567	0.223	0.256
1989	89.758	89.962	0.204	0.227
1990	90.083	90.386	0.303	0.337
1991	89.371	88.628	0.258	0.292
1992	87.800	88.246	0.447	0.509
1993	87.191	89.061	1.870	2.145
1994	87.017	89.353	2.337	2.685
1995	86.884	87.257	0.372	0.429
1996	85.569	86.968	1.400	1.636
1997	85.229	86.715	1.485	1.742
1998	84.796	86.379	1.584	1.868
1999	84.835	86.405	1.569	1.850
2000	84.771	86.257	1.486	1.753
2001	84.812	86.167	1.356	1.598
2002	84.630	85.862	1.232	1.456
2003	84.573	85.729	1.156	1.367
2004	84.527	85.639	1.112	1.316
2005	84.506	85.609	1.103	1.305
2006	84.502	85.603	1.101	1.303
2007	84.512	85.615	1.103	1.305
2008	84.534	85.640	1.106	1.308
2009	84.567	85.676	1.110	1.312
2010	84.589	85.701	1.113	1.315

SOURCE: MAP MODEL SIMULATIONS (BASE83N AND OCS.83H)--CREATED 10/11/88

TABLE B.51

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

2.4 EBBL CASE

TOTAL EMPLOYMENT

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	204.449	204.449	0.000	0.000
1981	213.195	213.195	0.000	0.000
1982	227.129	227.129	0.000	0.000
1983	231.699	231.699	0.000	0.000
1984	232.710	232.710	0.000	0.000
1985	234.784	235.164	0.379	0.162
1986	241.543	242.574	1.031	0.427
1987	256.718	258.754	2.036	0.793
1988	274.161	276.044	1.883	0.687
1989	272.387	275.243	2.855	1.048
1990	262.494	265.100	2.605	0.993
1991	260.395	263.894	3.499	1.344
1992	257.748	274.292	16.544	6.419
1993	258.040	281.519	23.479	9.099
1994	259.263	271.844	12.582	4.853
1995	255.591	269.208	13.616	5.327
1996	253.602	268.493	14.891	5.872
1997	250.087	266.520	16.433	6.571
1998	253.462	270.110	16.647	6.568
1999	255.428	271.568	16.140	6.319
2000	258.821	273.865	15.044	5.812
2001	258.755	272.626	13.871	5.361
2002	260.235	273.295	13.061	5.019
2003	261.836	274.417	12.582	4.805
2004	263.724	276.186	12.462	4.725
2005	265.783	278.258	12.475	4.694
2006	267.995	280.545	12.550	4.683
2007	270.347	282.991	12.644	4.677
2008	272.826	285.572	12.746	4.672
2009	275.266	288.115	12.849	4.668
2010	277.869	290.820	12.952	4.661

SOURCE: MAP MODEL SIMULATIONS SBASE83M AND DCS.83H--CREATED 10/11/82



TABLE B.. 51

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

2.4 BBBL CASE

REAL PERSONAL INCOME

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6247.679	6247.679	0.000	0.000
1981	6551.144	6551.144	0.000	0.000
1982	7081.304	7081.304	0.000	0.000
1983	7300.878	7300.878	0.000	0.000
1984	7339.421	7339.421	0.000	0.000
1985	7480.527	7497.429	16.902	0.226
1986	7990.835	8032.066	41.230	0.516
1987	9179.180	9265.640	86.461	0.942
1988	10462.730	10533.490	70.762	0.676
1989	9922.060	10040.190	118.133	1.191
1990	8886.261	8985.289	99.027	1.114
1991	8779.230	8921.562	142.332	1.621
1992	8682.132	9426.380	744.246	8.572
1993	8769.375	9769.000	999.625	11.399
1994	8877.281	9415.190	537.906	6.059
1995	8821.000	9441.280	620.277	7.032
1996	8827.140	9493.420	666.277	7.548
1997	8764.835	9489.840	725.004	8.272
1998	8945.421	9677.070	731.652	8.179
1999	9070.840	9777.180	706.332	7.787
2000	9261.790	9917.640	655.852	7.081
2001	9329.610	9935.420	605.805	6.493
2002	9462.750	10038.950	576.195	6.089
2003	9599.870	10161.260	561.387	5.848
2004	9749.930	10313.530	563.602	5.781
2005	9908.360	10478.180	569.820	5.751
2006	10074.460	10652.820	578.355	5.741
2007	10248.010	10835.490	587.484	5.733
2008	10428.700	11025.480	596.789	5.723
2009	10604.090	11210.460	606.367	5.718
2010	10795.460	11411.390	615.930	5.705

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND OCS.83H--CREATED 10/11/82

TABLE B. 52

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

2.4 BBBL CASE

REAL PER CAPITA PERSONAL INCOME

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	15539.26	15539.26	0.00	0.00
1981	15789.14	15789.14	0.00	0.00
1982	16354.58	16354.58	0.00	0.00
1983	16497.91	16497.91	0.00	0.00
1984	16369.10	16369.10	0.00	0.00
1985	16434.42	16458.33	23.91	0.15
1986	17105.03	17156.26	-51.23	0.30
1987	18789.32	18888.33	99.02	0.53
1988	20424.05	20485.02	60.98	0.30
1989	19267.11	19386.09	118.98	0.62
1990	17464.90	17562.75	97.85	0.56
1991	17165.08	17316.30	151.22	0.88
1992	16909.10	17790.65	881.55	5.21
1993	16927.52	18030.87	1103.36	6.52
1994	16961.31	17513.26	551.95	3.25
1995	16837.07	17500.62	663.55	3.94
1996	16791.69	17484.05	692.36	4.12
1997	16668.90	17409.11	740.21	4.44
1998	16804.36	17518.84	714.48	4.25
1999	16875.38	17533.30	657.91	3.90
2000	17023.47	17595.96	572.49	3.36
2001	17046.08	17547.10	501.01	2.94
2002	17144.05	17597.90	453.85	2.65
2003	17245.21	17669.91	424.70	2.46
2004	17360.33	17775.31	414.98	2.39
2005	17484.06	17892.30	408.24	2.33
2006	17615.34	18018.55	403.21	2.29
2007	17753.74	18151.91	398.17	2.24
2008	17898.69	18291.46	392.76	2.19
2009	18033.79	18421.70	387.91	2.15
2010	18189.23	18571.26	382.03	2.10

SOURCE: MAP MODEL SIMULATIONS 8BASE83M AND 80S.83H--CREATED 10/11/88

TABLE B.55.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBBL CASE

## BASIC SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	27201.58	27201.58	0.00	0.00
1981	27253.51	27253.51	0.00	0.00
1982	28596.71	28596.71	0.00	0.00
1983	29226.08	29226.08	0.00	0.00
1984	28819.58	28819.58	0.00	0.00
1985	29281.75	29353.08	71.33	0.24
1986	32184.88	32255.89	71.01	0.22
1987	38377.82	38491.92	114.10	0.30
1988	43599.71	43598.35	-1.37	-0.00
1989	39702.80	39827.07	124.27	0.31
1990	32580.52	32743.30	162.78	0.50
1991	32014.25	32330.70	316.45	0.99
1992	31852.62	33930.94	2078.32	6.52
1993	32165.57	34533.68	2368.12	7.36
1994	32375.26	33700.32	1325.05	4.09
1995	32346.14	34136.44	1790.30	5.53
1996	32418.13	34430.16	2012.03	6.21
1997	32598.90	34703.82	2104.92	6.46
1998	32549.13	34569.73	2020.60	6.21
1999	32587.14	34478.38	1891.24	5.80
2000	32758.00	34430.34	1672.34	5.11
2001	33125.32	34632.79	1507.47	4.55
2002	33423.47	34868.55	1445.08	4.32
2003	33730.13	35156.88	1426.75	4.23
2004	34047.55	35506.48	1458.93	4.28
2005	34376.77	35863.19	1486.42	4.32
2006	34713.44	36224.50	1511.05	4.35
2007	35057.91	36592.11	1534.21	4.38
2008	35409.80	36965.65	1555.86	4.39
2009	35688.05	37271.57	1583.52	4.44
2010	36069.95	37673.17	1603.23	4.44

TABLE B.54.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBBL CASE

## SERVICES SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	22624.87	22624.87	0.00	0.00
1981	22465.76	22465.76	0.00	0.00
1982	22158.36	22158.36	0.00	0.00
1983	22355.64	22355.64	0.00	0.00
1984	22476.25	22476.25	0.00	0.00
1985	22645.47	22642.72	-2.75	-0.01
1986	23281.60	23308.83	27.24	0.12
1987	24791.66	24817.92	26.26	0.11
1988	26136.07	26138.12	2.05	0.01
1989	25216.85	25221.67	4.82	0.02
1990	23952.98	23958.72	5.74	0.02
1991	23527.14	23545.13	18.00	0.08
1992	23146.93	23112.53	-34.41	-0.15
1993	23263.69	23161.81	-101.88	-0.44
1994	23358.05	23417.35	59.30	0.25
1995	23516.07	23673.54	157.46	0.67
1996	23700.33	23686.20	-14.13	-0.06
1997	23757.03	23797.94	40.91	0.17
1998	23866.83	23907.26	40.43	0.17
1999	23945.29	23999.79	54.50	0.23
2000	24058.77	24123.44	64.67	0.27
2001	24000.35	24087.13	86.78	0.36
2002	24130.42	24219.73	89.31	0.37
2003	24236.32	24326.39	90.07	0.37
2004	24350.14	24439.26	89.12	0.37
2005	24463.09	24550.68	87.59	0.36
2006	24576.96	24664.27	87.31	0.36
2007	24691.34	24778.53	87.19	0.35
2008	24806.23	24893.33	87.10	0.35
2009	24922.65	25009.69	87.04	0.35
2010	25040.28	25127.20	86.92	0.35

SOURCE: MAP MODEL SIMULATIONS 22ASE83N AND 00S.23H--CREATED 10/11/83

TABLE B.55

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBBL CASE

## GOVERNMENT SECTOR REAL WAGE RATE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	23469.32	23469.32	0.00	0.00
1981	23665.52	23665.52	0.00	0.00
1982	24451.50	24451.50	0.00	0.00
1983	24813.00	24813.00	0.00	0.00
1984	25148.11	25148.11	0.00	0.00
1985	25508.86	25508.62	-0.25	-0.00
1986	25974.68	25973.85	-0.83	-0.00
1987	26573.26	26570.52	-2.74	-0.01
1988	27122.75	27121.37	-1.38	-0.01
1989	27304.00	27299.85	-4.15	-0.02
1990	27379.02	27376.37	-2.65	-0.01
1991	27763.93	27760.20	-3.73	-0.01
1992	28179.68	28165.74	-13.94	-0.05
1993	28612.79	28581.89	-30.90	-0.11
1994	29048.10	29014.95	-33.16	-0.11
1995	29490.98	29473.81	-17.17	-0.06
1996	29960.84	29928.00	-32.84	-0.11
1997	30433.24	30393.96	-39.28	-0.13
1998	30915.46	30869.79	-45.68	-0.15
1999	31399.30	31349.92	-49.37	-0.16
2000	31894.02	31842.97	-51.05	-0.16
2001	32398.59	32347.64	-50.96	-0.16
2002	32918.60	32867.76	-50.84	-0.15
2003	33446.18	33394.41	-51.77	-0.15
2004	33983.82	33930.07	-53.75	-0.16
2005	34531.57	34474.57	-57.00	-0.17
2006	35089.44	35028.79	-60.65	-0.17
2007	35657.73	35593.14	-64.58	-0.18
2008	36236.54	36167.93	-68.61	-0.19
2009	36826.35	36753.46	-72.89	-0.20
2010	37428.28	37351.07	-77.21	-0.21

SOURCE: MAP MODEL SIMULATIONS BASE83N AND CCS.93H--CREATED 10/11/88

TABLE B.56

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

2.4 BBBL CASE

TOTAL REAL STATE GOVERNMENT REVENUES

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2922.715	2922.715	0.000	0.000
1981	3893.178	3893.178	0.000	0.000
1982	4730.027	4730.027	0.000	0.000
1983	3659.045	3659.045	0.000	0.000
1984	3666.755	3666.755	0.000	0.000
1985	4196.351	4197.593	1.242	0.030
1986	4455.921	4459.968	4.047	0.091
1987	4758.718	4767.156	8.438	0.177
1988	4701.808	4711.457	9.648	0.205
1989	5099.402	5112.796	13.395	0.263
1990	4609.652	4623.144	13.492	0.293
1991	4387.226	4403.058	15.832	0.361
1992	4215.984	4270.957	54.973	1.304
1993	4136.718	4226.542	89.824	2.171
1994	3951.787	4161.347	209.560	5.303
1995	3801.949	4300.054	498.105	13.101
1996	3851.055	4093.697	242.642	6.301
1997	3775.547	4039.626	264.078	6.994
1998	3703.297	3985.762	282.466	7.627
1999	3591.435	3885.989	294.554	8.202
2000	3482.177	3784.412	302.235	8.679
2001	3356.313	3663.183	306.870	9.143
2002	3260.732	3572.324	311.592	9.556
2003	3170.253	3487.707	317.453	10.013
2004	3053.408	3377.668	324.261	10.620
2005	2991.311	3323.314	332.003	11.099
2006	2935.669	3275.352	339.683	11.571
2007	2885.704	3232.840	347.136	12.029
2008	2840.818	3195.102	354.283	12.471
2009	2800.101	3161.215	361.114	12.896
2010	2762.889	3130.539	367.650	13.307

SOURCE: MAP MODEL SIMULATIONS BASE83M AND DC1.83M--CREATED 10/11/82

TABLE B.57

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBBL CASE

## TOTAL REAL STATE GOVERNMENT EXPENDITURES

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2005.519	2005.519	0.000	0.000
1981	2960.817	2960.817	0.000	0.000
1982	3651.551	3651.551	0.000	0.000
1983	3403.064	3403.064	0.000	0.000
1984	3414.833	3414.833	0.000	0.000
1985	3440.812	3441.589	0.777	0.023
1986	3466.836	3468.973	2.137	0.062
1987	3484.240	3488.538	4.298	0.123
1988	3491.066	3495.395	4.329	0.124
1989	3479.157	3485.561	6.404	0.184
1990	3476.221	3482.389	6.168	0.177
1991	3493.268	3501.270	8.002	0.229
1992	3512.592	3545.628	33.037	0.941
1993	3534.157	3581.179	47.022	1.331
1994	3557.588	3384.958	-172.630	-4.852
1995	3371.354	3226.751	-144.604	-4.289
1996	3216.832	3096.024	-120.808	-3.755
1997	3084.819	2984.515	-100.304	-3.252
1998	2980.318	2896.002	-84.317	-2.829
1999	2891.114	2819.913	-71.201	-2.463
2000	2817.548	2756.924	-60.625	-2.152
2001	2754.956	2703.359	-51.597	-1.873
2002	2701.743	2657.889	-43.854	-1.623
2003	2657.634	2620.520	-37.114	-1.396
2004	2620.714	2589.532	-31.182	-1.190
2005	2590.493	2564.443	-26.050	-1.006
2006	2565.985	2544.359	-21.626	-0.843
2007	2546.362	2528.538	-17.824	-0.700
2008	2530.923	2516.365	-14.558	-0.575
2009	2518.975	2507.233	-11.742	-0.466
2010	2510.156	2500.842	-9.314	-0.371

TABLE B.58

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

2.4 BBBL CASE

REAL PER CAPITA STATE GOVERNMENT EXPENDITURES

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	4988.14	4988.14	0.00	0.00
1981	7135.97	7135.97	0.00	0.00
1982	8433.42	8433.42	0.00	0.00
1983	7689.96	7689.96	0.00	0.00
1984	7616.10	7616.10	0.00	0.00
1985	7559.33	7554.97	-4.36	-0.06
1986	7421.05	7409.63	-11.42	-0.15
1987	7132.06	7111.50	-20.56	-0.29
1988	6814.82	6797.67	-17.15	-0.25
1989	6755.99	6730.09	-25.89	-0.38
1990	6832.11	6806.72	-25.39	-0.37
1991	6830.01	6795.79	-34.22	-0.50
1992	6841.04	6691.76	-149.28	-2.18
1993	6821.98	6609.87	-212.11	-3.11
1994	6797.28	6296.38	-500.89	-7.37
1995	6435.07	5981.20	-453.87	-7.05
1996	6119.32	5701.96	-417.36	-6.82
1997	5866.69	5475.09	-391.59	-6.67
1998	5598.66	5242.76	-355.89	-6.36
1999	5378.63	5056.92	-321.71	-5.98
2000	5178.75	4891.36	-287.39	-5.55
2001	5033.57	4774.45	-259.12	-5.15
2002	4894.86	4659.18	-235.68	-4.81
2003	4774.17	4556.95	-217.22	-4.55
2004	4666.34	4463.04	-203.30	-4.36
2005	4571.13	4378.98	-192.14	-4.20
2006	4486.66	4303.62	-183.04	-4.08
2007	4411.34	4235.87	-175.47	-3.98
2008	4343.80	4174.69	-169.11	-3.89
2009	4283.88	4120.04	-163.84	-3.82
2010	4229.35	4069.95	-159.40	-3.77

SOURCE: MAP MODEL SIMULATIONS (BASE83N AND 003.83H)--CREATED 10/11/82.



TABLE B. 59

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBBL CASE

## REAL COMBINED FUNDS BALANCE

MILLIONS OF 1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	2420.861	2420.861	0.000	0.000
1981	3475.185	3475.185	0.000	0.000
1982	4687.683	4687.683	0.000	0.000
1983	5023.308	5023.308	0.000	0.000
1984	5346.121	5346.121	0.000	0.000
1985	6173.565	6174.679	1.094	0.018
1986	7162.925	7167.148	4.223	0.059
1987	8322.921	8333.402	10.480	0.126
1988	9287.470	9303.050	15.582	0.168
1989	10606.470	10630.250	24.379	0.230
1990	11405.320	11435.320	30.000	0.263
1991	11936.670	11975.410	38.738	0.325
1992	12242.040	12340.330	98.297	0.803
1993	12435.020	12592.110	157.090	1.263
1994	12411.750	12872.510	460.762	3.712
1995	12377.870	13422.710	1044.840	8.441
1996	12527.430	13842.120	1314.687	10.494
1997	12694.560	14266.160	1571.605	12.380
1998	12885.500	14698.660	1813.152	14.071
1999	13020.160	15057.090	2036.929	15.644
2000	13101.740	15344.630	2242.886	17.119
2001	13092.980	15523.720	2430.738	18.565
2002	13039.120	15645.190	2606.062	19.986
2003	12936.290	15707.340	2771.050	21.421
2004	12756.220	15684.380	2928.164	22.955
2005	12553.100	15631.690	3078.589	24.525
2006	12330.200	15553.210	3223.011	26.139
2007	12090.410	15452.370	3361.960	27.807
2008	11836.460	15332.330	3495.871	29.535
2009	11570.050	15195.040	3624.996	31.331
2010	11293.500	15043.310	3749.808	33.203

SOURCE: MAP MODEL SIMULATIONS SBASE83N AND DCS.83H--CREATED 10/11/82

TABLE B. 60

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## 2.4 BBEL CASE

## REAL PER CAPITA COMBINED FUNDS BALANCE

1982 \$

	BASE CASE	IMPACT CASE	DIFFERENCE	PERCENT DIFFERENCE
1980	6021.18	6021.18	0.00	0.00
1981	8375.67	8375.67	0.00	0.00
1982	10826.41	10826.41	0.00	0.00
1983	11351.25	11351.25	0.00	0.00
1984	11923.44	11923.44	0.00	0.00
1985	13563.12	13554.64	-8.49	-0.06
1986	15332.82	15308.82	-24.00	-0.16
1987	17036.60	16987.92	-48.67	-0.29
1988	18129.83	18092.11	-37.72	-0.21
1989	20596.14	20526.57	-69.57	-0.34
1990	22415.82	22351.61	-64.20	-0.29
1991	23338.50	23243.68	-94.81	-0.41
1992	23842.30	23290.25	-552.05	-2.32
1993	24003.33	23241.57	-761.76	-3.17
1994	23714.42	23944.25	229.83	0.97
1995	23626.26	24880.74	1254.48	5.31
1996	23830.69	25493.07	1662.39	6.98
1997	24142.43	26171.29	2028.86	8.40
1998	24205.99	26609.64	2403.65	9.93
1999	24222.70	27001.72	2779.02	11.47
2000	24081.45	27224.58	3143.13	13.05
2001	23922.12	27416.69	3494.57	14.61
2002	23623.52	27425.45	3801.93	16.09
2003	23238.76	27314.27	4075.51	17.54
2004	22713.22	27031.96	4318.73	19.01
2005	22150.92	26692.33	4541.41	20.50
2006	21559.53	26307.25	4747.72	22.02
2007	20945.53	25886.23	4940.69	23.59
2008	20314.83	25436.59	5121.76	25.21
2009	19676.53	24969.41	5292.87	26.90
2010	19028.37	24481.96	5453.59	28.66

SOURCE: MAP MODEL SIMULATIONS SBASE83M AND OCS.83H--CREATED 10/11/82

APPENDIX C

MAP MODEL IMPACT PROJECTIONS  
COMPARISON OF ABSOLUTE IMPACTS BY OCS CASE



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TABLE C.1.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

TOTAL POPULATION

THOUSANDS

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.366	0.366	0.366	0.366
1986	0.702	0.804	0.804	1.008
1987	0.964	1.525	1.525	2.017
1988	1.303	1.946	1.946	1.929
1989	1.949	2.673	2.673	2.933
1990	2.167	2.400	2.400	2.804
1991	3.390	3.459	3.459	3.753
1992	5.746	11.546	11.546	16.391
1993	9.566	16.852	16.852	23.739
1994	9.878	15.360	15.360	14.219
1995	10.926	15.369	15.369	15.579
1996	10.397	15.295	15.295	17.291
1997	10.573	15.679	15.679	19.288
1998	10.614	15.754	15.754	20.054
1999	10.471	15.545	15.545	20.115
2000	9.961	14.898	14.898	19.572
2001	9.715	14.237	14.237	18.897
2002	9.499	13.920	13.920	18.507
2003	9.536	13.936	13.936	18.391
2004	9.650	14.094	14.094	18.595
2005	9.813	14.319	14.319	18.917
2006	9.993	14.571	14.571	19.300
2007	10.180	14.836	14.836	19.703
2008	10.375	15.111	15.111	20.116
2009	10.574	15.393	15.393	20.534
2010	10.776	15.680	15.680	20.957

SOURCE: MAP MODEL SIMULATIONS SBASE83N, OCS.83L, OCS.83M, OCS.81F.  
AND 801.834--CREATED 10/11/92

TABLE C.2.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## ABSOLUTE IMPACT

## BASIC SECTOR EMPLOYMENT

THOUSANDS

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.259	0.259	0.259	0.259
1986	0.165	0.219	0.219	0.327
1987	0.238	0.517	0.517	0.743
1988	0.367	0.610	0.610	0.516
1989	0.708	0.957	0.957	1.070
1990	0.664	0.637	0.637	0.807
1991	1.438	1.331	1.331	1.401
1992	2.763	6.672	6.672	9.906
1993	4.636	8.293	8.293	11.923
1994	3.735	5.197	5.197	4.726
1995	4.090	5.083	5.083	5.947
1996	3.396	4.977	4.977	6.426
1997	3.394	4.992	4.992	6.507
1998	3.277	4.750	4.750	6.394
1999	3.019	4.378	4.378	5.964
2000	2.589	3.818	3.818	5.344
2001	2.430	3.364	3.364	4.797
2002	2.269	3.186	3.186	4.515
2003	2.259	3.167	3.167	4.374
2004	2.258	3.165	3.165	4.387
2005	2.263	3.172	3.172	4.412
2006	2.270	3.181	3.181	4.441
2007	2.277	3.192	3.192	4.470
2008	2.286	3.205	3.205	4.499
2009	2.295	3.217	3.217	4.526
2010	2.304	3.230	3.230	4.553

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82



TABLE C.3.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

SERVICES SECTOR EMPLOYMENT

THOUSANDS

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.117	0.117	0.117	0.117
1986	0.499	0.551	0.551	0.653
1987	0.643	0.925	0.925	1.171
1988	0.827	1.151	1.151	1.144
1989	1.063	1.440	1.440	1.581
1990	1.199	1.313	1.313	1.495
1991	1.617	1.700	1.700	1.840
1992	2.471	4.490	4.490	6.191
1993	4.087	7.000	7.000	9.685
1994	4.562	7.451	7.451	5.519
1995	4.982	7.336	7.336	7.297
1996	4.710	6.932	6.932	7.065
1997	4.655	6.871	6.871	8.441
1998	4.513	6.745	6.745	8.670
1999	4.361	6.524	6.524	8.606
2000	4.052	6.109	6.109	8.213
2001	3.820	5.665	5.665	7.719
2002	3.604	5.341	5.341	7.313
2003	3.523	5.187	5.187	7.052
2004	3.488	5.140	5.140	6.963
2005	3.497	5.149	5.149	6.961
2006	3.518	5.178	5.178	7.008
2007	3.545	5.215	5.215	7.071
2008	3.574	5.256	5.256	7.141
2009	3.605	5.299	5.299	7.213
2010	3.637	5.345	5.345	7.286

SOURCE: MAP MODEL SIMULATIONS BASED ON: DCS.93L, DCS.93M, DCS.93P,  
AND DCS.93H--CREATED 10/11/82

TABLE C.4.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

GOVERNMENT EMPLOYMENT

THOUSANDS

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.003	0.003	0.003	0.003
1986	0.048	0.049	0.049	0.052
1987	0.074	0.092	0.092	0.121
1988	0.102	0.172	0.172	0.223
1989	0.145	0.216	0.216	0.204
1990	0.204	0.273	0.273	0.303
1991	0.210	0.216	0.216	0.258
1992	0.355	0.391	0.391	0.447
1993	0.612	1.296	1.296	1.870
1994	0.977	1.690	1.690	2.337
1995	0.924	1.365	1.365	0.372
1996	0.947	1.279	1.279	1.400
1997	0.847	1.240	1.240	1.485
1998	0.835	1.229	1.229	1.584
1999	0.802	1.176	1.176	1.569
2000	0.745	1.094	1.094	1.486
2001	0.657	0.975	0.975	1.356
2002	0.612	0.873	0.873	1.232
2003	0.572	0.821	0.821	1.156
2004	0.562	0.804	0.804	1.112
2005	0.557	0.797	0.797	1.103
2006	0.556	0.795	0.795	1.101
2007	0.556	0.795	0.795	1.103
2008	0.557	0.795	0.795	1.106
2009	0.557	0.796	0.796	1.110
2010	0.558	0.797	0.797	1.113

SOURCE: MAP MODEL SIMULATIONS SP8583N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82

TABLE C.5.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## ABSOLUTE IMPACT

## TOTAL EMPLOYMENT

THOUSANDS

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.379	0.379	0.379	0.379
1986	0.712	0.819	0.819	1.031
1987	0.954	1.534	1.534	2.036
1988	1.295	1.933	1.933	1.883
1989	1.916	2.613	2.613	2.855
1990	2.067	2.222	2.222	2.605
1991	3.265	3.247	3.247	3.499
1992	5.590	11.552	11.552	16.544
1993	9.335	16.588	16.588	23.479
1994	9.274	14.337	14.337	12.582
1995	9.996	13.784	13.784	13.616
1996	9.052	13.188	13.188	14.891
1997	8.896	13.104	13.104	16.433
1998	8.625	12.724	12.724	16.647
1999	8.181	12.078	12.078	16.140
2000	7.386	11.021	11.021	15.044
2001	6.906	10.004	10.004	13.871
2002	6.486	9.400	9.400	13.061
2003	6.354	9.175	9.175	12.582
2004	6.308	9.109	9.109	12.462
2005	6.317	9.118	9.118	12.475
2006	6.344	9.154	9.154	12.550
2007	6.378	9.202	9.202	12.644
2008	6.416	9.256	9.256	12.746
2009	6.457	9.312	9.312	12.849
2010	6.499	9.372	9.372	12.952

SOURCE: MAP MODEL SIMULATIONS SBASE83N, OCS.83L, OCS.83M, OCS.83P,  
AND OCS.83H--CREATED 10/11/82

TABLE C.6.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

REAL PERSONAL INCOME

MILLIONS OF 1982 \$

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	16.902	16.902	16.902	16.902
1986	26.691	31.555	31.555	41.230
1987	37.021	63.941	63.941	86.461
1988	50.711	77.320	77.320	70.762
1989	78.672	106.711	106.711	118.133
1990	80.141	82.375	82.375	99.027
1991	136.371	133.156	133.156	142.332
1992	239.145	514.539	514.539	744.246
1993	404.879	706.238	706.238	999.625
1994	385.188	575.605	575.605	537.906
1995	426.102	575.016	575.016	620.277
1996	384.438	562.953	562.953	666.277
1997	385.039	567.285	567.285	725.004
1998	375.637	551.625	551.625	731.652
1999	356.344	523.684	523.684	706.332
2000	319.246	475.406	475.406	655.852
2001	302.574	432.410	432.410	605.805
2002	286.297	411.777	411.777	576.195
2003	284.832	408.305	408.305	561.387
2004	286.023	409.965	409.965	563.602
2005	289.090	414.184	414.184	569.820
2006	292.738	419.320	419.320	578.355
2007	296.746	424.977	424.977	587.484
2008	300.918	430.883	430.883	596.789
2009	305.227	437.020	437.020	606.367
2010	309.633	443.129	443.129	615.930

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82

TABLE C.7.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## ABSOLUTE IMPACT

## REAL PER CAPITA PERSONAL INCOME

1982 \$

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	23.91	23.91	23.91	23.91
1986	31.39	38.02	38.02	51.23
1987	38.64	72.00	72.00	99.02
1988	46.90	73.09	73.09	60.98
1989	79.56	106.64	106.64	118.98
1990	82.77	79.14	79.14	97.85
1991	151.84	143.27	143.27	151.22
1992	273.46	608.20	608.20	881.55
1993	460.46	787.00	787.00	1103.36
1994	408.12	584.84	584.84	551.95
1995	452.75	586.43	586.43	663.55
1996	391.46	565.86	565.86	692.36
1997	389.28	564.97	564.97	740.21
1998	363.34	523.44	523.44	714.48
1999	327.82	472.57	472.57	657.91
2000	270.17	396.80	396.80	572.49
2001	245.91	337.84	337.84	501.01
2002	219.87	305.95	305.95	453.85
2003	212.60	294.38	294.38	424.70
2004	207.41	287.10	287.10	414.98
2005	203.84	281.97	281.97	408.24
2006	200.57	277.34	277.34	403.21
2007	197.49	272.91	272.91	398.17
2008	194.28	268.36	268.36	392.76
2009	191.36	264.20	264.20	387.91
2010	188.03	259.22	259.22	382.03

SOURCE: MAP MODEL SIMULATIONS BASED ON: DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83--- REPORTED 10/11/82

TABLE C.8.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

BASIC SECTOR REAL WAGE RATE

1982 \$

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	71.33	71.33	71.33	71.33
1986	22.09	38.46	38.46	71.01
1987	12.30	69.95	69.95	114.10
1988	3.96	25.90	25.90	-1.37
1989	74.52	104.57	104.57	124.27
1990	139.04	114.27	114.27	162.78
1991	337.56	302.75	302.75	316.45
1992	656.38	1468.52	1468.52	2078.32
1993	1110.92	1754.02	1754.02	2368.12
1994	959.97	1225.14	1225.14	1325.05
1995	1131.61	1385.26	1385.26	1790.30
1996	1028.14	1472.42	1472.42	2012.03
1997	1102.45	1576.75	1576.75	2104.92
1998	1056.76	1480.56	1480.56	2020.60
1999	981.58	1377.26	1377.26	1891.24
2000	822.02	1179.73	1179.73	1672.34
2001	786.17	1040.88	1040.88	1507.47
2002	745.41	1009.77	1009.77	1445.08
2003	761.21	1032.05	1032.05	1426.75
2004	774.64	1050.27	1050.27	1458.93
2005	786.31	1066.32	1066.32	1486.42
2006	797.24	1081.48	1081.48	1511.05
2007	807.86	1095.74	1095.74	1534.21
2008	817.90	1109.25	1109.25	1555.86
2009	831.29	1127.69	1127.69	1583.52
2010	840.76	1140.58	1140.58	1603.23

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.834--CREATED 10/11/82



TABLE C.10.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

GOVERNMENT SECTOR REAL WAGE RATE

1982 \$

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	-0.25	-0.25	-0.25	-0.25
1986	-0.47	-0.58	-0.58	-0.83
1987	-1.08	-2.07	-2.07	-2.74
1988	-1.86	-2.43	-2.43	-1.38
1989	-2.67	-3.51	-3.51	-4.15
1990	-2.05	-2.32	-2.32	-2.65
1991	-3.26	-3.36	-3.36	-3.73
1992	-6.13	-10.27	-10.27	-13.94
1993	-11.60	-21.86	-21.86	-30.90
1994	-16.71	-27.64	-27.64	-33.16
1995	-19.09	-27.70	-27.70	-17.17
1996	-21.53	-29.88	-29.88	-32.84
1997	-22.36	-32.65	-32.65	-39.28
1998	-24.34	-35.75	-35.75	-45.68
1999	-25.55	-37.47	-37.47	-49.37
2000	-25.89	-38.07	-38.07	-51.05
2001	-25.25	-37.27	-37.27	-50.96
2002	-25.60	-36.68	-36.68	-50.84
2003	-26.07	-37.44	-37.44	-51.77
2004	-27.46	-39.42	-39.42	-53.75
2005	-29.16	-41.77	-41.77	-57.00
2006	-30.99	-44.36	-44.36	-60.65
2007	-32.88	-47.05	-47.05	-64.58
2008	-34.90	-49.89	-49.89	-68.61
2009	-36.97	-52.89	-52.89	-72.89
2010	-39.09	-55.87	-55.87	-77.21

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82



TABLE C.11.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

TOTAL REAL STATE GOVERNMENT REVENUES

MILLIONS OF 1982 \$

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	1.242	1.242	1.242	1.242
1986	2.992	3.344	3.344	4.047
1987	4.355	6.465	6.465	8.438
1988	6.047	9.039	9.039	9.648
1989	8.957	12.422	12.422	13.395
1990	9.910	11.734	11.734	13.492
1991	13.598	14.344	14.344	15.832
1992	21.750	39.707	39.707	54.973
1993	35.250	63.621	63.621	89.824
1994	43.639	132.086	132.086	209.560
1995	48.402	134.118	134.118	498.105
1996	63.701	156.913	156.913	242.642
1997	63.471	161.038	161.038	264.078
1998	65.410	165.359	165.359	282.466
1999	66.222	167.532	167.532	294.554
2000	65.474	167.677	167.677	302.235
2001	64.366	166.272	166.272	306.870
2002	64.542	165.975	165.975	311.592
2003	65.410	167.672	167.672	317.453
2004	67.308	170.505	170.505	324.261
2005	69.612	173.825	173.825	332.003
2006	72.116	177.257	177.257	339.683
2007	74.729	180.672	180.672	347.136
2008	77.426	184.027	184.027	354.283
2009	80.186	187.298	187.298	361.114
2010	83.010	190.472	190.472	367.650

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83R,  
AND DCS.83H--CREATED 10/11/82



TABLE C.13.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

REAL PER CAPITA STATE GOVERNMENT EXPENDITURES

1982 \$

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	-4.36	-4.36	-4.36	-4.36
1986	-7.95	-9.11	-9.11	-11.42
1987	-9.80	-15.55	-15.55	-20.56
1988	-11.73	-17.51	-17.51	-17.15
1989	-17.34	-23.69	-23.69	-25.89
1990	-19.91	-21.74	-21.74	-25.39
1991	-31.34	-31.63	-31.63	-34.22
1992	-53.30	-105.99	-105.99	-149.28
1993	-87.49	-152.26	-152.26	-212.11
1994	-89.44	-137.86	-137.86	-500.89
1995	-97.64	-134.20	-134.20	-453.87
1996	-89.68	-129.80	-129.80	-417.36
1997	-89.48	-130.78	-130.78	-391.59
1998	-86.43	-126.54	-126.54	-355.89
1999	-82.55	-120.95	-120.95	-321.71
2000	-75.83	-112.04	-112.04	-287.39
2001	-72.47	-104.96	-104.96	-259.12
2002	-69.22	-100.32	-100.32	-235.68
2003	-67.98	-98.30	-98.30	-217.22
2004	-67.32	-97.31	-97.31	-203.30
2005	-67.02	-96.82	-96.82	-192.14
2006	-66.86	-96.55	-96.55	-183.04
2007	-66.77	-96.39	-96.39	-175.47
2008	-66.75	-96.31	-96.31	-169.11
2009	-66.79	-96.34	-96.34	-163.84
2010	-66.85	-96.39	-96.39	-159.40

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82

TABLE C.14.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

ABSOLUTE IMPACT

REAL COMBINED FUNDS BALANCE

MILLIONS OF 1982 \$

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	1.094	1.094	1.094	1.094
1986	3.223	3.559	3.559	4.223
1987	6.004	8.258	8.258	10.480
1988	9.875	13.957	13.957	15.582
1989	15.836	21.871	21.871	24.379
1990	20.820	26.371	26.371	30.000
1991	29.715	34.848	34.848	38.738
1992	45.301	74.602	74.602	98.297
1993	70.695	116.281	116.281	157.090
1994	90.668	204.824	204.824	460.762
1995	118.102	298.172	298.172	1044.840
1996	156.117	410.387	410.387	1314.687
1997	195.145	522.609	522.609	1571.605
1998	234.004	632.250	632.250	1813.152
1999	271.859	737.668	737.668	2036.929
2000	306.551	836.637	836.637	2242.886
2001	339.852	929.008	929.008	2430.738
2002	372.070	1017.477	1017.477	2606.062
2003	404.449	1103.718	1103.718	2771.050
2004	437.227	1188.085	1188.085	2928.164
2005	470.582	1270.769	1270.769	3078.589
2006	504.461	1351.703	1351.703	3223.011
2007	538.906	1430.902	1430.902	3361.960
2008	573.879	1508.328	1508.328	3495.871
2009	609.375	1583.933	1583.933	3624.996
2010	645.375	1657.722	1657.722	3749.808

SOURCE: MAP MODEL SIMULATIONS SEASER3N, DCS.83L, DCS.83M, DCS.83R,  
AND DCS.83H--CREATED 10/11/82

TABLE C.15.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:  
 -----  
 ABSOLUTE IMPACT  
 -----  
 REAL PER CAPITA COMBINED FUNDS BALANCE  
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 1982 \$  
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	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	-8.49	-8.49	-8.49	-8.49
1986	-16.11	-18.75	-18.75	-24.00
1987	-21.29	-36.18	-36.18	-48.67
1988	-26.79	-41.45	-41.45	-37.72
1989	-47.01	-64.12	-64.12	-69.57
1990	-54.33	-53.66	-53.66	-64.20
1991	-95.97	-89.12	-89.12	-94.61
1992	-176.62	-382.24	-382.24	-552.05
1993	-301.20	-538.83	-538.83	-761.76
1994	-269.28	-295.92	-295.92	229.83
1995	-261.82	-120.42	-120.42	1254.48
1996	-170.96	84.82	84.82	1662.39
1997	-112.06	266.07	266.07	2028.86
1998	-42.21	457.79	457.79	2403.65
1999	33.26	652.97	652.97	2779.02
2000	120.36	854.95	854.95	3143.13
2001	192.91	1047.84	1047.84	3494.57
2002	263.02	1216.94	1216.94	3801.93
2003	322.91	1366.73	1366.73	4075.51
2004	381.66	1507.63	1507.63	4318.73
2005	439.20	1641.22	1641.22	4541.41
2006	496.68	1769.13	1769.13	4747.72
2007	554.43	1891.93	1891.93	4940.69
2008	612.29	2009.75	2009.75	5121.76
2009	670.45	2123.03	2123.03	5292.87
2010	728.67	2231.41	2231.41	5453.59

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83R,  
 AND DCS.83H--CREATED 10/11/82



APPENDIX D

MAP MODEL IMPACT PROJECTIONS  
COMPARISON OF PERCENTAGE IMPACTS OF OCS CASE





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TABLE D.2.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

PERCENT IMPACT

BASIC SECTOR EMPLOYMENT

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.488	0.488	0.488	0.488
1986	0.290	0.386	0.386	0.577
1987	0.368	0.800	0.800	1.152
1988	0.510	0.848	0.848	0.718
1989	1.060	1.432	1.432	1.602
1990	1.120	1.075	1.075	1.362
1991	2.398	2.220	2.220	2.337
1992	4.596	11.098	11.098	16.478
1993	7.664	13.708	13.708	19.709
1994	6.135	8.536	8.536	7.762
1995	6.831	8.488	8.488	9.931
1996	5.675	8.318	8.318	10.740
1997	5.878	8.646	8.646	11.270
1998	5.430	7.872	7.872	10.596
1999	4.947	7.175	7.175	9.774
2000	4.143	6.111	6.111	8.553
2001	3.881	5.373	5.373	7.661
2002	3.617	5.079	5.079	7.197
2003	3.592	5.036	5.036	6.954
2004	3.577	5.015	5.015	6.951
2005	3.569	5.004	5.004	6.960
2006	3.563	4.994	4.994	6.972
2007	3.556	4.985	4.985	6.980
2008	3.549	4.975	4.975	6.984
2009	3.545	4.970	4.970	6.993
2010	3.540	4.962	4.962	6.994

SOURCE: MAP MODEL SIMULATIONS BASE83N, OCS.83L, OCS.83M, OCS.83R,  
AND OCS.83H--OPERATED 10/11/82

TABLE D.3.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

PERCENT IMPACT

SERVICES SECTOR EMPLOYMENT

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.125	0.125	0.125	0.125
1986	0.513	0.566	0.566	0.671
1987	0.610	0.878	0.878	1.112
1988	0.719	1.001	1.001	0.995
1989	0.918	1.244	1.244	1.365
1990	1.060	1.160	1.160	1.321
1991	1.443	1.517	1.517	1.642
1992	2.250	4.088	4.088	5.637
1993	3.703	6.343	6.343	8.777
1994	4.096	6.691	6.691	4.956
1995	4.578	6.741	6.741	6.706
1996	4.353	6.407	6.407	6.530
1997	4.346	6.414	6.414	7.880
1998	4.167	6.226	6.226	9.004
1999	3.980	5.954	5.954	7.855
2000	3.632	5.475	5.475	7.362
2001	3.431	5.088	5.088	6.933
2002	3.193	4.732	4.732	6.479
2003	3.080	4.536	4.536	6.166
2004	3.005	4.428	4.428	5.998
2005	2.967	4.368	4.368	5.905
2006	2.937	4.322	4.322	5.850
2007	2.910	4.282	4.282	5.806
2008	2.885	4.243	4.243	5.765
2009	2.862	4.206	4.206	5.735
2010	2.838	4.170	4.170	5.704

SOURCE: MAP MODEL SIMULATIONS BASE88M, DD1.89L, DD2.88M, DD3.88F,  
AND DD1.89H--CREATED 10/11/88

TABLE D.4.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

PERCENT IMPACT

GOVERNMENT EMPLOYMENT

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.004	0.004	0.004	0.004
1986	0.055	0.056	0.056	0.059
1987	0.085	0.106	0.106	0.140
1988	0.116	0.197	0.197	0.256
1989	0.162	0.240	0.240	0.227
1990	0.226	0.303	0.303	0.337
1991	0.238	0.245	0.245	0.292
1992	0.405	0.445	0.445	0.509
1993	0.702	1.486	1.486	2.145
1994	1.123	1.942	1.942	2.685
1995	1.063	1.572	1.572	0.429
1996	1.107	1.495	1.495	1.636
1997	0.994	1.455	1.455	1.742
1998	0.985	1.450	1.450	1.868
1999	0.945	1.386	1.386	1.850
2000	0.879	1.291	1.291	1.753
2001	0.774	1.150	1.150	1.598
2002	0.723	1.031	1.031	1.456
2003	0.676	0.970	0.970	1.367
2004	0.665	0.951	0.951	1.316
2005	0.660	0.943	0.943	1.305
2006	0.658	0.941	0.941	1.303
2007	0.658	0.940	0.940	1.305
2008	0.658	0.941	0.941	1.308
2009	0.659	0.941	0.941	1.312
2010	0.660	0.942	0.942	1.315

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83F,  
AND DCS.83H--CREATED 10/11/82

TABLE D.5.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

\*\*\*\*\*  
 PERCENT IMPACT  
 \*\*\*\*\*  
 TOTAL EMPLOYMENT  
 \*\*\*\*\*

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.162	0.162	0.162	0.162
1986	0.295	0.339	0.339	0.427
1987	0.372	0.597	0.597	0.793
1988	0.473	0.705	0.705	0.687
1989	0.704	0.959	0.959	1.048
1990	0.787	0.847	0.847	0.993
1991	1.254	1.247	1.247	1.344
1992	2.169	4.482	4.482	6.419
1993	3.618	6.428	6.428	9.099
1994	3.577	5.530	5.530	4.853
1995	3.911	5.393	5.393	5.327
1996	3.569	5.200	5.200	5.872
1997	3.557	5.240	5.240	6.571
1998	3.403	5.020	5.020	6.568
1999	3.203	4.728	4.728	6.319
2000	2.854	4.258	4.258	5.812
2001	2.669	3.866	3.866	5.361
2002	2.492	3.612	3.612	5.019
2003	2.427	3.504	3.504	4.805
2004	2.392	3.454	3.454	4.725
2005	2.377	3.431	3.431	4.694
2006	2.367	3.416	3.416	4.683
2007	2.359	3.404	3.404	4.677
2008	2.352	3.393	3.393	4.672
2009	2.346	3.383	3.383	4.668
2010	2.339	3.373	3.373	4.661

TABLE D.6.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

PERCENT IMPACT

REAL PERSONAL INCOME

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.226	0.226	0.226	0.226
1986	0.334	0.395	0.395	0.516
1987	0.403	0.697	0.697	0.942
1988	0.485	0.739	0.739	0.676
1989	0.793	1.075	1.075	1.191
1990	0.902	0.927	0.927	1.114
1991	1.553	1.517	1.517	1.621
1992	2.754	5.926	5.926	8.572
1993	4.617	8.053	8.053	11.399
1994	4.339	6.484	6.484	6.059
1995	4.831	6.519	6.519	7.032
1996	4.355	6.378	6.378	7.548
1997	4.393	6.472	6.472	8.272
1998	4.199	6.167	6.167	8.179
1999	3.928	5.773	5.773	7.787
2000	3.447	5.133	5.133	7.081
2001	3.243	4.635	4.635	6.493
2002	3.026	4.352	4.352	6.089
2003	2.967	4.253	4.253	5.848
2004	2.934	4.205	4.205	5.781
2005	2.918	4.180	4.180	5.751
2006	2.906	4.162	4.162	5.741
2007	2.896	4.147	4.147	5.733
2008	2.885	4.132	4.132	5.723
2009	2.878	4.121	4.121	5.718
2010	2.868	4.105	4.105	5.705

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82



TABLE D.7.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

\*\*\*\*\*  
 PERCENT IMPACT  
 \*\*\*\*\*  
 REAL PER CAPITA PERSONAL INCOME  
 \*\*\*\*\*

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	0.15	0.15	0.15	0.15
1986	0.18	0.22	0.22	0.30
1987	0.21	0.38	0.38	0.53
1988	0.23	0.36	0.36	0.30
1989	0.41	0.55	0.55	0.62
1990	0.47	0.45	0.45	0.56
1991	0.88	0.83	0.83	0.88
1992	1.62	3.60	3.60	5.21
1993	2.72	4.65	4.65	6.52
1994	2.41	3.45	3.45	3.25
1995	2.69	3.48	3.48	3.94
1996	2.33	3.37	3.37	4.12
1997	2.34	3.39	3.39	4.44
1998	2.16	3.11	3.11	4.25
1999	1.94	2.80	2.80	3.90
2000	1.59	2.33	2.33	3.36
2001	1.44	1.98	1.98	2.94
2002	1.28	1.78	1.78	2.65
2003	1.23	1.71	1.71	2.46
2004	1.19	1.65	1.65	2.39
2005	1.17	1.61	1.61	2.33
2006	1.14	1.57	1.57	2.29
2007	1.11	1.54	1.54	2.24
2008	1.09	1.50	1.50	2.19
2009	1.06	1.47	1.47	2.15
2010	1.03	1.43	1.43	2.10

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
 AND DCS.83H--CREATED 10/11/82

TABLE D.8.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

PERCENT IMPACT

BASIC SECTOR REAL WAGE RATE

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	0.24	0.24	0.24	0.24
1986	0.07	0.12	0.12	0.22
1987	0.03	0.18	0.18	0.30
1988	0.01	0.06	0.06	-0.00
1989	0.19	0.26	0.26	0.31
1990	0.43	0.35	0.35	0.50
1991	1.05	0.95	0.95	0.99
1992	2.06	4.61	4.61	6.52
1993	3.45	5.45	5.45	7.36
1994	2.97	3.78	3.78	4.09
1995	3.50	4.28	4.28	5.53
1996	3.17	4.54	4.54	6.21
1997	3.38	4.84	4.84	6.46
1998	3.25	4.55	4.55	6.21
1999	3.01	4.23	4.23	5.80
2000	2.51	3.60	3.60	5.11
2001	2.37	3.14	3.14	4.55
2002	2.23	3.02	3.02	4.32
2003	2.26	3.06	3.06	4.23
2004	2.28	3.08	3.08	4.28
2005	2.29	3.10	3.10	4.32
2006	2.30	3.12	3.12	4.35
2007	2.30	3.13	3.13	4.38
2008	2.31	3.13	3.13	4.39
2009	2.33	3.16	3.16	4.44
2010	2.33	3.16	3.16	4.44

TABLE D.9.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## PERCENT IMPACT

## SERVICES SECTOR REAL WAGE RATE

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	-0.01	-0.01	-0.01	-0.01
1986	0.10	0.11	0.11	0.12
1987	0.09	0.10	0.10	0.11
1988	0.06	0.03	0.03	0.01
1989	0.02	0.01	0.01	0.02
1990	0.04	0.02	0.02	0.02
1991	0.05	0.08	0.08	0.08
1992	0.00	-0.07	-0.07	-0.15
1993	-0.04	-0.25	-0.25	-0.44
1994	-0.05	0.01	0.01	0.25
1995	0.06	0.21	0.21	0.67
1996	0.05	0.15	0.15	-0.06
1997	0.10	0.17	0.17	0.17
1998	0.09	0.17	0.17	0.17
1999	0.11	0.21	0.21	0.23
2000	0.14	0.24	0.24	0.27
2001	0.18	0.32	0.32	0.36
2002	0.18	0.32	0.32	0.37
2003	0.18	0.31	0.31	0.37
2004	0.17	0.31	0.31	0.37
2005	0.17	0.30	0.30	0.36
2006	0.17	0.30	0.30	0.36
2007	0.17	0.30	0.30	0.35
2008	0.17	0.30	0.30	0.35
2009	0.17	0.30	0.30	0.35
2010	0.17	0.30	0.30	0.35

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82

TABLE D.10.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

PERCENT IMPACT

GOVERNMENT SECTOR REAL WAGE RATE

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	-0.00	-0.00	-0.00	-0.00
1986	-0.00	-0.00	-0.00	-0.00
1987	-0.00	-0.01	-0.01	-0.01
1988	-0.01	-0.01	-0.01	-0.01
1989	-0.01	-0.01	-0.01	-0.02
1990	-0.01	-0.01	-0.01	-0.01
1991	-0.01	-0.01	-0.01	-0.01
1992	-0.02	-0.04	-0.04	-0.05
1993	-0.04	-0.08	-0.08	-0.11
1994	-0.06	-0.10	-0.10	-0.11
1995	-0.06	-0.09	-0.09	-0.06
1996	-0.07	-0.10	-0.10	-0.11
1997	-0.07	-0.11	-0.11	-0.13
1998	-0.08	-0.12	-0.12	-0.15
1999	-0.08	-0.12	-0.12	-0.16
2000	-0.08	-0.12	-0.12	-0.16
2001	-0.08	-0.12	-0.12	-0.16
2002	-0.08	-0.11	-0.11	-0.15
2003	-0.08	-0.11	-0.11	-0.15
2004	-0.08	-0.12	-0.12	-0.16
2005	-0.08	-0.12	-0.12	-0.17
2006	-0.09	-0.13	-0.13	-0.17
2007	-0.09	-0.13	-0.13	-0.18
2008	-0.10	-0.14	-0.14	-0.19
2009	-0.10	-0.14	-0.14	-0.20
2010	-0.10	-0.15	-0.15	-0.21

SOURCE: MAP MODEL SIMULATIONS SBASE83N, DCS.83L, DCS.83M, DCS.83P,  
AND DCS.83H--CREATED 10/11/82

TABLE D.11.

MAP MODEL STATEWIDE IMPACT PROJECTIONS:

PERCENT IMPACT

TOTAL REAL STATE GOVERNMENT REVENUES

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.030	0.030	0.030	0.030
1986	0.067	0.075	0.075	0.091
1987	0.092	0.136	0.136	0.177
1988	0.129	0.192	0.192	0.205
1989	0.176	0.244	0.244	0.263
1990	0.215	0.255	0.255	0.293
1991	0.310	0.327	0.327	0.361
1992	0.516	0.942	0.942	1.304
1993	0.852	1.538	1.538	2.171
1994	1.104	3.342	3.342	5.303
1995	1.273	3.528	3.528	13.101
1996	1.654	4.075	4.075	6.301
1997	1.681	4.265	4.265	6.994
1998	1.766	4.465	4.465	7.627
1999	1.844	4.665	4.665	8.202
2000	1.880	4.815	4.815	8.679
2001	1.918	4.954	4.954	9.143
2002	1.979	5.090	5.090	9.556
2003	2.063	5.289	5.289	10.013
2004	2.204	5.584	5.584	10.620
2005	2.327	5.811	5.811	11.099
2006	2.457	6.038	6.038	11.571
2007	2.590	6.261	6.261	12.029
2008	2.725	6.478	6.478	12.471
2009	2.864	6.689	6.689	12.896
2010	3.004	6.894	6.894	13.307



TABLE D.13.

## MAP MODEL STATEWIDE IMPACT PROJECTIONS:

## PERCENT IMPACT

## REAL PER CAPITA STATE GOVERNMENT EXPENDITURES

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	-0.06	-0.06	-0.06	-0.06
1986	-0.11	-0.12	-0.12	-0.15
1987	-0.14	-0.22	-0.22	-0.29
1988	-0.17	-0.26	-0.26	-0.25
1989	-0.26	-0.35	-0.35	-0.38
1990	-0.29	-0.32	-0.32	-0.37
1991	-0.46	-0.46	-0.46	-0.50
1992	-0.78	-1.55	-1.55	-2.18
1993	-1.28	-2.23	-2.23	-3.11
1994	-1.32	-2.03	-2.03	-7.37
1995	-1.52	-2.09	-2.09	-7.05
1996	-1.47	-2.12	-2.12	-6.82
1997	-1.53	-2.23	-2.23	-6.67
1998	-1.54	-2.26	-2.26	-6.36
1999	-1.53	-2.25	-2.25	-5.98
2000	-1.46	-2.16	-2.16	-5.55
2001	-1.44	-2.09	-2.09	-5.15
2002	-1.41	-2.05	-2.05	-4.81
2003	-1.42	-2.06	-2.06	-4.55
2004	-1.44	-2.09	-2.09	-4.36
2005	-1.47	-2.12	-2.12	-4.20
2006	-1.49	-2.15	-2.15	-4.08
2007	-1.51	-2.19	-2.19	-3.98
2008	-1.54	-2.22	-2.22	-3.89
2009	-1.56	-2.25	-2.25	-3.82
2010	-1.58	-2.28	-2.28	-3.77

SOURCE: MAP MODEL SIMULATIONS SBASE83M, OCS.83L, OCS.83M, OCS.83P,  
AND OCS.83H--CREATED 10/11/82

TABLE D.14.

MAP MODEL STATEWIDE IMPACT PROJECTION

PERCENT IMPACT

REAL COMBINED FUNDS BALANCE

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.600	0.000
1982	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000
1985	0.018	0.018	0.018	0.018
1986	0.045	0.050	0.050	0.059
1987	0.072	0.099	0.099	0.126
1988	0.106	0.150	0.150	0.168
1989	0.149	0.206	0.206	0.230
1990	0.183	0.231	0.231	0.263
1991	0.249	0.292	0.292	0.325
1992	0.370	0.609	0.609	0.803
1993	0.569	0.935	0.935	1.263
1994	0.731	1.650	1.650	3.712
1995	0.954	2.409	2.409	8.441
1996	1.246	3.276	3.276	10.494
1997	1.537	4.117	4.117	12.380
1998	1.816	4.907	4.907	14.071
1999	2.088	5.666	5.666	15.644
2000	2.340	6.386	6.386	17.119
2001	2.596	7.095	7.095	18.565
2002	2.853	7.803	7.803	19.986
2003	3.126	8.532	8.532	21.421
2004	3.428	9.314	9.314	22.955
2005	3.749	10.123	10.123	24.525
2006	4.091	10.963	10.963	26.139
2007	4.457	11.835	11.835	27.807
2008	4.848	12.743	12.743	29.535
2009	5.267	13.690	13.690	31.331
2010	5.715	14.679	14.679	33.203



TABLE D.15.

IAP MODEL STATEWIDE IMPACT PROJECTIONS:

\*\*\*\*\*  
 PERCENT IMPACT  
 \*\*\*\*\*  
 REAL PER CAPITA COMBINED FUNDS BALANCE  
 \*\*\*\*\*

	.6 BBBL CASE	1.2 BBBL REMOTE CASE	1.2 BBBL ROAD CONNECTED CASE	2.4 BBBL CASE
1980	0.00	0.00	0.00	0.00
1981	0.00	0.00	0.00	0.00
1982	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.00	0.00
1984	0.00	0.00	0.00	0.00
1985	-0.06	-0.06	-0.06	-0.06
1986	-0.11	-0.12	-0.12	-0.16
1987	-0.12	-0.21	-0.21	-0.29
1988	-0.15	-0.23	-0.23	-0.21
1989	-0.23	-0.31	-0.31	-0.34
1990	-0.24	-0.24	-0.24	-0.29
1991	-0.41	-0.38	-0.38	-0.41
1992	-0.74	-1.60	-1.60	-2.32
1993	-1.25	-2.24	-2.24	-3.17
1994	-1.14	-1.25	-1.25	0.97
1995	-1.11	-0.51	-0.51	5.31
1996	-0.72	0.36	0.36	6.98
1997	-0.46	1.10	1.10	8.40
1998	-0.17	1.89	1.89	9.93
1999	0.14	2.70	2.70	11.47
2000	0.50	3.55	3.55	13.05
2001	0.81	4.38	4.38	14.61
2002	1.11	5.15	5.15	16.09
2003	1.39	5.88	5.88	17.54
2004	1.68	6.64	6.64	19.01
2005	1.98	7.41	7.41	20.50
2006	2.30	8.21	8.21	22.02
2007	2.65	9.03	9.03	23.59
2008	3.01	9.89	9.89	25.21
2009	3.41	10.79	10.79	26.90
2010	3.83	11.73	11.73	28.66

SOURCE: IAP MODEL SIMULATIONS BASE80N, DCS.82L, DCS.83M, DCS.83R,  
 AND DCS.83---CREATED 10/11/82



APPENDIX E

SCIMP MODEL BASE CASE PROJECTIONS FOR ALEUTIAN ISLANDS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

LIST OF APPENDIX E TABLES

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Table E.2.	Resident Employment
Table E.3.	Nonresident Employment
Table E.4.	Total Employment

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

TABLE E.1.  
 SCIMP MODEL BASE CASE PROJECTIONS FOR  
 ALEUTIAN ISLANDS POPULATION

YEAR	BRESPOP	ENCLV	TONRFISH	FMIL
1981	3654.	1666.	717.	3894.
1982	3738.	1667.	774.	3894.
1983	3833.	1753.	911.	3894.
1984	3953.	1801.	1093.	3894.
1985	4080.	1827.	1280.	3894.
1986	4204.	1807.	1474.	3894.
1987	4319.	1761.	1677.	3894.
1988	4427.	1687.	1889.	3894.
1989	4544.	1695.	2035.	3894.
1990	4662.	1706.	2116.	3894.
1991	4788.	1720.	2216.	3894.
1992	4932.	1740.	2340.	3894.
1993	5101.	1766.	2492.	3894.
1994	5305.	1802.	2680.	3894.
1995	5557.	1848.	2910.	3894.
1996	5876.	1911.	3190.	3894.
1997	6285.	1994.	3532.	3894.
1998	6815.	2105.	3946.	3894.
1999	7512.	2253.	4447.	3894.
2000	8348.	2450.	4473.	3894.

BRESPOP	RESIDENT POPULATION
ENCLV	ENCLAVE POPULATION
TONRFISH	NONRESIDENT FISHERMEN
FMIL	MILITARY POPULATION

TABLE E.1.  
(Continued)

	PTOTAL1	PTOTAL2	PTOTAL3
1981	5320.	6037.	9931.
1982	5405.	6179.	10073.
1983	5587.	6498.	10392.
1984	5754.	6847.	10741.
1985	5907.	7187.	11081.
1986	6011.	7485.	11379.
1987	6080.	7757.	11651.
1988	6114.	8003.	11897.
1989	6239.	8273.	12167.
1990	6367.	8483.	12377.
1991	6509.	8725.	12619.
1992	6672.	9012.	12906.
1993	6867.	9359.	13253.
1994	7107.	9787.	13681.
1995	7406.	10315.	14209.
1996	7787.	10977.	14871.
1997	8279.	11811.	15705.
1998	8921.	12867.	16761.
1999	9765.	14212.	18106.
2000	10798.	15271.	19165.

PTOTAL1	TOTAL POPULATION EXCLUDING NONRESIDENT FISHERMEN AND MILITARY
ETOTAL2	TOTAL POPULATION EXCLUDING MILITARY
PTOTAL3	TOTAL POPULATION

SOURCE--SCIMP MODEL PROJECTIONS,  
INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
SEPTEMBER, 1982.



TABLE E.2.  
 SCIMP MODEL BASE CASE PROJECTIONS FOR  
 ALEUTIAN ISLANDS RESIDENT EMPLOYMENT

YEAR	EMPRV	EMPRON	TRFHMP	TRPEMP
1981	24.	1.	251.	174.
1982	30.	1.	251.	174.
1983	45.	2.	251.	174.
1984	66.	3.	251.	174.
1985	87.	4.	251.	174.
1986	109.	6.	251.	174.
1987	132.	9.	251.	174.
1988	156.	12.	251.	174.
1989	173.	18.	251.	174.
1990	183.	25.	251.	174.
1991	196.	35.	251.	174.
1992	213.	50.	251.	174.
1993	234.	71.	251.	174.
1994	260.	101.	251.	174.
1995	294.	142.	251.	174.
1996	336.	201.	251.	174.
1997	390.	283.	251.	174.
1998	459.	398.	251.	174.
1999	547.	560.	251.	174.
2000	595.	787.	251.	174.

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EMPRV	RESIDENT BOTTOMFISHERMEN
EMPRON	BOTTOMFISH PROCESSING RESIDENT EMPLOYMENT
TRFHMP	TRADITIONAL FISHING RESIDENT EMPLOYMENT
TRPFMP	TRADITIONAL PROCESSING RESIDENT EMPLOYMENT

TABLE E.2.  
(Continued)

	REMPSGS	NFREMP	EMS1	EMG1
1981	0.	11.	461.	600.
1982	0.	11.	465.	609.
1983	9.	11.	482.	619.
1984	15.	11.	497.	630.
1985	17.	11.	509.	643.
1986	15.	11.	516.	657.
1987	9.	11.	520.	670.
1988	0.	11.	521.	682.
1989	0.	11.	530.	693.
1990	0.	11.	539.	706.
1991	0.	11.	550.	719.
1992	0.	11.	563.	733.
1993	0.	11.	581.	749.
1994	0.	11.	604.	767.
1995	0.	11.	633.	790.
1996	0.	11.	673.	818.
1997	0.	11.	725.	853.
1998	0.	11.	795.	899.
1999	0.	11.	889.	958.
2000	0.	11.	1000.	1035.

REMPSGS  
NFREMP  
EMS1  
EMG1

ST. GEORGE SALE RESIDENT EMPLOYMENT  
OTHER BASIC SECTOR RESIDENT EMPLOYMENT  
SUPPORT SECTOR EMPLOYMENT  
GOVERNMENT EMPLOYMENT

TABLE E.3.  
 SCIMP MODEL BASE CASE PROJECTIONS FOR  
 ALEUTIAN ISLANDS NONRESIDENT EMPLOYMENT

YEAR	TEFPEMP	EMPNRON	TFPNREMP	TNRFISH	EMPRNV
1981	1565.	3.	1568.	505.	212.
1982	1565.	4.	1569.	505.	269.
1983	1565.	5.	1570.	505.	406.
1984	1565.	7.	1572.	505.	588.
1985	1565.	10.	1575.	505.	775.
1986	1565.	13.	1578.	505.	969.
1987	1565.	18.	1583.	505.	1172.
1988	1565.	24.	1589.	505.	1384.
1989	1565.	32.	1597.	505.	1530.
1990	1565.	43.	1608.	505.	1611.
1991	1565.	57.	1622.	505.	1711.
1992	1565.	77.	1642.	505.	1835.
1993	1565.	103.	1668.	505.	1987.
1994	1565.	139.	1704.	505.	2175.
1995	1565.	185.	1750.	505.	2405.
1996	1565.	248.	1813.	505.	2685.
1997	1565.	331.	1896.	505.	3027.
1998	1565.	442.	2007.	505.	3441.
1999	1565.	590.	2155.	505.	3942.
2000	1565.	787.	2352.	505.	3968.

TEFPEMP	TRADITIONAL PROCESSING ENCLAVE EMPLOYMENT
EMPNRON	BOTTOMFISH PROCESSING ENCLAVE EMPLOYMENT
TFPNREMP	TOTAL PROCESSING ENCLAVE EMPLOYMENT
TNRFISH	TRADITIONAL FISHING NONRESIDENTS
EMPRNV	BOTTOMFISHING NONRESIDENT FISHERMEN

TABLE E.3.  
(Continued)

	TONRFISH	EEMPSGS	NFEEMP	TOEEMP
1981	717.	0.	98.	2383.
1982	774.	0.	98.	2441.
1983	911.	85.	98.	2579.
1984	1093.	131.	98.	2763.
1985	1280.	154.	98.	2953.
1986	1474.	131.	98.	3150.
1987	1677.	80.	98.	3357.
1988	1889.	0.	98.	3576.
1989	2035.	0.	98.	3729.
1990	2116.	0.	98.	3821.
1991	2216.	0.	98.	3936.
1992	2340.	0.	98.	4080.
1993	2492.	0.	98.	4259.
1994	2680.	0.	98.	4482.
1995	2910.	0.	98.	4758.
1996	3190.	0.	98.	5101.
1997	3532.	0.	98.	5526.
1998	3946.	0.	98.	6052.
1999	4447.	0.	98.	6700.
2000	4473.	0.	98.	6924.

TONRFISH	TOTAL NONRESIDENT FISHERMEN
ESGSEMP	ST. GEORGE SALE ENCLAVE EMPLOYMENT
NFEEMP	OTHER ENCLAVE EMPLOYMENT
TOEEMP	TOTAL EMPLOYMENT

TABLE E.4.  
SCIMP MODEL BASE CASE PROJECTIONS FOR  
ALEUTIAN ISLANDS TOTAL EMPLOYMENT

YEAR	EMX	EMS1	EMG1	ENCLU	TONRFISH	EMIL
1981	461.	461.	600.	1666.	717.	2504.
1982	467.	465.	609.	1667.	774.	2504.
1983	492.	482.	619.	1753.	911.	2504.
1984	520.	497.	630.	1801.	1093.	2504.
1985	544.	509.	643.	1827.	1280.	2504.
1986	566.	516.	657.	1807.	1474.	2504.
1987	585.	520.	670.	1761.	1677.	2504.
1988	604.	521.	682.	1687.	1889.	2504.
1989	627.	530.	693.	1695.	2035.	2504.
1990	644.	539.	706.	1706.	2116.	2504.
1991	668.	550.	719.	1720.	2216.	2504.
1992	699.	563.	733.	1740.	2340.	2504.
1993	741.	581.	749.	1766.	2492.	2504.
1994	797.	604.	767.	1802.	2680.	2504.
1995	872.	633.	790.	1848.	2910.	2504.
1996	973.	673.	818.	1911.	3190.	2504.
1997	1109.	725.	853.	1994.	3532.	2504.
1998	1293.	795.	899.	2105.	3946.	2504.
1999	1543.	889.	958.	2253.	4447.	2504.
2000	1818.	1000.	1035.	2450.	4473.	2504.

EMX	RESIDENT BASIC EMPLOYMENT
EMS1	SUPPORT SECTOR EMPLOYMENT
EMG1	GOVERNMENT EMPLOYMENT
ENCLU	ENCLAVE EMPLOYMENT
TONRFISH	NONRESIDENT FISHERMEN
EMIL	MILITARY EMPLOYMENT

TABLE E.4.  
(Continued)

	TOEMP1	TOEMP2	TOEMP3	TOEMP4
1981	1522.	3188.	3904.	6408.
1982	1542.	3208.	3982.	6486.
1983	1594.	3347.	4258.	6762.
1984	1647.	3448.	4541.	7045.
1985	1697.	3524.	4804.	7308.
1986	1739.	3546.	5020.	7524.
1987	1775.	3536.	5212.	7716.
1988	1807.	3493.	5383.	7887.
1989	1850.	3545.	5579.	8083.
1990	1889.	3595.	5711.	8215.
1991	1937.	3657.	5873.	8377.
1992	1996.	3736.	6076.	8580.
1993	2071.	3837.	6330.	8834.
1994	2168.	3970.	6650.	9154.
1995	2295.	4143.	7053.	9557.
1996	2464.	4375.	7565.	10069.
1997	2688.	4682.	8214.	10718.
1998	2987.	5092.	9039.	11543.
1999	3390.	5643.	10090.	12594.
2000	3853.	6303.	10777.	13281.

TOEMP1	TOTAL RESIDENT EMPLOYMENT
TOEMP2	TOTAL EMPLOYMENT EXCLUDING NONRESIDENT FISHERMEN AND MILITARY
TOEMP3	TOTAL EMPLOYMENT EXCLUDING MILITARY
TOEMP4	TOTAL EMPLOYMENT

SOURCE--SCIMP MODEL PROJECTIONS,  
INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
SEPTEMBER, 1982.

APPENDIX F

'SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS





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TABLE F.1.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 RESIDENT POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3570.	3570.	0.	.00
1981	3654.	3654.	-0.	.00
1982	3738.	3738.	-0.	.00
1983	3833.	3833.	0.	.00
1984	3953.	3953.	-0.	.00
1985	4080.	4103.	23.	.01
1986	4204.	4220.	17.	.00
1987	4319.	4337.	18.	.00
1988	4427.	4447.	20.	.00
1989	4544.	4576.	32.	.01
1990	4662.	4690.	28.	.01
1991	4788.	4813.	25.	.01
1992	4932.	4966.	34.	.01
1993	5101.	5319.	218.	.04
1994	5305.	5641.	336.	.06
1995	5557.	5989.	431.	.08
1996	5876.	6318.	441.	.08
1997	6285.	6701.	416.	.07
1998	6815.	7187.	372.	.05
1999	7512.	7922.	310.	.04
2000	8348.	8578.	230.	.03

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.2.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 ENCLAVE POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	1663.	1663.	0.	0.
1981	1666.	1666.	0.	0.
1982	1667.	1667.	0.	0.
1983	1753.	1753.	0.	0.
1984	1801.	1801.	0.	0.
1985	1827.	2108.	282.	0.15
1986	1807.	2024.	217.	0.12
1987	1761.	1997.	237.	0.13
1988	1687.	1963.	276.	0.16
1989	1695.	2456.	762.	0.45
1990	1706.	2264.	559.	0.33
1991	1720.	2029.	309.	0.18
1992	1740.	2093.	353.	0.20
1993	1766.	2302.	536.	0.30
1994	1802.	2407.	605.	0.34
1995	1848.	2514.	666.	0.36
1996	1911.	2586.	675.	0.35
1997	1994.	2669.	675.	0.34
1998	2105.	2780.	675.	0.32
1999	2253.	2928.	675.	0.30
2000	2450.	3125.	675.	0.28

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.3.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 TOTAL POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	5233.	5233.	0.	0.00
1981	5320.	5320.	-0.	-0.00
1982	5405.	5405.	-0.	-0.00
1983	5587.	5587.	0.	0.00
1984	5754.	5754.	-0.	-0.00
1985	5907.	6212.	305.	0.05
1986	6011.	6244.	234.	0.04
1987	6080.	6334.	255.	0.04
1988	6114.	6410.	296.	0.05
1989	6239.	7033.	794.	0.13
1990	6367.	6954.	587.	0.09
1991	6509.	6842.	334.	0.05
1992	6672.	7059.	387.	0.06
1993	6867.	7621.	754.	0.11
1994	7107.	8048.	941.	0.13
1995	7406.	8503.	1097.	0.15
1996	7787.	8903.	1116.	0.14
1997	8279.	9370.	1091.	0.13
1998	8921.	9967.	1047.	0.12
1999	9765.	10750.	985.	0.10
2000	10798.	11703.	905.	0.08

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.4.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 TOTAL RESIDENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	1479.	1479.	0.	0.
1981	1522.	1522.	0.	0.
1982	1542.	1542.	0.	0.
1983	1594.	1594.	0.	0.
1984	1647.	1647.	0.	0.
1985	1697.	1820.	123.	0.07
1986	1739.	1834.	94.	0.05
1987	1775.	1876.	101.	0.06
1988	1807.	1920.	113.	0.06
1989	1850.	2030.	180.	0.10
1990	1889.	2048.	159.	0.08
1991	1937.	2081.	145.	0.07
1992	1996.	2197.	202.	0.10
1993	2071.	2330.	259.	0.13
1994	2168.	2441.	273.	0.13
1995	2295.	2584.	288.	0.13
1996	2464.	2763.	299.	0.12
1997	2688.	3000.	312.	0.12
1998	2987.	3316.	329.	0.11
1999	3390.	3741.	352.	0.10
2000	3853.	4233.	380.	0.10

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.5.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 BASIC RESIDENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	436.	436.	0.	0.
1981	461.	461.	0.	0.
1982	467.	467.	0.	0.
1983	492.	492.	0.	0.
1984	520.	520.	0.	0.
1985	544.	616.	72.	0.13
1986	566.	621.	56.	0.10
1987	585.	644.	59.	0.10
1988	604.	669.	65.	0.11
1989	627.	701.	74.	0.12
1990	644.	720.	76.	0.12
1991	668.	755.	87.	0.13
1992	699.	828.	128.	0.18
1993	741.	956.	215.	0.29
1994	797.	1038.	240.	0.30
1995	872.	1138.	266.	0.30
1996	973.	1239.	266.	0.27
1997	1109.	1375.	266.	0.24
1998	1293.	1559.	266.	0.21
1999	1543.	1809.	266.	0.17
2000	1818.	2084.	266.	0.15

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.6.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 SERVICES EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	452.	452.	0.	0.
1981	461.	461.	0.	0.
1982	465.	465.	0.	0.
1983	482.	482.	0.	0.
1984	497.	497.	0.	0.
1985	509.	557.	48.	0.09
1986	516.	553.	37.	0.07
1987	520.	559.	39.	0.08
1988	521.	566.	45.	0.09
1989	530.	627.	97.	0.18
1990	539.	616.	77.	0.14
1991	550.	604.	54.	0.10
1992	563.	633.	69.	0.12
1993	581.	691.	110.	0.19
1994	604.	732.	129.	0.21
1995	633.	778.	145.	0.23
1996	673.	821.	148.	0.22
1997	725.	873.	148.	0.20
1998	795.	943.	147.	0.19
1999	889.	1035.	146.	0.16
2000	1000.	1144.	144.	0.14

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.



TABLE F.7.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 GOVERNMENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	591.	591.	0.	0.
1981	600.	600.	0.	0.
1982	609.	609.	0.	0.
1983	619.	619.	0.	0.
1984	630.	630.	0.	0.
1985	643.	646.	3.	0.00
1986	657.	659.	2.	0.00
1987	670.	672.	3.	0.00
1988	682.	685.	3.	0.00
1989	693.	702.	8.	0.01
1990	706.	712.	6.	0.01
1991	719.	722.	3.	0.00
1992	733.	737.	4.	0.01
1993	749.	755.	6.	0.01
1994	767.	792.	25.	0.03
1995	790.	828.	38.	0.05
1996	818.	866.	48.	0.06
1997	853.	902.	49.	0.06
1998	899.	944.	45.	0.05
1999	958.	998.	40.	0.04
2000	1035.	1068.	33.	0.03

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.8.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 .6 BBBL CASE  
 TOTAL RESIDENT AND ENCLAVE EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3142.	3142.	0.	0.
1981	3188.	3188.	0.	0.
1982	3208.	3208.	0.	0.
1983	3347.	3347.	0.	0.
1984	3448.	3448.	0.	0.
1985	3524.	3928.	404.	0.11
1986	3546.	3857.	311.	0.09
1987	3536.	3873.	337.	0.10
1988	3493.	3883.	389.	0.11
1989	3545.	4486.	941.	0.27
1990	3595.	4313.	717.	0.20
1991	3657.	4110.	453.	0.12
1992	3736.	4290.	555.	0.15
1993	3837.	4632.	795.	0.21
1994	3970.	4848.	879.	0.22
1995	4143.	5098.	955.	0.23
1996	4375.	5348.	974.	0.22
1997	4682.	5669.	987.	0.21
1998	5092.	6096.	1004.	0.20
1999	5643.	6670.	1026.	0.18
2000	6303.	7358.	1055.	0.17

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.9.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 RESIDENT POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3570.	3570.	0.	.00
1981	3654.	3654.	-0.	.00
1982	3738.	3738.	-0.	.00
1983	3833.	3833.	0.	.00
1984	3953.	3953.	-0.	.00
1985	4080.	4103.	23.	.01
1986	4204.	4216.	12.	.00
1987	4319.	4337.	18.	.00
1988	4427.	4446.	19.	.00
1989	4544.	4575.	31.	.01
1990	4662.	4683.	22.	.00
1991	4788.	4808.	19.	.00
1992	4932.	4969.	37.	.01
1993	5101.	5268.	167.	.03
1994	5305.	5533.	228.	.04
1995	5557.	5836.	279.	.05
1996	5876.	6157.	281.	.05
1997	6285.	6538.	253.	.04
1998	6815.	7022.	207.	.03
1999	7512.	7656.	144.	.02
2000	8348.	8419.	72.	.01

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.10.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 ENCLAVE POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	1663.	1663.	0.	0.
1981	1666.	1666.	0.	0.
1982	1667.	1667.	0.	0.
1983	1753.	1753.	0.	0.
1984	1801.	1801.	0.	0.
1985	1827.	2108.	282.	0.15
1986	1807.	1973.	166.	0.09
1987	1761.	2026.	265.	0.15
1988	1687.	1972.	285.	0.17
1989	1695.	2465.	770.	0.45
1990	1706.	2174.	468.	0.27
1991	1720.	1941.	221.	0.13
1992	1740.	2301.	561.	0.32
1993	1766.	2429.	662.	0.37
1994	1802.	2289.	488.	0.27
1995	1848.	2376.	528.	0.29
1996	1911.	2451.	540.	0.28
1997	1994.	2535.	540.	0.27
1998	2105.	2646.	540.	0.26
1999	2253.	2794.	540.	0.24
2000	2450.	2991.	540.	0.22

SOURCE---SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.11.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 TOTAL POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	5233.	5233.	0.	0.00
1981	5320.	5320.	-0.	-0.00
1982	5405.	5405.	-0.	-0.00
1983	5587.	5587.	0.	0.00
1984	5754.	5754.	-0.	-0.00
1985	5907.	6212.	305.	0.05
1986	6011.	6189.	178.	0.03
1987	6080.	6363.	283.	0.05
1988	6114.	6417.	304.	0.05
1989	6239.	7040.	801.	0.13
1990	6367.	6857.	489.	0.08
1991	6509.	6749.	240.	0.04
1992	6672.	7270.	599.	0.09
1993	6867.	7696.	829.	0.12
1994	7107.	7822.	716.	0.10
1995	7406.	8212.	807.	0.11
1996	7787.	8608.	821.	0.11
1997	8279.	9072.	793.	0.10
1998	8921.	9668.	747.	0.08
1999	9765.	10450.	685.	0.07
2000	10798.	11410.	612.	0.06

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.12.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 TOTAL RESIDENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	1479.	1479.	0.	0.
1981	1522.	1522.	0.	0.
1982	1542.	1542.	0.	0.
1983	1594.	1594.	0.	0.
1984	1647.	1647.	0.	0.
1985	1697.	1820.	123.	0.07
1986	1739.	1807.	67.	0.04
1987	1775.	1874.	99.	0.06
1988	1807.	1911.	105.	0.06
1989	1850.	2021.	171.	0.09
1990	1889.	2009.	119.	0.06
1991	1937.	2047.	110.	0.06
1992	1996.	2211.	215.	0.11
1993	2071.	2321.	250.	0.12
1994	2168.	2435.	267.	0.12
1995	2295.	2575.	280.	0.12
1996	2464.	2755.	291.	0.12
1997	2688.	2992.	304.	0.11
1998	2987.	3309.	322.	0.11
1999	3390.	3734.	344.	0.10
2000	3853.	4218.	365.	0.09

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.13.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 BASIC RESIDENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	436.	436.	0.	0.
1981	461.	461.	0.	0.
1982	467.	467.	0.	0.
1983	492.	492.	0.	0.
1984	520.	520.	0.	0.
1985	544.	616.	72.	0.13
1986	566.	604.	39.	0.07
1987	585.	640.	54.	0.09
1988	604.	662.	58.	0.10
1989	627.	693.	67.	0.11
1990	644.	697.	53.	0.08
1991	668.	736.	68.	0.10
1992	699.	820.	121.	0.17
1993	741.	920.	179.	0.24
1994	797.	1012.	215.	0.27
1995	872.	1104.	232.	0.27
1996	973.	1207.	234.	0.24
1997	1109.	1343.	234.	0.21
1998	1293.	1527.	234.	0.18
1999	1543.	1777.	234.	0.15
2000	1818.	2052.	234.	0.13

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.14.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 SERVICES EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	452.	452.	0.	0.
1981	461.	461.	0.	0.
1982	465.	465.	0.	0.
1983	482.	482.	0.	0.
1984	497.	497.	0.	0.
1985	509.	557.	48.	0.09
1986	516.	543.	27.	0.05
1987	520.	561.	41.	0.08
1988	521.	565.	44.	0.08
1989	530.	626.	96.	0.18
1990	539.	601.	62.	0.11
1991	550.	590.	40.	0.07
1992	563.	652.	89.	0.16
1993	581.	695.	114.	0.20
1994	604.	712.	109.	0.18
1995	633.	752.	119.	0.19
1996	673.	795.	122.	0.18
1997	725.	847.	122.	0.17
1998	795.	916.	121.	0.15
1999	889.	1009.	120.	0.13
2000	1000.	1117.	118.	0.12

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.



TABLE F.15.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 GOVERNMENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	591.	591.	0.	0.
1981	600.	600.	0.	0.
1982	609.	609.	0.	0.
1983	619.	619.	0.	0.
1984	630.	630.	0.	0.
1985	643.	646.	3.	0.00
1986	657.	659.	2.	0.00
1987	670.	673.	3.	0.00
1988	682.	685.	3.	0.00
1989	693.	702.	8.	0.01
1990	706.	711.	5.	0.01
1991	719.	721.	2.	0.00
1992	733.	739.	6.	0.01
1993	749.	756.	7.	0.01
1994	767.	786.	18.	0.02
1995	790.	815.	25.	0.03
1996	818.	848.	30.	0.04
1997	853.	883.	30.	0.04
1998	899.	925.	27.	0.03
1999	958.	979.	21.	0.02
2000	1035.	1049.	14.	0.01

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.16.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL ROAD-CONNECTED CASE  
 TOTAL RESIDENT AND ENCLAVE EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3142.	3142.	0.	0.
1981	3188.	3188.	0.	0.
1982	3208.	3208.	0.	0.
1983	3347.	3347.	0.	0.
1984	3448.	3448.	0.	0.
1985	3524.	3928.	404.	0.11
1986	3546.	3779.	233.	0.07
1987	3536.	3899.	363.	0.10
1988	3493.	3883.	390.	0.11
1989	3545.	4486.	941.	0.27
1990	3595.	4182.	587.	0.16
1991	3657.	3988.	331.	0.09
1992	3736.	4512.	777.	0.21
1993	3837.	4749.	912.	0.24
1994	3970.	4724.	755.	0.19
1995	4143.	4951.	808.	0.19
1996	4375.	5206.	831.	0.19
1997	4682.	5527.	845.	0.18
1998	5092.	5954.	862.	0.17
1999	5643.	6528.	885.	0.16
2000	6303.	7209.	906.	0.14

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.17.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL REMOTE CASE  
 RESIDENT POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3570.	3570.	0.	.00
1981	3654.	3654.	-0.	.00
1982	3738.	3738.	-0.	.00
1983	3833.	3833.	0.	.00
1984	3953.	3953.	-0.	.00
1985	4080.	4103.	23.	.01
1986	4204.	4216.	12.	.00
1987	4319.	4337.	18.	.00
1988	4427.	4446.	19.	.00
1989	4544.	4575.	31.	.01
1990	4662.	4683.	22.	.00
1991	4788.	4808.	19.	.00
1992	4932.	4966.	34.	.01
1993	5101.	5234.	134.	.03
1994	5305.	5513.	208.	.04
1995	5557.	5816.	259.	.05
1996	5876.	6132.	255.	.04
1997	6285.	6511.	226.	.04
1998	6815.	6995.	179.	.03
1999	7512.	7628.	116.	.02
2000	8348.	8417.	69.	.01

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.18.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL REMOTE CASE  
 ENCLAVE POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	1663.	1663.	0.	0.
1981	1666.	1666.	0.	0.
1982	1667.	1667.	0.	0.
1983	1753.	1753.	0.	0.
1984	1801.	1801.	0.	0.
1985	1827.	2108.	282.	0.15
1986	1807.	1973.	166.	0.09
1987	1761.	2026.	265.	0.15
1988	1687.	1972.	285.	0.17
1989	1695.	2465.	770.	0.45
1990	1706.	2174.	468.	0.27
1991	1720.	1941.	221.	0.13
1992	1740.	2317.	577.	0.33
1993	1766.	2444.	678.	0.38
1994	1802.	2294.	492.	0.27
1995	1848.	2383.	535.	0.29
1996	1911.	2460.	549.	0.29
1997	1994.	2543.	549.	0.28
1998	2105.	2654.	549.	0.26
1999	2253.	2803.	549.	0.24
2000	2450.	2999.	549.	0.22

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.19.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL REMOTE CASE  
 TOTAL POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	5233.	5233.	0.	0.00
1981	5320.	5320.	-0.	-0.00
1982	5405.	5405.	-0.	-0.00
1983	5587.	5587.	0.	0.00
1984	5754.	5754.	-0.	-0.00
1985	5907.	6212.	305.	0.05
1986	6011.	6189.	178.	0.03
1987	6080.	6363.	283.	0.05
1988	6114.	6417.	304.	0.05
1989	6239.	7040.	801.	0.13
1990	6367.	6857.	489.	0.08
1991	6509.	6749.	240.	0.04
1992	6672.	7283.	611.	0.09
1993	6867.	7678.	811.	0.12
1994	7107.	7807.	700.	0.10
1995	7406.	8199.	793.	0.11
1996	7787.	8592.	805.	0.10
1997	8279.	9054.	775.	0.09
1998	8921.	9649.	729.	0.08
1999	9765.	10431.	666.	0.07
2000	10798.	11416.	618.	0.06

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.20.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL REMOTE CASE  
 TOTAL POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	5233.	5233.	0.	0.00
1981	5320.	5320.	-0.	-0.00
1982	5405.	5405.	-0.	-0.00
1983	5587.	5587.	0.	0.00
1984	5754.	5754.	-0.	-0.00
1985	5907.	6212.	305.	0.05
1986	6011.	6189.	178.	0.03
1987	6080.	6363.	283.	0.05
1988	6114.	6417.	304.	0.05
1989	6239.	7040.	801.	0.13
1990	6367.	6857.	489.	0.08
1991	6509.	6749.	240.	0.04
1992	6672.	7283.	611.	0.09
1993	6867.	7678.	811.	0.12
1994	7107.	7807.	700.	0.10
1995	7406.	8199.	793.	0.11
1996	7787.	8592.	805.	0.10
1997	8279.	9054.	775.	0.09
1998	8921.	9649.	729.	0.08
1999	9765.	10431.	666.	0.07
2000	10798.	11416.	618.	0.06

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.21.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL REMOTE CASE  
 BASIC RESIDENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	436.	436.	0.	0.
1981	461.	461.	0.	0.
1982	467.	467.	0.	0.
1983	492.	492.	0.	0.
1984	520.	520.	0.	0.
1985	544.	616.	72.	0.13
1986	566.	604.	39.	0.07
1987	585.	640.	54.	0.09
1988	604.	662.	58.	0.10
1989	627.	693.	67.	0.11
1990	644.	697.	53.	0.08
1991	668.	736.	68.	0.10
1992	699.	804.	105.	0.15
1993	741.	905.	164.	0.22
1994	797.	1008.	211.	0.26
1995	872.	1097.	225.	0.26
1996	973.	1198.	225.	0.23
1997	1109.	1334.	225.	0.20
1998	1293.	1518.	225.	0.17
1999	1543.	1768.	225.	0.15
2000	1818.	2043.	225.	0.12

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.22.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL REMOTE CASE  
 SERVICES EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	452.	452.	0.	0.
1981	461.	461.	0.	0.
1982	465.	465.	0.	0.
1983	482.	482.	0.	0.
1984	497.	497.	0.	0.
1985	509.	557.	48.	0.09
1986	516.	543.	27.	0.05
1987	520.	561.	41.	0.08
1988	521.	565.	44.	0.08
1989	530.	626.	96.	0.18
1990	539.	601.	62.	0.11
1991	550.	590.	40.	0.07
1992	563.	650.	86.	0.15
1993	581.	693.	112.	0.19
1994	604.	711.	107.	0.18
1995	633.	751.	117.	0.19
1996	673.	793.	120.	0.18
1997	725.	845.	120.	0.17
1998	795.	914.	119.	0.15
1999	889.	1007.	117.	0.13
2000	1000.	1115.	116.	0.12

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.



TABLE F.23.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1:2 BBBL REMOTE CASE  
 GOVERNMENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	591.	591.	0.	0.
1981	600.	600.	0.	0.
1982	609.	609.	0.	0.
1983	619.	619.	0.	0.
1984	630.	630.	0.	0.
1985	643.	646.	3.	0.00
1986	657.	659.	2.	0.00
1987	670.	673.	3.	0.00
1988	682.	685.	3.	0.00
1989	693.	702.	8.	0.01
1990	706.	711.	5.	0.01
1991	719.	721.	2.	0.00
1992	733.	739.	6.	0.01
1993	749.	756.	7.	0.01
1994	767.	782.	15.	0.02
1995	790.	813.	23.	0.03
1996	818.	846.	28.	0.03
1997	853.	881.	27.	0.03
1998	899.	923.	24.	0.03
1999	958.	976.	18.	0.02
2000	1035.	1046.	11.	0.01

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.24.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 1.2 BBBL REMOTE CASE  
 TOTAL RESIDENT AND ENCLAVE EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3142.	3142.	0.	0.
1981	3188.	3188.	0.	0.
1982	3208.	3208.	0.	0.
1983	3347.	3347.	0.	0.
1984	3448.	3448.	0.	0.
1985	3524.	3928.	404.	0.11
1986	3546.	3779.	233.	0.07
1987	3536.	3899.	363.	0.10
1988	3493.	3883.	390.	0.11
1989	3545.	4486.	941.	0.27
1990	3595.	4182.	587.	0.16
1991	3657.	3988.	331.	0.09
1992	3736.	4510.	774.	0.21
1993	3837.	4761.	923.	0.24
1994	3970.	4728.	758.	0.19
1995	4143.	4956.	812.	0.20
1996	4375.	5212.	838.	0.19
1997	4682.	5533.	851.	0.18
1998	5092.	5961.	869.	0.17
1999	5643.	6535.	891.	0.16
2000	6303.	7204.	901.	0.14

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.25.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 RESIDENT POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3570.	3570.	0.	.00
1981	3654.	3654.	-0.	.00
1982	3738.	3738.	-0.	.00
1983	3833.	3833.	0.	.00
1984	3953.	3953.	-0.	.00
1985	4080.	4103.	23.	.01
1986	4204.	4218.	15.	.00
1987	4319.	4342.	23.	.01
1988	4427.	4443.	17.	.00
1989	4544.	4577.	33.	.01
1990	4662.	4687.	25.	.01
1991	4788.	4809.	20.	.00
1992	4932.	5035.	104.	.02
1993	5101.	5429.	329.	.06
1994	5305.	5706.	401.	.08
1995	5557.	6053.	495.	.09
1996	5876.	6428.	551.	.09
1997	6285.	6827.	541.	.09
1998	6815.	7318.	503.	.07
1999	7512.	7955.	443.	.06
2000	8348.	8712.	364.	.04

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.26.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 ENCLAVE POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980.	1663.	1663.	0.	0.
1981	1666.	1666.	0.	0.
1982	1667.	1667.	0.	0.
1983	1753.	1753.	0.	0.
1984	1801.	1801.	0.	0.
1985	1827.	2108.	282.	0.15
1986	1807.	2013.	205.	0.11
1987	1761.	2105.	344.	0.20
1988	1687.	1932.	245.	0.15
1989	1695.	2505.	810.	0.48
1990	1706.	2233.	527.	0.31
1991	1720.	1961.	240.	0.14
1992	1740.	2587.	847.	0.49
1993	1766.	2750.	983.	0.56
1994	1802.	2395.	594.	0.33
1995	1848.	2521.	673.	0.36
1996	1911.	2635.	724.	0.38
1997	1994.	2719.	724.	0.36
1998	2105.	2830.	724.	0.34
1999	2253.	2978.	724.	0.32
2000	2450.	3175.	724.	0.30

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.27.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 TOTAL POPULATION

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	5233.	5233.	0.	0.00
1981	5320.	5320.	-0.	-0.00
1982	5405.	5405.	-0.	-0.00
1983	5587.	5587.	0.	0.00
1984	5754.	5754.	-0.	-0.00
1985	5907.	6212.	305.	0.05
1986	6011.	6231.	220.	0.04
1987	6080.	6447.	367.	0.06
1988	6114.	6375.	262.	0.04
1989	6239.	7082.	843.	0.14
1990	6367.	6920.	552.	0.09
1991	6509.	6770.	261.	0.04
1992	6622.	7622.	950.	0.14
1993	6867.	8179.	1312.	0.19
1994	7107.	8101.	994.	0.14
1995	7406.	8574.	1168.	0.16
1996	7787.	9063.	1276.	0.16
1997	8279.	9545.	1266.	0.15
1998	8921.	10148.	1227.	0.14
1999	9765.	10933.	1168.	0.12
2000	10798.	11887.	1089.	0.10

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.28.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 TOTAL RESIDENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	1479.	1479.	0.	0.
1981	1522.	1522.	0.	0.
1982	1542.	1542.	0.	0.
1983	1594.	1594.	0.	0.
1984	1647.	1647.	0.	0.
1985	1697.	1820.	123.	0.07
1986	1739.	1819.	80.	0.05
1987	1775.	1899.	123.	0.07
1988	1807.	1899.	92.	0.05
1989	1850.	2034.	184.	0.10
1990	1889.	2027.	138.	0.07
1991	1937.	2053.	116.	0.06
1992	1996.	2225.	229.	0.11
1993	2071.	2327.	256.	0.12
1994	2168.	2445.	277.	0.13
1995	2295.	2588.	293.	0.13
1996	2464.	2771.	307.	0.12
1997	2688.	3008.	320.	0.12
1998	2987.	3324.	337.	0.11
1999	3390.	3749.	359.	0.11
2000	3853.	4240.	387.	0.10

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.29.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 BASIC RESIDENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	436.	436.	0.	0.
1981	461.	461.	0.	0.
1982	467.	467.	0.	0.
1983	492.	492.	0.	0.
1984	520.	520.	0.	0.
1985	544.	616.	72.	0.13
1986	566.	611.	45.	0.08
1987	585.	652.	67.	0.11
1988	604.	656.	51.	0.08
1989	627.	700.	73.	0.12
1990	644.	706.	62.	0.10
1991	668.	739.	71.	0.11
1992	699.	825.	126.	0.18
1993	741.	944.	203.	0.27
1994	797.	1051.	254.	0.32
1995	872.	1155.	283.	0.32
1996	973.	1271.	298.	0.31
1997	1109.	1407.	298.	0.27
1998	1293.	1591.	298.	0.23
1999	1543.	1841.	298.	0.19
2000	1818.	2116.	298.	0.16

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.30.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 SERVICES EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	452.	452.	0.	0.
1981	461.	461.	0.	0.
1982	465.	465.	0.	0.
1983	482.	482.	0.	0.
1984	497.	497.	0.	0.
1985	509.	557.	48.	0.09
1986	516.	549.	33.	0.06
1987	520.	573.	53.	0.10
1988	521.	559.	38.	0.07
1989	530.	632.	102.	0.19
1990	539.	609.	70.	0.13
1991	550.	593.	43.	0.08
1992	563.	683.	119.	0.21
1993	581.	736.	155.	0.27
1994	604.	738.	134.	0.22
1995	633.	785.	152.	0.24
1996	673.	836.	163.	0.24
1997	725.	890.	165.	0.23
1998	795.	959.	164.	0.21
1999	889.	1052.	163.	0.18
2000	1000.	1161.	161.	0.16

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.



TABLE F.31.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 GOVERNMENT EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	591.	591.	0.	0.
1981	600.	600.	0.	0.
1982	609.	609.	0.	0.
1983	619.	619.	0.	0.
1984	630.	630.	0.	0.
1985	643.	646.	3.	0.00
1986	657.	659.	2.	0.00
1987	670.	674.	4.	0.01
1988	682.	684.	3.	0.00
1989	693.	702.	9.	0.01
1990	706.	712.	6.	0.01
1991	719.	722.	3.	0.00
1992	733.	742.	9.	0.01
1993	749.	766.	17.	0.02
1994	767.	804.	37.	0.05
1995	790.	835.	45.	0.06
1996	818.	873.	55.	0.07
1997	853.	914.	61.	0.07
1998	899.	958.	59.	0.07
1999	958.	1012.	55.	0.06
2000	1035.	1083.	47.	0.05

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE F.32.  
 SCIMP MODEL IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 2.4 BBBL CASE  
 TOTAL RESIDENT AND ENCLAVE EMPLOYMENT

YEAR	BASE CASE	IMPACT CASE	ABSOLUTE IMPACT	PERCENT IMPACT
1980	3142.	3142.	0.	0.
1981	3188.	3188.	0.	0.
1982	3208.	3208.	0.	0.
1983	3347.	3347.	0.	0.
1984	3448.	3448.	0.	0.
1985	3524.	3928.	404.	0.11
1986	3546.	3831.	285.	0.08
1987	3536.	4004.	468.	0.13
1988	3493.	3831.	337.	0.10
1989	3545.	4538.	993.	0.28
1990	3595.	4261.	665.	0.19
1991	3657.	4014.	357.	0.10
1992	3736.	4811.	1076.	0.29
1993	3837.	5076.	1239.	0.32
1994	3970.	4840.	870.	0.22
1995	4143.	5109.	966.	0.23
1996	4375.	5406.	1031.	0.24
1997	4682.	5727.	1044.	0.22
1998	5092.	6154.	1061.	0.21
1999	5643.	6727.	1083.	0.19
2000	6303.	7415.	1111.	0.18

SOURCE--SCIMP MODEL PROJECTIONS,  
 INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH,  
 SEPTEMBER, 1982.

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

APPENDIX G

SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS  
FOR ALEUTIAN ISLANDS BY CASE



## LIST OF APPENDIX G TABLES

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TABLE G.1.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 RESIDENT POPULATION

Year	.6 BBBL Case	T.2 BBBL Road-Connected Case	1.2 BBBL Remote Case	2.4 BBBL Case
1980	0.	0.	0.	0.
1981	-0.	-0.	-0.	-0.
1982	-0.	-0.	-0.	-0.
1983	0.	0.	0.	0.
1984	-0.	-0.	-0.	-0.
1985	23.	23.	23.	23.
1986	17.	12.	12.	15.
1987	18.	18.	18.	23.
1988	20.	19.	19.	17.
1989	32.	31.	31.	33.
1990	28.	22.	22.	25.
1991	25.	19.	19.	20.
1992	34.	37.	34.	104.
1993	218.	167.	134.	329.
1994	336.	228.	208.	401.
1995	431.	279.	259.	495.
1996	441.	281.	255.	551.
1997	416.	253.	226.	541.
1998	372.	207.	179.	503.
1999	310.	144.	116.	443.
2000	230.	72.	62.	364.

TABLE G.2.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 ENCLAVE POPULATION

<u>Year</u>	<u>.6 BBBL Case</u>	<u>T.2 BBBL Road-Connected Case</u>	<u>T.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	282.	282.	282.	282.
1986	217.	166.	166.	205.
1987	237.	265.	265.	344.
1988	276.	285.	285.	245.
1989	762.	770.	770.	810.
1990	559.	468.	468.	527.
1991	309.	221.	221.	240.
1992	353.	561.	577.	847.
1993	536.	662.	678.	983.
1994	605.	488.	492.	594.
1995	666.	528.	535.	673.
1996	675.	540.	549.	724.
1997	675.	540.	549.	724.
1998	675.	540.	549.	724.
1999	675.	540.	549.	724.
2000	675.	540.	549.	724.



TABLE G.3.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 TOTAL POPULATION\*

<u>Year</u>	<u>.6 BBBL Case</u>	<u>T.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	-0.	-0.	-0.	-0.
1982	-0.	-0.	-0.	-0.
1983	0.	0.	0.	0.
1984	-0.	-0.	-0.	-0.
1985	305.	305.	305.	305.
1986	234.	178.	178.	220.
1987	255.	283.	283.	367.
1988	296.	304.	304.	262.
1989	794.	801.	801.	843.
1990	587.	489.	489.	552.
1991	334.	240.	240.	261.
1992	387.	599.	611.	950.
1993	754.	829.	811.	1312.
1994	941.	716.	700.	994.
1995	1097.	807.	793.	1168.
1996	1116.	821.	805.	1276.
1997	1091.	793.	775.	1266.
1998	1047.	747.	729.	1227.
1999	985.	685.	666.	1168.
2000	905.	612.	618.	1089.

TABLE G.4.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 TOTAL RESIDENT EMPLOYMENT

Year	<u>.6 BBBL Case</u>	<u>1.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	123.	123.	123.	123.
1986	94.	67.	67.	80.
1987	101.	99.	99.	123.
1988	113.	105.	105.	92.
1989	180.	171.	171.	184.
1990	159.	119.	119.	138.
1991	145.	110.	110.	116.
1992	202.	215.	197.	229.
1993	259.	250.	246.	256.
1994	273.	267.	265.	277.
1995	288.	280.	278.	293.
1996	299.	291.	289.	307.
1997	312.	304.	302.	320.
1998	329.	322.	319.	337.
1999	352.	344.	342.	359.
2000	380.	365.	351.	387.

TABLE G.5.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 BASIC RESIDENT EMPLOYMENT

<u>Year</u>	<u>.6 BBBL Case</u>	<u>1.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	72.	72.	72.	72.
1986	56.	39.	39.	45.
1987	59.	54.	54.	67.
1988	65.	58.	58.	51.
1989	74.	67.	67.	73.
1990	76.	53.	53.	62.
1991	87.	68.	68.	71.
1992	128.	121.	105.	126.
1993	215.	179.	164.	203.
1994	240.	215.	211.	254.
1995	266.	232.	225.	283.
1996	266.	234.	225.	298.
1997	266.	234.	225.	298.
1998	266.	234.	225.	298.
1999	266.	234.	225.	298.
2000	266.	234.	225.	298.

TABLE G.6.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 SERVICES EMPLOYMENT

<u>Year</u>	<u>.6 BBBL Case</u>	<u>1.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	48.	48.	48.	48.
1986	37.	27.	27.	33.
1987	39.	41.	41.	53.
1988	45.	44.	44.	38.
1989	97.	96.	96.	102.
1990	77.	62.	62.	70.
1991	54.	40.	40.	43.
1992	69.	89.	86.	119.
1993	110.	114.	112.	155.
1994	129.	109.	107.	134.
1995	145.	119.	117.	152.
1996	148.	122.	120.	163.
1997	148.	122.	120.	165.
1998	147.	121.	119.	164.
1999	146.	120.	117.	163.
2000	144.	118.	116.	161.

TABLE G.7.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 GOVERNMENT EMPLOYMENT

<u>Year</u>	<u>.6 BBBL Case</u>	<u>T.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	3.	3.	3.	3.
1986	2.	2.	2.	2.
1987	3.	3.	3.	4.
1988	3.	3.	3.	3.
1989	8.	8.	8.	9.
1990	6.	5.	5.	6.
1991	3.	2.	2.	3.
1992	4.	6.	6.	9.
1993	6.	7.	7.	17.
1994	25.	18.	15.	37.
1995	38.	25.	23.	45.
1996	48.	30.	28.	55.
1997	49.	30.	27.	61.
1998	45.	27.	24.	59.
1999	40.	21.	18.	55.
2000	33.	14.	11.	47.

TABLE G.8.  
 SCIMP MODEL ABSOLUTE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 TOTAL RESIDENT AND ENCLAVE EMPLOYMENT

Year	.6 BBBL Case	1.2 BBBL Road-Connected Case	1.2 BBBL Remote Case	2.4 BBBL Case
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	404.	404.	404.	404.
1986	311.	233.	233.	285.
1987	337.	363.	363.	468.
1988	389.	390.	390.	337.
1989	941.	941.	941.	993.
1990	717.	587.	587.	665.
1991	453.	331.	331.	357.
1992	555.	777.	774.	1076.
1993	795.	912.	923.	1239.
1994	879.	755.	758.	870.
1995	955.	808.	812.	966.
1996	974.	831.	838.	1031.
1997	987.	845.	851.	1044.
1998	1004.	862.	869.	1061.
1999	1026.	885.	891.	1083.
2000	1055.	906.	901.	1111.

APPENDIX H

SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS  
FOR ALEUTIAN ISLANDS BY CASE





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TABLE H.11.  
 SSCMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALIUTIAN ISLANDS  
 PRESIDENT POPULATION

Year	1.6 BBBL Case	1.2 BBBL Road-Connected Case	1.2 BBBL Remote Case	2.4 BBBL Case
1980	.00	.00	.00	.00
1981	.00	.00	.00	.00
1982	.00	.00	.00	.00
1983	.00	.00	.00	.00
1984	.00	.00	.00	.00
1985	.01	.01	.01	.01
1986	.00	.00	.00	.00
1987	.00	.00	.00	.01
1988	.00	.00	.00	.00
1989	.01	.01	.01	.01
1990	.01	.00	.00	.01
1991	.01	.00	.00	.01
1992	.01	.01	.01	.02
1993	.04	.03	.03	.06
1994	.06	.04	.04	.08
1995	.08	.05	.05	.09
1996	.08	.05	.04	.09
1997	.07	.04	.04	.09
1998	.05	.03	.03	.07
1999	.04	.02	.02	.06
2000	.03	.01	.01	.04

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE H.2.  
SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
ENCLAVE POPULATION

<u>Year</u>	<u>.6 BBBL Case</u>	<u>T.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	0.15	0.15	0.15	0.15
1986	0.12	0.09	0.09	0.11
1987	0.13	0.15	0.15	0.20
1988	0.16	0.17	0.17	0.15
1989	0.45	0.45	0.45	0.48
1990	0.33	0.27	0.27	0.31
1991	0.18	0.13	0.13	0.14
1992	0.20	0.32	0.33	0.49
1993	0.30	0.37	0.38	0.56
1994	0.34	0.27	0.27	0.33
1995	0.36	0.29	0.29	0.36
1996	0.35	0.28	0.29	0.38
1997	0.34	0.27	0.28	0.36
1998	0.32	0.26	0.26	0.34
1999	0.30	0.24	0.24	0.32
2000	0.28	0.22	0.22	0.30

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE H.3.  
SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
TOTAL POPULATION\*

<u>Year</u>	<u>.6 BBBL Case</u>	<u>1.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.00	0.00	0.00	0.00
1981	-0.00	-0.00	-0.00	-0.00
1982	-0.00	-0.00	-0.00	-0.00
1983	0.00	-0.00	0.00	0.00
1984	-0.00	-0.00	-0.00	-0.00
1985	0.05	0.05	0.05	0.05
1986	0.04	0.03	0.03	0.04
1987	0.04	0.05	0.05	0.06
1988	0.05	0.05	0.05	0.04
1989	0.13	0.13	0.13	0.14
1990	0.09	0.08	0.08	0.09
1991	0.05	0.04	0.04	0.04
1992	0.06	0.09	0.09	0.14
1993	0.11	0.12	0.12	0.19
1994	0.13	0.10	0.10	0.14
1995	0.15	0.11	0.11	0.16
1996	0.14	0.11	0.10	0.14
1997	0.13	0.10	0.09	0.15
1998	0.12	0.08	0.08	0.14
1999	0.10	0.07	0.07	0.12
2000	0.08	0.06	0.06	0.10

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE H.4.  
SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
TOTAL RESIDENT EMPLOYMENT

Year	.6 BBBL Case	1.2 BBBL Road-Connected Case	1.2 BBBL Remote Case	2.4 BBBL Case
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	0.07	0.07	0.07	0.07
1986	0.05	0.04	0.04	0.05
1987	0.06	0.06	0.06	0.07
1988	0.06	0.06	0.06	0.05
1989	0.10	0.09	0.09	0.10
1990	0.08	0.06	0.06	0.07
1991	0.07	0.06	0.06	0.06
1992	0.10	0.11	0.10	0.11
1993	0.13	0.12	0.12	0.12
1994	0.13	0.12	0.12	0.13
1995	0.13	0.12	0.12	0.13
1996	0.12	0.12	0.12	0.12
1997	0.12	0.11	0.11	0.12
1998	0.11	0.11	0.11	0.11
1999	0.10	0.10	0.10	0.11
2000	0.10	0.09	0.09	0.10

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE H.5.  
 SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 BASIC RESIDENT EMPLOYMENT

<u>Year</u>	<u>.6 BBBL Case</u>	<u>1.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	0.13	0.13	0.13	0.13
1986	0.10	0.07	0.07	0.08
1987	0.10	0.09	0.09	0.11
1988	0.11	0.10	0.10	0.08
1989	0.12	0.11	0.11	0.12
1990	0.12	0.08	0.08	0.10
1991	0.13	0.10	0.10	0.11
1992	0.18	0.17	0.15	0.18
1993	0.29	0.24	0.22	0.27
1994	0.30	0.27	0.26	0.32
1995	0.30	0.27	0.26	0.32
1996	0.27	0.24	0.23	0.31
1997	0.24	0.21	0.20	0.27
1998	0.21	0.18	0.17	0.23
1999	0.17	0.15	0.15	0.19
2000	0.15	0.13	0.12	0.16

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE H.6.  
 SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 SERVICES EMPLOYMENT

Year	.6 BBBL Case	1.2 BBBL Road-Connected Case	1.2 BBBL Remote Case	2.4 BBBL Case
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	0.09	0.09	0.09	0.09
1986	0.07	0.05	0.05	0.06
1987	0.08	0.08	0.08	0.10
1988	0.09	0.08	0.08	0.07
1989	0.18	0.18	0.18	0.19
1990	0.14	0.11	0.11	0.13
1991	0.10	0.07	0.07	0.08
1992	0.12	0.16	0.15	0.21
1993	0.19	0.20	0.19	0.27
1994	0.21	0.18	0.18	0.22
1995	0.23	0.19	0.19	0.24
1996	0.22	0.18	0.18	0.24
1997	0.20	0.18	0.17	0.23
1998	0.20	0.17	0.17	0.21
1999	0.19	0.15	0.15	0.21
1999	0.16	0.15	0.13	0.18
2000	0.14	0.13	0.12	0.16

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.



TABLE H.7.  
 SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
 GOVERNMENT EMPLOYMENT

<u>Year</u>	<u>.6 BBBL Case</u>	<u>1.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	0.00	0.00	0.00	0.00
1986	0.00	0.00	0.00	0.00
1987	0.00	0.00	0.00	0.01
1988	0.00	0.00	0.00	0.00
1989	0.01	0.01	0.01	0.01
1990	0.01	0.01	0.01	0.01
1991	0.00	0.00	0.00	0.00
1992	0.01	0.01	0.01	0.01
1993	0.01	0.01	0.01	0.02
1994	0.03	0.02	0.02	0.05
1995	0.05	0.03	0.03	0.06
1996	0.06	0.04	0.03	0.07
1997	0.06	0.04	0.03	0.07
1998	0.05	0.03	0.03	0.07
1999	0.04	0.02	0.02	0.06
2000	0.03	0.01	0.01	0.05

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

TABLE H.8.  
SCIMP MODEL PERCENTAGE IMPACT PROJECTIONS FOR ALEUTIAN ISLANDS  
TOTAL RESIDENT AND ENCLAVE EMPLOYMENT

Year	<u>.6 BBBL Case</u>	<u>T.2 BBBL Road-Connected Case</u>	<u>1.2 BBBL Remote Case</u>	<u>2.4 BBBL Case</u>
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	0.11	0.11	0.11	0.11
1986	0.09	0.07	0.07	0.08
1987	0.10	0.10	0.10	0.13
1988	0.11	0.11	0.11	0.10
1989	0.27	0.27	0.27	0.28
1990	0.20	0.16	0.16	0.19
1991	0.12	0.09	0.09	0.10
1992	0.15	0.21	0.21	0.29
1993	0.21	0.24	0.24	0.32
1994	0.22	0.19	0.19	0.22
1995	0.23	0.19	0.20	0.23
1996	0.22	0.19	0.19	0.24
1997	0.21	0.18	0.18	0.22
1998	0.20	0.17	0.17	0.21
1999	0.18	0.16	0.16	0.19
2000	0.17	0.14	0.14	0.18

NOTE: "Percent impact" numbers are actually shares rather than percentages. For example, .11 refers to 11 percent rather than .11 percent. To get percent impacts, ignore the decimal point.

## APPENDIX I: MAP MODEL ASSUMPTIONS

This appendix discusses the assumptions used in running the statewide MAP model.

Four types of assumptions are required as the premises upon which a forecast of economic activity using the MAP statewide model is based. First, several assumptions about the performance of the national economy are required. Secondly, an assumption is required as to the number of tourists who will visit Alaska. Thirdly, assumptions are required about exogenous state government revenues and about state government spending policies. Finally, assumptions are required about employment in a number of different sectors. These assumptions are discussed below.

### National Variables Assumptions

Inasmuch as Alaska is an open economy, developments in the state hinge at least in part on the performance of the national economy. In particular, three assumptions about the U.S. economy are required. First, a forecast of weekly earnings in the United States is needed to estimate Alaskan wage rates. Second, insofar as most goods consumed in Alaska are imported from the Lower 48, the U.S. price level is an important determinant of Alaskan prices, so that estimates of such prices require some forecast of the U.S. consumer

price index. Finally, insofar as the income differential between Alaska and the Lower 48 is a major determinant of migration between Alaska and the Lower 48, a forecast is required of real per capita disposable income in the United States.

In the base case, it is estimated that the growth in U.S. consumer prices slows to a long run rate of 7.5 percent by 1985, that the growth in average weekly earnings rises to a long run rate of 8.0 percent by 1985, and that real per capita personal income growth rises slightly to 2 percent annually by the mid-80s.

#### Tourism Assumptions

The MAP model nets out those portions of transportation, trade, and service sector employment generated by tourist activity in the state. Such estimates are generated in forecasts as a function of an exogenous forecast estimate of total tourists visiting Alaska during the forecast period.

In 1979, the Alaska Division of Tourism estimated that 505,400 persons visited the state. The model projections assume that the number of tourists grows at a constant annual rate of 4.4 percent, reaching over 1.1 million persons by the year 2000.

#### State Government Revenues and Expenditures

Exogenous revenue assumptions were based upon the first quarter 1982 petroleum production revenue forecast prepared by the Alaska

Department of Revenue. These exogenous revenue assumptions are summarized in Table I-1. In addition, revenues associated with specific projects were assumed.

Given the revenue assumptions, state government expenditures could not continue to grow at a rate comparable to those of recent experience without provoking a state government fiscal crisis by the late '90s. On the other hand, major cuts in state spending, in particular operating expenditures, are not especially plausible to expect in the face of accumulating petroleum revenues. Consequently, in both the base case and impact cases, a two-phase expenditure policy was assumed over the forecast period. As long as the real per capita accumulated balances are growing, nominal expenditures grow at eight percent annually, approximately the growth rate required to maintain current per capita service levels. Once such balances begin to decline, however, capital expenditures are cut at a rate of ten percent annually, and the personal income tax is reintroduced with its historical structure. The combination of tax increases and capital budget cuts limits the decline in state government employment to a very small rate.

#### Exogenous Employment Assumptions

The MAP model treats a number of categories of employment as exogenous. Employment in these industries is assumed, and constitutes one of the major driving assumptions for the model. The categories are listed in Table I-2.

TABLE I-1

MAP MODEL ENDOGENOUS REVENUE ASSUMPTIONS

MILLIONS OF CURRENT \$

	STATE PROPERTY TAX REVENUE	STATE BONUS PAYMENT REVENUE	STATE ROYALTY INCOME	STATE PRODUCTION TAX REVENUE	STATE CORPORATE PETROLEUM TAX REVENUE
1980	175.000	0.000	881.300	469.900	135.120
1981	143.000	0.000	1389.000	1156.000	860.000
1982	155.000	0.000	1666.000	1578.000	820.000
1983	157.000	0.000	2087.000	2102.000	495.000
1984	157.000	0.000	2463.000	2480.000	593.160
1985	157.000	0.000	2894.000	2896.000	694.800
1986	157.000	0.000	3473.000	3497.000	836.400
1987	157.000	0.000	3962.000	3978.000	952.800
1988	157.000	0.000	4404.000	3675.000	969.480
1989	157.000	0.000	4928.000	4149.000	1089.240
1990	157.000	0.000	4830.000	4002.000	1059.840
1991	157.000	0.000	4641.000	3752.000	1007.160
1992	157.000	0.000	4631.000	3656.000	994.440
1993	157.000	0.000	4814.000	3775.000	1030.680
1994	157.000	0.000	4718.000	3661.000	1005.480
1995	157.000	0.000	4481.000	3417.000	947.760
1996	157.000	0.000	4380.000	3256.000	916.320
1997	157.000	0.000	4659.000	3420.000	969.480
1998	157.000	0.000	4659.000	3420.000	969.480
1999	157.000	0.000	4659.000	3420.000	969.480
2000	157.000	0.000	4659.000	3420.000	969.480
2001	157.000	0.000	4659.000	3420.000	969.480
2002	157.000	0.000	4659.000	3420.000	969.480
2003	157.000	0.000	4659.000	3420.000	969.480
2004	157.000	0.000	4659.000	3420.000	969.480
2005	157.000	0.000	4659.000	3420.000	969.480
2006	157.000	0.000	4659.000	3420.000	969.480
2007	157.000	0.000	4659.000	3420.000	969.480
2008	157.000	0.000	4659.000	3420.000	969.480
2009	157.000	0.000	4659.000	3420.000	969.480
2010	157.000	0.000	4659.000	3420.000	969.480

SOURCE: MAP MODEL, CASE DOR.381

TABLE I-2  
MAP MODEL EXOGENOUS EMPLOYMENT CATEGORIES

Agricultural Employment

Mining Employment

High Wage Exogenous Construction Employment\*

Low Wage Exogenous Construction Employment

High Wage Exogenous Manufacturing Employment

Low Wage Exogenous Manufacturing Employment

Exogenous Transportation Employment

Fish Harvesting Employment

Active Duty Military Employment

Civilian Federal Employment

\*Primarily used for major construction projects such as the trans-Alaska pipeline.

Employment in some categories, such as Civilian Federal Employment, is assumed directly. For other categories, such as mining employment, assumptions are based on employment assumptions for a number of different industries and special projects, all of which contribute employment to the category. Below, we briefly review the employment assumptions for different projects and industries upon which the total exogenous employment assumptions are based. Tables I-3 to I-24, at the end of this appendix, show these assumptions in detail.

#### Trans-Alaska Pipeline (Table I-3)

Additional construction employment of 90 is assumed in connection with construction of new pump stations. Constant operating employment of 1500 is assumed.

#### Alaska Natural Gas Transportation System (Table I-4)

Construction employment on the Northwest Alaska Pipeline is assumed to peak at 10,589 in 1988, falling to a long-term total of 319 persons in transportation and petroleum sector employment.

#### Prudhoe Bay and Kuparuk Petroleum Production (Table I-5)

In addition to the existing Prudhoe Bay and Kuparuk operating work force, additional construction employment is generated in connection with secondary recovery projects and expansion of the Kuparuk field. Long-run operating employment is 2502.



Upper Cook Inlet Petroleum Production (Table I-6)

Declining oil production employment is offset by expanding gas production, resulting in a constant work force of 778.

National Petroleum Reserve in Alaska (Table I-7)

Five commercial fields are assumed to be discovered and developed, representing 1.85 billion barrels of oil and 2.73 trillion cubic feet of gas. Construction employment peaks at 550 in 1987, while long-run transportation and mining employment total 336.

OCS Development (Tables I-8 - I-13)

Prior to the scheduled date of OCS Sale 83, eight other OCS sales will have occurred, as follows:

<u>Sale</u>	<u>Location</u>	<u>Date</u>
46	Gulf of Alaska	1976
CI	Lower Cook Inlet	1977
BF	Beaufort Sea	1979
55	Gulf of Alaska	1980
60	Lower Cook Inlet	1981
71	Beaufort Sea	1982
57	Bering-Norton	1983
70	St. George	1983

The first Gulf of Alaska sale (Sale 46) resulted in the drilling of ten dry holes, and exploration has ended in these tracts. Disappointing results of exploration on tracts leased in Lower Cook Inlet (Sale CI) in 1977 also resulted, at least temporarily, in a halt to exploration there.

In the base case, no future employment is assumed to result from Sale 46. In addition, it is assumed that no recoverable resources are discovered on tracts leased in Sales CI, 55, 57, 60 and 70; that is, such sales are assumed to generate only exploration employment. The level of recoverable resources in the remaining two sales is assumed to be the USGS estimated mean for the areas, as shown below:

<u>Sale</u>	<u>Location</u>	<u>Recoverable Oil</u>	<u>Recoverable Gas</u>
BF	Beaufort Sea	.75 BBO	1.625 TCFG
71	Beaufort Sea	2.38 BBO	1.78 TCFG

SOURCES: U.S. Department of the Interior, Final Environmental Impact Statement, Proposed Federal-State Oil and Gas Lease Sale, Beaufort Sea, page 6; U.S. Department of the Interior, Draft Environmental Impact Statement, Proposed Oil and Gas Lease Sale 71, Diapir Field (December 1981), page xii.

Exploration in 1982 on Sale CI is assumed to provide 38 jobs in mining and 9 jobs in transportation. No subsequent employment is provided by Sale CI. The levels of employment assumed for the remaining six OCS sales are shown in Tables I-8 - I-13.

#### Beluga Coal

A coal export program from the Beluga fields is implemented beginning in 1985. Construction employment peaks at 400 in 1987. Long-run operations employment is 524.

#### Red Dog Mine (Table I-15)

Construction employment at the Red Dog Mine near Kotzebue reaches a maximum of 200 in 1986. Long-run mining employment is 448.

U.S. Borax Mine (Table I-16)

Construction employment at the U.S. Borax Mine reaches a maximum of 500 in 1985. Long-run operating employment is 790.

Other Mining (Table I-17)

Other mining employment is assumed to grow at a constant rate of one percent per year, from 3171 in 1982 to 3869 in 2000.

Agriculture (Table I-18)

Agriculture grows at a moderate rate, with total employment expanding from 183 in 1980 to 308 in 2000.

Lumber and Pulp Processing (Table I-19)

Employment in lumber and pulp processing increases from 2204 in 1980 to a maximum of 4103 in 2000.

Commercial Fishing - Non-bottomfish (Table I-20)

Fishing employment remains constant at 7123. Fish harvesting employment remains constant at 6363.

Commercial Fishing - Bottomfish (Table I-21)

Bottomfish harvesting employment expands from 36 in 1982 to over 1137 in 2000, while resident bottomfish processing employment expands from 18 to 3873. This case assumes full takeover of the foreign bottomfish catch by U.S. fishermen and the establishment of

a sizable onshore processing industry. Since the future evolution of the bottomfish industry is highly uncertain, these assumptions are also highly tenuous.

Hydroelectric Projects (Table I-22)

Construction employment on hydroelectric projects presently underway at Tyee and Terror Lakes peaks at 520 in 1983.

Federal Civilian and Military Employment (Tables I-23, I-24)

Federal military employment remains constant at 23,323. Federal civilian employment grows at .5 percent per year, from 18,005 in 1980 to 19,893 in 2000.







TABLE I-6

UPPER COOK INLET OIL AND GAS

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

MINING  
EMPLOYMENT

1980	0.778
1981	0.778
1982	0.778
1983	0.778
1984	0.778
1985	0.778
1986	0.778
1987	0.778
1988	0.778
1989	0.778
1990	0.778
1991	0.778
1992	0.778
1993	0.778
1994	0.778
1995	0.778
1996	0.778
1997	0.778
1998	0.778
1999	0.778
2000	0.778
2001	0.778
2002	0.778
2003	0.778
2004	0.778
2005	0.778
2006	0.778
2007	0.778
2008	0.778
2009	0.778
2010	0.778

SOURCE: MAP MODEL CASE UPC.01:





TABLE I-8

3 FEDERAL/STATE LEASE SALE (BEAUFORT SEA)

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

	MINING EMPLOYMENT	HIGH WAGE EXOG CON- STRUCTION EMPLOYMENT
1980	0.000	0.000
1981	0.066	0.062
1982	0.197	0.188
1983	0.197	0.135
1984	0.230	0.211
1985	0.066	0.150
1986	0.112	0.305
1987	0.276	0.383
1988	0.479	0.466
1989	0.616	0.466
1990	0.595	0.155
1991	0.524	0.155
1992	0.503	0.077
1993	0.432	0.155
1994	0.435	0.155
1995	0.438	0.077
1996	0.440	0.022
1997	0.417	0.000
1998	0.393	0.000
1999	0.393	0.000
2000	0.394	0.000
2001	0.318	0.000
2002	0.287	0.000
2003	0.253	0.000
2004	0.224	0.000
2005	0.201	0.000
2006	0.178	0.000
2007	0.157	0.000
2008	0.138	0.000
2009	0.000	0.000
2010	0.000	0.000

SOURCE: WAF MODEL 1-15 2011

TABLE I-9

DCS SALE 55 (GULF OF ALASKA)

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

	MINING EMPLOYMENT	EXOS TRANS- PORTATION EMPLOYMENT
1980	0.000	0.000
1981	0.030	0.013
1982	0.030	0.028
1983	0.030	0.028
1984	0.030	0.020
1985	0.000	0.007
1986	0.000	0.000
1987	0.000	0.000
1988	0.000	0.000
1989	0.000	0.000
1990	0.000	0.000
1991	0.000	0.000
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

SOURCE: MAP MODEL CASE DCS.55X

TABLE I-10

DCS SALE 57 (BERING/NORTON)

\*\*\*\*\*  
 EMPLOYMENT ASSUMPTIONS  
 \*\*\*\*\*  
 THOUSANDS OF EMPLOYEES  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*

	MINING EMPLOYMENT	LOW WAGE EXOG CON- STRUCTION EMPLOYMENT	EXOG TRANS- PORTATION EMPLOYMENT
	-----	-----	-----
1980	0.000	0.000	0.000
1981	0.000	0.000	0.000
1982	0.000	0.000	0.000
1983	0.026	0.000	0.015
1984	0.056	0.005	0.031
1985	0.030	0.005	0.016
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	0.000
1991	0.000	0.000	0.000
1992	0.000	0.000	0.000
1993	0.000	0.000	0.000
1994	0.000	0.000	0.000
1995	0.000	0.000	0.000
1996	0.000	0.000	0.000
1997	0.000	0.000	0.000
1998	0.000	0.000	0.000
1999	0.000	0.000	0.000
2000	0.000	0.000	0.000
2001	0.000	0.000	0.000
2002	0.000	0.000	0.000
2003	0.000	0.000	0.000
2004	0.000	0.000	0.000
2005	0.000	0.000	0.000
2006	0.000	0.000	0.000
2007	0.000	0.000	0.000
2008	0.000	0.000	0.000
2009	0.000	0.000	0.000
2010	0.000	0.000	0.000

SOURCE: MAP MODEL CASE DCS.57X



TABLE I-12

DCS SALE 70 (ST. GEORGE)

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

	MINING EMPLOYMENT	EXD5 TRANS- PORTATION EMPLOYMENT
1980	0.000	0.000
1981	0.000	0.000
1982	0.000	0.000
1983	0.050	0.023
1984	0.064	0.037
1985	0.072	0.046
1986	0.065	0.039
1987	0.044	0.008
1988	0.000	0.000
1989	0.000	0.000
1990	0.000	0.000
1991	0.000	0.000
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

SOURCE: MAP MODEL CASE DCS.70L

TABLE I-13

DCS SALE 71 (BEAUFORT SEA)

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

	MINING EMPLOYMENT	LOW WAGE EXOG CON- STRUCTION EMPLOYMENT	EXOG TRANS- PORTATION EMPLOYMENT
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	0.037	0.000
1985	0.032	0.000	0.007
1986	0.052	0.000	0.017
1987	0.053	0.000	0.018
1988	0.052	0.000	0.017
1989	0.000	0.000	0.000
1990	0.000	0.076	0.000
1991	1.205	0.077	0.000
1992	1.353	0.035	0.090
1993	1.393	0.000	0.247
1994	1.393	0.000	0.363
1995	1.408	0.000	0.363
1996	1.178	0.000	0.363
1997	0.970	0.000	0.363
1998	0.970	0.000	0.363
1999	0.985	0.000	0.363
2000	0.996	0.000	0.363
2001	0.996	0.000	0.363
2002	0.996	0.000	0.363
2003	0.996	0.000	0.363
2004	0.996	0.000	0.363
2005	0.996	0.000	0.363
2006	0.996	0.000	0.363
2007	0.996	0.000	0.363
2008	0.996	0.000	0.363
2009	0.996	0.000	0.363
2010	0.996	0.000	0.363

SOURCE: MAP MODEL CASE DCS.71M

TABLE I-14

BELUGA COAL DEVELOPMENT

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

	MINING EMPLOYMENT	LOW WAGE EXOG CON- STRUCTION EMPLOYMENT	EXOG TRANS- PORTATION EMPLOYMENT
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	0.150	0.000
1986	0.000	0.300	0.000
1987	0.000	0.400	0.000
1988	0.000	0.350	0.000
1989	0.000	0.200	0.000
1990	0.210	0.100	0.053
1991	0.419	0.000	0.105
1992	0.419	0.000	0.105
1993	0.419	0.000	0.105
1994	0.419	0.000	0.105
1995	0.419	0.000	0.105
1996	0.419	0.000	0.105
1997	0.419	0.000	0.105
1998	0.419	0.000	0.105
1999	0.419	0.000	0.105
2000	0.419	0.000	0.105
2001	0.419	0.000	0.105
2002	0.419	0.000	0.105
2003	0.419	0.000	0.105
2004	0.419	0.000	0.105
2005	0.419	0.000	0.105
2006	0.419	0.000	0.105
2007	0.419	0.000	0.105
2008	0.419	0.000	0.105
2009	0.419	0.000	0.105
2010	0.419	0.000	0.105

SOURCE: MAP MODEL CASE BCL.04T



TABLE I-15

RED DOG MINE

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

	MINING EMPLOYMENT	LOW WAGE EXOG CON- STRUCTION EMPLOYMENT
1980	0.025	0.000
1981	0.025	0.000
1982	0.025	0.000
1983	0.025	0.000
1984	0.035	0.100
1985	0.021	0.150
1986	0.026	0.200
1987	0.021	0.150
1988	0.448	0.000
1989	0.448	0.000
1990	0.448	0.000
1991	0.448	0.000
1992	0.448	0.000
1993	0.448	0.000
1994	0.448	0.000
1995	0.448	0.000
1996	0.448	0.000
1997	0.448	0.000
1998	0.448	0.000
1999	0.448	0.000
2000	0.448	0.000
2001	0.448	0.000
2002	0.448	0.000
2003	0.448	0.000
2004	0.448	0.000
2005	0.448	0.000
2006	0.448	0.000
2007	0.448	0.000
2008	0.448	0.000
2009	0.448	0.000
2010	0.448	0.000

SOURCE: MAP MODEL CASE RED.PJH



TABLE I-17

OTHER MINING

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

MINING  
EMPLOYMENT

1980	3.171
1981	3.203
1982	3.235
1983	3.267
1984	3.300
1985	3.333
1986	3.367
1987	3.400
1988	3.434
1989	3.469
1990	3.503
1991	3.538
1992	3.574
1993	3.609
1994	3.645
1995	3.682
1996	3.719
1997	3.756
1998	3.793
1999	3.831
2000	3.869
2001	3.908
2002	3.947
2003	3.986
2004	4.026
2005	4.066
2006	4.107
2007	4.148
2008	4.190
2009	4.231
2010	4.274

SOURCE: MAP MODEL CASE DMN.EPH



TABLE I-19

FORESTRY, LUMBER, AND PULP  
 ───────────────────────────────────  
 EMPLOYMENT ASSUMPTIONS  
 ───────────────────────────────────  
 THOUSANDS OF EMPLOYEES  
 ───────────────────────────────────  
 ───────────────────────────────────  
 ───────────────────────────────────

LOW WAGE  
 EXOG MANU-  
 FACTURING  
 EMPLOYMENT  
 -----

1980	2.204
1981	2.273
1982	2.345
1983	2.418
1984	2.494
1985	2.572
1986	2.653
1987	2.736
1988	2.822
1989	2.911
1990	3.001
1991	3.096
1992	3.193
1993	3.293
1994	3.396
1995	3.503
1996	3.613
1997	3.727
1998	3.843
1999	3.964
2000	4.103
2001	4.103
2002	4.103
2003	4.103
2004	4.103
2005	4.103
2006	4.103
2007	4.103
2008	4.103
2009	4.103
2010	4.103

SOURCE: MAP MODEL CASE FLP.SCM

TABLE I-20

COMMERCIAL FISHING (NON-BOTTOMFISH)

EMPLOYMENT ASSUMPTIONS

THOUSANDS OF EMPLOYEES

LOW WAGE  
EXDS MANU- FISH  
FACTURING HARVESTING  
EMPLOYMENT EMPLOYMENT

	LOW WAGE EXDS MANU- FACTURING EMPLOYMENT	FISH HARVESTING EMPLOYMENT
1980	7.123	6.363
1981	7.123	6.363
1982	7.123	6.363
1983	7.123	6.363
1984	7.123	6.363
1985	7.123	6.363
1986	7.123	6.363
1987	7.123	6.363
1988	7.123	6.363
1989	7.123	6.363
1990	7.123	6.363
1991	7.123	6.363
1992	7.123	6.363
1993	7.123	6.363
1994	7.123	6.363
1995	7.123	6.363
1996	7.123	6.363
1997	7.123	6.363
1998	7.123	6.363
1999	7.123	6.363
2000	7.123	6.363
2001	7.123	6.363
2002	7.123	6.363
2003	7.123	6.363
2004	7.123	6.363
2005	7.123	6.363
2006	7.123	6.363
2007	7.123	6.363
2008	7.123	6.363
2009	7.123	6.363
2010	7.123	6.363

SOURCE: MAP MODEL CASE TCF.001









TABLE I-24

FEDERAL CIVILIAN  
 EMPLOYMENT ASSUMPTIONS  
 THOUSANDS OF EMPLOYEES

CIVILIAN FEDERAL EMPLOYMENT	
-----	
1980	18.005
1981	18.095
1982	18.185
1983	18.276
1984	18.367
1985	18.459
1986	18.551
1987	18.644
1988	18.737
1989	18.831
1990	18.925
1991	19.020
1992	19.115
1993	19.211
1994	19.307
1995	19.403
1996	19.500
1997	19.598
1998	19.696
1999	19.794
2000	19.893
2001	19.993
2002	20.092
2003	20.193
2004	20.294
2005	20.395
2006	20.497
2007	20.600
2008	20.703
2009	20.806
2010	20.910

SOURCE: MAP MODEL CASE GFC.EPM

APPENDIX J: SALE 83 (NAVARIN BASIN)  
EMPLOYMENT ASSUMPTIONS

OCS annual employment figures were provided by the Alaska OCS office for 17 different job categories. These job categories are listed in Table J-1. This appendix discusses the procedures used to convert these employment assumptions into inputs for the MAP and SCIMP models.

The employment figures were provided for four different cases which differ with respect to the oil and gas resources which are assumed to be discovered as well as the location of facilities. The cases are referred to as the .6 Bbbl case, the 1.2 Bbbl remote case, the 1.2 Bbbl road-connected case, and the 2.4 Bbbl case. The difference between the two 1.2 Bbbl cases is in the assumption about whether or not the oil trans-shipment facility in the Aleutians is road-connected to an established community.

The OCS employment associated with each case is shown in Tables J-2 through J-4. The assumed locations of facilities for each case are shown in Table J-5. Tables J-6 through J-9 show, in matrix form, these job location assumptions as applied to the OCS job categories.

After assigning employment by location, the next step in determining OCS employment inputs for the MAP and SCIMP models was to determine residency patterns of workers. The SEAR (share of employment to

Alaska residents) and SELR (share of employment to local residents) assumptions used are shown in Table J-10.

The MAP and SCIMP model OCS employment inputs were obtained by applying the residency coefficients to the employment figures for each location and aggregating these numbers. The MAP model employment inputs are given in Tables J-11 to J-13. For the MAP model, non-Alaska residents were counted as half an employee, in order to take account of the smaller impact that they have upon the Alaskan economy. The SCIMP model employment inputs are given in Tables J-14 through J-17.

TABLE J-1. OCS EMPLOYMENT CATEGORIES,  
AS PROVIDED BY OCS OFFICE

1	Exploration drilling rigs
2	Exploration aircraft
3	Exploration vessels
4	Exploration shore bases
5	Construction platform installation
6	Construction shore bases
7	Pipeline construction
8	Oil terminal construction
9	LNG terminal construction
10	Production drilling
11	Production aircraft
12	Production vessels
13	Production shore bases
14	Production headquarters
15	Production oil terminal
16	Production LNG terminal
17	Production operations

TABLE J-2. OCS EMPLOYMENT ASSUMPTIONS, BY JOB:  
.6 Bbb1 Case\*

YEAR	1	2	3	4	5	6	7	8
1985	0.	0.	0.	0.	0.	400.	0.	0.
1986	160.	12.	40.	40.	0.	0.	0.	0.
1987	240.	18.	60.	40.	0.	0.	0.	0.
1988	400.	30.	100.	40.	0.	0.	0.	0.
1989	400.	30.	100.	40.	0.	500.	0.	0.
1990	560.	42.	140.	40.	0.	250.	0.	0.
1991	320.	24.	80.	40.	1112.	0.	0.	0.
1992	80.	6.	20.	40.	2224.	0.	0.	0.
1993	0.	0.	0.	0.	3336.	0.	0.	0.
1994	0.	0.	0.	0.	1112.	0.	0.	0.
1995	0.	0.	0.	0.	1112.	0.	0.	0.
1996	0.	0.	0.	0.	0.	0.	0.	0.
1997	0.	0.	0.	0.	0.	0.	0.	0.
1998	0.	0.	0.	0.	0.	0.	0.	0.
1999	0.	0.	0.	0.	0.	0.	0.	0.
2000	0.	0.	0.	0.	0.	0.	0.	0.
2001	0.	0.	0.	0.	0.	0.	0.	0.
2002	0.	0.	0.	0.	0.	0.	0.	0.
2003	0.	0.	0.	0.	0.	0.	0.	0.
2004	0.	0.	0.	0.	0.	0.	0.	0.
2005	0.	0.	0.	0.	0.	0.	0.	0.
2006	0.	0.	0.	0.	0.	0.	0.	0.
2007	0.	0.	0.	0.	0.	0.	0.	0.
2008	0.	0.	0.	0.	0.	0.	0.	0.
2009	0.	0.	0.	0.	0.	0.	0.	0.
2010	0.	0.	0.	0.	0.	0.	0.	0.
2011	0.	0.	0.	0.	0.	0.	0.	0.
2012	0.	0.	0.	0.	0.	0.	0.	0.
2013	0.	0.	0.	0.	0.	0.	0.	0.
2014	0.	0.	0.	0.	0.	0.	0.	0.
2015	0.	0.	0.	0.	0.	0.	0.	0.
2016	0.	0.	0.	0.	0.	0.	0.	0.
2017	0.	0.	0.	0.	0.	0.	0.	0.
2018	0.	0.	0.	0.	0.	0.	0.	0.
2019	0.	0.	0.	0.	0.	0.	0.	0.
2020	0.	0.	0.	0.	0.	0.	0.	0.

\*See Table J-1 for job code.

SOURCE: Alaska OCS Office.

TABLE J-2. OCS EMPLOYMENT ASSUMPTIONS, BY JOB:  
 .6 Bbb1 Case\*

(Continued)

9	10	11	12	13	14	15	16	17
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	200.	0.	0.	0.	0.
0.	0.	0.	0.	200.	0.	0.	0.	0.
0.	0.	0.	0.	200.	0.	0.	0.	0.
0.	0.	0.	0.	200.	0.	0.	0.	0.
0.	0.	0.	0.	200.	0.	0.	0.	0.
0.	0.	6.	60.	200.	0.	0.	0.	180.
0.	224.	18.	180.	200.	0.	0.	0.	541.
0.	672.	36.	360.	300.	2.	0.	0.	1080.
0.	1344.	42.	420.	300.	- 4.	18.	0.	1240.
0.	1368.	48.	480.	300.	12.	26.	0.	1440.
0.	1792.	48.	480.	300.	16.	33.	0.	1440.
0.	1807.	48.	480.	300.	21.	33.	0.	1440.
0.	1613.	48.	480.	300.	31.	33.	0.	1440.
0.	1210.	48.	480.	300.	31.	33.	0.	1440.
0.	553.	48.	480.	300.	31.	33.	0.	1440.
0.	344.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	120.	48.	480.	300.	31.	33.	0.	1440.
0.	60.	24.	240.	150.	16.	0.	0.	800.
0.	60.	24.	240.	150.	16.	0.	0.	800.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.

TABLE J-3. OCS EMPLOYMENT ASSUMPTIONS, BY JOB:  
1.2 Bbb1 Cases\*

YEAR	1	2	3	4	5	6	7	8
1985	0.	0.	0.	0.	0.	400.	0.	0.
1986	240.	18.	60.	40.	0.	0.	0.	0.
1987	640.	48.	180.	40.	0.	0.	0.	0.
1988	720.	54.	180.	40.	0.	0.	0.	0.
1989	720.	54.	180.	40.	0.	500.	0.	0.
1990	480.	36.	120.	40.	0.	250.	0.	0.
1991	240.	18.	60.	40.	950.	0.	0.	0.
1992	80.	6.	20.	40.	1424.	0.	672.	942.
1993	0.	0.	0.	0.	1899.	0.	672.	942.
1994	0.	0.	0.	0.	1424.	0.	0.	0.
1995	0.	0.	0.	0.	475.	0.	0.	0.
1996	0.	0.	0.	0.	0.	0.	0.	0.
1997	0.	0.	0.	0.	0.	0.	0.	0.
1998	0.	0.	0.	0.	0.	0.	0.	0.
1999	0.	0.	0.	0.	0.	0.	0.	0.
2000	0.	0.	0.	0.	0.	0.	0.	0.
2001	0.	0.	0.	0.	0.	0.	0.	0.
2002	0.	0.	0.	0.	0.	0.	0.	0.
2003	0.	0.	0.	0.	0.	0.	0.	0.
2004	0.	0.	0.	0.	0.	0.	0.	0.
2005	0.	0.	0.	0.	0.	0.	0.	0.
2006	0.	0.	0.	0.	0.	0.	0.	0.
2007	0.	0.	0.	0.	0.	0.	0.	0.
2008	0.	0.	0.	0.	0.	0.	0.	0.
2009	0.	0.	0.	0.	0.	0.	0.	0.
2010	0.	0.	0.	0.	0.	0.	0.	0.
2011	0.	0.	0.	0.	0.	0.	0.	0.
2012	0.	0.	0.	0.	0.	0.	0.	0.
2013	0.	0.	0.	0.	0.	0.	0.	0.
2014	0.	0.	0.	0.	0.	0.	0.	0.
2015	0.	0.	0.	0.	0.	0.	0.	0.
2016	0.	0.	0.	0.	0.	0.	0.	0.
2017	0.	0.	0.	0.	0.	0.	0.	0.
2018	0.	0.	0.	0.	0.	0.	0.	0.
2019	0.	0.	0.	0.	0.	0.	0.	0.
2020	0.	0.	0.	0.	0.	0.	0.	0.

\*See Table J-1 for job code.

SOURCE: Alaska OCS Office.





TABLE J-4. OCS EMPLOYMENT ASSUMPTIONS, BY JOB:  
2.4 Bbb1 Cases\*

YEAR	1	2	3	4	5	6	7	8
1985	0.	0.	0.	0.	0.	400.	0.	0.
1986	400.	30.	100.	40.	0.	0.	0.	0.
1987	960.	72.	240.	40.	0.	0.	0.	0.
1988	560.	42.	140.	40.	0.	0.	0.	0.
1989	880.	66.	220.	40.	0.	500.	0.	0.
1990	720.	54.	180.	40.	0.	250.	0.	0.
1991	320.	24.	80.	40.	950.	0.	0.	0.
1992	240.	18.	60.	40.	1899.	0.	1343.	1550.
1993	80.	6.	20.	40.	2374.	0.	1343.	1550.
1994	0.	0.	0.	0.	1899.	0.	0.	0.
1995	0.	0.	0.	0.	950.	0.	0.	0.
1996	0.	0.	0.	0.	475.	0.	0.	0.
1997	0.	0.	0.	0.	0.	0.	0.	0.
1998	0.	0.	0.	0.	0.	0.	0.	0.
1999	0.	0.	0.	0.	0.	0.	0.	0.
2000	0.	0.	0.	0.	0.	0.	0.	0.
2001	0.	0.	0.	0.	0.	0.	0.	0.
2002	0.	0.	0.	0.	0.	0.	0.	0.
2003	0.	0.	0.	0.	0.	0.	0.	0.
2004	0.	0.	0.	0.	0.	0.	0.	0.
2005	0.	0.	0.	0.	0.	0.	0.	0.
2006	0.	0.	0.	0.	0.	0.	0.	0.
2007	0.	0.	0.	0.	0.	0.	0.	0.
2008	0.	0.	0.	0.	0.	0.	0.	0.
2009	0.	0.	0.	0.	0.	0.	0.	0.
2010	0.	0.	0.	0.	0.	0.	0.	0.
2011	0.	0.	0.	0.	0.	0.	0.	0.
2012	0.	0.	0.	0.	0.	0.	0.	0.
2013	0.	0.	0.	0.	0.	0.	0.	0.
2014	0.	0.	0.	0.	0.	0.	0.	0.
2015	0.	0.	0.	0.	0.	0.	0.	0.
2016	0.	0.	0.	0.	0.	0.	0.	0.
2017	0.	0.	0.	0.	0.	0.	0.	0.
2018	0.	0.	0.	0.	0.	0.	0.	0.
2019	0.	0.	0.	0.	0.	0.	0.	0.
2020	0.	0.	0.	0.	0.	0.	0.	0.

\*See Table J-1 for job code.

SOURCE: Alaska OCS Office.



TABLE J-5: ASSUMED LOCATIONS OF AIR AND MARINE SUPPORT  
AND OIL AND LNG TERMINAL EMPLOYMENT, BY CASE (a)

	<u>Case</u>		
	<u>.6 Bbb1</u>	<u>1.2 Bbb1 (Both)</u>	<u>2.4 Bbb1</u>
<u>Air Support (b)</u>	50% Cold Bay 50% St. Matthew	50% Cold Bay 50% St. Matthew	50% Cold Bay 50% St. Paul
<u>Marine Support (b)</u>			
Exploration Phase	Dutch Harbor	Dutch Harbor	Dutch Harbor
Construction and Development/ Production Phase	Dutch Harbor	50% Dutch Harbor 50% St. Matthew	50% Dutch Harbor 50% St. Paul
<u>Oil Terminals</u>			
	Transshipment point at remote site in Aleutians	St. Matthew, trans- shipment point at remote or road- connected site in Aleutians	St. Paul, trans- shipment point at remote site in Aleutians
<u>LNG Terminals</u>	None	St. Matthew	St. Paul

(a) All other employment is assumed to be located offshore except for "headquarters," which is in Anchorage. See text for breakdowns of "aircraft/vessels" into marine and air support.

(b) Includes associated "shore base" employment.

TABLE J-6: EMPLOYMENT LOCATION ASSUMPTIONS, BY JOB:  
 .6 Bbb1 Case (Share of Employment, By Location)\*

JOB	DUTCH HARBOR	COLD BAY	REMOTE	ST MATTHEW	OFFSHORE	ANCHORAGE
1	0.	0.	0.	0.	1.0000	0.
2	0.	0.5000	0.	0.5000	0.	0.
3	1.0000	0.	0.	0.1154	0.	0.
4	0.7692	0.1154	0.	0.	1.0000	0.
5	0.	0.	0.	0.0115	0.	0.
6	0.0769	0.0115	0.9000	0.	1.0000	0.
7	0.	0.	0.	0.6670	0.	0.
8	0.	0.	0.3330	1.0000	0.	0.
9	0.	0.	0.	0.	1.0000	0.
10	0.	0.	0.	0.5000	0.	0.
11	0.	0.5000	0.	0.	0.	0.
12	1.0000	0.	0.	0.0455	0.	0.
13	0.9091	0.0455	0.	0.	0.	1.0000
14	0.	0.	0.	0.	0.	0.
15	0.	0.	1.0000	1.0000	0.	0.
16	0.	0.	0.	0.	0.9200	0.
17	0.0800	0.	0.	0.	0.	0.

\*See Table J-1 for job code explanation. For 1985 only, the location numbers for job 6, reading across, are .7692, .1154, 0, .1134, 0, and 0.

TABLE J-7: EMPLOYMENT LOCATION ASSUMPTIONS, BY JOB:  
 1.2 Bbb1 Road-Connected Case  
 (Share of Employment, By Location)\*

JOB	DUTCH HARBOR	COLD BAY	REMOTE	ST MATTHEW	OFFSHORE	ANCHORAGE
1	0.	0.	0.	0.	1.0000	0.
2	0.	0.5000	0.	0.5000	0.	0.
3	1.0000	0.	0.	0.	0.	0.
4	0.7692	0.1154	0.	0.1154	0.	0.
5	0.	0.	0.	0.	1.0000	0.
6	0.0769	0.0115	0.9000	0.0115	0.	0.
7	0.	0.	0.	0.	1.0000	0.
8	0.	0.	0.3330	0.6670	0.	0.
9	0.	0.	0.	1.0000	0.	0.
10	0.	0.	0.	0.	1.0000	0.
11	0.	0.5000	0.	0.5000	0.	0.
12	0.5000	0.	0.	0.5000	0.	0.
13	0.4545	0.0455	0.	0.5000	0.	0.
14	0.	0.	0.	0.	0.	0.
15	0.	0.	0.3330	0.6670	0.	1.0000
16	0.	0.	0.	1.0000	0.	0.
17	0.0800	0.	0.	0.	0.9200	0.

\*See Table J-1 for job code explanation. For 1985 only, the location numbers for job 6, reading across, are .7692, .1154, 0, .1134, 0, and 0.

TABLE J-8. EMPLOYMENT LOCATION ASSUMPTIONS, BY JOB:  
 1.2 Bbb1 Remote Case  
 (Share of Employment, By Location)\*

JOB	DUTCH HARBOR	COLD BAY	REMOTE	ST MATTHEW	OFFSHORE	ANCHORAGE
1	0.	0.	0.	0.	1.0000	0.
2	0.	0.5000	0.	0.5000	0.	0.
3	1.0000	0.	0.	0.	0.	0.
4	0.7692	0.1154	0.	0.1154	0.	0.
5	0.	0.	0.	0.	1.0000	0.
6	0.0769	0.0115	0.9000	0.0115	0.	0.
7	0.	0.	0.	0.	1.0000	0.
8	0.	0.	0.3330	0.6670	0.	0.
9	0.	0.	0.	1.0000	0.	0.
10	0.	0.	0.	0.	1.0000	0.
11	0.	0.5000	0.	0.5000	0.	0.
12	0.5000	0.	0.	0.5000	0.	0.
13	0.4545	0.0455	0.	0.5000	0.	0.
14	0.	0.	0.	0.	0.	1.0000
15	0.	0.	0.3330	0.6670	0.	0.
16	0.	0.	0.	1.0000	0.	0.
17	0.0800	0.	0.	0.	0.9200	0.

\*See Table J-1 for job code explanation. For 1985 only, the location numbers for job 6, reading across, are .7692, .1154, 0, .1134, 0, and 0.

TABLE J-9. EMPLOYMENT LOCATION ASSUMPTIONS, BY JOB:  
 2.4 Bbb1 Case  
 (Share of Employment, by Location)\*

JOB	DUTCH HARBOR	COLD BAY	REMOTE	ST MATTHEW	OFFSHORE	ANCHORAGE
1	0.	0.	0.	0.	1.0000	0.
2	0.	0.5000	0.	0.5000	0.	0.
3	1.0000	0.	0.	0.	0.	0.
4	0.7692	0.1154	0.	0.1154	0.	0.
5	0.	0.	0.	0.	1.0000	0.
6	0.0769	0.0115	0.9000	0.0115	0.	0.
7	0.	0.	0.	0.	1.0000	0.
8	0.	0.	0.3330	0.6670	0.	0.
9	0.	0.	0.	1.0000	0.	0.
10	0.	0.	0.	0.	1.0000	0.
11	0.	0.5000	0.	0.5000	0.	0.
12	0.5000	0.	0.	0.5000	0.	0.
13	0.4545	0.0455	0.	0.5000	0.	0.
14	0.	0.	0.	0.	0.	1.0000
15	0.	0.	0.3330	0.6670	0.	0.
16	0.	0.	0.	1.0000	0.	0.
17	0.0800	0.	0.	0.	0.9200	0.

\*See Table J-1 for job code explanation. For 1985 only, the location numbers for job 6, reading across, are .7692, .1154, 0, .1134, 0, and 0.



TABLE J-10: RESIDENCY ASSUMPTIONS FOR OCS EMPLOYMENT,  
SALE 83 (NAVARIN BASIN)

<u>Activity</u>	<u>Assumed Location</u>	<u>SEAR (a)</u>	<u>SELR (b)</u>
<u>Exploration Phase</u>			
Drilling Rigs	Offshore	0	0
Aircraft/Vessels			
Aircraft	Cold Bay	1.0	.05
	St. Matthew	1.0	0
	St. Paul	1.0	0
Vessels	Dutch Harbor	.15	.15
	St. Matthew	.15	0
	St. Paul	.15	0
Shore Bases	Cold Bay	1.0	.1
	Dutch Harbor	1.0	.22
	St. Matthew	1.0	0
	St. Paul	1.0	0
<u>Construction Phase</u>			
Platform Installation	Offshore	.25	0
Shore Base	Cold Bay	.5	.1
	Dutch Harbor	.5	.22
	St. Matthew	.5	0
	St. Paul	.5	0
Pipeline Construct.	Offshore	.25	0
Oil Terminal	Remote transshipment point	.5	0
	Road connected " "	.5	.05
	St. Matthew	.5	0
	St. Paul	.5	0
LNG Terminal	St. Matthew	.5	0
	St. Paul	.5	0
<u>Development/Production Phase</u>			
Development Drilling	Offshore	0	0
Aircraft/Vessels			
Aircraft	Cold Bay	1.0	.05
	St. Matthew	1.0	0
	St. Paul	1.0	0

TABLE J-10: RESIDENCY ASSUMPTIONS FOR OCS EMPLOYMENT,  
 SALE 83 (NAVARIN BASIN) (Continued)

<u>Activity</u>	<u>Assumed Location</u>	<u>SEAR (a)</u>	<u>SELR (b)</u>
Vessels	Dutch Harbor	.95	.18
	St. Matthew	.95	0
	St. Paul	.95	0
Shore Bases	Cold Bay	1.0	.22
	Dutch Harbor	1.0	.22
	St. Matthew	1.0	0
	St. Paul	1.0	0
Headquarters	Anchorage	1.0	0
<u>Oil Terminal</u>	Remote transshipment point	1.0	0
	Road connected " "	1.0	.15
	St. Matthew	1.0	0
	St. Paul	1.0	0
<u>LNG Terminal</u>	St. Matthew	1.0	0
	St. Paul	1.0	0
<u>Production Operations</u>	Offshore	.95	.08

(a) Share of employment to Alaska residents (for use in MAP model).

(b) Share of employment to residents of Aleutian Islands (share of workers not living in enclaves--for use in SCIMP model).

SOURCE: Based on Will Nebesky, "Patterns of Resident Employment in Alaska's Outer Continental Shelf Industry," in Lee Huskey, et al., "Economic and Demographic Structural Change in Alaska," OCS Technical Report Number 73 (Anchorage, BLM Alaska OCS Office, June 1982).

TABLE J-11. MAP MODEL OCS EMPLOYMENT INPUTS:  
 .6 Bbb1 Case

YEAR	EMCNX	EMP9	EMT9X
1980	0.	0.	0.
1981	0.	0.	0.
1982	0.	0.	0.
1983	0.	0.	0.
1984	0.	0.	0.
1985	210.	0.	0.
1986	0.	80.	275.
1987	0.	120.	293.
1988	0.	200.	328.
1989	263.	200.	328.
1990	131.	280.	363.
1991	695.	329.	346.
1992	1390.	659.	366.
1993	2085.	1350.	516.
1994	695.	1874.	588.
1995	695.	2171.	588.
1996	0.	2296.	588.
1997	0.	2309.	588.
1998	0.	2222.	588.
1999	0.	2021.	588.
2000	0.	1672.	588.
2001	0.	1588.	588.
2002	0.	1476.	588.
2003	0.	1476.	588.
2004	0.	1476.	588.
2005	0.	1476.	588.
2006	0.	1476.	588.
2007	0.	1476.	588.
2008	0.	1476.	588.
2009	0.	1476.	588.
2010	0.	1476.	588.
2011	0.	1476.	588.
2012	0.	1476.	588.
2013	0.	1476.	588.
2014	0.	795.	294.
2015	0.	795.	294.
2016	0.	0.	0.
2017	0.	0.	0.
2018	0.	0.	0.
2019	0.	0.	0.
2020	0.	0.	0.

EMCNX: Low wage construction employment  
 EMP9: Mining employment  
 EMT9X: Transportation employment

TABLE J-12. MAP MODEL OCS EMPLOYMENT INPUTS:  
1.2 Bbb1 Cases

YEAR	EMCNX	EMP9	EMT9X
1980	0.	0.	0.
1981	0.	0.	0.
1982	0.	0.	0.
1983	0.	0.	0.
1984	0.	0.	0.
1985	210.	0.	0.
1986	0.	120.	293.
1987	0.	320.	380.
1988	0.	360.	398.
1989	263.	360.	398.
1990	131.	240.	345.
1991	593.	330.	393.
1992	4371.	789.	509.
1993	4668.	1506.	752.
1994	890.	2534.	933.
1995	297.	3114.	983.
1996	0.	3367.	983.
1997	0.	3391.	983.
1998	0.	3196.	983.
1999	0.	2906.	983.
2000	0.	2480.	983.
2001	0.	2152.	983.
2002	0.	2040.	983.
2003	0.	2040.	983.
2004	0.	2040.	983.
2005	0.	2040.	983.
2006	0.	2040.	983.
2007	0.	2040.	983.
2008	0.	2040.	983.
2009	0.	2040.	983.
2010	0.	2040.	983.
2011	0.	2040.	983.
2012	0.	2040.	983.
2013	0.	2040.	983.
2014	0.	2040.	983.
2015	0.	2040.	983.
2016	0.	2040.	983.
2017	0.	820.	502.
2018	0.	820.	502.
2019	0.	0.	0.
2020	0.	0.	0.

EMCNX: Low wage construction employment  
 EMP9: Mining employment  
 EMT9X: Transportation employment

TABLE J-13. MAP MODEL OCS EMPLOYMENT INPUTS:  
2.4 Bbb1 Case

YEAR	EMCNX	EMP9	EMT9X
1980	0.	0.	0.
1981	0.	0.	0.
1982	0.	0.	0.
1983	0.	0.	0.
1984	0.	0.	0.
1985	210.	0.	0.
1986	0.	200.	328.
1987	0.	480.	450.
1988	0.	280.	363.
1989	263.	440.	433.
1990	131.	360.	396.
1991	593.	370.	411.
1992	6751.	974.	594.
1993	7048.	1871.	910.
1994	1187.	3224.	1083.
1995	593.	4100.	1184.
1996	297.	4659.	1234.
1997	0.	4802.	1234.
1998	0.	4614.	1234.
1999	0.	4209.	1234.
2000	0.	3691.	1234.
2001	0.	3258.	1234.
2002	0.	3042.	1234.
2003	0.	2930.	1234.
2004	0.	2930.	1234.
2005	0.	2930.	1234.
2006	0.	2930.	1234.
2007	0.	2930.	1234.
2008	0.	2930.	1234.
2009	0.	2930.	1234.
2010	0.	2930.	1234.
2011	0.	2930.	1234.
2012	0.	2930.	1234.
2013	0.	2930.	1234.
2014	0.	2930.	1234.
2015	0.	2930.	1234.
2016	0.	2930.	1234.
2017	0.	2930.	1234.
2018	0.	2930.	1234.
2019	0.	2930.	1234.
2020	0.	1145.	617.

EMCNX: Low wage construction employment  
 EMP9: Mining employment  
 EMT9X: Transportation employment

TABLE J-14: SCIMP MODEL OCS DIRECT EMPLOYMENT  
 INPUTS: .6 Bbb1 Case

YEAR	DDL	DIMPT	ODL	OIMPT
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	72.	282.	0.	0.
1986	14.	68.	42.	149.
1987	17.	88.	42.	149.
1988	23.	127.	42.	149.
1989	32.	613.	42.	149.
1990	34.	410.	42.	149.
1991	20.	108.	67.	201.
1992	10.	48.	118.	305.
1993	0.	0.	215.	536.
1994	0.	0.	240.	605.
1995	0.	0.	266.	666.
1996	0.	0.	266.	675.
1997	0.	0.	266.	675.
1998	0.	0.	266.	675.
1999	0.	0.	266.	675.
2000	0.	0.	266.	675.

DDL: Exploration and construction phase local resident employment  
 DIMPT: Exploration and construction phase enclave employment  
 ODL: Operations phase local resident employment  
 OIMPT: Operations phase enclave employment

TABLE J-15: SCIMP MODEL OCS DIRECT EMPLOYMENT INPUTS:  
1.2 Bbb1 Road-Connected Case

YEAR	DDL	DIMPT	ODL	OIMPT
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	72.	282.	0.	0.
1986	17.	88.	22.	78.
1987	32.	187.	22.	78.
1988	36.	207.	22.	78.
1989	45.	692.	22.	78.
1990	31.	390.	22.	78.
1991	17.	88.	51.	133.
1992	26.	346.	95.	215.
1993	16.	298.	164.	364.
1994	0.	0.	215.	488.
1995	0.	0.	232.	528.
1996	0.	0.	234.	540.
1997	0.	0.	234.	540.
1998	0.	0.	234.	540.
1999	0.	0.	234.	540.
2000	0.	0.	234.	540.

DDL: Exploration and construction phase local resident employment  
 DIMPT: Exploration and construction phase enclave employment  
 ODL: Operations phase local resident employment  
 OIMPT: Operations phase enclave employment

TABLE J-16: SCIMP MODEL OCS DIRECT EMPLOYMENT INPUTS:  
1.2 Bbb1 Remote Case

YEAR	DDL	DIMPT	ODL	OIMPT
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	72.	282.	0.	0.
1986	17.	88.	22.	78.
1987	32.	187.	22.	78.
1988	36.	207.	22.	78.
1989	45.	692.	22.	78.
1990	31.	390.	22.	78.
1991	17.	88.	51.	133.
1992	10.	362.	95.	215.
1993	0.	314.	164.	364.
1994	0.	0.	211.	492.
1995	0.	0.	225.	535.
1996	0.	0.	225.	549.
1997	0.	0.	225.	549.
1998	0.	0.	225.	549.
1999	0.	0.	225.	549.
2000	0.	0.	225.	549.

DDL: Exploration and construction phase local resident employment  
 DIMPT: Exploration and construction phase enclave employment  
 ODL: Operations phase local resident employment  
 OIMPT: Operations phase enclave employment.



TABLE J-17: SCIMP MODEL OCS DIRECT EMPLOYMENT INPUTS:  
2.4 Bbb1 Case

YEAR	DDL	DIMPT	ODL	OIMPT
1980	0.	0.	0.	0.
1981	0.	0.	0.	0.
1982	0.	0.	0.	0.
1983	0.	0.	0.	0.
1984	0.	0.	0.	0.
1985	72.	282.	0.	0.
1986	23.	127.	22.	78.
1987	45.	266.	22.	78.
1988	29.	167.	22.	78.
1989	51.	732.	22.	78.
1990	40.	449.	22.	78.
1991	20.	108.	51.	133.
1992	17.	504.	109.	245.
1993	10.	564.	193.	419.
1994	0.	0.	254.	594.
1995	0.	0.	283.	673.
1996	0.	0.	298.	724.
1997	0.	0.	298.	724.
1998	0.	0.	298.	724.
1999	0.	0.	298.	724.
2000	0.	0.	298.	724.

DDL: Exploration and construction phase local resident employment  
 DIMPT: Exploration and construction phase enclave employment  
 ODL: Operations phase local resident employment  
 OIMPT: Operations phase enclave employment



## APPENDIX K

### ALEUTIAN ISLANDS BOTTOMFISHING EMPLOYMENT ASSUMPTIONS

This appendix discusses the calculation of Aleutian Islands bottomfishing employment assumptions used as inputs to the SCIMP model projections. The future development of the bottomfishing industry is highly uncertain. At present, only a small share of the total bottomfish harvest is caught by Americans. An even smaller share is processed by Americans, as most of the American harvest is sold to foreign processing ships under joint venture agreements. However, there is a great deal of interest among American fishermen in expanding bottomfish harvests and processing activities.

The implications of possible future changes in the bottomfish industry for the Aleutians will depend upon the rate of growth of the total American catch, how and where the catch is processed, and the residency patterns of workers in different industries. In order to develop projections about bottomfishing employment, we made a number of assumptions with respect to these factors, which are listed below. The assumptions were made in consultation with the Alaska OCS office. These assumptions and the resulting employment estimates are in no sense a prediction of the future. Instead, they are one example of what might happen, constructed in order to provide a backdrop against which to measure the possible effects of OCS development.

Bottomfish harvest assumptions and the allocation of this catch among different processing methods are shown in Table K-1. Coefficients for employment per metric ton harvested and Aleutian Islands residency shares of workers are shown in Table K-2. Finally, Table K-3 shows the resulting employment projections.

TABLE K-1.  
 BOTTOMFISH HARVEST ASSUMPTIONS  
 (Thousands of Metric Tons)

YEAR	CATCH	CATCHJV	CATCHON	CATCHCF
1981	87.3	78.5	0.4	8.4
1982	111.4	100.0	0.5	10.9
1983	174.7	160.0	0.7	14.0
1984	259.1	240.0	1.0	18.1
1985	344.8	320.0	1.4	23.4
1986	432.1	400.0	1.9	30.2
1987	521.7	480.0	2.6	39.1
1988	614.1	560.0	3.6	50.5
1989	670.1	600.0	4.9	65.2
1990	690.9	600.0	6.7	84.2
1991	718.0	600.0	9.2	108.8
1992	753.2	600.0	12.6	140.6
1993	798.9	600.0	17.3	181.6
1994	858.4	600.0	23.7	234.7
1995	935.6	600.0	32.4	303.2
1996	1036.1	600.0	44.4	391.7
1997	1166.9	600.0	60.8	506.1
1998	1337.0	600.0	83.2	653.8
1999	1558.6	600.0	113.9	844.7
2000	1559.0	311.8	155.9	1091.3

CATCH TOTAL U.S. BOTTOMFISH CATCH  
 CATCHJV CATCH BY JOINT VENTURE TRAWLERS  
 CATCHON CATCH FOR ONSHORE PROCESSING  
 CATCHCF CATCH BY CATCHER PROCESSORS

TABLE K-2.  
COEFFICIENT ASSUMPTIONS FOR BOTTOMFISH  
EMPLOYMENT CALCULATIONS\*

	<u>Value</u>	<u>Value</u>
<u>Employment per metric ton harvested or processed</u>		
Joint venture fishing boats	.00222	.00222
Boats fishing for onshore processors	.00222	.00222
Onshore processing plants	.01010	.01010
Catcher-processors	.00718	.00323
 <u>Share of workers residing in Aleutians</u>		
Joint venture fishing boats	.10	.10
Boats fishing for onshore processors	.25	.50
Onshore processing plants	.25	.50
Catcher-processors	.10	.10

\*Values were assumed to change in a linear fashion from the starting values in 1981 to the ending values in 2000.

TABLE K-3.  
 BOTTOMFISH HARVESTING AND PROCESSING  
 EMPLOYMENT PROJECTIONS

	EMPJV	EMFFON	EMFON	EMPCF	EMPNRV	EMPNRON	EMPR
1981	174.	1.	4.	60.	212.	3.	25.
1982	222.	1.	5.	76.	269.	4.	31.
1983	355.	2.	7.	95.	406.	5.	47.
1984	533.	2.	10.	119.	588.	7.	69.
1985	710.	3.	14.	149.	775.	10.	91.
1986	888.	4.	19.	185.	969.	13.	115.
1987	1066.	6.	26.	232.	1172.	18.	140.
1988	1243.	8.	36.	289.	1384.	24.	168.
1989	1332.	11.	49.	360.	1530.	32.	191.
1990	1332.	15.	68.	447.	1611.	43.	208.
1991	1332.	20.	93.	555.	1711.	57.	232.
1992	1332.	28.	127.	688.	1835.	77.	263.
1993	1332.	38.	175.	851.	1987.	103.	305.
1994	1332.	53.	239.	1051.	2175.	139.	361.
1995	1332.	72.	327.	1295.	2405.	185.	436.
1996	1332.	99.	448.	1591.	2685.	248.	537.
1997	1332.	135.	614.	1950.	3027.	331.	673.
1998	1332.	185.	840.	2384.	3441.	442.	857.
1999	1332.	253.	1150.	2904.	3942.	590.	1107.
2000	692.	346.	1575.	3525.	3968.	787.	1382.

EMPJV                   EMPLOYMENT ON JOINT VENTURE TRAWLERS  
 EMFFON                 EMPLOYMENT IN FISHING FOR ONSHORE PROCESSING  
 EMFON                 EMPLOYMENT IN ONSHORE PROCESSING PLANTS  
 EMPCF                 EMPLOYMENT ON CATCHER PROCESSORS  
 EMPNRV                NONRESIDENT WORKERS ON VESSELS  
 EMPNRON              NON-RESIDENT ONSHORE EMPLOYMENT  
 EMPR                   RESIDENT ON AND OFFSHORE EMPLOYMENT

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



APPENDIX L  
CALCULATION OF SCIMP MODEL LABOR FORCE  
PARTICIPATION RATES

Labor force participation rate data were not available in the form required by the SCIMP model, which requires breakdowns by age, sex, and race. In order to calculate these rates, a procedure was followed which amounted to assuming rates for Non-Natives and then calculating rates for Natives, which would be consistent with the total assumed labor force, total resident population, and total employment.

First, an unemployment rate of 6.6 percent was assumed, based on the average for the years 1970-1978 (see Chapter II). Given total resident employment of 1,469 (Table 28), 6.6 percent unemployment implies a total labor force of 1,573. Given a total population of 3,484, this implies an overall labor force participation rate of 42 percent. However, this is not yet in the form required by the SCIMP model.

The next step was to assume labor force participation rates for the Non-Native population. High rates were assumed on the theory that few Non-Natives would live in the Aleutians unless they were working there.

The assumptions for Non-Native labor force participation rates are shown in Table L-1. This table also shows the resulting labor force for Non-Natives by age and sex.

These figures result in a total Non-Native labor force of 636. Given a total labor force of 1,573, this implies a Native labor force of 937. If the same labor force participation rates were applied to Natives, they would imply a total Native labor force of 1,388. In order to calculate native labor force participation rates, the Non-Native rates were reduced by the fraction  $937/1,388$ , or 67.5 percent. The resulting rates are shown in Table 31.

TABLE L-1.  
CALCULATION OF NON-NATIVE LABOR FORCE

	Assumed Labor Force Participation Rates for Non-Natives		Total Labor Force Participation for Non-Natives*	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
0 - 14	0	0	0	0
15 - 19	.25	.25	20	16
20 - 24	1	.9	88	57
25 - 29	1	.9	82	47
30 - 44	1	.8	142	51
45 - 64	1	.8	90	38
64 +	.5	.1	<u>4</u>	<u>1</u>
TOTAL			636	

\*Calculated by multiplying labor force participation rate by population for group (see Table 26).

636 Non-Natives are in labor force.



APPENDIX M.

NAVARIN BASIN STATE PROPERTY TAX REVENUE ASSUMPTIONS

This appendix discusses the state property tax revenue assumptions used in developing the MAP model impact projections. Table M-1 shows the assumed construction costs, completion dates, and depreciation periods associated with each case.

State property tax revenues were assumed to be 3 percent of total installed cost, depreciated in a straight-line fashion over the production period beginning in 1994. No depreciation was assumed for the shore base.

The following formula was used to calculate taxable value in nominal dollars:

$$\text{value} = \left( \begin{array}{c} \text{shore base} \\ \text{cost in} \\ 1981 \text{ dollars} \end{array} \right) + \left( \begin{array}{c} \text{other assets} \\ \text{cost in} \\ 1981 \text{ dollars} \end{array} \right) \left( 1 - \frac{\text{year} - 1994}{\text{depreciation period}} \right) \\ \times (1.075)^{(\text{year} - 1981)}$$

The resulting property tax receipts are shown in Table M-2.

TABLE M-1. ASSUMPTIONS USED IN CALCULATING SALE 83  
(NAVARIN BASIN) STATE PROPERTY TAX REVENUES

Facility	Cost <sup>a</sup> (millions 1981 \$)	Completion <sup>c</sup> Date	Last Year <sup>c</sup> of Production	Depreciation <sup>c</sup> Period (years)
<u>Shore Base</u>				
.6 Bbbl case	10	1986	-	-
1.2 Bbbl case	10	1986	-	-
2.4 Bbbl case	10	1986	-	-
<u>Aleutians Transportation Terminal</u>				
.6 Bbbl case	200	1994	2015	21
1.2 Bbbl case	200	1994	2018	24
2.4 Bbbl case	200	1994	2020	26
<u>Pipelines (3 miles, oil and gas)</u>				
1.2 Bbbl case	12.6	1994	2018	24
2.4 Bbbl case	16.2	1994	2020	26
<u>St. Matthew/St. Paul Oil Terminal</u>				
1.2 Bbbl case	470	1994	2018	24
2.4 Bbbl case	650	1994	2020	26
<u>St. Matthew/St. Paul LNG Terminal</u>				
1.2 Bbbl case	2698 <sup>b</sup>	1994	2018	24
2.4 Bbbl case	3814 <sup>b</sup>	1994	2020	26

<sup>a</sup>Provided by Alaska OCS Office.

<sup>b</sup>Alaska OCS Office figures in 1982 dollars deflated by 7.5 percent.

<sup>c</sup>Based on manpower scenarios.

TABLE M-2. ASSUMED STATE OIL AND GAS PROPERTY TAXES  
 RESULTING FROM OCS SALE 83 (NAVARIN BASIN)  
 (Millions of Nominal Dollars)

	<u>.6 Bbb1</u> <u>Case</u>	<u>1.2 Bbb1</u> <u>Case</u>	<u>2.4 Bbb1</u> <u>Case</u>
1986	.287	.287	.287
1987	.309	.309	.309
1988	.332	.332	.332
1989	.357	.357	.357
1990	.383	.383	.383
1991	.412	.412	.412
1992	.443	.443	.443
1993	.476	.476	.476
1994	10.754	173.610	240.175
1995	11.036	178.877	248.279
1996	11.300	183.958	256.247
1997	11.542	188.795	264.014
1998	11.756	193.323	271.305
1999	11.938	197.468	278.635
2000	12.080	201.147	285.307
2001	12.177	204.267	291.412
2002	12.221	206.724	296.828
2003	12.202	208.401	301.418
2004	12.112	209.166	305.026
2005	11.940	208.873	307.480
2006	11.674	207.360	308.586
2007	11.301	204.446	308.129
2008	10.806	199.927	305.867
2009	10.173	193.581	301.533
2010	9.385	185.158	294.828
2011	8.421	174.384	285.421
2012	7.260	160.951	272.945
2013	5.878	144.522	256.991
2014	4.247	124.724	237.110
2015	2.338	101.144	212.801
2016	2.514	73.324	183.511
2017	2.702	40.763	148.632
2018	2.905	2.905	107.488
2019	3.123	3.123	59.336
2020	3.357	3.357	3.357

