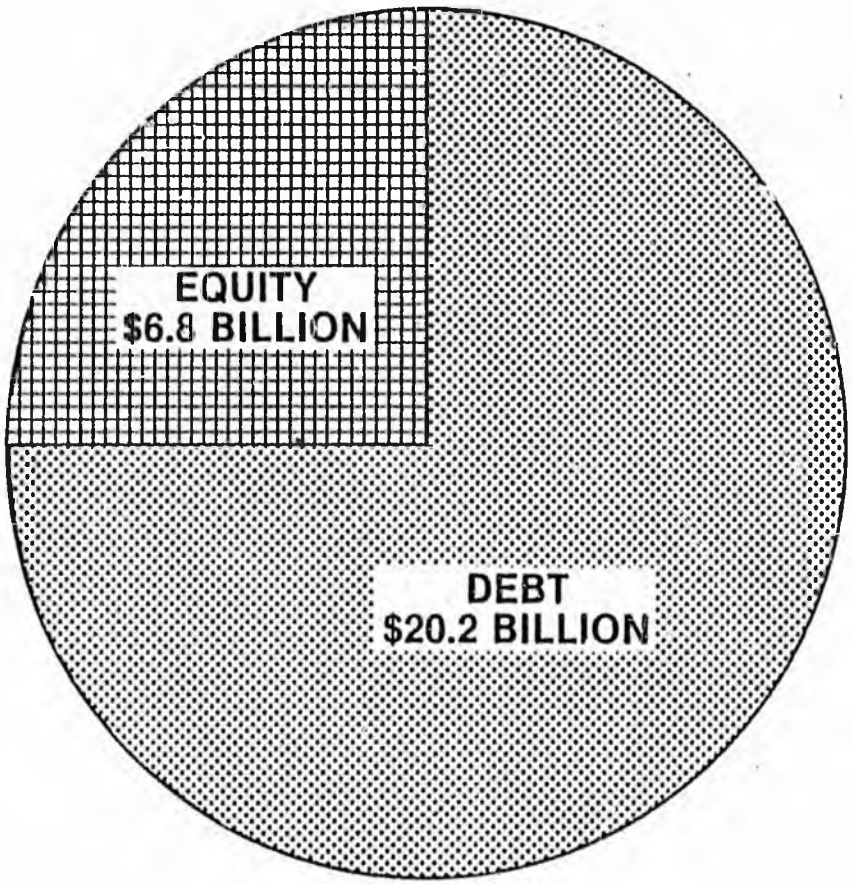
ALASKA LEGISLATURE COMMITTEE FILES 1981-1982 8672

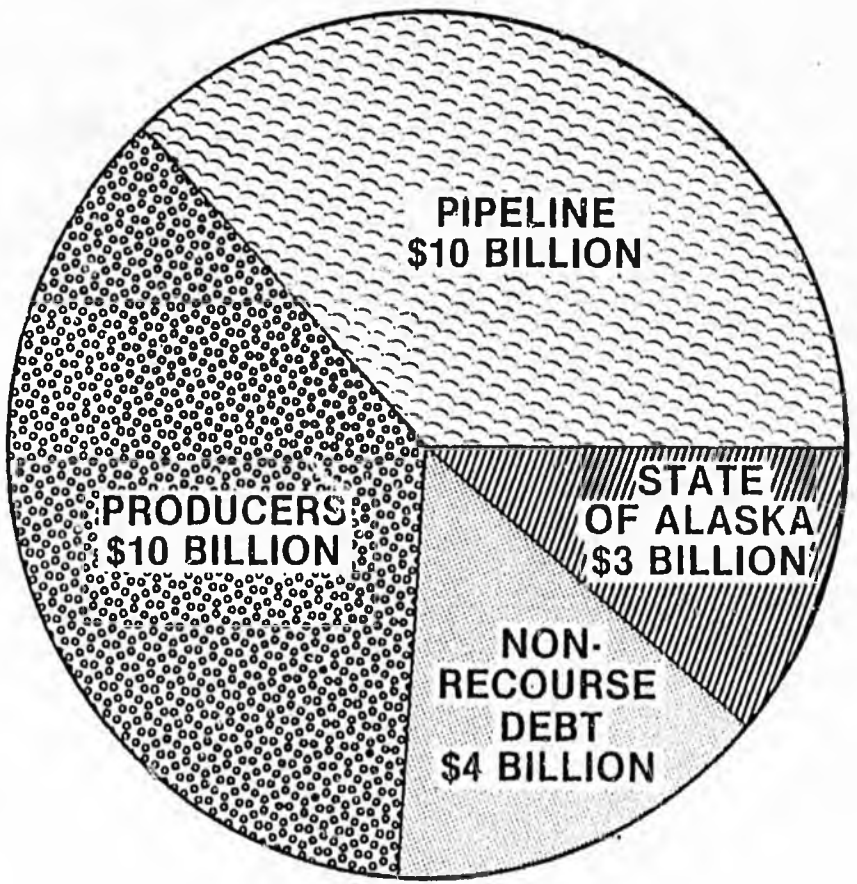
1886 SRES NATURAL GAS TRANS. 3/31/82 (KIDDER PEABODY)

1886

ALASKAN SEGMENT
ALASKA NATURAL GAS TRANSPORTATION SYSTEM
SOURCES OF FINANCING

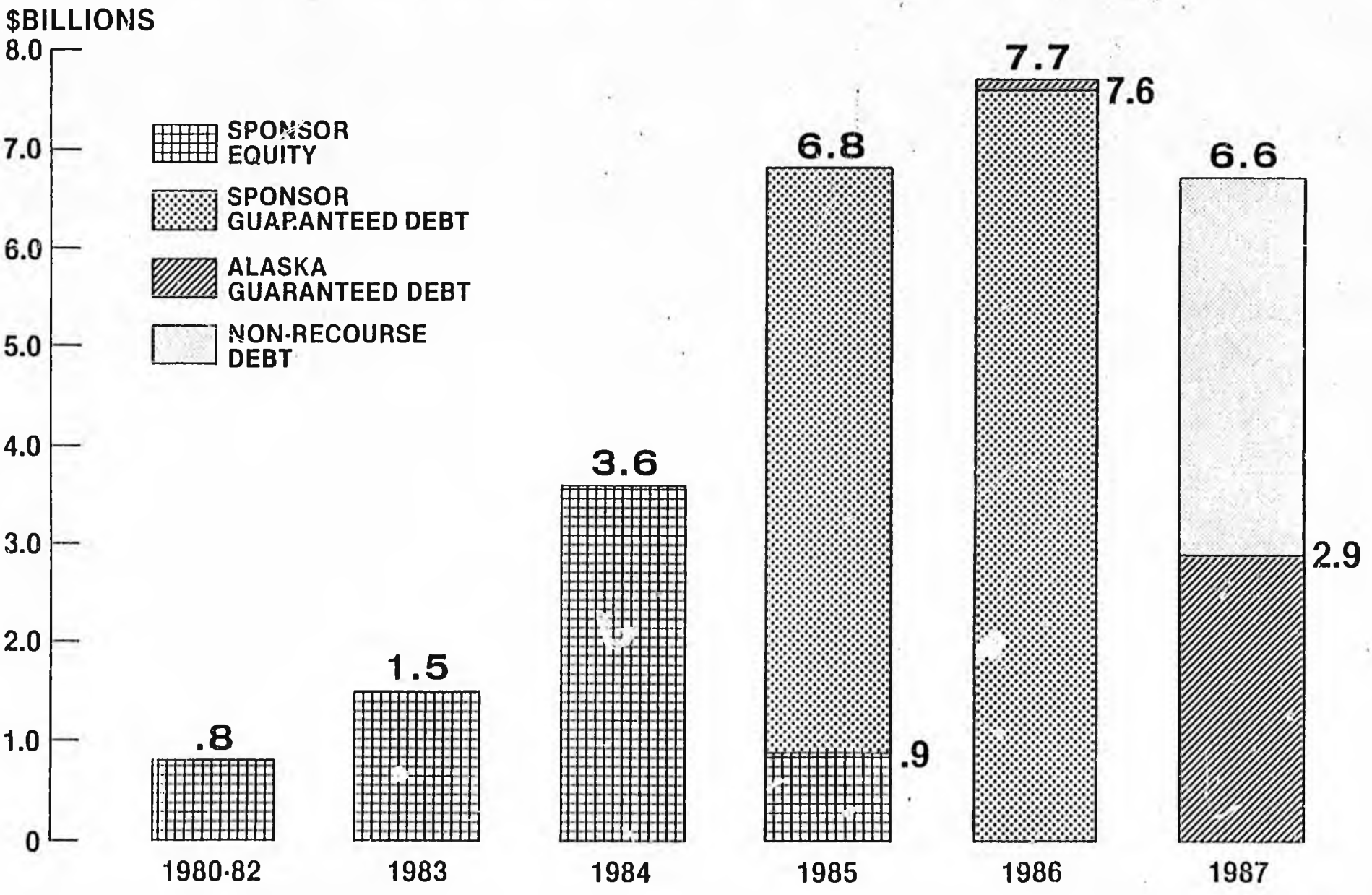
TOTAL ESTIMATED COST OF $27 BILLION



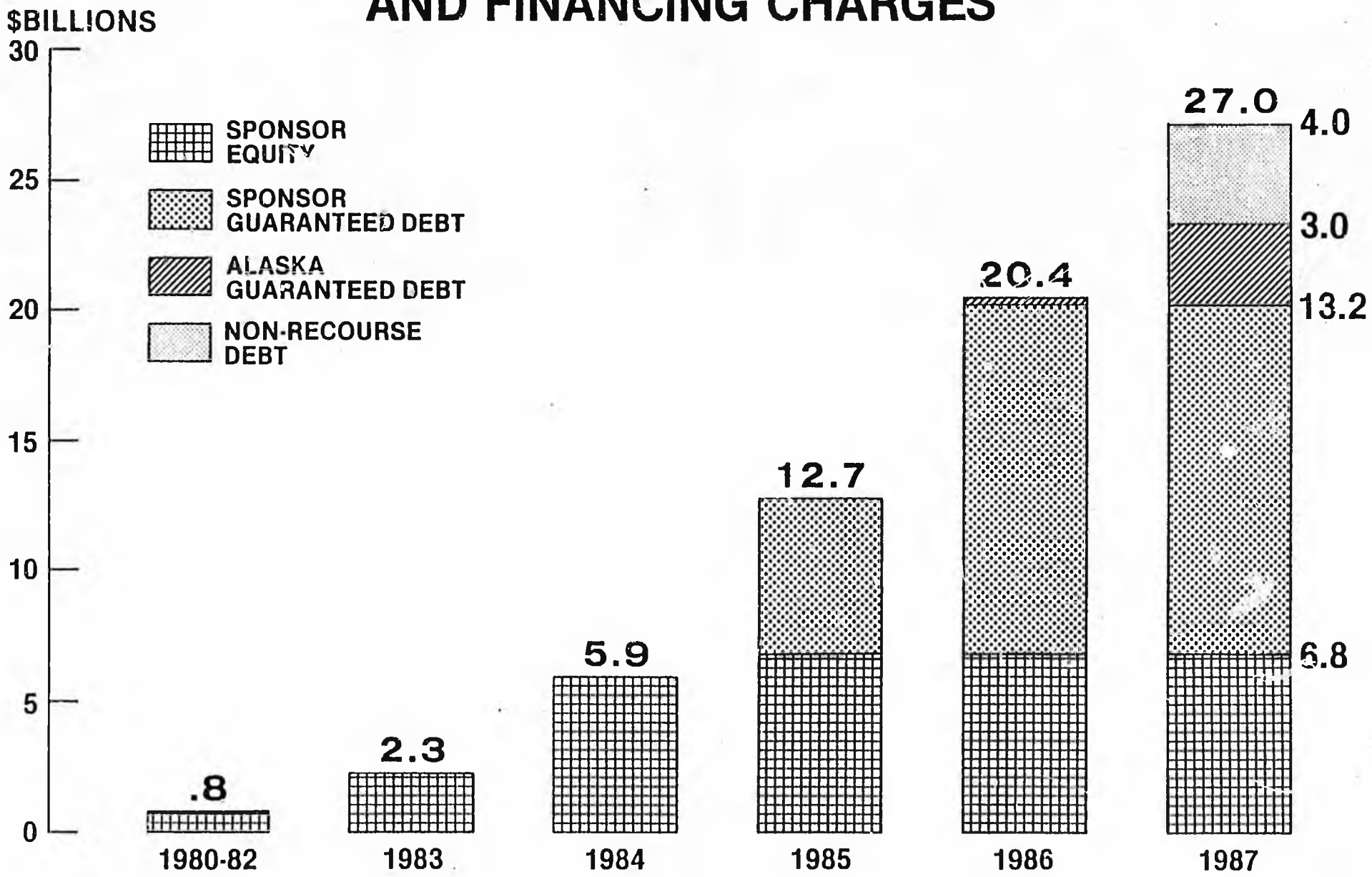


NOTE: THE PIPELINES AND PRODUCERS EACH CONTRIBUTE 3.4 BILLION OF EQUITY AND 6.6 BILLION OF DEBT.

ALASKAN SEGMENT
ALASKA NATURAL GAS TRANSPORTATION SYSTEM
FUNDING OF CONSTRUCTION AND FINANCING COSTS



ALASKAN SEGMENT
ALASKA NATURAL GAS TRANSPORTATION SYSTEM
CUMULATIVE FUNDING OF CONSTRUCTION AND FINANCING CHARGES



EFFECT OF DELAYED GAS SALES ON PRUDHOE BAY PERFORMANCE AND DEVELOPMENT

INTRODUCTION

In the development planning for the Prudhoe Bay Field, it was recognized that gas production for sales would be an integral part of the total energy resource management. Prior to the Field going on production in June, 1977, gas sales of 2.0 BSCFPD were anticipated starting as early as 1982. Now it appears that startup of gas sales will be about 1987. All of the studies done by the major Owners indicate that the optimum operating plan for Prudhoe Bay includes early gas sales and that the reservoir can be managed such that gas offtake will have little or no effect on ultimate oil recovery. Considering that the Prudhoe Bay Unit gas and associated liquids are approximately equivalent to one third of the total recoverable hydrocarbon reserves of the Sadlerochit Reservoir and that simultaneous oil and gas sales can allow lower economic production limits at abandonment, the Prudhoe Bay Unit Owners strongly support early gas sales.

Reservoir Performance/Plans Impact

The performance of the Prudhoe Bay Sadlerochit reservoir will be dominated by the expansion of the large gas cap. Gas production will be an integral and normal part of the oil operation. Currently, gas production associated with oil withdrawals has risen to about 1.8 BSCFPD. By the time of gas sales, production of gas will have increased to the point that the entire production volume to support 2.0 BSCFPD of sales could be produced from oil wells.

The associated gas produced in excess of the fuel and other consumption requirements will be reinjected into the gas cap by a Central Compression Plant until the start of gas sales. With the startup of gas sales, the field gas handling capacity will increase by approximately 500 MMSCFPD. This provides an increase in oil production of up to 100 MBOPD by allowing production of high gas-oil ratio wells which otherwise would be shut-in. Although this benefit erodes with further increases in gas production, expansion of gas handling capacity can be expected to provide incremental oil production rate for some time.

A delay in the commencement of gas sales is not expected to have a significant effect on the ultimate oil recovery from Prudhoe Bay. In previous public testimony, Unit Working Interest Owners have stated that delaying gas sales until substantially all oil has been recovered could increase the oil recovery by approximately 1% of the original oil in place. Less drastic delays (of 1 to 3 years) will have an even smaller effect. Moreover, any gas sales timing impacts on oil recovery are tempered by the initiation of a major waterflood in 1984, to which the Unit Owners are already committed. Although the primary benefits of the water injection program will be to improve sweep efficiency in portions of the oil zone which experience poor recovery under natural depletion, reservoir pressure maintenance from waterflood will certainly mitigate hydrocarbon withdrawal effects.

A short delay in gas sales is expected to have no significant impact on the ultimate gas recovery, except for the amount of gas that is used as fuel for reinjection purposes. At abandonment, the field will be at some as yet unknown final pressure, which will determine the ultimate recovery of gas. This pressure will be a function of economic factors existing at that time and not of the specific dates of gas sales start-up, which would have occurred many years earlier.

Operating and Facility Impacts

Significant delays in gas sales can have a major impact on field facility and operational requirements. In the absence of gas sales in the 1987 time frame, additional facilities would be necessary to provide the equivalent field gas handling capacity. These additional facilities, e.g. compressors, injection wells and lines, would result in extra capital, operating, and maintenance costs of about $150 - 200 MM for the producers. More importantly, however, continued injection of gas back into the gas cap consumes large quantities of energy. Each year gas sales are delayed would require approximately 30 BSCF of fuel gas or the energy equivalent of over 5 million barrels of oil.

Conclusion

The objective of the Prudhoe Bay Field Owners is to achieve the maximum economic recovery of oil, gas and gas liquids. Studies have shown that with sound reservoir management which includes a very large commitment to waterflood in 1984, all of the interests in the Field can be best served by simultaneous production of oil and gas. This can be achieved by early gas production through facilities installed for oil production, and in the long term by prolonging of oil production while gas production operations continue to be viable. These combined benefits can be maximized by the early realization of gas sales. Delays in gas sales carry penalties associated with the fuel consumed in reinjecting gas which cannot be sold, and with the potential burden to provide extra gas handling facilities to sustain oil production at economically optimum rates. Such delays, therefore, frustrate the orderly development of the total energy resource that Prudhoe represents and thwart the resolve to strive for energy independence.

GASLINE FINANCING MATERIAL - CONTENTS

1. Report by Kidder, Peabody & Co. to State of Alaska, March 1982
2. Net Economic Benefits Report; Legislative Finance, March 1982
3. Financing Mechanisms Available to State of Alaska (legal analysis), Dept. of Revenue, February 1982
4. Conflict of interest legal analysis, Robert Loeffler, March 1982
5. ANGTS project schedule analysis, Robert Loeffler, March 1982
6. Assessment of potential for construction cost overruns, Office of State Pipeline Coordinator, March 1982
7. Critique of marketability study of Alaska natural gas, Budget and Management, February 1982
8. March revenue forecasts, Dept. of Revenue, March 1982

NET ECONOMIC BENEFIT

TO ALASKA

OF ALASKA NATURAL GAS TRANSPORTATION SYSTEM

MARCH, 1982

Prepared by
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Legislative Finance Division

With Review by
Department of Revenue
Department of Natural Resources
and
Budget and Management, Office of the Governor

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(continued)

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Net Economic Benefit to Alaska of the Alaska Natural Gas Transportation System

SUMMARY

Construction and operation of the Alaska Natural Gas Transportation System (ANGTS) could easily provide in excess of $5 billion in present value of economic benefits to Alaska in 1982 dollars if the effects of construction on price levels in Alaska can be held to a minimum. If the inflationary impact of construction is not held in check, its adverse consequences could result in a real net cost to the state from ANGTS.

The assumptions behind these conclusions are very conservative. Limited time and resources were available for testing alternate assumptions. Since the most important question to be answered by this sort of analysis is whether on the whole economic benefits are positive or negative, conservatism supplies a "failsafe" test. If benefits are positive, or nearly so, in the worst imaginable case, the project can be endorsed with confidence.

Arguably this is so for ANGTS. The high inflationary impact case assumed price level escalation slightly in excess of the Trans-Alaska Pipeline System (TAPS) experience and persistence of these elevated price levels for eleven years. Such an impact would result in a net cost to the state of almost $1 billion.

The extraordinary inflation associated with ANGTS is assumed to occur during and immediately following the construction period. The persistence of elevated price levels, resulting from inflation during that period, is assumed in order to provide a worst case test. A large backlog of state capital projects and continued high levels of state spending of petroleum revenues might result in such persistence.

Since one can never know what the future will hold, some find it helpful to think in terms of probabilities. If one feels that there is no more than an 80% chance of the high inflationary impact as specified here, occurring, then one can expect the project to result in positive benefits.

In light of the possibility of negative benefits to Alaska from ANGTS, it may be felt that prudence requires a much more extensive testing, and judgment as to likelihood, of alternate assumptions before the state endorses the project or makes any commitments for financial support.

Specific findings or propositions from the economic benefit analysis are:

1) benefits of ANGTS are:

   a) an increase in the present value of Sadlerochit oil production if gas is also produced;

   b) higher bonus, royalty, or net profit share bids on lease sales;

c) availability of property and sales taxes in excess of local government expenditures for ANGTS impact;

d) an increase in income and wealth of Alaska residents resulting from wage gains and increased corporate profits;

e) availability of gas revenues in excess of state expenditures for gasline impact if there is a minimal ANGTS inflationary impact;

f) high inflation can create significant windfalls to property owners who are leveraged;

2) costs of ANGTS are:

a) the increase in state expenditures required to maintain existing levels of service can exceed gas revenues, with a high inflation impact from ANGTS;

b) the greatest cost of a high inflation impact can be the reduction in value received for the expenditure of state revenue in excess of the amounts required for existing levels of service;

c) even low inflation will reduce the real value of permanent fund dividends more than gas royalties increase them for as long as the elevated price levels persist; population increases will further dilute their value to individuals;

d) high inflation can significantly erode the value of government assets and personal savings;

e) the inflationary impact of the gasline could be compounded by high levels of state spending at the same time;

3) the state may have some capability to assist in ANGTS financing:

a) there might be general funds available for investment between FY 84 and FY 88; however, this possibility is becoming increasingly clouded by current oil market developments;

b) the state's gas royalties from Sadlerochit would have a present value of roughly $1.5 billion in 1982 dollars at a minimum;

4) the amounts of gas revenues estimated in the analysis are conservative in that:

a) gas liquids may provide additional revenues;

b) gas marketability may not require reduced wellheads at the outset, as projected, if tariffs are levelized and/or rolled-in pricing is possible;

c) oil prices and the controlled gas price of the Prudhoe Bay Unit may increase faster than projected;

d) decontrol of Prudhoe Bay Unit gas might mean greater revenues in the long run;

5) the amounts of gas revenues are optimistic in that delivered gas prices are assumed to have parity with oil prices in Btu terms;

6) levelization of ANGTS tariffs probably would increase state benefits if Prudhoe Bay prices remain controlled; however, levelization might decrease state benefits if Prudhoe Bay prices are decontrolled;

7) the state may have an interest in further analyzing marketability measures that may be undertaken by FERC to determine their effect on state revenues and possibly to try to influence such decisions.

NET ECONOMIC BENEFIT TO ALASKA OF THE ALASKA NATURAL GAS TRANSPORTATION SYSTEM

I. CONCEPT AND METHODOLOGY

Definitions

The net economic benefit to Alaska of the Alaska Natural Gas Transportation System (ANGTS) is composed of the change in revenues and expenditures of state and local governments, the change in personal income of Alaskan residents, and the effects of inflation in Alaska in excess of national rates of inflation which are attributable to construction and operation of the gasline. The revenue, expenditure, and personal income items include the multiplier effects of ANGTS construction.

The present value of the net economic benefits is the value today of the benefits and costs to be received or incurred in future years. The present value is less than the actual benefits when they occur because the present value, invested at some positive rate of return, would compound to the amount of the future benefit. Thus, one would be indifferent between the present value received today and the actual value received in the future.

Purpose

This economic benefit study seeks to provide guidance to the state in answering the question "to what extent should the state support the ANGTS project, if at all?". State support could be either in the form of subsidies, investment, or non-financial support such as permitting and regulatory measures.

To answer this question, the benefits from state support of ANGTS should be compared to the benefits of all other uses of state funds. This is not practical. As a surrogate, the next best use of state funds is assumed to provide a real rate of return of 3% per annum. If the present value of ANGTS benefits -- calculated by using 3% as the state's opportunity cost -- is positive, then support of ANGTS, if necessary, would be a better use of state funds than other alternatives. If the present value is negative, the state should not support ANGTS.

More specifically, consider the following possible outcomes:

a) if state support is critical to the project's completion, the state in theory should be willing to subsidize ANGTS up to the amount of positive benefits in present value terms that the state would receive. Subsidy means both direct payments or grants or tax relief as well as acceptance of a return on investment less than 3% per annum.

b) if state support is not crucial and the present value of benefits is positive, there should obviously be no subsidies and any investment by the state would have to earn at least 3% in real terms. In this situation, an investment by the state in the ANGTS can be evaluated on its own terms, with due consideration for alternative investment opportunities, alternative expenditure priorities, diversification, risk and regulatory conflicts.

c) if the present value of benefits is negative, there should obviously be no subsidies and the earnings on any investment by the state would have to exceed the normal earnings or opportunity cost of 3% on state investments by the amount of the present value.

It should be noted that there are at least two ways in which use of this economic benefit analysis may be a defective guide to decision-making:

a) there is no consideration of environmental or socioeconomic effects such as congestion, crime, etc.

b) the benefits are calculated by comparing the ANGTS project to not producing Prudhoe gas at all; the correct approach would be to compare it to the next best alternative, be it methanol, use as in-state boiler fuel or whatever; in other words, the gas is assigned a zero opportunity cost when it may really have some value even if ANGTS is not built.

Method of Analysis

The benefits of ANGTS are estimated for four different gasline construction cases representing combinations of low and high inflation scenarios and weak and strong state expenditures. Comparison of these cases reveals how sensitive the estimated benefits are to assumptions about inflation and spending. The benefits for the four cases are calculated as the difference from base cases of weak and strong state expenditures in which there is no gasline.

The low inflation scenario assumes gasline construction results in cumulative inflation totaling 5.55% in excess of the base case (no gasline). See Table IX. This level of inflationary impact is assumed to be consistent with construction of ANGTS at the IROR (incentive rate of return) centerpoint cost. This cost is the estimated cost of construction as filed with the Federal Energy Regulatory Commission (FERC) by Northwest Alaskan Pipeline Company plus 30% as an allowance for anticipated but unidentified cost overruns. These overruns are assumed to result generally from unforeseen technological and managerial problems.

The high inflation scenario assumes gasline construction results in 18.06% inflation in excess of the base case. This high estimate of inflation is assumed to be consistent with a construction cost 10% in excess of the centerpoint cost (or roughly 40% over filed costs). The annual rates of excess inflation for this scenario are shown in Table X.

The weak state expenditure scenario is modeled on the assumption that per capita expenditures remain at FY 82 levels of service in real dollars.

In the case of capital expenditures, this means the capital budget shrinks to an amount equal to one-twentieth of the value of capital stock (cumulative, depreciated capital expenditures as shown in Table XVIII) escalated by changes in population. This is all that is required to maintain the existing level of capital stock if one assumes it depreciates to zero over a twenty year period. 1/

Highway repair costs resulting from gasline construction have been estimated separately in Table XV and are added to the capital budget amount required for non-highway capital stock during the years of construction. 2/

1/ As a practical matter, because capital facilities often come in large chunks, expenditures may be more than they would be if they could be provided in truly per capita increments. However, governments could also choose to tolerate congestion in use of existing facilities rather than create excess capacity.

2/ In 1978 Northwest agreed in principle to reimburse the state for highway repair costs and socioeconomic impact costs. However, they are indicating that they will make reimbursement only for those costs that are allowed in the rate base by FERC. The state pipeline coordinator's office has estimated $19.7 million (in FY 80 $) in state costs during FY 81-88 for migrants and their families directly employed on the gasline and $96.6 million additional costs for migrants and families induced to come to Alaska by ANGTS construction but not directly employed on the line. These costs are based on FY 80 levels of service. See the attached letter of July 21, 1980 from Commissioner Ward of the Alaska Department of Transportation and Public Facilities to Northwest regarding highways costs. The socioeconomic cost estimates are based on "The Relationship Between the Alaska Natural Gas Pipeline and State and Local Government Expenditures", Goldsmith and Mogford, Institute of Social and Economic Research, December 1980 and state agency estimates. Northwest is (continued-next page)

The FY 82 level of service budgets take into account the facts that not all state operating and capital expenditures are related to population changes and that the composition of migrant families is different from the average Alaskan family, thus not requiring the same pattern of state expenditures.

The strong state expenditure scenario projects state expenditures at the level that would be permitted if the proposed constitutional spending limit, Legislative Resolve 1, SLA 1981, is ratified by the voters.

In this scenario, the impact of the gasline on expenditures is greater first of all because the base for capital budgets under the spending limit is not one-twentieth of the value of the state's capital stock, but a much larger amount based on FY 82 capital expenditures. Secondly, spending limits will go up in full proportion to population increases, not just by the fraction of the budget that is population sensitive or responsive to migrant demographics. Compare Tables XIII and XIV.

The FY 82 level of service budgets are a fairer measure of what costs can be assigned to gasline impact in that costs rise only to the extent required to maintain the given level of service. However, the spending limit budgets are a more realistic estimate of what the actual level of services will be.

Components of Economic Benefit

The specific elements of economic benefits for which quantitative estimates are shown in Tables I and II need some explanation.

For state government, net economic benefit is composed of:

1.) the change in the FY 98 general fund balance
   a.) this figure measures the effect of both the increased state expenditures resulting from gasline impact and the increased state revenues from the gasline for the entire period FY 83 through FY 98;

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2 continued/ reimbursing the state for pipeline surveillance and monitoring which is budgeted at $51.3 million for FY 81-88. Any of these costs allowed in the rate base could result in an adverse though miniscule effect on wellhead values and a definite though miniscule increase in pipeline income taxes.

b.) it also measures the erosion of the real dollar value of the general fund balance due to gasline caused inflation; the FY 98 figure is in 1982 $ which in the gasline scenarios means it was reduced by an additional 5.55% or 18.06% compared to the no gasline base case; these percentages are the additional inflation generated by gasline construction;

2.) the change in the FY 98 permanent fund balance

a.) this figure accounts for the increase in the balance as a result of 25% of Prudhoe Bay unit gas royalties being deposited in the fund between FY 83 and FY 98;

b.) the figure also measures the erosion of fund value caused by additional gasline-related inflation as described above;

c.) the extent to which this figure is positive or negative would indicate whether the total value of permanent fund dividends in real dollars increased or decreased without considering the dilution that would come from population growth caused by the pipeline; if 50% of earnings at 12% interest are paid as dividends, the effect on annual dividends would be 6% of the effect on the fund balance;

3.) FY 99-2016 gas revenues

a.) beyond FY 98, additional state expenditures and inflation resulting from the gasline are ignored;

4.) FY 86-2016 reduced oil recovery

a.) counted as an economic cost in this analysis is a total reduction in Sadlerochit oil recovery of 140 million barrels as a result of gas production. This is based on van Poollen's March 1980 reservoir simulation of oil production with waterflooding, with and without gas production;

5.) gas revenues from other fields

a.) ANGTS would make possible gas revenue from reservoirs other than Sadlerochit depending on the economics of production; a September 25, 1980 Department of Natural Resources study, "Proven and Probable Oil and Gas Reserves, North Slope, Alaska" estimated 6.4 trillion cubic feet (TCF) in gas reserves on North Slope acreage leased at that time in addition to Sadlerochit; 3/

3/ Point Thomson and Flaxman Island areas - 4.5 TCF; Lisburne reservoir, Sag Delta and Duck Island areas - 1.9 TCF.

b.) ANGTS would also increase gas revenues by increasing bonus, royalty, or net profit share bids on acreage yet to be leased;

6.) erosion of other state assets

a.) other state assets such as the retirement funds and the rainy day fund will be worth less as a result of gasline-caused inflation;

b.) asset values are based on 1980 fund levels; roughly speaking, changes from this level would have to come from the general fund; thus, the analysis of gasline impact on the general fund avoids the necessity of considering future balances of these other assets.

Local government benefits are the excess of revenues over expenditure based on 1979 levels of service per capita. Additional revenues are from property taxes and sales taxes.

The figures for local government include only the gasline construction years. This is the period of major impact. 4/ It is assumed that both revenues and expenditures of local governments keep pace with inflation. Thus, the lingering effects of gasline inflation after the construction period make no difference in economic benefits in real dollars.

Private sector benefits include increases in corporate profits of Alaska-owned businesses and increases in wages of existing Alaska residents. For estimating the wage gains, it is assumed that only gasline jobs result in wage gains in real dollars and that existing residents receive 60% of the gasline jobs.

4/ Fairbanks will continue to receive some significant additional property taxes on the gasline after construction. The North Slope Borough will receive additional property taxes only during construction when construction workers are present. This is because the borough is already at its per capita property tax limits.

II. RESULTS AND SENSITIVITY

Results

For the state as a whole, and for all three sectors -- state government, local government, and the private sector -- the gasline provides significant benefits if it does not cause much additional inflation in the state.

If there is significant inflation, then state government potentially is a loser even though local government and the private sector remain immune from any adverse effects. The effect on the state as a whole could be negative.

The negative effects of gasline inflation on state government come about because 95% of the state's general fund revenues, namely petroleum revenues and interest income, would not increase with inflation that occurs only in Alaska. These revenues are determined by world and national markets and price levels. Thus, gasline inflation eats away at the real value of the state's revenues as state expenditures rise with inflation while petroleum revenues and interest remain unaffected. The other way of looking at this is that each dollar of state revenue purchases less real goods and services.

Interpretation of Effects on State Government

A. GENERAL FUND

In the low inflation scenarios, it is clear that the main result of ANGTS would be to increase state revenues well in excess of any need for increased state expenditures or ill effects of inflation.

In the high inflation scenarios, clearly the effects of inflation predominate and require some further interpretation.

In comparing FY 98 fund balances, the gasline scenarios' fund balances in real dollars are reduced by the additional inflation caused by the gasline. This implies that the effects of gasline-caused inflation on price levels persists indefinitely or that the fund balances are spent before the effects of gasline-caused inflation have receded. The first implication is very unlikely -- the second, rather likely.

The general fund balances shown in Tables I and II combine two adverse effects of inflation which can be segregated.

The first effect of inflation would be to increase the state expenditures required to maintain a given level of service.

This effect can be most clearly discerned by examining the FY 82 level of service budgets. 5/ If one compares FY 98 general fund balances without adjusting the gasline scenario balances for any additional inflation caused by the gasline, one can determine that in the high inflation case the general fund balance is $628.5 million (1982 dollars) less than in the base case. This is the extent to which the increase in state expenditures required to provide the existing level of services would exceed gasline revenues. The culprit is sure to be inflation rather than population impact from ANGTS, since the change in the general fund balance is positive in the low inflation case.

The second effect of inflation, the reduction in real goods and services that would be received from expenditure of state revenues in excess of those required to maintain the FY 82 level of service, would amount to $4,635.8 million. 6/ The expenditure of the funds is not caused by gasline impact but gasline impact would reduce the value received for them. 7/

B. PERMANENT FUND

Assuming the excessively high price levels resulting from gasline inflation eventually return to normal, the effects of inflation on the permanent fund balance could be ignored. Arguably this is so, since the permanent fund balance is never supposed to be spent. In that case, the FY 98 permanent fund balances would be $290.6 million and $260.1 million higher in 1982 dollars in the low and high inflation scenarios than in the base case.

5/ As previously discussed, the spending limit budgets provide increasing levels of service, especially through capital expenditures in excess of those required to maintain existing stock.

6/ The difference between the $628.5 million decrease in the general fund in the preceding paragraph and the total decrease of $5264.3 million shown in Table II is $4,635.8 million.

7/ It should be noted that in the high inflation scenario, reliance upon the spending limit budget for evaluation of gasline benefits would be misleading. The spending limit case shows the cost (negative benefit) of ANGTS to be smaller than the FY 82 level of service case. The reason is that the most significant effect, the erosion of general fund assets by inflation, is diminished because the high rate of spending has already diminished general fund balances. The problem is that the reduction in value received for these greater expenditures is not measured.

However, as discussed previously, this item serves to indicate the change in the value of permanent fund dividends. The longer the effects of gasline inflation persist, the closer the effect on permanent fund dividends comes to the effect shown for the permanent fund balance.

C. REDUCED OIL RECOVERY

When the difference in oil recovery between the gasline cases and the base cases is present valued, the economic cost of reduced oil recovery becomes a positive benefit. This requires some explanation.

The effect occurs because there can be greater oil production until FY 98 if gas is also produced. There will be less oil produced thereafter and total recovery is less for the entire period 1986-2015. But the possibility of earning interest on revenues from greater production during the early years can offset the net loss in recovery under certain assumptions about oil prices, and does in this case.

Expected Value 8/

If one were to use FY 82 level of service budgets as the best measure of economic benefits, assign equal probabilities to high and low inflation and a 20% chance to the line never being completed once it's begun, the expected present value of the benefits of ANGTS to Alaska would be $1,455.1 million in 1982 dollars.

Taking a less rosy view and assigning a 75% chance to high inflation and a 25% chance to low inflation and a 50% chance to the line not being completed, the expected present value would be $212.6 million.

Arguably, factoring in non-completion is relevant only for investment purposes and not for calculating economic benefits which would be received if the line is completed. In that case, the two previous expected values would be $1,818.8 million and $425.3 million.

However, factoring in a zero benefit for non-completion could be conservative. Non-completion could have most of the negative effects of gasline impact expenditures and gasline inflation with none of the positive effects of gasline revenues.

8/ Expected value is the average of several values weighted according to their probability of occurence.

Sensitivity to Inflation

The net economic benefits of ANGTS and their present value can be judged by Tables I and II to be highly sensitive to inflation. The swing in economic benefits approaches $9 billion between the high and low inflation scenarios in the case of a weak state spending response. The swing occurs entirely in state government benefits. Local government and the private sector are unaffected by inflation.

The results are partly a reflection of the assumption that the relatively higher price levels induced by the gasline persist through FY 98. One might ordinarily expect the rate of inflation to subside to less than normal rates in the aftermath of construction.

The experience with construction of the Trans-Alaska Pipeline System (TAPS) is an interesting comparison in this regard. Table XI shows that indeed sub-normal inflation rates finally did begin to occur two years after TAPS became operational. Four years after completion about one-sixth of the effect of TAPS inflation on price levels had been erased.

The assumed persistence of gasline-caused relative price levels through FY 98 could occur as a result of record levels of state spending of oil revenues throughout the period. Going into FY 82, the state had a backlog of $2,541.6 million in capital projects. 9/

The change in benefits as a result of inflation also clearly depends on the level of gasline inflation.

Again, the level generated by TAPS, 15.83%, is interesting by comparison. Arguably, the fact that Alaska's economy will be significantly larger when ANGTS is constructed, and the fact that ANGTS is presumably being more carefluly planned and managed for cost control and may have a lesser percentage of its expenditures in Alaska, means that it will generate less inflation than TAPS did.

9/ $769.9 million in general fund projects and $391.7 million in bond fund projects as of June 30, 1981 according to the "Annual Financial Report" of the state for FY 81 plus FY 82 capital appropriations of $1380.0 million.

On the other hand, the 18.06% high inflation figure for ANGTS could conceivably be low if construction occurs against a backdrop of an already overheated Alaskan economy resulting from expenditure of state petroleum revenues. The attached letter of January 29, 1982 from John Bates, Deputy Commissioner, Alaska Department of Transportation and Public Facilities, re: "construction costs escalation" is of interest in this regard. His letter states that material cost and "wage increases could easily result in a construction escalation rate of 2% per month (24% per year) in 1982".

Although there is the question of how much of the construction cost inflation gets translated into consumer price inflation for much of the state budget, namely the capital budget, construction costs are very relevant.

In any event, the high inflation assumptions serve as a pessimistic case to test the sensitivity of project benefits to unanticipated levels of inflation.

The sensitivity of economic benefits from ANGTS to inflation is very suggestive as regards state expenditures and should give decision makers pause. At current levels of state expenditures, the state can be characterized as burning the candle at both ends. A substantial portion of the "principal" of the state's petroleum wealth, rather than only the interest thereof, is being spent, while the value of the remaining principal, whether in the ground or the permanent fund, is being eroded by inflation caused by the spending.

What should give one pause is the scale of the effect suggested by the gasline analysis with inflation rates paramount to what may now be occuring, as suggested by the aforementioned letter from John Bates. For state expenditures one can expect inflation's effect to be even greater than that suggested by the gasline analysis as there are unlikely to be any offsetting revenues commensurate with those from ANGTS.

This analysis suggests two important matters for consideration by budgetary decision makers -- one, slowing state expenditures, and two, timing capital expenditures to avoid the simultaneous construction of major projects such as a new capital, Susitna and ANGTS. Simultaneous construction could magnify inflation synergistically. Any positive benefits from ANGTS could easily be negated in such circumstances.

Sensitivity to State Expenditures

The benefits from ANGTS are not nearly so sensitive to state expenditures -- as long as higher expenditures can be achieved without generating inflation.

In the low inflation scenarios the pattern of spending makes little difference. This would very likely be the case in the high inflation cases as well if one measured the reduction in value received for the higher expenditures when spending up to the limit.

Further Sensitivity Analysis

This limited analysis could be expanded to consider the effects on ANGTS benefits to Alaska of various other overruns or underruns of ANGTS construction costs, oil price levels, relative parity of gas prices with oil prices, ANGTS tariff structures, treatment of conditioning costs, other gas reserves, etc. From this, the expected value of ANGTS benefits might be more meaningfully calculated.

Conservatism of Assumptions

Absent further sensitivity analysis, several things can be said about the relative conservatism of certain assumptions and the general effect on economic benefits of changes in those assumptions:

1.) gas liquids
even ignoring the possibility of petrochemical development based on gas liquids, some additional revenue could be received for gas liquids that might be put in TAPS; the assumed MMBtu to MCF ratio of 1.055 assumes some gas liquids go into ANGTS; the state will receive no revenue from gas or gas liquids consumed in the conditioning plant or for field operations;

2.) oil parity
gas delivered by ANGTS is assumed to be marketed at a price equivalent to that of oil in terms of Btu's; this may be optimistic; more likely, gas will sell at some discount from oil in Btu terms;

3.) oil prices
the price assumed for oil works out to be around $36 per barrel 10/ in 1982 which is clearly too high in light of today's oil markets; the assumed growth rate of 8% per annum for oil prices may or may not be too high in the long run; 8% is less than the assumed inflation rate for Alaska of 9% absent gasline impact; Alaskan inflation has historically been 1.5 percentage points below U. S. inflation in normal times; rates of growth in oil prices in excess of 8% could greatly increase ANGTS' benefits to Alaska;

10/ $5.13 per MMBtu for oil from Table VI in 1980 x 8% inflation to 1982 x 6 MMBtu per barrel of oil.

4.) gas prices

a.) Natural Gas Policy Act (NGPA) ceiling vs. netback price

the wellhead prices in this analysis are calculated as the lesser of a netback from the delivered sales price or the NGPA controlled price; this results in zero wellhead values for the first three or four years of production increasing over a few additional years to the NGPA ceiling price; this could be conservative for several reasons:

i.) producers might not agree to resolving the marketability problem in the early years by reducing wellhead values; the problem might be entirely or partially overcome by rolled-in pricing or levelizing the ANGTS tariff; now-lapsed gas sales contracts contained language that would have permitted reduction of wellhead values below the NGPA ceiling prices only in case of economic hardship and subject to renegotiation by all parties involved in ANGTS; if Sadlerochit gas is sold at the NGPA price from the outset or if higher prices are allowed by FERC later to recoup these amounts, the economic benefits from ANGTS would be roughly $1.6 billion greater; the present value of the benefits would be $600 million greater; 11/

ii.) if gas prices are decontrolled, losses at the wellhead to provide marketability in the early years might be overshadowed by much higher netbacks in later years if oil prices grow at rates greater than 8%; in present value terms this increase would be somewhat muted;

iii.) prices of gas from reservoirs other than the Prudhoe Bay unit would not be controlled even under NGPA;

11/ The figures quoted can be determined from the attached computer runs prepared by Chuck Logsdon of the Department of Revenue. His discounted cash flow figures were discounted at 10% to 1980; the above figures are discounts of 9% for inflation and 3% real rate of return for the present value figure, to 1982.

b.) NGPA price escalator
the U. S. inflation rate implied by this analysis (see item 3 above and Table XI) is 10.5% as measured by the CPI; the ceiling price escalator under NGPA is the GNP implicit price deflator adjusted to approximate the CPI; thus, this analysis should have escalated the NGPA ceiling by 10.5% rather than 8%;

5.) ANGTS tariffs
the gas price netback calculations assumed that ANGTS tariffs were higher in the early years and declined as the rate base was depreciated; if tariffs are instead levalized, state benefits may be greater if Prudhoe Bay prices remain controlled but relatively less are decontrolled; since tariffs are lower in early years, more total dollars over the project life will have to be paid to equity owners to give them the same rate of return; since the rate of return to be allowed is expected to be higher than the 3% (in real dollars) used to value state benefits, income taxes on ANGTS equity returns will be greater even in present value terms; however, the present value of state gas revenues at the wellhead would arguably be less by similar reasoning, at least in a decontrolled, netback price situation; the net effect could be negative since the wellhead revenue generally outweighs the income tax revenue; the state might want to develop a detailed analysis to better determine the effects on state benefits of levelized tariffs and/or reduced wellheads and possibly take a position on what means should be used to overcome marketability problems;

6.) population
the effects of population on state expenditures are conservative in two respects:

i.) the population impact of gasline and conditioning plant operations was not considered;

ii.) the population increase resulting from ANGTS was projected by the Institute of Social and Economic Research MAP model based on government spending at a level required to maintain the FY 81 level of service per capita; this analysis calculated costs based on maintenance of FY 82 level of service or some higher level resulting from spending at the spending limit; in either case provision of the same services to pipeline employees as the rest of the populace receives would result in higher state employment and total population;

7.) conditioning costs
the gas revenue figures assume that conditioning costs are passed on to consumers as part of the ANGTS tariff; even though the ANGTS waivers would make the plant part of ANGTS, there may still be some chance part or all of the conditioning costs would be borne by the producers and state through a reduced ceiling price or the allocation of costs between gas and liquids;

8.) severance taxes
the gas revenue figures are too low in that consideration was not given to the fact that severance taxes can be added on to the NGPA ceiling price; accounting for this would increase income taxes from producers.

7.) conditioning costs
the gas revenue figures assume that conditioning costs are passed on to consumers as part of the ANGTS tariff; even though the ANGTS waivers would make the plant part of ANGTS, there may still be some chance part or all of the conditioning costs would be borne by the producers and state through a reduced ceiling price or the allocation of costs between gas and liquids;

8.) severance taxes
the gas revenue figures are too low in that consideration was not given to the fact that severance taxes can be added on to the NGPA ceiling price; accounting for this would increase income taxes from producers.

III. WEALTH

Increases in real or financial wealth of Alaskans is an economic benefit that has not been estimated in the preceding analysis.

Real Wealth

As a result of ANGTS, there will likely be increased investment in plant and equipment in Alaska. This constitutes an increase in real wealth. Some portion of this will be owned by Alaskans.

The extent of investment in Alaska as a result of ANGTS is rather uncertain however because of the boom-bust nature of the development. The possible specter of excess capacity after the construction period may temper investment plans. This of course does not apply to development-type investments such as gas liquids-based petrochemicals that might accompany ANGTS.

Financial Wealth

Financial wealth is an increase in savings of individuals. The higher personal incomes of Alaskans resulting from ANGTS will undoubtedly result in some increase in their savings, which means higher incomes in the future.

To the extent the investment response to the prospect of ANGTS is limited, higher than usual profits from construction activity would accrue to existing businesses. As a result the value of these businesses increase, if only temporarily as a result of the boom-bust nature of ANGTS.

This might be perceived as an additional economic benefit because those who sell out during the high tide of gasline construction can experience a gain in financial wealth. However, if markets and information were perfect, the gain would equal the present value of the additional profits. These have already been counted as a net economic benefit to the private sector.

IV. INFLATION AND THE DISTRIBUTION OF INCOME AND WEALTH

In the economic benefit analysis, inflation was assumed to have no effect on the private sector. While this may be true as a whole, inflation may have different impacts on various groups within the private sector. These differing effects can occur with respect to both income and wealth.

Income

Some idea of the effect of inflation caused by ANGTS can be gained by looking at the TAPS experience. The following table shows that practically all employment groups had increases in real wages during TAPS construction from 1973 to 1976:

Alaskan Wage Rate Growth in the 1970s

Industry	Average Monthly Wage 1973	1976	1979	Increase (percent) 1973-76	1973-79
All Nonagricultural Employment	$1,006	$1,928	$1,741	92	73
Mining	1,617	2,705	3,370	67	108
Construction	1,635	4,041	2,910	147	78
Manufacturing	961	1,409	1,745	47	82
Transport, Communications & Public Utilities	1,141	2,023	2,264	77	98
Trade	778	1,149	1,239	48	59
Finance, Insurance & Real Estate	897	1,197	1,572	33	75
Services	751	1,499	1,272	100	69
Government	1,024	1,418	1,749	42	71
	*	*	*		
U.S. per Capita Annual Income	$4,981	$6,401	$8,706	29	75
Anchorage Consumer Price Index (Oct.)	113.8	167.6	211.4	35	71

Reprinted from "Analyzing Economic Impact in Alaska", Scott Goldsmith, Institute of Social and Economic Research, 1981.

By 1979, in the wake of TAPS construction, the wages of trade and services employees had decreased in real terms compared to pre-pipeline days.

However, the effect on individuals in trade services may not have been negative. The decline in real wages may have resulted from changes in the kinds of jobs or skill levels of employees as younger or less experienced employees moved into these jobs. It may reflect a decline in the number of hours worked.

Wealth

Possibly the most significant effect of gasline inflation on the private sector is to transfer financial wealth from lenders to borrowers.

The total value of assets held by borrowers will increase with inflation. However, debt service costs, which are generally at fixed interest rates, will remain the same. Thus, the inflationary increase on the portion of assets financed by debt will accrue as additional financial wealth to the owner upon sale.

A rough estimate of this increase in borrower's financial wealth can be made. Total assessed property values in Alaska as of Janaury 1, 1981 were $16.6 billion excluding oil and gas property. If the high inflation estimate of 18.06% is used, the increase in property values is $3 billion. As of January 1981, total Alaskan bank loans, Alaskan savings and loan institutions' loans, and Alaska Housing Finance Corporation (AHFC) mortgages were approximately $2.5 billion or 15% of assessed value. Thus, 15% of $3 billion or $450 million would be the increase in borrowers' financial wealth. This is a conservative estimate of the transfer of wealth to owners of Alaskan property (not all to whom would be Alaskans) since many bank and S & L loans are resold to outside banks or mortgage companies and are not on the books as assets of Alaskan banks or S and L's.

The effect of inflation on lenders is to see their loans and fixed-rate investments in the money or bond markets decrease in value by the amount of the gasline-caused inflation. This can be roughly estimated as follows:

Alaskan bank, S&L, and credit union deposits December, 1980	$2,794,555,000
State Appropriations to Loan Programs FY 81 and FY 82	1,560,700,000
TOTAL SAVINGS AND/OR LENDING	$4,355,255,000

Inflation of 18.06% will reduce the value of these funds saved or lent by $786 million. Again, not all of these funds are provided by Alaska residents; some are from outside corporations.

V. ALASKA'S CAPACITY FOR INVOLVEMENT IN ANGTS FINANCING

The analysis performed for determining economic benefits can also be used to answer the questions how much surplus general funds might the state have to invest in ANGTS or how much would its Sadlerochit gas royalties be worth if used to assist in financing. The increasingly dismal outlook for oil prices, at least in the short run, means that the amounts estimated in this analysis are probably too high. At least, this would be the case with general funds of which there could possibly be no surplus in the next few years.

General Funds

A budget forecasting model was used to estimate the previously discussed effects of ANGTS on state government. The model calculated general fund balances out to FY 98 for six scenarios obtained by combinations of

1) no gasline, gasline with low inflation, gasline with high inflation;

2) FY 82 level of service budgets, budgets at the spending limit.

The model was also run an additional six times for each of the cases with the assumption that all funds in excess of the above budget levels were spent on capital projects. 12 /

In all cases, the amounts available for capital projects were in excess of the currently anticipated capital budgets for each year from FY 84 to FY 88 by almost one billion dollars or more. For FY 83 all available funds are budgeted. (Compare Table XVIII to the computer runs.)

In total, the amounts available for capital during the period FY 83-98 are over $25 billion in FY 83 dollars in the worst case. The total capital projects for the period, including the best available estimates for Susitna and the capital move, are only $19 billion in as-spent dollars. Of course, capital budgets have not been formulated beyond the Governor's six-year plan as yet.

12/ The amounts so spent on capital projects are substantially less than the cumulative general fund balances in the first six runs due to the loss of interest earnings. Involvement in gasline financing would presumably earn interest, somewhat augmenting the amounts available.

Royalties

A Division of Petroleum Revenue computer model was used to forecast gasline revenues to FY 2016. Three cases were projected based on:

1) Sadlerochit gas prices at the Natural Gas Policy ACT (NGPA) ceiling;

2) netback gas prices based on the two ANGTS construction costs scenarios described earlier;

The present value in 1982 $ of the royalties calculated in these three scenarios is:

1) $2,174.6 million at the NGPA ceiling;

2) $1,594.3 million in the low inflation-centerpoint construction cost (30% overrun) case;

3) $1,474.0 million in the high inflation--10% over centerpoint construction cost (40% overrun) case.

The royalty amounts are discounted at 9% for inflation and 3% for a real rate of return to obtain their present value. Gas prices had been escalated at 8%.

Table I
Present Value of Net Economic Benefits to Alaska
of the Alaska Natural Gas Transportation System
(MILLIONS 1982 $)

	LOW INFLATION SCENARIO		HIGH INFLATION SCENARIO	
	FY 82 Level of Service Budgets	Budgets at Spending Limit	FY 82 Level of Service Budgets	Budgets at Spending Limit
Benefits (Costs) Discounted @ 3%				
a) State Government	3375.5	3250.1	(2198.6)	(1033.0)
(1) FY 98 General Fund Balance Increase (Decrease) from Base Case	1641.0	1515.6	(3280.5)	(2119.9)
(2) FY 98 Permanent Fund Balance (Decrease) from Base Case	(21.9)	(21.9)	(534.0)	(534.0)
(3) FY 99-2016 Gas Revenues	1325.5	1325.5	1344.4	1344.4
(4) FY 86-2016 Reduced Oil Recovery	501.6	501.6	501.6	501.6
(5) Gas Revenues from Other Fields	?	?	?	?
(6) Erosion of Other State Assets due to Gasline Inflation (Retirement Funds, Rainy Day Fund)	(70.7)	(70.7)	(230.1)	(230.1)
b) Local Government	112.0	112.0	112.0	112.0
c) Private Sector	1118.4	1118.4	1118.4	1118.4
Present Value of Net Economic Benefits (Costs)	4605.9	4480.5	(968.2)	192.4

NOTES:

a) (1) & (2) Amounts from Table II discounted 3% per annum from 1998-1982
(3) Annual amounts from Division of Petroleum Revenue computer runs discounted at 9% inflation and 3% for real rate of return
(4) Net difference in Sadlerochit oil recovery (see footnote a) (4) from Table II) discounted at 3% real rate of return and multiplied by $20 per barrel in 1982 $ and 30% state share
(6) Amount from Table II

b) Amounts from Col. 5, Table XXII discounted at 3% real rate of return to 1982 and escalated at 9% inflation to 1982

c) Amounts from Col. 3, Table XXI discounted at 3% real rate of return to 1982 and escalated at 9% inflation to 1982

Table II
Net Economic Benefit to Alaska
of the Alaska Natural Gas Transportation System
(Millions 1982 $)

Benefits (Costs) not Discounted	LOW INFLATION SCENARIO		HIGH INFLATION SCENARIO	
	FY 82 Level of Service Budgets	Budgets at Spending Limit	FY 82 Level of Service Budgets	Budgets at Spending Limit
a) State Government	4161.0	3959.8	(4682.0)	(2819.5)
(1) FY 98 General Fund Balance Increase (Decrease) from Base Case	2633.3	2432.1	(5264.3)	(3401.8)
(2) FY 98 Permanent Fund Balance (Decrease) from Base Case	(35.2)	(35.2)	(854.4)	(854.4)
(3) FY 99-2016 Gas Revenues	2473.6	2473.6	2506.8	2506.8
(4) FY 06-2016 Reduced Oil Recovery	(840.0)	(840.0)	(840.0)	(840.0)
(5) Gas Revenues from Other Fields	?	?	?	?
(6) Erosion of Other State Assets due to Gasline Inflation (Retirement Funds, Rainy Day Fund)	(70.7)	(70.7)	(230.1)	(230.1)
b) Local Government	127.6	127.6	127.6	127.6
c) Private Sector	1233.2	1233.2	1233.2	1233.2
Net Economic Benefit (Cost)	5521.8	5320.6	(3321.2)	(1458.7)

NOTES: a) (1) & (2) FY 98 balances in FY 83 $ from Legislative Finance computer runs discounted at 9% inflation to 1982 $ and further discounted by the additional inflation from Tables IX and X in the gasline scenarios; also includes $70.3 million and $77.7 million in ¢/MCF severance taxes (1982 $) for the low and high inflation scenarios that were omitted from the computer analysis compounded @ 3% real rate of return to FY 98.

(3) Annual amounts from Division of Petroleum Revenue computer runs discounted at 9% inflation to 1982 $

(4) Net difference in Sadlerochit oil recovery from "Estimated State and Local Revenue from the Alaska Highway Natural Gas Pipeline Project", Berman and Myers, October 1980, Table B-1 valued at a constant $20 per barrel in 1982 $ multiplied by an assumed state share of 30%; Berman and Myers work is based on the March 1980 "Three-Dimensional Reservoir Study, Sadlerochit Formation" by Van Poollen.

(6) 1980 fund balances multiplied by additional gasline inflation from Tables IX and X.

b) Sum of Col. 5, Table XXII escalated at 9% per annum to 1982

c) Sum of Col. 3, Table XXI escalated at 9% per annum to 1982

TABLE III
ALASKA REVENUES
ASSUMING NO GAS LINE CONSTRUCTION
($ Millions)

FY	(1) Severance	(2) Royalties	(3) Petroleum Income Tax	(4) Property Tax	(5) Other Tax and License Revenue
82	1718.7	1678.4	713.0	155.0	210.0
83	1819.6	1767.0	304.0	157.0	212.8
84	2214.1	2145.1	360.0	225.0	222.4
85	2616.1	2542.6	373.0	283.1	244.8
86	2970.9	2869.6	400.0	304.2	269.5
87	3420.7	3322.2	430.0	317.9	296.7
88	3179.9	3629.1	460.0	317.9	326.7
89	3540.8	4003.8	490.0	318.0	359.6
90	3386.2	3880.4	520.0	318.0	395.9
91	3138.7	3667.7	550.0	318.0	435.9
92	3061.4	3644.4	580.0	305.0	479.9
93	3095.6	3709.9	610.0	293.0	528.3
94	3092.8	3723.3	640.0	281.0	581.6
95	2740.0	3404.3	670.0	270.0	640.2
96	2572.1	3276.6	700.0	259.0	704.9
97	2771.4	3552.8	730.0	251.0	775.9
98	2799.9	3673.6	730.0	238.0	854.3

NOTES:
1. "Petroleum Revenue Production Forecast", Alaska Department of Revenue, December 1981; amount is total severance from Table 1 less Prudhoe Bay gas production taxes from Table 2.
2. Ibid.; amount is total royalties from Table 1 less Prudhoe Bay gas royalties from Table 2.
3 & 4. Long range computer projections provided by Research Division, Alaska Department of Revenue.
5. FY 82-FY 84 derived from "Revenue Sources", Alaska Department of Revenue, January 1982.
FY 85-FY 98 escalated at 1% above the inflation rate of 9% used in projecting budget growth with no gasline.

TABLE IV
Alaska Revenues
Assuming Gas Line Construction
Low Inflation
($ Millions)

FY	(1) Severance	(2) Royalties	(3) Petroleum Income Tax	(4) Property Tax	(5) Other Tax and license Revenue
82	1718.7	1678.4	713.0	157.0	211.5
83	1819.6	1767.0	304.0	169.0	219.3
84	2214.1	2145.1	360.0	256.0	240.1
85	2616.1	2542.6	373.0	399.0	298.4
86	2970.9	2869.6	400.0	543.2	352.9
87	3460.7	3322.2	641.5	857.9	359.7
88	3219.9	3629.1	663.0	836.3	367.7
89	3580.8	4003.8	684.6	814.8	389.9
90	3426.2	3916.7	706.1	793.2	418.2
91	3256.9	3847.3	747.3	771.6	453.3
92	3257.3	3965.2	792.3	737.0	495.4
93	3348.7	4149.1	833.7	703.4	544.0
94	3357.0	4196.6	861.2	669.8	598.6
95	3014.3	3915.3	899.3	637.2	658.5
96	2844.4	3829.6	918.6	604.6	724.8
97	3033.1	4148.5	948.2	575.0	797.6
98	3076.6	4317.2	948.1	540.4	878.0

NOTES: 1, 2 & 3. Amounts from Table III plus amounts from Division of Petroleum Revenue computer run projecting gasline revenue based on $27 billion rate base for the Alaska line segment and conditioning plant. Gas wellhead prices are shown in Col. 5, Table VI . ¢/MCF severance added to computer run amounts.

4. FY 82-86 amounts from Col. 1, Table 2 of "Estimated State and Local Revenue from the Alaska Highway Natural Gas Pipeline Project", Berman and Myers, October 1980, escalated 10% per annum to yield nominal dollars.
   FY 87-98 amounts from Division of Petroleum Revenue computer run.
5. Amounts from Table VII

TABLE V
Alaska Revenues
Assuming Gas Line Construction
High Inflation
($ Millions)

FY	(1) Severance	(2) Royalties	(3) Petroleum Income Tax	(4) Property Tax	(5) Other Tax and license Revenue
82	1718.7	1678.4	713.0	157.0	211.5
83	1819.6	1767.0	304.0	169.0	219.3
84	2214.1	2145.1	360.0	257.0	240.2
85	2616.1	2542.6	373.0	409.0	299.8
86	2970.9	2869.6	400.0	572.8	359.4
87	3460.7	3322.2	642.7	911.9	367.1
88	3219.9	3629.1	664.2	888.1	372.8
89	3580.8	4003.8	685.7	854.5	393.5
90	3426.2	3880.4	707.2	840.7	420.8
91	3193.1	3736.9	730.0	817.0	455.3
92	3186.3	3839.3	772.4	780.2	497.3
93	3295.9	4051.4	818.4	744.4	545.9
94	3357.0	4196.6	862.0	708.7	600.5
95	3014.3	3915.3	890.1	673.9	660.6
96	2844.4	3829.6	919.3	639.2	727.2
97	3033.1	4148.5	948.9	607.4	800.2
98	3076.6	4317.2	948.9	570.6	880.9

NOTES: 1, 2 & 3. Amounts from Table III plus amounts from Division of Petroleum Revenue computer run projecting gasline revenue based on $29.7 billion rate base for the Alaska line segment and conditioning plant. Gas wellhead prices are shown in Col. 8 of Table VI. ¢/MCF severance added to computer run amounts.

4. FY 82-86 amounts from Col. 1, Table 2 of "Estimated State and Local Revenue from the Alaska Highway Natural Gas Pipeline Project", Berman and Myers, October 1980, escalated at inflation rates in Table X to yield nominal dollars.
FY 87-98 amounts from Division of Petroleum Revenue computer run.

5. Amounts from Table XIII.

TABLE VI
ALASKA NORTH SLOPE GAS PRICES

			LOW INFLATION SCENARIO (CURRENT ANGTS ESTIMATE)			HIGH INFLATION SCENARIO (40% ANGTS OVERRUN)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FY	Oil Price ($/MMBtu)	Alaska Gas Wellhead NGPA Price ($/MMBtu)	ANGTS Delivered Unit Cost Base Case ($/MMBtu)	Alaska Gas Wellhead Netback ($/MMBtu)	Alaska Gas Wellhead Netback ($/MCF)	ANGTS Delivered Cost 40% Overrun ($/MMBtu)	Alaska Gas Wellhead Netback ($/MMBtu)	Alaska Gas Wellhead Netback ($/MCF)
80	5.13	1.786						
87	8.79	3.06	15.90	-		17.48	-	-
88	9.49	3.30	15.30	-		16.66	-	-
89	10.25	3.57	14.80	-		15.99	-	-
90	11.07	3.85	14.30	.62	.65	15.65	-	-
91	11.96	4.16	14.00	2.12	2.24	15.15	.97	1.03
92	12.91	4.50	13.80	3.61	3.81	15.11	2.30	2.43
93	13.95	4.86	13.80	4.86	5.13	14.96	3.85	4.06
94	15.06	5.24	-	5.24	5.53	14.68	5.24	5.53
95	16.26	5.66	-	5.66	5.97	15.06	5.66	5.97
96	17.57	6.12	-	6.12	6.46	15.41	6.12	6.46
97	18.97	6.60	-	6.60	6.96	15.91	6.60	6.96
98	20.49	7.13	-	7.13	7.52	15.98	7.13	7.52

NOTES: 1. & 2. Escalated at 8% per annum; 1980 oil value from "Cost of Service for ANGTS", Federal Inspector for ANGTS, October 19, 1981; 1980 NGPA ceiling price from FERC.
3. Interpolated from Chart on page 729 of "Cost of Service for the ANGTS".
4. Col. 2 - Col. 3 + Col. 1
5. Col. 4 x 1.055 MMBtu per MCF for Sadlerochit gas
6. Interpolated in 1980 $ from chart on page 731 of "Cost of Service for the ANGTS"; escalated at 8% per annum for nominal dollars.
7. Col. 2 - Col. 6 + Col. 1
8. Col. 7 x 1.055

Table VII
ALASKA NON-PETROLEUM REVENUES
RESULTING FROM GASLINE CONSTRUCTION
LOW INFLATION
($ Millions)

FY	(1) Corporate Income Taxes of Pipeline Contractors	(2) Other Corporate Income Taxes	(3) Excise Taxes and Licenses	(4) Total Non-Petroleum Revenue
82	1.1	.1	.3	1.5
83	4.8	.7	1.0	6.5
84	9.2	3.2	5.3	17.7
85	26.2	9.6	17.8	53.6
86	33.7	16.3	33.4	83.4
87	21.2	13.1	28.7	63.0
88	1.9	13.5	25.6	41.0
89		12.5	17.8	30.3
90		10.6	11.7	22.3
91		8.4	9.0	17.4
92		7.6	7.9	15.5
93		7.7	8.0	15.7
94		8.2	8.8	17.0
95		8.8	9.5	18.3
96		9.6	10.3	19.9
97		10.4	11.3	21.7
98		11.4	12.3	23.7

Notes: 1. Amounts from Table 2 of "Estimated State and Local Revenue from the Alaska Highway Natural Gas Pipeline Project", Berman and Myers, October 1980, lagged one year to reflect current estimated construction commencement date and escalated 9% plus the additional inflation from Table IX per annum.

2 & 3. Amounts from Table 5 of Berman and Myers lagged one year and escalated as in footnote 1.

4. Col. 1 + Col. 2 + Col. 3.

Table VIII
ALASKA NON-PETROLEUM REVENUES
RESULTING FROM GASLINE CONSTRUCTION
HIGH INFLATION
($ Millions)

FY	(1) Corporate Income Taxes of Pipeline Contractors	(2) Other Corporate Income Taxes	(3) Excise Taxes and Licenses	(4) Total Non-Petroleum Revenue
82	1.1	.1	.3	1.5
83	4.[illegible]	.7	1.0	6.5
84	9.[illegible]	3.2	5.3	17.8
85	26.9	9.9	18.2	55.0
86	36.3	17.6	36.0	89.9
87	23.7	14.6	32.1	70.4
88	2.1	15.1	28.9	46.1
89		13.9	20.0	33.9
90		11.8	13.1	24.9
91		9.4	10.0	19.4
92		8.5	8.9	17.4
93		8.6	9.0	17.6
94		9.1	9.8	18.9
95		9.8	10.6	20.4
96		10.7	11.6	22.3
97		11.7	12.6	24.3
98		12.8	13.8	26.6

NOTES 1. Amounts from Table 2 of "Estimated State and Local Revenue from the Alaska Highway Natural Gas Pipeline Project", Berman and Myers, October 1980, lagged one year to reflect current estimated construction commencement date and escalated 9% plus the additional inflation from Table X per annum lagged one year for fiscal year basis and delay in payment dates.

2 & 3. Amounts from Table 5 of Berman and Myers lagged one year and escalated as in footnote 1.

4. Col. 1 + Col. 2 + Col. 3

TABLE IX

Impact of Gasline on Alaska Inflation

Low Inflation Estimate

FY	(1) AEIRS CPI No Gasline	(2) AEIRS CPI Gasline	(3) Annual Inflation No Gasline	(4) Annual Inflation with Gasline	(5) Additional Inflation Due to Gasline
81	2.466	2.501	-	-	-
82	2.684	2.751	8.84%	10.00%	-
83	2.919	3.024	8.76	9.92	1.06%
84	3.169	3.318	8.56	9.72	1.07
85	3.445	3.646	8.71	9.89	1.07
86	3.753	4.017	8.94	10.18	1.09
87	-	-	-	-	1.14
88	-	-	-	-	-

NOTES:
1. Projected Anchorage CPI from Table II, "Alaska Economic Information and Reporting System", Alaska Department of Commerce and Economic Development, July, 1980.
2. Projected Anchorage CPI from Table II of a July 10, 1980 run of the AEIRS model simulating gasline construction.

3 & 4. Annual percentage increase in Cols. 1 and 2.

5. (1 + Col. 4/100) ÷ (1 + Col. 3/100) - 1; amounts lagged one year to reflect current estimated construction commencement date.

TABLE X
Impact of Gasline on Alaska Inflation
HIGH INFLATION ESTIMATE

Calendar Year	(1) Alaska Gasline Construction Cost Billions 1980 $	(2) Additional Inflation Due To Gasline	(3) Cumulative Additional Inflation
82	.6	--	--
83	1.2	2%	2.00%
84	3.3	4%	6.08%
85	3.3	6%	12.44%
86	2.4	5%	18.06%
Total	10.8		

Notes:

1. Incremental construction costs for line with 30% overrun for IROR centerpoint interpolated from chart on page 714 of "Cost of Service for the Alaska Natural Gas Transportation System", FERC Federal Inspector for ANGTS, October 19, 1981.

2. Arbitrary estimate of the author.

3. Product of inflation for current year times all previous years.

TABLE XI

IMPACT OF TAPS CONSTRUCTION ON INFLATION

Year	(1) U.S. CPI (October)	(2) U.S. Inflation	(3) Anchorage CPI	(4) Anchorage Inflation	(5) Anchorage vs. U.S. Inflation	(6) Anchorage Inflation During TAPS Construction in Excess of 67-73 Average Margin	(7) Anchorage Inflation Below 67-73 Average Margin Following TAPS Construction
67	101.1		100.0				
68	105.7	4.55%	102.6	2.60%	(1.95%)		
69	111.6	5.59	107.3	4.58	(1.01)		
70	118.1	5.82	111.5	3.91	(1.91)		
71	122.4	3.64	114.4	2.60	(1.04)		
72	126.6	3.43	116.9	2.18	(1.25)		
73	136.6	7.90	123.8	5.90	(2.00)		
74	153.0	12.01	140.0	13.08	1.07	2.60%	
75	164.6	7.58	157.4	12.42	4.84	6.37	
76	173.3	5.29	167.6	6.48	1.19	2.72	
77	184.5	6.46	177.3	5.79	(.67)	.86	
78	200.9	8.89	194.7	9.81	.92	2.45	
79	225.4	12.20	213.7	9.75	(2.45)		(.92%)
80	253.9	12.64	236.5	10.67	(1.97)		(.44)
81	279.9	10.24	253.7	7.27	(2.97)		(1.44)
Average 1967-1973 Margin Below U.S. Inflation					(1.53)		
Cumulative Inflation						15.83%	2.82%

NOTES: Columns 6 and 7 assume that in the absence of TAPS, Anchorage inflation would have been 1.53 percentage points below U.S. inflation.

Table XII
Alaska Population
(000)

FY	(1) Non-Gasline Population	(2) Gasline Construction Population	(3) Conditioning Plant Construction Population	(4) Total Population with Gasline	(5) Population Growth with Gasline
82	425.6	.4	--	426.0	
83	437.7	3.7	.5	441.9	3.73%
84	450.1	17.6	1.9	469.6	6.27
85	462.9	35.3	3.6	501.8	6.86
86	476.0	31.1	3.2	510.3	1.69
87	489.6	19.1	1.9	510.6	--
88	503.5			503.5	(1.39)
89	517.8			517.8	2.84
90	532.5			532.5	2.84
91	547.6			547.6	2.84
92	563.1			563.1	2.84
93	579.1			579.1	2.84
94	595.6			595.6	2.84
95	612.5			612.5	2.84
96	629.9			629.9	2.84
97	647.8			647.8	2.84
98	666.2			666.2	2.84

NOTES:
1. FY 82 = July 1, 1981 population from "July 1, 1981 Population, Municipalities and Census Areas", Department of Community and Regional Affairs escalated at one-half the average compound growth rate between the 1970 and 1980 census which was 2.84%;
   FY 82 and beyond = prior year population x 1.0284
2. Population 3.B from Table II of "The Relationship between the Alaska Natural Gas Pipeline and State and Local Government Expenditures", Institute of Social and Economic Research, December 1980 divided by pipeline construction employment in Table 2 of ISER lagged one year and multiplied by estimated pipeline construction employment in Table II-1 of "Gasline Planning Update", Northwest Alaska Pipeline Company, September 1981; figures include direct, indirect, and government spending induced employment impact and employees' families.
3. Same ratio as footnote 2 multiplied by direct employment on conditioning plant construction interpolated from Table VI-2 of "Gasline Planning Update" til peak construction year of FY 85. Population declines thereafter at same rate as Col. 2.
4. Col. 1 + Col. 2 + Col. 3
5. Annual percentage increase in Col. 4

TABLE XIII
State of Alaska
Nominal General Fund Budget Growth at the Level Permitted by the Proposed Constitutional Spending Limit

FY	(1) NO GASLINE	(2) GASLINE LOW INFLATION	(3) GASLINE HIGH INFLATION
83	12.10%	14.26%	15.33%
84	12.10	17.07	20.47
85	12.10	17.72	23.47
86	12.10	12.05	12.11
87	12.10	10.24	9.00
88	12.10	7.48	7.48
89-90, annually	12.10	12.10	12.10

NOTES:
1. Annual inflation at 9% x average population growth of 2.84% between 1970 and 1980 census.
2. Population growth from Col. 5, Table XII x annual inflation of 9% x additional inflation due to gasline from Col. 5, Table IX
3. Population growth from Col. 5, Table XII x annual inflati 9% x additional inflation from Col 2, Table X

TABLE XIV

State of Alaska

Nominal General Fund Budget Growth Required to Maintain FY 82 Level of Service

	(1)	(2)	(3)	(4)	(5)	(6)
	NO GASLINE		GASLINE LOW INFLATION		GASLINE HIGH INFLATION	
FY	Operating	Capital	Operating	Capital	Operating	Capital
83	11.36%	11.70%	13.21%	13.31%	14.26%	14.36%
84	"	"	15.09	14.51	18.43	17.83
85	"	"	15.53	14.78	21.17	20.38
86	"	"	11.73	12.38	16.05	16.73
87	"	"	10.53	11.64	9.28	10.33
88	"	"	8.28	9.74	8.28	9.74
89-98, annually	11.36%	11.70%	11.36	11.70	11.36	11.70

NOTES:

1. & 2. Real growth rates from Cols. 1 and 2, Table XVI x 9% annual inflation
3. & 4. Real growth rates from Cols. 3 and 4, Table XVI x 9% annual inflation x additional inflation due to gasline from Col. 5, Table IX
5. & 6. Real growth rates from Cols. 3 and 4, Table XVI x 9% annual inflation x additional inflation due to gasline from Col. 2, Table X

TABLE XV
STATE OF ALASKA
HIGHWAY COST IMPACT OF THE GASLINE
($ MILLIONS)

FY	Original Cost Estimate (Nominal $)	Original Cost Estimate (1980 $)	Low Inflation Cost Estimate (Nominal $)	High Inflation Cost Estimate (Nominal $)
82	8.4	6.9	-	-
83	25.7	19.3	9.1	9.3
84	31.1	21.2	28.3	29.3
85	31.0	19.2	34.1	37.0
86	207.1	116.7	34.0	38.2
87	-	-	227.4	253.0
TOTAL	303.3	183.3	332.9	366.8

NOTES:

1. Amounts from July 21, 1980 letter from Commissioner Robert Ward of the Alaska Department of Transportation and Public Facilities to Al Kuhn of Northwest Alaskan Pipeline Company.

2. FY 82-85: amount from Co. 1 discounted at 10% per annum, the inflation rate assumed in Commissioner Ward's letter.
   FY 86: amount from Commissioner Ward's letter

3. Col. 2 inflated at 10% per annum to succeeding year to reflect current estimated construction commencement date.

4. Col. 2 inflated at 9% per annum plus additional inflation from Table X to succeeding year.

TABLE XVI
STATE OF ALASKA
REAL GENERAL FUND BUDGET GROWTH REQUIRED TO MAINTAIN FY 82 LEVEL OF SERVICE PER CAPITA

	(1)	(2)	(3)	(4)
	No Gasline		Gasline	
FY	Operating	Capital	Operating	Capital
83	2.17%	2.48%	2.77%	2.86%
84	2.17%	2.48%	4.47%	3.94%
85	2.17%	2.48%	4.87%	4.19%
86	2.17%	2.48%	1.40%	1.99%
87	2.17%	2.48%	.26%	1.27%
88	2.17%	2.48%	(.66)%	.68%
89-98, annually	2.17%	2.48%	2.17%	2.48

NOTES:

1. 2.84% population growth (see Footnote 1, Table XII) x .764 which is the proportion of the general fund operating budget estimated to be population sensitive in Table 5 of ISER study (mentioned in Footnote 2, Table XII); this includes a percentage for government support activities in the same ratio as directly population sensitive programs are to the total general fund budget; it also includes population sensitive programs outside the impact area from Table B.1 of ISER.

2. 2.84 population growth x .872 which is the proportion of the general fund and general obligation bond capital budget estimated to be population sensitive in Table B.3 of ISER; this growth rate is to be applied to one-twentieth of the total capital stock in Col. 5, Table XVII adjusted for inflation at 9% over a three year construction period, a factor of 1.2.

3. No gasline growth rate from Col. 1 x (additional gasline growth rate, ((1 + Col. 5, Table XII)/1.0284)-1, x .735 population sensitive operating budget in impact areas derived from ISER Table 5 x .919 to reflect different age and family structure of migrants); .919 is derived from Table B.2 and Table 5 of ISER by comparing the total population sensitive general fund budget per capita to the cost per capita calculated for migrants.

4. No gasline growth rate from Col. 2 x (additional gasline growth rate, ((1 + Col. 5, Table XII)/1.0284)-1, x .465 population sensitive non-highway impact area capital budget estimated from Table B.3 of ISER x .917 to reflect different age and family structure of migrants); .917 is derived from Table B.4 of ISER; this growth rate is to be applied to one-twentieth of the non-highway capital stock in Col. 10, Table XVII adjusted for inflation (see Footnote 2).

TABLE XVIII
STATE OF ALASKA
STATE-FUNDED CAPITAL STOCK IN MILLIONS OF FY 82 $

	TOTAL					NON-HIGHWAY				
FY	(1) Gen.Fund Capital Approp.	(2) G.O.Bond Authoriza-tions	(3) Annual Projects Completed	(4) Value of Projects Completed	(5) Value of Cap.Stock FY 82 $	(6) Gen.Fund Capital Approp.	(7) G.O.Bond Authoriza-tions	(8) Annual Projects Completed	(9) Value of Projects Completed	(10) Value of Cap.Stock FY 82 $
63	6.8					2.0				
64	8.2	7.0				2.8	7.0			
65	.9					.9				
66	2.0	62.6	6.8	25.2		1.8	52.1	2.0	7.4	
67	1.3	13.2	15.2	53.6		1.3	8.2	9.8	34.6	
68	1.8	44.7	.9	3.0		1.8	33.5	.9	3.0	
69	2.3		64.6	200.7		2.2		53.9	167.5	
70	2.0	146.2	14.5	42.1		2.0	111.5	9.5	27.6	
71	61.2		46.5	125.7		57.5		35.3	95.4	
72	8.4	124.5	2.3	5.9		8.4	114.5	2.2	5.6	
73	11.6		148.2	345.3		10.5		113.5	264.5	
74	7.5	189.5	61.2	125.4		7.4	152.2	57.5	117.8	
75	12.4		132.9	248.6		11.1		122.9	229.9	
76	16.2	201.1	11.6	20.9		14.8	150.0	10.5	18.9	
77	10.9		197.0	325.1		10.1		159.6	263.4	
78	29.8	271.3	12.4	18.2		27.3	188.4	11.1	16.3	
79	138.9		217.3	281.4		137.7		164.8	213.4	
80	100.6	289.7	10.9	12.9		89.9	206.1	10.1	12.0	
81	707.4		301.1	328.2		622.2		215.7	235.1	
82	1380.0	-	138.9	138.9		1287.9		137.7	137.7	
83			390.3	358.1				296.0	271.6	
84			707.4	595.4				622.2	523.7	
85			1380.0	1065.6	3175.5			1287.9	994.5	2728.0

NOTES: 1. FY 63-79 amounts from general appropriations act plus Ch. 134 for FY 79. FY 80-82 amounts from "Alaska Budget in Brief, FY 82," Division of Budget & Management.

2. Amounts from "Annual Financial Report" State of Alaska, various years.

3. Col. 1 and Col. 2 lagged three years.

4. Col. 3 x Department of Commerce Construction Index derived from Table 13 of the ISER study (mentioned in Footnote 2, Table XII) adjusted to FY 82 $ assuming 9% annual inflation for FY 80-85.

5. This is what the value of all projects would be in FY 82 $ upon completion of all authorized projects in FY 85 after depreciating each year's projects over a 20 year period.

6. Amounts for highways from "Annual Financial Report," State of Alaska, various years and "Free Conference Committee Report, Operating and Capital Budget" Alaska Legislature, various years and Session Laws of Alaska, various years, are deducted from Col. 1.

7. Col. 2 less amounts for highways bond issues from "Annual Financial Report," State of Alaska, various years.

8. Col. 6 and Col. 7 lagged three years

9. Same method as Footnote 4.

10. Same method as Footnote 5.

TABLE XVIII
State of Alaska
Capital Projects
($ Millions)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		HYDROELECTRIC PROJECTS						
	Governor's Six-year	Licensed or under	West Creek Bradley Lake	SUSITNA			Capital City	Total Capital
FY	Capital Budget	Construction	Taximina	Watana	Devil Canyon	Total Hydro	Relocation	Projects
83	1156.0	228.0	200.0	25.6		453.6	-	1609.6
84	1819.4		200.0	50.0		250.0	13.4	2082.8
85	981.8		180.0	220.0		400.0	64.0	1445.8
86	782.9		160.0	490.0		650.0	120.8	1553.7
87	1001.2			600.0		600.0	110.7	1711.9
88	1106.2			750.0		750.0	[illegible]	1999.6
89				900.0		900.0	1[illegible]	1020.5
90				1000.0		1000.0	150.9	1150.9
91				750.0		750.0	97.6	847.6
92				610.0		610.0	153.0	763.0
93				460.0	480.0	940.0	172.5	1112.5
94					610.0	610.0	145.7	755.7
95					760.0	760.0	120.8	880.8
96					830.0	830.0	134.5	964.5
97					900.0	900.0	88.9	988.9
98					860.0	860.0	39.8	899.8
TOTAL	6847.5			5855.6		11263.6	1676.5	19787.6

NOTES: 1. Computer total of general fund (including voter approval) projects contained in "Executive Budget, Book 2- Capital Budget and Six Year Capital Program, FY 83", Jay Hammond, Governor, provided by Budget and Management.
2. Figure provided by Alaska Power Authority.
3 & 4. Figures provided by Alaska Power Authority; assumes 9% inflation; costs not yet definitive; project feasibility uncertain; Watana costs $3.5 billion in January 1982 $
5. According to Alaska Power Authority, Devil Canyon will cost $1.55 billion in January 1982 $ and would be constructed over a seven year period beginning sometime between 1990 and 1996; scheduled appropriations in Col. 5 estimated by comparison to Watana schedule in January 1982 $
6. Sum of Col. 2 thru 5
7. Amounts from a table on pages 82 and 83 of "Financial Plan and Detailed Economic Projections, Background Report No. 9", Capital Site Planning Commission, March 1978 which are in 1978 dollars have been inflated at 9% per annum and lagged four years; figures are net of land sales and developers costs and represent state and municipal investment exclusive of any financing costs.

COMMENT: These amounts have not been appropriated; appropriation of these amounts may depend on future levels of state revenue.

TABLE XIX

Alaska Personal Income
Resulting from Gasline Impact
(Millions 1980 $)

FY	(1) Wages	(2) Gasline Construction Corporate Profits	(3) Corporate Profits From Indirect Gasline Impact	(4) Personal Income From Gasline Impact
82	13.9	5.3	1.1	20.3
83	171.9	21.2	6.4	199.5
84	593.1	37.2	25.5	655.8
85	1115.8	95.7	70.2	1281.7
86	980.9	111.7	108.5	1201.1
87	591.3	63.8	78.7	733.8

Notes:

1. Amount from Col. 8, Table XX
2. Income taxes of pipeline contractors from Table 2 "Estimated State and Local Revenue from the Alaska Highway Natural Gas Pipeline Project", Berman and Myers, October 1980 ÷ .094 Alaska tax rate x 50% rough assumption of Alaskan-owned businesses' share of contracts; amounts lagged one year for construction commencement.
3. Income taxes from Table 5 of Berman and Myers ÷ .094; lagged one year.
4. Sum of Cols. 1 through 3

TABLE XX
Alaska Employment and Wages
Resulting from Gasline Impact

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	EMPLOYMENT				WAGES (Millions 1980 $)			
	CONSTRUCTION				CONSTRUCTION			
FY	Staff	Craft	Other	Total	Staff	Craft	Other	Total
82	220	32	134	386	8.3	1.9	3.7	13.9
83	1290	1072	2185	4547	48.5	63.0	60.4	171.9
84	2859	4216	8607	15682	107.4	247.9	237.8	593.1
85	3607	7805	18875	30287	135.5	458.9	521.4	1115.8
86	1957	5255	21660	28872	73.5	309.0	598.4	980.9
87	314	378	20172	20864	11.8	22.2	557.3	591.3

NOTES:

1. & 2. Ratio of staff and craft to total pipeline construction employment as contained in Table 2, "The Relationship Between the Alaska Natural Gas Pipeline and State and Local Government Expenditures", Goldsmith and Mogford, ISER, December 1980, applied to estimated pipeline and conditioning plant construction contained in Tables II-1 and VI-2 of "Gasline Planning Update", Northwest Alaskan Pipeline Company, December 1980; ratio lagged one year;
3. Col. 4 less Cols. 1 and 2;
4. Ratio of Col. 4 to Col. 1 on page A-11 of "ISER" x sum of Col. 1 and Col. 2 above, ratio lagged one year; includes state government employment;
5. Average salary of $37,650 as calculated on page A-6 of "ISER" x Col. 1;
6. Average wage of $20 per hour for 70 hour weeks for 42 weeks per year as calculated on pages A-5 and A-7 of "ISER" x Col. 2;
7. Col. 3 x average weekly earnings for non-government and non-service employment for November 1980 of $531.27 as calculated from February 1981 and 1982 issues of "Alaska Economic Trends", Alaska Department of Labor, x 52;
8. Sum of Cols. 5 through 7.

TABLE XXI
PRIVATE SECTOR ECONOMIC BENEFIT
FROM GASLINE IMPACT
(MILLIONS 1980 $)

FY	(1) Wage Gains of Alaska Residents	(2) Corporate Profits	(3) Total Benefits
82	1.9	6.4	8.3
83	27.9	27.6	55.5
84	96.1	62.7	158.8
85	167.7	165.9	333.6
86	110.1	220.2	330.3
87	9.0	142.5	151.5

NOTES:

1. This assumes only pipeline employees experience a gain in wages in real dollars. It assumes that 60% of pipeline jobs go to Alaska residents, based on a review of the TAPS experience in "The Relationship Between the Alaska Natural Gas Pipeline and State and Local Government Experiences," Goldsmith and Mogford, ISER, December 1980. The gain in wages is calculated on the basis of wage rates in footnotes 5, 6, and 7 of Table XX applied to 60% of the employment in Cols. 1 and 2 of Table XX

2. Sum of Cols. 2 and 3 from Table ..

3. Sum of Cols. 1 and 2.

TABLE XXII
Alaska Local Government
Revenues and Expenditures
from Gasline Impact
(Millions 1980 $)

FY		(1) Additional Revenue	(2) Additional Expenditures Operating	(3) Capital	(4) Total	(5) Surplus (Deficit)
82		.3	.1	--	.1	.2
83		2.1	1.5	.3	1.8	.3
84		7.2	6.9	1.4	8.3	(1.1)
85		25.6	13.8	2.8	16.6	9.0
86		62.8	12.1	2.5	14.6	48.2
87		59.7	7.4	1.5	8.9	50.8
	TOTAL	157.7	41.8	8.5	50.3	107.4

Notes:

1. Sum of Col. 5, Table 3 and Col. 6, Table 5 of "Estimated State and Local Revenue from the Alaska Nat ral Gas Pipeline Project", Berman and Myers, October 1980; amounts include direct and indirect effects of gasline construction on local property and sales taxes;
2. Estimated calendar 1979 expenditures per migrant of $353.70 per annum in 1980 $ from "The Relationship Between the Alaska Natural Gas Pipeline and State and Local Government Expenditures", Goldsmith and Mogford, ISER, December 1980, multiplied by the sum of gasline and conditioning plant construction-related population increases from Cols. 2 and 3 of Table XII;
3. Expenditures of $72.28 per migrant required to maintain 1979 level of local government fixed assets as estimated by Goldsmith and Mogford multiplied by population impact as ir footnote 2.
4. Col. 2 + Col. 3.
5. Col. 1 - Col. 4.

APPENDIX A

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL

1

13-FEB-82

NO GASLINE
DEPT OF REVENUE ESTIMATES
FY82 LEVEL OF SERVICE BUDGETS

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	402.0	4220.7	1830.2	212.8	113.2	152.5	2308.6	1912.0	4771.9	1218.6	0.0
1984	4630.3	762.4	5392.7	2038.1	232.7	138.8	162.3	2576.9	2815.8	5606.2	4034.5	0.0
1985	5424.0	1306.9	6730.9	2269.6	265.5	163.8	231.8	2930.7	3800.1	6505.0	7834.6	0.0
1986	6046.8	1969.6	8066.4	2527.5	296.6	161.9	300.6	3286.5	4779.8	7459.1	12614.4	0.0
1987	6957.0	2764.1	9721.1	2814.6	331.3	152.8	367.2	3670.9	6050.2	8513.6	18664.6	0.0
1988	7006.3	3646.9	10653.2	3134.3	370.0	154.8	423.6	4082.8	6570.4	9664.3	25235.0	0.0
1989	7698.8	4646.7	12345.5	3490.4	413.3	146.5	485.0	4535.2	7810.3	10944.2	33045.3	0.0
1990	7504.1	5757.4	13261.5	3806.9	461.7	135.7	551.3	5035.3	8226.2	12218.7	41271.5	0.0
1991	7172.2	6919.8	14092.0	4328.5	515.7	114.8	621.6	5580.5	8511.5	13454.1	49783.0	0.0
1992	7095.9	8138.5	15234.4	4820.2	576.0	114.1	694.8	6205.2	9029.2	14730.3	58812.2	0.0
1993	7219.3	9444.5	16663.8	5362.7	643.4	31.7	770.5	6813.3	9850.5	16053.9	68662.6	0.0
1994	7272.1	10847.3	18119.4	5977.5	718.7	25.8	847.6	7569.7	10549.8	17413.3	79212.4	0.0
1995	6746.5	12301.6	19048.0	6656.6	802.8	23.0	925.4	8407.7	10640.3	18707.8	89852.7	0.0
1996	6541.8	13786.4	20328.2	7412.7	896.7	21.5	1003.5	9334.5	10993.7	19993.6	100846.4	0.0
1997	6984.4	15357.4	22341.8	8254.8	1001.7	16.7	1082.7	10355.8	11985.9	21377.2	112832.3	0.0
1998	7159.9	17038.1	24198.0	9192.6	1118.8	14.4	1163.3	11489.1	12708.9	22839.6	125541.2	0.0

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL
FY 1983 $

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13-FEB-82

NO GASLINE
DEPT OF REVENUE ESTIMATES
FY82 LEVEL OF SERVICE BUDGETS

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	402.0	4220.7	1830.2	212.8	113.2	152.5	2308.6	1912.0	4271.9	1218.6	0.0
1984	4248.0	699.5	4947.5	1869.8	218.1	127.3	148.9	2364.1	2583.3	5143.3	3701.3	0.0
1985	4565.2	1100.0	5665.2	1910.3	223.5	137.9	195.1	2466.7	3198.5	5475.1	6594.2	0.0
1986	4707.8	1520.9	6228.7	1951.7	229.0	125.0	232.1	2537.8	3690.9	5259.8	9740.7	0.0
1987	4928.5	1958.2	6886.6	1993.9	234.7	111.8	260.1	2600.6	4286.1	6031.2	13222.5	0.0
1988	4553.6	2370.2	6923.9	2037.1	240.5	100.6	275.3	2653.5	4270.3	6281.1	16401.0	0.0
1989	4590.5	2770.7	7361.2	2081.2	246.5	87.4	289.2	2704.2	4657.0	6525.7	19703.8	0.0
1990	4105.0	3149.5	7254.5	2126.3	252.6	74.1	301.6	2754.5	4500.0	6684.0	22576.9	0.0
1991	3599.5	3472.8	7072.3	2172.3	258.8	57.6	311.9	2800.7	4271.6	6752.1	24984.4	0.0
1992	3267.1	3747.2	7014.3	2219.3	265.2	52.5	319.9	2857.0	4157.3	6782.2	27028.8	0.0
1993	3049.5	3989.5	7039.0	2267.4	271.8	13.4	325.5	2878.0	4161.0	6781.3	29003.8	0.0
1994	2818.2	4203.7	7021.9	2316.5	278.5	10.0	328.5	2933.5	4088.4	6748.2	30697.4	0.0
1995	2398.6	4373.6	6772.2	2366.6	285.4	8.2	329.0	2989.2	3783.0	6651.3	31945.8	0.0
1996	2133.8	4496.8	6630.6	2417.9	292.5	7.0	327.3	3044.7	3585.9	6521.5	32893.9	0.0
1997	2090.1	4595.6	6685.7	2470.2	299.7	5.0	324.0	3099.0	3586.7	6397.1	33764.7	0.0
1998	1965.7	4677.6	6643.3	2523.7	307.2	4.0	319.4	3154.2	3489.1	6270.3	34465.8	0.0

ASSUMPTIONS

	EXISTING DEBT SERVICE	NEW DEBT	SEVERANCE TAXES	PETROL INCOME TAX	PROPERTY TAX	OTHER REVENUE	ROYALTIES X% TO PF	ROYALTIES 50% TO PF
1983	94.2	0.0	1,819.6	304.0	157.0	212.8	1,767.0	0.0
1984	91.3	0.0	2,214.1	360.0	225.0	222.4	2,145.1	0.0
1985	87.9	0.0	2,616.1	373.0	283.1	244.8	2,542.6	0.0
1986	84.0	0.0	2,970.9	400.0	304.2	269.5	2,869.6	0.0
1987	81.9	0.0	3,420.7	430.0	317.9	296.7	3,322.2	0.0
1988	78.9	0.0	3,179.9	460.0	317.9	326.7	3,629.1	0.0
1989	70.6	0.0	3,540.8	490.0	318.0	359.6	3,954.0	48.8
1990	59.5	0.0	3,386.2	520.0	318.0	395.9	3,793.3	76.1
1991	36.9	0.0	3,138.7	550.0	318.0	435.9	3,582.9	84.8
1992	38.2	0.0	3,061.4	580.0	305.0	479.9	3,389.4	255.0
1993	31.7	0.0	3,095.6	610.0	293.0	528.3	3,349.8	360.1
1994	25.8	0.0	3,092.8	640.0	281.0	581.6	3,260.1	463.2
1995	23.0	0.0	2,740.0	670.0	270.0	640.2	2,896.5	507.8
1996	21.5	0.0	2,572.1	700.0	259.0	704.9	2,670.0	606.6
1997	16.7	0.0	2,771.4	730.0	251.0	775.9	2,778.8	744.0
1998	14.4	0.0	2,799.9	730.0	238.0	854.3	2,803.6	870.0

ANNUAL RATE OF INTEREST ON GENERAL & PERMANENT FUNDS	=	0.120
ANNUAL RATE OF INTEREST ON NEW BONDS	=	0.100
MATURITY PERIOD ON NEW BONDS IN YEARS	=	10.000
% OF OPERATING BUDGET IN G.F. CASH BAL	=	0.200
% OF ROYALTIES TO PERMANENT FUND	=	0.250
OPERATING BUDGET GROWTH RATE	=	0.114
% OF PERMANENT FUND EARNINGS PAID AS DIVIDENDS	=	0.500
CAPITAL BUDGET GROWTH RATE	=	0.117
INFLATION RATE	=	0.090
'1' IF PERMANENT FUND INCOME BASED ON 5 YEAR AVERAGE	=	1.000
PER CAPITA DIVIDEND	=	50.000
NUMBER OF PRIOR YEAR DIVIDEND RECIPIENTS	=	2.966
GROWTH RATE IN DIVIDEND RECIPIENTS	=	0.028

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL

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13-FEB-02

NO GASLINE
DEPT OF REVENUE ESTIMATES
FY02 LEVEL OF SERVICE BUDGETS
SURPLUS SPENT ON CAPITAL

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	392.4	4211.0	1830.2	1421.8	113.2	152.5	3517.6	693.4	4771.9	0.0	0.0
1984	4630.3	671.9	5302.2	2038.1	2963.0	138.8	162.3	5302.2	0.0	5606.2	0.0	0.0
1985	5424.0	988.7	6412.7	2269.6	3747.5	163.8	231.8	6412.7	0.0	6505.0	0.0	0.0
1986	6096.8	1252.3	7349.1	2527.5	4359.1	161.9	300.6	7349.1	0.0	7459.1	0.0	0.0
1987	6957.0	1490.7	8447.7	2814.6	5108.0	157.8	367.2	8447.7	-0.0	8513.6	0.0	0.0
1988	7006.3	1667.8	8674.1	3134.3	4961.4	154.8	423.6	8674.1	0.0	9664.3	0.0	0.0
1989	7698.8	1829.4	9528.2	3490.4	5406.3	146.5	485.0	9528.2	-0.0	10944.2	0.0	0.0
1990	7504.1	1971.8	9476.0	3886.9	4902.3	135.4	551.3	9476.0	0.0	12218.7	0.0	0.0
1991	7172.2	2060.4	9232.5	4328.5	4167.7	114.8	621.6	9232.5	0.0	13454.1	0.0	0.0
1992	7095.9	2127.7	9223.5	4820.2	3594.4	114.1	694.8	9223.5	-0.0	14730.3	0.0	0.0
1993	7219.3	2219.8	9439.1	5367.7	3269.2	31.7	770.5	9439.1	-0.0	16053.9	0.0	0.0
1994	7272.1	2326.5	9598.6	5977.5	2747.6	25.8	847.6	9598.6	0.0	17413.3	0.0	0.0
1995	6746.5	2392.0	9138.5	6656.6	1533.6	23.0	925.4	9138.5	0.0	18707.8	0.0	0.0
1996	6541.8	2439.4	8981.2	7412.7	896.7	21.5	1003.5	9334.5	-353.3	19993.6	0.0	353.3
1997	6984.4	2553.1	9537.5	8254.8	1001.7	16.7	1082.7	10355.8	-818.4	21377.2	0.0	818.4
1998	7159.9	2735.7	9895.6	9192.4	1110.8	14.4	1163.3	11480.1	-1593.5	22812.6	0.0	1593.5

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL
FY 1983 $

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13-FEB-82

NO GASLINE
DEPT OF REVENUE ESTIMATES
FY82 LEVEL OF SERVICE BUDGETS
SURPLUS SPENT ON CAPITAL

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	392.4	4211.0	1830.2	1421.8	113.2	152.5	3517.6	693.4	4771.9	0.0	0.0
1984	4248.0	616.4	4864.4	1869.8	2718.4	127.3	148.9	4864.4	0.0	5143.3	0.0	0.0
1985	4565.2	832.2	5397.4	1910.3	3154.2	137.9	195.1	5392.4	0.0	5475.1	0.0	0.0
1986	4707.8	967.0	5674.8	1951.7	3366.0	125.0	232.1	5674.8	0.0	5759.8	0.0	0.0
1987	4920.5	1056.1	5984.5	1993.9	3618.7	111.8	260.1	5984.5	-0.0	6031.2	0.0	0.0
1988	4553.6	1084.0	5637.6	2037.1	3224.5	100.6	275.3	5637.6	0.0	6281.1	0.0	0.0
1989	4590.5	1090.8	5681.4	2081.2	3223.6	87.4	289.2	5681.4	-0.0	6525.7	0.0	0.0
1990	4105.0	1078.7	5183.7	2126.3	2681.7	74.1	301.6	5183.7	0.0	6684.0	0.0	0.0
1991	3599.5	1034.0	4633.5	2172.3	2091.6	57.6	311.9	4633.5	0.0	6752.1	0.0	0.0
1992	3267.1	979.6	4246.8	2219.3	1655.0	52.5	319.9	4246.8	-0.0	6782.2	0.0	0.0
1993	3049.5	937.7	3987.2	2267.4	1380.9	13.4	325.5	3987.2	-0.0	6781.3	0.0	0.0
1994	2818.2	901.6	3719.8	2316.5	1064.8	10.0	328.5	3719.8	0.0	6748.2	0.0	0.0
1995	2398.6	850.5	3249.1	2366.6	545.2	8.2	329.0	3249.1	0.0	6651.3	0.0	0.0
1996	2133.8	795.7	2929.5	2417.9	292.5	7.0	327.3	3044.7	-115.2	6521.5	0.0	115.2
1997	2090.1	764.0	2854.1	2470.2	299.7	5.0	324.0	3099.0	-244.9	6397.1	0.0	244.9
1998	1965.7	751.0	2716.7	2523.7	307.2	4.0	319.4	3154.2	-437.5	6270.3	0.0	437.5

ASSUMPTIONS

	EXISTING DEBT SERVICE	NEW DEBT	SEVERANCE TAXES	PETROL INCOME TAX	PROPERTY TAX	OTHER REVENUE	ROYALTIES XX% TO PF	ROYALTIES 50% TO PF
1983	94.2	0.0	1,819.6	304.0	157.0	212.8	1,717.0	0.0
1984	91.3	0.0	2,214.1	360.0	225.0	222.4	2,145.1	0.0
1985	87.9	0.0	2,616.1	373.0	283.1	244.8	2,542.6	0.0
1986	86.0	0.0	2,970.9	400.0	304.2	269.5	2,869.6	0.0
1987	81.9	0.0	3,420.7	430.0	317.9	296.7	3,322.2	0.0
1988	78.9	0.0	3,179.9	460.0	317.9	326.7	3,629.1	0.0
1989	70.6	0.0	3,540.8	490.0	318.0	359.6	3,954.0	49.8
1990	59.5	0.0	3,386.2	520.0	318.0	395.9	3,793.3	78.1
1991	38.9	0.0	3,138.7	550.0	318.0	435.9	3,582.9	84.8
1992	38.2	0.0	3,061.4	580.0	305.0	429.9	3,389.4	255.0
1993	31.7	0.0	3,095.6	610.0	293.0	528.3	3,349.8	360.1
1994	25.8	0.0	3,092.8	640.0	281.0	581.6	3,260.1	463.2
1995	23.0	0.0	2,740.0	670.0	270.0	640.2	2,896.5	507.8
1996	21.5	0.0	2,572.1	700.0	259.0	704.9	2,670.0	606.6
1997	15.7	0.0	2,771.4	730.0	251.0	775.9	2,778.8	744.0
1998	14.4	0.0	2,799.9	730.0	238.0	854.3	2,803.6	870.0

ANNUAL RATE OF INTEREST ON GENERAL + PERMANENT FUNDS	=	0.120
ANNUAL RATE OF INTEREST ON NEW BONDS	=	0.100
MATURITY PERIOD ON NEW BONDS IN YEARS	=	10.000
% OF OPERATING BUDGET IN G.F. CASH BAL	=	0.200
% OF ROYALTIES TO PERMANENT FUND	=	0.250
OPERATING BUDGET GROWTH RATE	=	0.114
% OF PERMANENT FUND EARNINGS PAID AS DIVIDENDS	=	0.500
CAPITAL BUDGET GROWTH RATE	=	0.117
% OF GF ADDED TO CAPITAL BUDGET	=	1.000
INFLATION RATE	=	0.090
'1' IF PERMANENT FUND INCOME BASED ON 5 YEAR AVERAGE	=	1.000
PER CAPITA DIVIDEND	=	50.000
NUMBER OF PRIOR YEAR DIVIDEND RECIPIENTS	=	2.966
GROWTH RATE IN DIVIDEND RECIPIENTS	=	0.028

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL

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15-FEB-82

NO GASLINE
DEPT OF REVENUE ESTIMATES
BUDGETS AT SPENDING LIMIT

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	394.9	4213.5	1866.7	933.3	113.2	152.5	3065.6	1147.9	4771.9	454.5	0.0
1984	4630.3	708.1	5338.4	2092.6	1046.2	138.8	162.3	3439.9	1898.5	5606.2	2353.0	0.0
1985	5424.0	1157.4	6581.4	2345.8	1172.8	163.8	231.8	3914.2	2667.2	6505.0	5020.2	0.0
1986	6096.8	1682.8	7779.6	2629.6	1314.7	161.9	300.6	4406.8	3372.7	7459.1	8392.9	0.0
1987	6957.0	2305.8	9262.8	2947.8	1473.8	157.8	367.2	4946.7	4316.1	8513.6	12709.0	0.0
1988	7006.3	2976.3	9982.6	3304.5	1652.1	154.8	423.6	5535.1	4447.5	9664.3	17156.5	0.0
1989	7698.8	3715.2	11414.0	3704.3	1852.1	146.5	485.0	6187.9	5226.1	10944.2	22382.6	0.0
1990	7504.1	4507.1	12011.3	4152.5	2076.2	135.4	551.3	6915.4	5095.8	12218.7	27478.4	0.0
1991	7172.2	5282.4	12454.6	4655.0	2327.4	114.8	621.6	7718.8	4735.8	13454.1	32214.3	0.0
1992	7095.9	6033.0	13128.8	5218.3	2609.0	114.1	694.8	8636.2	4492.6	14730.3	36706.9	0.0
1993	7219.3	6775.3	13994.6	5849.7	2924.7	31.7	770.5	9576.5	4418.1	16053.9	41125.0	0.0
1994	7272.1	7501.7	14773.8	6557.5	3278.6	25.8	847.6	10709.5	4064.4	17413.3	45189.3	0.0
1995	6746.5	8147.1	14893.6	7350.9	3675.3	23.0	925.4	11974.6	2919.0	18707.8	48108.3	0.0
1996	6541.8	8667.4	15209.2	8240.4	4120.0	21.5	1003.5	13385.4	1823.8	19993.6	49932.1	0.0
1997	6984.4	9091.4	16075.8	9237.5	4618.5	16.7	1082.7	14955.3	1120.5	21377.2	51052.6	0.0
1998	7159.9	9411.3	16571.2	10355.2	5177.3	14.4	1163.3	16710.2	-139.0	22839.6	50913.6	0.0

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL
FY 1983 $

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15-FEB-82

NO GASLINE
DEPT OF REVENUE ESTIMATES
BUDGETS AT SPENDING LIMIT

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	394.9	4213.5	1866.7	933.3	113.2	152.5	3065.6	1147.9	4771.9	454.5	0.0
1984	4248.0	649.6	4897.6	1919.8	959.8	127.3	148.9	3155.9	1741.7	5143.3	2158.7	0.0
1985	4565.2	974.2	5539.4	1974.4	987.1	137.9	195.1	3294.5	2244.9	5475.1	4225.4	0.0
1986	4707.8	1299.4	6007.2	2030.5	1015.2	125.0	232.1	3402.9	2604.4	5759.8	6480.8	0.0
1987	4928.5	1633.5	6562.0	2088.3	1044.1	111.8	260.1	3504.3	3057.6	6031.2	9003.4	0.0
1988	4553.6	1934.4	6488.0	2147.7	1073.8	100.6	275.3	3597.4	2890.6	6281.1	11150.6	0.0
1989	4590.5	2215.2	6805.8	2208.8	1104.3	87.4	289.2	3689.6	3116.1	6525.7	13346.0	0.0
1990	4105.0	2465.6	6570.6	2271.6	1135.7	74.1	301.6	3783.0	2787.6	6684.0	15031.6	0.0
1991	3599.5	2651.1	6250.5	2336.2	1168.0	57.6	311.9	3873.8	2376.8	6752.1	16167.3	0.0
1992	3267.1	2777.7	6044.9	2402.6	1201.2	52.5	319.9	3976.3	2068.5	6782.2	16900.9	0.0
1993	3049.5	2861.9	5911.5	2471.0	1235.4	13.4	325.5	4045.2	1866.2	6781.3	17371.6	0.0
1994	2818.2	2907.2	5725.3	2541.2	1270.5	10.0	328.5	4150.3	1575.1	6748.2	17512.3	0.0
1995	2398.6	2896.6	5295.2	2613.5	1306.7	8.2	329.0	4257.4	1037.8	6651.3	17104.2	0.0
1996	2133.8	2827.1	4960.9	2687.8	1343.8	7.0	327.3	4366.0	594.9	6521.5	16286.8	0.0
1997	2090.1	2720.6	4810.6	2764.3	1382.1	5.0	324.0	4475.3	335.3	6397.1	15277.3	0.0
1998	1965.7	2503.8	4549.4	2842.9	1421.4	4.0	319.4	4587.6	-38.2	6270.3	13977.7	0.0

ASSUMPTIONS

	EXISTING DEBT SERVICE	NEW DEBT	SEVERANCE TAXES	PETROL INCOME TAX	PROPERTY TAX	OTHER REVENUE	ROYALTIES X% TO PF	ROYALTIES 50% TO PF
1983	94.2	0.0	1,819.6	304.0	157.0	212.8	1,767.0	0.0
1984	91.3	0.0	2,214.1	360.0	225.0	222.4	2,145.1	0.0
1985	87.9	0.0	2,616.1	373.0	283.1	244.8	2,542.6	0.0
1986	86.0	0.0	2,970.9	400.0	304.2	269.5	2,869.6	0.0
1987	81.9	0.0	3,420.7	430.0	317.9	296.7	3,322.2	0.0
1988	78.9	0.0	3,179.9	460.0	317.9	326.7	3,629.1	0.0
1989	70.6	0.0	3,540.8	490.0	318.0	359.6	3,954.0	49.8
1990	59.5	0.0	3,386.2	520.0	318.0	395.9	3,793.3	78.1
1991	38.9	0.0	3,138.7	550.0	318.0	435.9	3,582.9	84.8
1992	38.2	0.0	3,061.4	580.0	305.0	479.9	3,389.4	255.0
1993	31.7	0.0	3,095.6	610.0	293.0	528.3	3,349.8	360.1
1994	25.8	0.0	3,092.8	640.0	281.0	581.6	3,260.1	463.2
1995	23.0	0.0	2,740.0	670.0	270.0	640.2	2,896.5	507.8
1996	21.5	0.0	2,572.1	700.0	259.0	704.9	2,670.0	606.6
1997	16.7	0.0	2,771.4	730.0	251.0	775.9	2,778.8	744.0
1998	14.4	0.0	2,799.9	730.0	238.0	854.3	2,803.6	870.0

ANNUAL RATE OF INTEREST ON GENERAL + PERMANENT FUNDS	=	0.120
ANNUAL RATE OF INTEREST ON NEW BONDS	=	0.100
MATURITY PERIOD ON NEW BONDS IN YEARS	=	10.000
% OF OPERATING BUDGET IN G.F. CASH BAL	=	0.200
% OF ROYALTIES TO PERMANENT FUND	=	0.250
OPERATING BUDGET GROWTH RATE	=	0.121
% OF PERMANENT FUND EARNINGS PAID AS DIVIDENDS	=	0.500
CAPITAL BUDGET GROWTH RATE	=	0.121
INFLATION RATE	=	0.090
'1' IF PERMANENT FUND INCOME BASED ON 5 YEAR AVERAGE	=	1.000
PER CAPITA DIVIDEND	=	50.000
NUMBER OF PRIOR YEAR DIVIDEND RECIPIENTS	=	2.966
GROWTH RATE IN DIVIDEND RECIPIENTS	=	0.020

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL

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NO GASLINE
DEPT OF REVENUE ESTIMATES
BUDGETS AT SPENDING LIMIT
SURPLUS SPENT ON CAPITAL

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	391.3	4209.9	1866.7	1384.2	113.2	152.5	3516.5	693.4	4771.9	0.0	0.0
1984	4630.3	667.6	5297.9	2092.6	2904.3	138.8	162.3	5297.9	-0.0	5606.2	0.0	0.0
1985	5424.0	981.4	6405.3	2345.8	3664.0	163.8	231.8	6405.3	0.0	6505.0	0.0	0.0
1986	6096.8	1241.8	7338.6	2629.6	4246.6	161.9	300.6	7338.6	0.0	7459.1	0.0	0.0
1987	6957.0	1476.7	8433.7	2947.8	4960.8	157.8	367.2	8433.7	0.0	8513.6	0.0	0.0
1988	7006.3	1649.5	8655.9	3304.5	4772.9	154.8	423.6	8655.9	0.0	9664.3	0.0	0.0
1989	7698.8	1806.1	9504.9	3704.3	5169.0	146.5	485.0	9504.9	0.0	10944.2	0.0	0.0
1990	7504.1	1942.5	9446.6	4152.5	4607.3	135.4	551.3	9446.6	-0.0	12218.7	0.0	0.0
1991	7172.2	2023.9	9196.1	4655.0	3804.7	114.8	621.6	9196.1	0.0	13454.1	0.0	0.0
1992	7095.9	2082.8	9178.7	5218.3	3151.5	114.1	694.8	9178.7	-0.0	14730.3	0.0	0.0
1993	7219.3	2175.2	9394.5	5849.7	2924.7	31.7	770.5	9576.5	-182.0	16053.9	0.0	182.0
1994	7272.1	2335.1	9607.2	6557.5	3278.6	25.8	847.6	10709.5	-1102.3	17413.3	0.0	1102.3
1995	6746.5	2549.2	9295.7	7350.9	3675.3	23.0	925.4	11974.6	-2678.9	18707.8	0.0	2678.9
1996	6541.8	2785.0	9326.8	8240.4	4120.0	21.5	1003.5	13385.4	-4058.6	19993.6	0.0	4058.6
1997	6984.4	3032.3	10016.7	9237.5	4618.5	16.7	1082.7	14955.3	-4938.6	21377.2	0.0	4938.6
1998	7159.9	3293.3	10453.2	10355.2	5177.3	14.4	1163.3	16710.2	-6257.0	22839.6	0.0	6257.0

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL
FY 1983 $

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NO GASLINE
DEPT OF REVENUE ESTIMATES
BUDGETS AT SPENDING LIMIT
SURPLUS SPENT ON CAPITAL

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3818.7	391.3	4209.9	1866.7	1384.2	113.2	152.5	3516.5	693.4	4771.9	0.0	0.0
1984	4248.0	612.5	4860.5	1919.8	2664.5	127.3	148.9	4860.5	-0.0	5143.3	0.0	0.0
1985	4565.2	826.0	5391.2	1974.4	3083.9	137.9	195.1	5391.2	0.0	5475.1	0.0	0.0
1986	4707.8	958.9	5666.8	2030.5	3279.1	125.0	232.1	5666.8	0.0	5759.8	0.0	0.0
1987	4928.5	1046.1	5974.6	2088.3	3514.4	111.8	260.1	5974.6	0.0	6031.2	0.0	0.0
1988	4553.6	1072.1	5625.7	2147.7	3102.1	100.6	275.3	5625.7	0.0	6281.1	0.0	0.0
1989	4590.5	1076.9	5667.5	2208.8	3082.1	87.4	289.2	5667.5	0.0	6525.7	0.0	0.0
1990	4105.0	1062.6	5167.6	2271.6	2520.4	74.1	301.6	5167.6	-0.0	6684.0	0.0	0.0
1991	3529.5	1015.7	4615.2	2336.2	1909.4	57.6	311.9	4615.2	0.0	6752.1	0.0	0.0
1992	3267.1	959.0	4226.1	2402.6	1451.0	52.5	319.9	4226.1	-0.0	6782.2	0.0	0.0
1993	3049.5	918.8	3968.3	2471.0	1235.4	13.4	325.5	4045.2	-76.9	6781.3	0.0	76.9
1994	2818.2	904.9	3723.1	2541.2	1270.5	10.0	328.5	4150.3	-427.2	6748.2	0.0	427.2
1995	2398.6	906.3	3304.9	2613.5	1306.7	8.2	329.0	4257.4	-952.4	6651.3	0.0	952.4
1996	2133.8	908.4	3042.2	2687.8	1343.8	7.0	327.3	4366.0	-1323.8	6521.5	0.0	1323.8
1997	2090.1	907.4	2997.5	2764.3	1382.1	5.0	324.0	4475.3	-1477.9	6397.1	0.0	1477.9
1998	1965.7	904.1	2869.8	2842.9	1421.4	4.0	319.4	4587.6	-1717.8	6270.3	0.0	1717.8

ASSUMPTIONS

	EXISTING DEBT SERVICE	NEW DEBT	SEVERANCE TAXES	PETROL INCOME TAX	PROPERTY TAX	OTHER REVENUE	ROYALTIES XX TO PF	ROYALTIES 50% TO PF
1983	94.2	0.0	1,819.6	304.0	157.0	212.5	1,767.0	0.0
1984	91.3	0.0	2,214.1	360.0	225.0	222.4	2,145.1	0.0
1985	87.9	0.0	2,616.1	373.0	283.1	244.8	2,542.6	0.0
1986	86.0	0.0	2,970.9	400.0	304.2	269.5	2,869.6	0.0
1987	81.7	0.0	3,420.7	420.0	317.9	296.7	3,322.2	0.0
1988	78.9	0.0	3,179.9	460.0	317.9	326.7	3,629.1	0.0
1989	70.6	0.0	3,540.8	490.0	318.0	359.6	3,954.0	49.8
1990	59.5	0.0	3,386.2	520.0	318.0	395.9	3,793.3	78.1
1991	38.9	0.0	3,138.7	550.0	318.0	435.9	3,582.9	84.8
1992	38.2	0.0	3,061.4	580.0	305.0	479.9	3,389.4	255.0
1993	31.7	0.0	3,095.6	610.0	293.0	528.3	3,349.8	360.1
1994	25.8	0.0	3,092.8	640.0	281.0	581.6	3,280.1	463.2
1995	23.0	0.0	2,740.0	670.0	270.0	640.2	2,896.5	607.8
1996	21.5	0.0	2,572.1	700.0	259.0	704.9	2,670.0	606.6
1997	16.7	0.0	2,771.4	730.0	251.0	775.9	2,778.8	744.0
1998	14.4	0.0	2,799.9	730.0	238.0	854.3	2,803.6	870.0

ANNUAL RATE OF INTEREST ON GENERAL & PERMANENT FUNDS	=	0.120
ANNUAL RATE OF INTEREST ON NEW BONDS	=	0.100
MATURITY PERIOD ON NEW BONDS IN YEARS	=	10.000
% OF OPERATING BUDGET IN G.F. CASH BAL	=	0.200
% OF ROYALTIES TO PERMANENT FUND	=	0.250
OPERATING BUDGET GROWTH RATE	=	0.121
% OF PERMANENT FUND EARNINGS PAID AS DIVIDENDS	=	0.500
CAPITAL BUDGET GROWTH RATE	=	0.121
% OF GF ADDED TO CAPITAL BUDGET	=	1.000
INFLATION RATE	=	0.090
'1' IF PERMANENT FUND INCOME BASED ON 5 YEAR AVERAGE	=	1.000
PER CAPITA DIVIDEND	=	50.000
NUMBER OF PRIOR YEAR DIVIDEND RECIPIENTS	=	2.966
GROWTH RATE IN DIVIDEND RECIPIENTS	=	0.020

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL

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GASLINE DEC 198?-LOW INFLATION
DEPT OF REVENUE ESTIMATES
FY82 LEVEL OF SERVICE BUDGETS

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3837.2	400.6	4237.7	1860.6	194.6	113.2	152.5	2320.9	1916.8	4771.9	1223.4	0.0
1984	4679.0	760.3	5439.3	2141.4	240.7	138.8	162.3	2683.2	2756.2	5606.2	3979.6	0.0
1985	5593.5	1302.6	6896.0	2473.9	277.9	163.8	231.8	3147.4	3748.6	6505.0	7728.2	0.0
1986	6419.2	1968.4	8387.6	2764.1	300.0	161.9	300.6	3534.6	4853.0	7459.1	12581.2	0.0
1987	7771.5	2802.2	10573.6	3055.2	533.3	157.8	367.2	4113.5	6460.1	8513.6	19041.3	0.0
1988	7768.7	3751.6	11520.3	3308.1	390.6	154.8	423.6	4277.2	7243.2	9664.3	26284.4	0.0
1989	8420.5	4825.5	13246.0	3684.0	436.3	146.5	485.0	4751.8	8494.2	10944.2	34778.6	0.0
1990	8256.7	6020.5	14277.2	4102.5	487.4	135.4	551.4	5276.7	9000.6	12230.6	43779.2	0.0
1991	8093.4	7292.8	15386.1	4568.5	544.4	114.8	622.1	5849.8	9536.4	13514.2	53315.6	0.0
1992	8192.2	8655.3	16847.4	5087.5	608.1	114.1	696.6	6506.3	10341.1	14879.6	63656.7	0.0
1993	8451.6	10141.8	18593.4	5665.4	679.2	31.7	774.8	7151.1	11442.3	16329.9	75099.0	0.0
1994	8518.3	11756.4	20274.6	6309.0	758.7	25.8	856.1	7949.6	12325.0	17832.4	87424.1	0.0
1995	8008.8	13449.4	21458.2	7025.7	847.5	23.0	939.8	8836.0	12622.2	19285.7	100046.3	0.0
1996	7813.0	15202.1	23015.1	7823.8	946.6	21.5	1025.5	9817.4	13197.7	20745.7	113244.0	0.0
1997	8279.3	17073.1	25352.4	8712.6	1057.4	16.7	1113.6	10900.3	14452.1	22326.0	127696.1	0.0
1998	8463.5	19088.5	27552.0	9702.4	1181.1	14.4	1204.2	12102.1	15449.9	23993.5	143146.0	0.0

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL
FY 1983 $

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GASLINE DEC 1986-LOW INFLATION
DEPT OF REVENUE ESTIMATES
FY82 LEVEL OF SERVICE BUDGETS

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3837.2	400.6	4237.7	1860.6	194.6	113.2	152.5	2320.9	1916.8	4771.9	1223.4	0.0
1984	4292.7	697.5	4990.2	1964.6	220.8	127.3	148.9	2461.6	2528.6	5143.3	3651.0	0.0
1985	4707.9	1096.4	5804.3	2082.3	233.9	137.9	195.1	2649.1	3155.1	5475.1	6504.7	0.0
1986	4956.8	1519.9	6476.7	2134.4	237.8	125.0	232.1	2729.4	3747.4	5759.8	9715.0	0.0
1987	5505.5	1985.1	7490.6	2164.4	377.8	111.8	260.1	2914.1	4576.5	6031.2	13489.3	0.0
1988	5049.1	2438.3	7487.4	2150.1	253.9	100.6	275.3	2779.9	4707.6	6281.1	17083.1	0.0
1989	5020.9	2877.3	7898.1	2196.6	260.2	87.4	289.2	2833.3	5064.8	6525.7	20737.4	0.0
1990	4516.7	3293.4	7810.1	2244.2	266.6	74.1	301.6	2886.5	4923.6	6690.6	23948.7	0.0
1991	4061.8	3660.0	7721.8	2292.8	273.2	57.6	312.2	2933.8	4786.0	6782.3	26757.3	0.0
1992	3771.9	3985.1	7757.0	2342.4	280.0	52.5	320.7	2995.7	4761.3	6851.0	29309.3	0.0
1993	3570.0	4284.0	7854.1	2393.1	286.9	13.4	327.3	3020.7	4833.4	6897.9	31722.6	0.0
1994	3301.1	4556.0	7857.1	2444.9	294.0	10.0	331.6	3080.7	4776.4	6910.6	33879.7	0.0
1995	2847.4	4781.7	7629.1	2497.9	301.3	8.2	334.1	3141.5	4487.6	6856.7	35569.9	0.0
1996	2548.4	4958.6	7507.0	2552.0	308.8	7.0	334.5	3202.2	4304.8	6766.8	36937.8	0.0
1997	2477.5	5109.1	7586.6	2607.2	316.4	5.0	333.2	3261.9	4324.7	6681.0	38212.6	0.0
1998	2323.6	5240.5	7564.1	2663.7	324.3	4.0	330.6	3322.5	4241.6	6587.1	39299.0	0.0

ASSUMPTIONS

	EXISTING DEBT SERVICE	NEW DEBT	SEVERANCE TAXES	PETROL INCOME TAX	PROPERTY TAX	OTHER REVENUE	ROYALTIES X% TO PF	ROYALTIES 50% TO PF
1983	94.2	0.0	1,819.6	304.0	169.0	219.3	1,767.0	0.0
1984	91.3	0.0	2,214.1	360.0	256.0	240.1	2,145.1	0.0
1985	87.9	0.0	2,616.1	373.0	399.0	298.4	2,542.6	0.0
1986	86.0	0.0	2,970.9	400.0	543.2	352.9	2,869.6	0.0
1987	81.9	0.0	3,420.7	641.5	857.9	359.7	3,322.2	0.0
1988	78.9	0.0	3,179.9	663.0	836.3	367.7	3,629.1	0.0
1989	70.6	0.0	3,540.8	684.6	814.8	389.9	3,954.0	49.8
1990	59.5	0.0	3,421.2	706.1	793.2	418.2	3,838.6	78.1
1991	38.9	0.0	3,256.9	747.3	771.6	453.3	3,762.5	84.8
1992	38.2	0.0	3,257.3	792.3	737.0	495.4	3,710.2	235.0
1993	31.7	0.0	3,348.7	833.7	703.4	544.0	3,789.0	360.1
1994	25.8	0.0	3,357.0	861.2	669.8	598.6	3,733.4	463.2
1995	23.0	0.0	3,014.3	889.3	637.2	658.5	3,407.5	507.8
1996	21.5	0.0	2,844.4	918.6	604.6	724.8	3,223.0	606.6
1997	16.7	0.0	3,033.1	948.2	575.0	797.5	3,404.5	744.0
1998	14.4	0.0	3,076.6	948.1	540.4	878.0	3,447.2	870.0

ANNUAL RATE OF INTEREST ON GENERAL + PERMANENT FUNDS	=	0.120
ANNUAL RATE OF INTEREST ON NEW BONDS	=	0.100
MATURITY PERIOD ON NEW BONDS IN YEARS	=	10.000
% OF OPERATING BUDGET IN G.F. CASH BAL.	=	0.200
% OF ROYALTIES TO PERMANENT FUND	=	0.250
% OF PERMANENT FUND EARNINGS PAID AS DIVIDENDS	=	0.500
INFLATION RATE	=	0.090
'1' IF PERMANENT FUND INCOME BASED ON 5 YEAR AVERAGE	=	1.000
PER CAPITA DIVIDEND	=	50.000
NUMBER OF PRIOR YEAR DIVIDEND RECIPIENTS	=	2.966
GROWTH RATE IN DIVIDEND RECIPIENTS	=	0.028

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL

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GASLINE DEC 1986-LOW INFLATION
DEPT OF REVENUE ESTIMATES
FY82 LEVEL OF SERVICE BUDGETS
SURPLUS SPENT ON CAPITAL

YEAR END	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERM-ANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF $0 MIL
1982										4005.3	-693.4	
1983	3837.2	390.9	4228.0	1860.6	1408.3	113.2	152.5	3534.6	693.4	4771.9	0.0	0.0
1984	4679.0	670.0	5349.0	2141.4	2906.6	138.8	162.3	5349.0	0.0	5606.2	0.0	0.0
1985	5593.5	987.7	6581.1	2473.9	3711.6	163.8	231.8	6581.1	0.0	6505.0	0.0	0.0
1986	6419.2	1259.1	7678.3	2764.1	4451.7	161.9	300.6	7678.3	0.0	7459.1	0.0	0.0
1987	7771.5	1534.4	9305.8	3055.2	5725.6	157.8	367.2	9305.8	0.0	8513.6	0.0	0.0
1988	7768.7	1751.0	9519.8	3308.1	5633.2	154.8	423.6	9519.8	0.0	9664.3	0.0	0.0
1989	8420.5	1926.1	10346.6	3684.0	6031.1	146.5	485.0	10346.6	0.0	10944.2	0.0	0.0
1990	8256.7	2067.7	10324.4	4102.5	5535.1	135.4	551.4	10324.4	0.0	12230.6	0.0	0.0
1991	8093.4	2165.1	10258.5	4568.5	4953.1	114.8	622.1	10258.5	0.0	13514.2	0.0	0.0
1992	8192.2	2255.0	10447.1	5087.5	4549.0	114.1	696.6	10447.1	0.0	14879.6	0.0	0.0
1993	8451.6	2374.7	10826.3	5665.4	4354.4	31.7	774.8	10826.3	0.0	16329.9	0.0	0.0
1994	8518.3	2503.0	11021.3	6309.0	3830.3	25.8	856.1	11021.3	0.0	17832.4	0.0	0.0
1995	8008.8	2583.4	10592.2	7025.7	2603.7	23.0	939.8	10592.2	0.0	19285.7	0.0	0.0
1996	7813.0	2625.0	10437.9	7823.8	1567.1	21.5	1025.5	10437.9	0.0	20745.7	0.0	0.0
1997	8279.3	2702.4	10981.6	8712.6	1138.8	16.7	1113.6	10981.6	-0.0	22326.0	0.0	0.0
1998	8463.5	2857.4	11320.9	9702.4	1181.1	14.4	1204.2	12102.1	-781.1	23993.5	0.0	781.1