

S B

68-71

(FILE 1)

Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chairman • 1024 W. 6th Ave., Suite 204 C,
Anchorage, Alaska 99501
(907) 278-3654

Official Business

December 1, 1983

Commissioner Dick Lyon, Chairman
Alaska Power Authority
Pouch D
Juneau, Ak. 99811

Dear Dick:

I am pleased that the Alaska Power Authority is taking steps to correct management and accounting deficiencies that were identified in the recent legislative audit. The management review now underway is a good step in the right direction.

Recommendation No. 5 of the legislative audit reads: "The Legislature, in conjunction with APA, should review the status of various projects to determine if unexpended project funds should be lapsed into the General Fund." Twenty-eight projects with unobligated balances totalling \$14,148,445 were identified; over \$10,000,000 of that represents the balance for the Solomon Gulch project, a project that I understand is in litigation.

I would like to request that the APA board review the identified projects and recommend to the Legislature what to do with the balances. The board, with the assistance of APA staff, is certainly in a better position than members of the Legislature to determine whether and when money should be lapsed or reappropriated. If this effort is not done systematically and with your assistance, I fear that individual legislators will attempt to repeal and reappropriate project balances on their own.

Please let me know whether the board intends to review project balances and to make recommendations to the Legislature and, if so, when that might be completed. I'd like to help make sure both that projects are adequately funded and that freed-up funds are used appropriately.

Best regards,

Senator Vic Fischer

Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chairman • 1024 W. 6th Ave., Suite 204 C,
Anchorage, Alaska 99501
(907) 278-3654

Official Business

December 1, 1983

Senator Arliss Sturgulewski
1024 W. 6th Ave., Suite 204 D
Anchorage, AK 99501

Dear Arliss:

Thanks for your memo of Oct. 31 regarding the Alaska Power Authority audit.

I have talked to Gerry Wilkerson, and the Audit Division will indeed be following up on the APA's progress in meeting the recommendations of the audit. Because a management review and additional performance and accounting audits of the APA are currently underway, Gerry said that his division would not attempt their own follow-up until next June or July. They will, meanwhile, be monitoring the other reviews. My staff, as well, will be keeping an eye on the various reviews and changes at the APA.

I have also written to Commissioner Lyon about the audit recommendation concerning project balances, and asked him to work with the Legislature. I'll enclose a copy of that letter.

Very early in the approaching session, I intend to hold State Affairs Committee hearings concerning the feasibility and economic status of the proposed Susitna project. Perhaps at that time we could also receive an overview of the APA's various programs. I agree with you that there are numerous questions of statewide import that need to be addressed and have asked Nancy Lord to follow through on your points.

Best regards,

Senator Vic Fischer

Enclosure

Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chairman • 1024 W. 6th Ave., Suite 204 C,
Anchorage, Alaska 99501
(907) 278-3654

Official Business

November 15, 1983

Commissioner Dick Lyon
Chairman, Alaska Power Authority
Department of Commerce
Pouch D
Juneau, AK 99811

Dear Dick:

As you know, I remain very interested in the progress of the proposed Susitna Hydroelectric Project under study by the Alaska Power Authority. I have a serious concern about one aspect of that progress, the development of a workable plan of finance.

I have reviewed the executive summary of the economic and financial update completed for the authority in September by Harza-Ebasco. I understand that that report was subsequently withdrawn because of various inadequacies and is still being rewritten and updated.

The September report concludes that the project remains "economically attractive under the conservative oil price forecasts used." (I note here that the "conservative" forecasts used in the report are nowhere near as conservative as those the state uses for its revenue forecasts.) In any case, if we accept the conclusion that the project is economically feasible, it would seem to be time for the APA to move on to developing a finance plan for the projects.

It has been apparent for some time that the ultimate key to Susitna, aside from its economic viability, lies in its financing. Only if it can be financed in a manner that breaks neither the state's treasury nor the pocketbooks of consumers should we proceed with it.

The financing question is, of course, extremely complex. The APA is, however, statutorily required to prepare such a plan for the Administration and Legislature. Little visible progress has thus far been made, and this concerns me greatly. With \$100 million of state funds already spent on the study of the project and another \$32 million being requested for FY 85, we have made a tremendous financial commitment without yet reaching the all-important financing step.

Frankly, I had expected the long-overdue Harza-Ebasco update to include a finance plan, or at least a clear listing of options. Instead, what I found

was a simple statement that a state equity contribution of \$1.6 - \$1.8 billion (1983 dollars) would be required.

On page 29, the report states, "Several important and interrelated issues must be resolved before a suitable financing plan can be recommended for the Susitna Project." It then lists them: size of project, size of state equity contribution, financing terms, and target cost of on-line power. Well, what else is new? We've known that since the beginning. It's true of any power project. Is that as far as we've come with Susitna after all these years? It makes me wonder where so much money has been going -- and why -- if the most basic question has not been addressed.

The report on the next page makes a vague statement that both requires additional explanation and further confirms my impression that no progress has been made on the financing issue. The statement is ". . . Other financing options could also influence project viability. Some interests have suggested alternative financing schemes that would improve the financial market ability of the power from Susitna. This subject is currently under study and should be explored further; it has not been treated in this update." What options and schemes? Who's doing the studying? Why doesn't the update discuss financing?

As you know, the Susitna Finance Committee, an outgrowth of the Anchorage Chamber of Commerce, has contracted with a firm, Kentco, to evaluate Susitna economics and develop a financing plan. The results of this study are due in January. While it is highly laudable for the private sector to take such initiative, I am concerned that the committee is trying to do something that is the responsibility of the APA. In a sense, they have stepped in to fill a void, to take some action where they have seen only inaction. My concern is that, whatever the credentials of Kentco, the committee does not have the same interests as the State of Alaska and I do not believe that it is wise to grant them, by default, the responsibility to put together a finance plan.

What we need is an objective analysis and no private organization can be expected to accomplish that. The Kentco proposal, although it is being billed as objective, reflects advance assumptions that Susitna is both feasible and desirable.

I would very much appreciate it if you would inform me as to the APA's progress in developing a Susitna finance plan. What steps are being taken, in what order and within what time frame? When can the Legislature expect to see an APA-recommended plan? Until there is a plan, financial viability cannot be determined, involved utilities cannot be expected to begin negotiating power sales contracts, and the Legislature cannot act to pass necessary legislation. I fear that lack of action at this point by the APA could result in insurmountable impediments to progress on Susitna.

The Senate State Affairs Committee, as you know, is still considering pending Susitna legislation -- SB 68, 69, 70 and 71. I plan to hold hearings that will include an update on the project during the early part of the

1984 legislative session. I hope that the APA will, at that time, be prepared to address the financing issue.

Best regards,

Senator Vic Fischer

cc: • Governor Bill Sheffield
• Commissioner Esther Wunnicke
• Commissioner Dan Casey
• OMB Director Peter McDowell
• Robert Huiman
• Lee Nunn
• David Allison
• Senator Jay Kerttula
• Rep. Joe Hayes
• Ray Benish, APA

Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chairman • 1024 W. 6th Ave., Suite 204 C,
Anchorage, Alaska 99501
(907) 28-3654

Official Business

November 21, 1983

Governor Bill Sheffield
Pouch A
Juneau, AK 99811

Dear Governor Sheffield:

Last March, following a series of Senate State Affairs Committee meetings on the proposed Susitna Hydroelectric Project, I sent you a letter summarizing conclusions of those hearings and requesting your help in addressing key issues and questions. While this letter was acknowledged, I never did receive the promised response to the questions raised in my letter.

I bring this to your attention only because in reviewing both my March 10 letter and the recent Harz-Ebasco Susitna update, I find that the questions raised in the letter remain extremely pertinent a full eight months later. I am enclosing a copy of the letter for your own review.

I am very much concerned that, as another legislative session rapidly approaches, we have made so little progress on the Susitna issue. In March, we were waiting for an update that was then expected in May. We're still waiting, as the September update was consequently withdrawn for further work.

The update, before it was withdrawn, found that the project still appeared to be economically feasible. The update did not address project financing, except to say that a commitment of \$1.6 - \$1.8 billion (1983 dollars) in state funding would be required.

Your Administration's position, as demonstrated by the actions of the APA board, seems to be to continue with the actions and funding needed to pursue FERC licensing of the project, but to forego making any decisions about the desirability of the project or how it might ultimately be financed until some unknown time in the future, possibly only after a license is granted. Is this an accurate summary of the Administration's position? It would be very helpful to both the Legislature and the general public if an Administration position were clearly articulated.

I remain extremely concerned about the lack of progress in the development of a finance plan for the project. I am sending you, under separate cover, a copy of a letter to Commissioner Lyon concerning this issue. I still look to you to take the lead regarding state participation in the financing of the project as the question of whether Alaska can afford Susitna remains key. A financing decision needs the benefit of all the expertise and advice

you can garner from your cabinet and advisors. It should not be left to the APA alone, to the Legislature, or to members of the private sector. In terms of the financial health of the state, it may be the most important responsibility you bear as governor.

In preparing for the up-coming session, I still seek answers to the questions raised in the letter. In particular, we must know:

- * When will an authoritative reassessment of the project be available?
- * What is the Administration's current position on this project?
- * What are Administration plans with respect to Susitna financing?
- * What, if any, legislation will be required?

The Senate State Affairs Committee is still considering pending Susitna Legislation SB 68, 69, 70, and 71. I plan to hold committee hearings early in the upcoming legislative session.

I look forward to your response and to continue to work with you on this important issue.

Best regards,

Senator Vic Fischer

Enclosure

cc: APA members
• Ray Benish
• Sen. Jay Kerttula
• Rep. Joe Hayes



Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chairman • 1024 W. 6th Ave., Suite 204 C,
Anchorage, Alaska 99501
(907) 278-3654

Official Business

November 21, 1983

Bob Penney, President
Susitna Finance Committee, Inc.
2819 Dawson St.
Anchorage, AK 99503

Dear Bob:

Thank you for the packet of information about the Kentco study of Susitna economics and financing. I found it most interesting.

The Senate State Affairs Committee is planning to hold some hearings early in the 1984 legislative session on Susitna. These will be a follow-up to those we held last spring and will include an update on the proposed project, particularly relating to its financing.

I hope that we can arrange, as a part of our hearings, for a presentation of the Kentco analysis and conclusions. My staff will be in touch as we begin to set up the schedule.

Best regards,

Senator Vic Fischer

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

OFFICE OF THE GOVERNOR

OFFICE OF MANAGEMENT AND BUDGET

DIVISION OF GOVERNMENTAL COORDINATION

POUCH AW
JUNEAU, ALASKA 99811
PHONE: (907) 465-3568

~~DE~~
LAL
ST

November 14, 1983

To: ACMP Participants

SUBJECT: CHANGES IN DISTRICT PROGRAM REGULATIONS

On September 29, 1983, the Coastal Policy Council (CPC) adopted some changes to the district program guidelines (6 AAC 85).

A brief outline of the amended regulations follows:

1. Identification of who does consistency reviews--
A new section is added that requires district plans to clearly identify who will conduct consistency reviews.
2. One chapter for enforceable rules--A new section 85.090(b) requires that all enforceable rules of the program be included within a single chapter or section of the document.
3. Deadlines for annual reports--Annual reports to the CPC from districts with approved programs will be required by December 31 of each year.
4. Public hearing draft regulations--Procedures for public hearing drafts are now included within the regulations. The 60-day notice of conceptual approval and requirement that districts prepare findings and conclusions are abolished.

Key elements are as follows:

- a. Public hearing drafts must include all elements required in a district program.
- b. The Office of Coastal Management (OCM) shall review the mailing list for the public hearing draft.

November 14, 1983

- c. A 60-day review period will be required on public hearing drafts. Public notice of distribution of the draft is also required.
- d. The public hearing shall be held no sooner than 30 days after draft distribution. Notice shall be widely distributed at least 30 days before the public hearing.

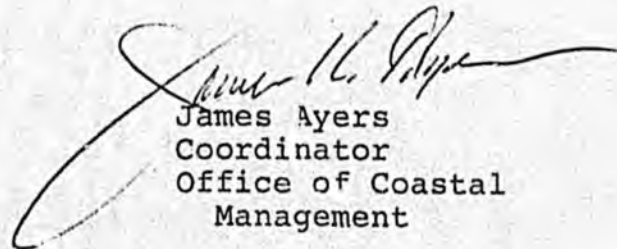
The Office of Coastal Management (OCM) has requested that the Federal Office of Ocean and Coastal Resource Management (OCRM), incorporate these changes into the Alaska Coastal Management Program as a routine program implementation. A copy of the required public notice is enclosed.

Federal approval is anticipated by December 20, 1983. Following this approval, the amendment will be filed by the Lieutenant Governor about December 20, 1983. You will receive a copy of the final notice and a complete set of all Alaska Coastal Management Program regulations in late December.

Copies of the draft regulation amendments were distributed previously. Additional copies may be obtained from our office.

Please call Amy Kyle, District Programs Coordinator, if you have any questions about this notice or the subject amendment.

Sincerely



James Ayers
Coordinator
Office of Coastal
Management

cfc/1033

Enclosure: Public Notice

PUBLIC NOTICE
Alaska Coastal Policy Council

On September 29, 1983, the Alaska Coastal Policy Council adopted changes to the District Program Guidelines (6 AAC 85).

The State of Alaska, Office of the Governor, Office of Coastal Management (OCM), Pouch AW, Juneau, Alaska 99811, considers the incorporation of this change to the Alaska Coastal Management Program to be a matter of routine program implementation. Pursuant to 15 CFR 923.84(b)(2), OCM has asked for the concurrence of the U.S. Department of Commerce, National Oceanographic and Atmospheric Administration, Office of Ocean and Coastal Resource Management with this determination.

Comments regarding whether the incorporation of the above change to the Alaska Coastal Management Program constitutes routine program implementation may be submitted to:

Office of Ocean and Coastal Resource Management
One Page Building
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Attention: Bill Brah

Comments will be accepted thru December 5, 1983.

A SPECIAL REPORT
ON THE
ALASKA POWER AUTHORITY

September 28, 1976 - June 30, 1983

Board Members
Alaska Power Authority

Chairman
Vice Chairman
Ex-Officio Member
Ex-Officio Member
Ex-Officio Member
Member
Member

Richard A. Lyon
Robert F. Hufman
Peter McDowell
Daniel A. Casey
Esther Wunnicke
Lee Nunn
David L. Allison

AUDIT DIVISION
POUCH W
JUNEAU, ALASKA 99811

THE LEGISLATURE

BUDGET AND AUDIT COMMITTEE

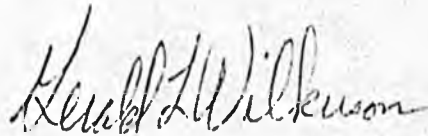
August 5, 1983

Members of the
Legislative Budget and Audit Committee:

In accordance with the provisions of Title 24 of the Alaska
Statutes, the attached report is submitted for your review.

A SPECIAL REPORT
ON THE
ALASKA POWER AUTHORITY

September 28, 1976 - June 30, 1983



Gerald L. Wilkerson, CPA
Legislative Auditor
Division of Legislative Audit

TABLE OF CONTENTS

	<u>Page</u>
Purpose of the Report	1
Organization and Function	3
Auditor's Comments.	5
Findings and Recommendations.	9
Financial Management System	23
Prior Audit Recommendations	25
Appendixes:	
A. Board of Directors.	27
B. Schedule of Project Status and Balances	29
C. Status of Recommendations by Price Waterhouse (PW) in Management Report Dated 12/10/82.	41

PURPOSE OF THE REPORT

In accordance with two Legislative Budget and Audit Committee requests and Title 24 of the Alaska Statutes, this special report has been prepared to determine:

1. If contracting policies and procedures of the Alaska Power Authority are in compliance with applicable statutes and administrative procedures.
2. The current status of Alaska Power Authority projects and current authorization balances for those projects.

↳ ours

ORGANIZATION AND FUNCTION

The Alaska Power Authority (APA) was established by the 1976 Legislature to develop Alaska's hydroelectric and fossil fuel power resources. A 1978 amendment expanded the power sources to include wind and tidal power, geothermal and solar energy, and waste heat conservation. The purpose of developing these resources is to strengthen and diversify the economy by providing energy and power at the lowest reasonable economic, social and environmental costs.

AS 44.56.020 provides that APA is a public corporation of the State within the Department of Commerce and Economic Development but with separate and independent legal existence. Consequently, APA is governed by a seven-member Board of Directors, including the Commissioners of the Departments of Commerce and Economic Development, Natural Resources, and Transportation and Public Facilities, the Director of the Office of Management and Budget and three members at large appointed by the Governor. A Schedule of all appointments to the Board since inception may be found in Appendix A.

APA staff consists of an executive director; directors of finance, engineering, construction, and operations; engineers, economists, and various support staff. In total, APA employs 35 people with an operating budget during Fiscal Year 1983 of \$10,428,000 which includes \$8,300,000 in grants.

APA's activities can be divided into three functions: Energy Program for Alaska, Power Production Cost Assistance, and Rural Electrification Revolving Loan Fund.

Energy Program for Alaska

APA receives appropriations to develop power production projects by acquisition or construction to address both immediate power supply problems and long-range anticipated problems.

To develop a power production project, APA follows basically a five-step process (reconnaissance, feasibility, design and licensing, construction, and operation).

The first step of the project development process is a reconnaissance study to assess the electrical energy and space-heating needs of a community or region and to evaluate possible alternatives. The result of a reconnaissance study is the identification of those energy alternatives that merit a more thorough evaluation. The second step of project development is the feasibility study. This study obtains detailed information and analyzes the technical, economical, and environmental aspects of a particular project or program.

If the results of the study appear to be feasible, the Legislature then reviews the findings. If approved, step three, design and licensing, can begin. During this time all necessary permits are obtained, including a Federal Energy Regulatory Commission (FERC) license for hydroelectric projects, and engineering plans are designed. Once the plans are designed and the license, if needed, is approved by the FERC, step four, actual construction, can begin. Finally, once constructed, APA either operates the facility itself or enters into an operations agreement with a local utility.

Power Production Cost Assistance

The Legislature created this program in Fiscal Year 1981 to reduce the high cost of electric energy to certain customers of qualifying utilities: residential customers, local community facilities, and charitable organizations. Payments are made to the utilities by APA to be passed on to these groups in the form of lower electricity rates. The primary beneficiaries of this program are rural areas, since high energy costs are a prerequisite for participation.

Rural Production Cost Assistance

Elect. Revolving Loan Fund

APA may make loans to electric utilities certified by the Alaska Public Utilities Commission for the purpose of extending new electric service into rural areas. Loans can only be made to certified utilities to provide service to at least three new customers. Loans are made at 2 percent interest for a maximum of 20 years.

AUDITOR'S COMMENTS

During the course of our review we observed, or were given, several explanations for the existence of the problems described in the Findings and Recommendations section of this report. These reasons surfaced with sufficient frequency throughout the audit to warrant special mention. Following is a listing of the explanations given and our opinion as to their impact on the operation of the Alaska Power Authority.

Workload Explosion

Since the Authority's establishment by the 1976 Legislature, workload has grown at an astronomical rate. Appropriations for capital expenditures have grown at an average of approximately 500 percent per year. The Authority has elected to keep the staffing level small and to handle the workload explosion through the increased use of contractors. In fact, the Legislature has approved more positions between Fiscal Years 1979 and 1983 than were requested by the Governor's budgets. While this procedure has allowed them to monitor project development, administrative support services have suffered resulting in numerous financial management and contract management problems.

The increase in workload resulted in a proportionate increase in the number of contracts let by the Authority annually. However, a separate contract administration section was not established until August, 1981. Prior to that time, responsibility for contracting procedures was delegated to numerous employees. Even though a contract administration section now exists, all contracting responsibilities have not been centralized under this section (see Recommendation No. 3).

Legal Status of the Authority

APA's enabling legislation provides that it is a public corporation of the State within the Department of Commerce and Economic Development but with separate and independent legal existence. For APA, as well as other agencies in this category, there have been many questions regarding their legal status which have needed to be resolved. Contracting problems resulting from this at the Authority have been in the areas of ~~confusion over the need for review and approval of APA contracts by the Departments of Commerce and Economic Development and Administration.~~ Some early contracts were not submitted for review and approval to either Department.

There have also been two periods of time more recently when ~~confusion existed over the need for external review and approval.~~ During August, 1981, blanket authorization for approval and obligation of funds for major equipment and

civil construction contracts was granted to APA. However, because of a confusing verbal interpretation of this authorization by the Department of Administration, there was a period of approximately five months when no professional service contracts were submitted for approval either.

Ebach?

During 1982, APA was granted "agency status" for all matters pertaining to professional service contracting. This action was taken at the request of the Deputy Commissioner of Commerce and Economic Development who felt that because the Authority is within the Department for administrative purposes only, the Department does not exercise any policy or decision-making control over it.

As a result of this change, contracts went directly from APA to the Department of Administration's Contracts Review Committee. With the advent of the new administration in January of this year, however, the Department of Commerce and Economic Development is once again reviewing and approving APA professional service contracts.

Internal Priorities/Attitudes

During our review, we observed several attitudes displayed by APA personnel which we feel contributed to the problems noted in contracting procedures. The most prevalent attitude observed was one of project development being of a higher priority than following the required procedures for the processing of contracts. This attitude was especially notable if the contract involved field work which had to be completed during the limited construction season. In these instances, it was felt that contracting procedures could be relaxed to expedite the completion of the work. Examples of the problems created by this attitude include allowing contract work to begin prior to execution of a formal contract (see Recommendation No. 1); and improperly executing contract amendments which substantially change the scope and amount of the original contract (see Recommendation No. 2).

Another attitude we observed was the assumption that all contracts submitted through approval channels will be approved. This attitude is engendered by several factors. The first is the historical perspective which shows that all contracts which are technically complete have been approved. The second is what APA regards as a total absence in approval channels of individuals with sufficient expertise in the types of contracts APA is entering to perform a substantive review. The third factor is the confusion over requirements for approval discussed in the previous section. This attitude has also manifested itself in a relaxation of contracting procedures such as the release of advertising for RFPs prior to having an approved ATN (see Recommendation No. 1).

Unexpended Project Funds

Several explanations were tendered by APA personnel as to why appropriation balances for completed projects are not lapsed. The most frequent explanation is that funds are retained to cover unexpected contingencies, which might occur. We were also told that funds are retained for the eventuality that a subsequent phase of the project will be funded. This may continue to occur even though appropriations sought for subsequent phases have been denied by the Governor or the Legislature. Because of these procedures, unexpended project funds may be appearing on APA's books several years after completion of the phase of the project the appropriation was received for. (For additional detail on project status and appropriation balances see Recommendation No. 5.)

(Intentionally left blank)

FINDINGS AND RECOMMENDATIONS

Recommendation No. 1

The Alaska Power Authority should comply with all applicable statutes and procedures governing contracting.

Our review of APA's contracting procedures included an examination of all contracts let by the Authority from its inception in 1976 through March 31, 1983. ~~We were unable to determine whether our contract universe was complete because of contract administration deficiencies~~ (see Recommendation No. 3). The universe we reviewed was comprised as follows:

<u>Type</u>	<u>No.</u>	<u>%</u>	<u>Dollar Amount</u>	<u>%</u>
Professional Services	146	83.0	\$106,818,446	29.6
Construction	6	3.4	184,567,625	51.0
Procurement	<u>24</u>	<u>13.6</u>	<u>70,265,446</u>	<u>19.4</u>
<u>Total</u>	<u>176</u>	<u>100.0</u>	<u>\$361,651,517</u>	<u>100.0</u>

Our review of these contracts revealed numerous violations of contracting procedures set out in the State Administrative Manual (SAM) and Title 36 of the Alaska Statutes. Contracting procedures set out in Title 36 became effective in July, 1982, therefore, only contracts entered into after that time were tested for compliance to those statutes. Violations are categorized and described below.

A. SAM 8134: The State is not obligated for services provided prior to the effective date of the contract.

~~Twenty-one contracts (12%) had work performed on the contract prior to Department of Administration (DOA) approval.~~ A review of contract billings indicated that work began in accordance with the projected contract start-up date rather than the date of DOA approval which establishes the actual effective date of all professional services contracts. The amount of time that work was performed prior to contracts being signed, ranged from 6 days to 244 days, with the average being 51 days. There were three contracts included in this category for which DOA approval was never received.

APA personnel stated no directive is given to contractors to begin work prior to the effective dates, and that contractors are informed that if work begins prior to the effective date, it is at their own risk. However, in an October 27, 1982 letter from an APA project manager to a prospective contractor, we found the following words of encouragement: "Let me once again express my appreciation for your willingness to proceed

on our work at your risk pending execution of the formal contract. Please keep track of your time and we will honor appropriate expenditures for this period when you submit your first formal billing." In our review, we noted billings amounting to \$884,343 for work performed on contracts prior to their approval.

B. SAM 8108 and AS 36.98.040(c). Contracts for professional services shall be approved by the Department of Administration.

Twenty-three professional services contracts did not have proper approval from the Department of Administration. These contracts totalled \$12,559,604. Included in this total are:

1. Four feasibility study contracts totalling \$4,625,154 which were processed during a period of time when there was some confusion whether blanket authority granted APA for major equipment manufacturing and civil construction contracts extended to feasibility study contracts. This confusion ensued from a telephone conversation with the coordinator of DOA's Contract Review Committee who interpreted the authorization to be thus extended.
2. Four professional services contracts totalling \$6,697,090 for services other than feasibility studies which were processed during the same time period as described in (1) above. Per APA staff these errors occurred as a result of their interpretation of the blanket authority as extending to all professional services contracts. No justification for this interpretation exists, however.
3. Fifteen additional contracts totalling \$1,237,360 which are predominantly unexplained.

C. SAM 8132 and AS 36.98.030(d). Sole source contracts shall be supported by an explanatory memorandum.

Forty-four of the seventy-seven sole source contracts entered into by the Authority (57%) did not tender adequate written justification for negotiating with only one source. These contracts totalled \$3,042,957. Although written justification was submitted on the majority of these contracts, we did not feel it adequately justified not soliciting competitive bids. For example, a sole source contract for a reconnaissance analysis was supported by the following justification. "Information to be provided by the engineer has been requested by the Legislature to be available as rapidly as possible. A qualified and experienced engineer in both conventional diesel generation and small hydroelectric development is not available on staff to perform this work in the desired time."

Included in this total are twenty-two United States Geological Survey (USGS) contracts totalling \$544,620 which were entered into prior to the exempting of federal contracts from DOA review. Also included are nine contracts totalling \$203,729 for the experts chosen for the Susitna Technical Review Panel. Although a selection process was carried out by the APA staff and Board, Authority to Enter Contract Negotiations documents (ATN) submitted to DOA did not reflect that process had occurred, and implied sole source contracts were being issued to each individual. The largest contract on our exception list was for \$1,231,090 and was entered into during the period of confusion over the Authority's blanket authority described in section A of this recommendation.

Per APA, past practice and current procedures permit, at the discretion of the Authority, the continued use of an engineering firm for successive phases of project development. We were able to determine that at least two contracts we reviewed totalling \$1,399,147 fall into this category. Thirty-six of the questioned contracts were approved by the Department of Administration without adequate written justification (see Recommendation No. 4). The remaining eight contracts did not receive required approval from DOA.

- D. SAM 8140. An ATN must be submitted to and approved by DOA before Requests for Proposals (RFP) are released, before newspaper advertising, and before negotiations commence with any prospective contractor.

Seventeen contracts reviewed did not have properly executed ATNs. For the majority of questioned contracts, eleven of the seventeen (65%) advertising for the RFP was released prior to approval of the ATNs. Other exceptions included three contracts for which no ATN could be located, two contracts which were approved prior to ATN approval, and one contract for which the RFP was released prior to approval of the ATN.

Per APA, the Authority has allowed the advertising to begin before receiving an approved ATN if they feel the ATN will be processed without question in order to minimize the paper processing delays prior to beginning actual contract work. Contracts questioned under this section totalled \$4,803,849.

- E. SAM 8146. Contracts for \$20,000 or more require solicitation of proposals by newspaper advertising in a major newspaper in each of Alaska's three major cities a minimum of three times.

Six professional services contracts were not advertised in accordance with SAM 8146. These contracts totalled \$9,587,052. Four of the questioned contracts were advertised, but not for the required three days. For the other two contracts, we could find no evidence that they were advertised. These two contracts were let in FY'80 and account for \$68,800 of the questioned total.

F. SAM 8144 and AS 36.98.040. Proposals must be evaluated by a committee consisting of at least three members.

Six contracts were entered into based on RFP evaluations which were not performed in conformance with this section. Three of the questioned contracts were evaluated by committees consisting of only two members. These contracts totalled \$364,300. For two contracts totaling \$8,016,628, evidence did not exist demonstrating an evaluation process had occurred. The six questioned contracts did not have evidence an evaluation by point values as recommended at SAM 8144 and required at AS 36.98-.040(a). The total value of contracts questioned under this section is \$8,847,727.

For three contracts for which evidence was not available to demonstrate an evaluation process had occurred or that point values were used, APA personnel stated that each was properly evaluated, but documentation has been misplaced.

Summary of Violations

In summarizing the impact of these violations on the total population reviewed we find that 75 of APA's 176 contracts (43%) were not properly executed under one or more of the above-listed requirements. These contracts totalled \$30,545,161.

In recognition of the fact the Alaska Power Authority has only been operational for a relatively short time, we analyzed the error rate by fiscal year to determine whether the high error rate could in part be attributed to growing pains. The result of this analysis follows and demonstrates that although the error rate has declined during the agency's development, the larger dollar value of contracts executed annually has resulted in a substantially larger total dollar impact in recent years.

<u>Fiscal Year</u>	<u>Total Contracts</u>		<u>Contracts Improperly Executed</u>			
	<u>No.</u>	<u>Amount</u>	<u>No.</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
1977	1	\$ 40,000	1	100	\$ 40,000	100
1978	2	unknown	1	50	unknown	-
1979	5	192,712	4	80	152,712	79
1980	22	9,558,996	15	68	8,447,628	88
1981	42	9,411,202	26	62	2,366,223	25
1982	63	288,221,006	19	30	13,160,630	5
1983*	41	54,227,601	9	22	6,377,968	8
<u>Total</u>	<u>176</u>	<u>\$361,651,517</u>	<u>75</u>	<u>43</u>	<u>\$30,545,161</u>	<u>8</u>

*Through March 31, 1983.

Violation of the statutes and procedures governing contracting could invite legal challenges to APA's contract awards, which in turn could escalate project costs and cause substantial project delays.

Recommendation No. 2

APA should review their procedure of amending professional service contracts and comply with applicable State statutory and administrative requirements.

General Information

Our review of APA contracting procedures from inception to March 31, 1983, included the determination of the extent and use of change orders and contract amendments. We found that APA frequently amends contracts as to scope, amount, and period of performance.

As of March 31, 1983, APA had awarded 176 professional service, procurement, and construction contracts totalling \$361,651,517. Included in this total were 194 change orders and contract amendments issued in excess of \$40,875,000. Upon review of the revisions, we found the following:

1. The dollar amount of procurement and construction contracts accounted for 70 percent of the total awarded contracts but only 1 percent of the dollar amount of the revisions. While it appears APA has adequately controlled the amount of change orders for procurement and construction contracts, APA has issued an extensive number of contract amendments for professional services (reconnaissance, feasibility, and design). Of the total dollar amount of revisions, \$40,309,595 (99%) were for professional services.
2. Since inception, APA has awarded \$106,818,446 in professional service contracts of which contract amendments accounted for \$40,309,595 (38%). Contract amendments have increased professional service contract costs sixty-three percent.
3. The number of revisions issued per project ranged from one to seventy-two with the Tyee Hydroelectric project receiving the most.
4. The average contract amendment issued on professional service contracts was \$298,590 while the range varied from reducing the contract \$1.6 million to increasing the contract \$7.8 million.

5. While the majority of revisions affected Fiscal Year 1982, other years were also affected.

<u>Fiscal Year</u>	<u>Number</u>	<u>Dollar Amount</u>
1979	4	\$ 22,850
1980	22	5,452,871
1981	49	4,190,110
1982	106	25,746,499
<u>1983*</u>	<u>13</u>	<u>5,462,790</u>
<u>Total</u>	<u>194</u>	<u>\$ 40,875,120</u>

*Through March 31, 1983.

Violations

We also found violations of procedures set out in the State Administrative Manual governing the amending of contracts. Those violations are categorized and described below.

- A. SAM 8148. The State is not liable for any sum in excess of the contract amount unless an amendment is negotiated and approved by the Department of Administration.

During our review, we found that fifteen contract amendments issued for \$6,437,898 lacked required approval by the Department of Administration. Included in this total are five amendments totalling \$214,500 which were processed during a period of time when there was some confusion whether blanket authority granted APA for major equipment manufacturing and construction contracts extended to feasibility contracts.

Five of the fifteen amendments described previously, plus an additional twenty-eight amendments totalling \$3,872,631, were issued after the contract completion date. By doing this, both the Authority and DOA were granting retroactive approval of amendments.

- B. SAM 8114. If a proposed amendment changes substantially the terms of the existing contract as to scope, amount or period of performance, a new ATN must be transmitted for approval.

There were ~~fourteen contract amendments we noted which substantially changed the scope of the original contract for which no new ATNs were processed.~~ For example, during Fiscal Year 1981, a professional service contract was awarded that provided for independent cost estimating. Originally, the contract scope stated the contractor would provide cost estimates for the Tyee Lake project. The contract was issued for \$33,840. The ATN for the project stated several cost

estimates would be solicited with an estimated project cost of \$100,000. The contract cost, however, ballooned to \$438,593 as contract amendments were issued for cost estimates to be provided on eight additional projects.

There were twenty-three contracts for which amendments increased original contract cost by more than twenty percent. Of these twenty-three, two did not have revised ATNs processed, and three did not have original ATNs. Also included in these contracts are two which had revised ATNs processed, however, amendments exceed the revised ATN amount by an average of 38%.

It is APA's opinion that due to the nature of their professional service needs, the use of contract amendments is the best way to manage and control contract costs. However, it is incumbent upon APA to exercise due care and diligence in the use of contract amendments so that the State may be assured the best product at the lowest possible price. If due care and diligence over amendments is not exercised, a certain loss of control over project cost is likely to occur which must ultimately be absorbed by the consumers of power generated by APA projects.

Recommendation No. 3

APA should strengthen their internal control over contract administration

During our review, we found several weaknesses in the administration of contracts:

1. A complete listing of contracts let since inception is not maintained.
2. The function of controlling contract documents is not centrally located.

Currently, APA relies on the Outstanding Encumbrance Analysis as documentation of awarded contracts. The Outstanding Encumbrance Analysis only reflects currently outstanding contracts. Since inception, APA has awarded \$361,651,517 professional service, construction, and procurement contracts. As of March 31, 1983, the Outstanding Encumbrance Analysis reflected only \$134,881,900 or 37% of the total contracts. Furthermore, for certain professional service contracts, it is the current policy of APA to write contracts to state that the project will progress in phases and that the contract will be continuing.

Accordingly, the phases may receive additional appropriations yearly. Thus, these contracts require an additional encumbrance. This encumbrance is assigned a new number and is reflected on the Outstanding Encumbrance Analysis as a new contract when in fact the additional encumbrance is an amendment to the original contract. ~~The use of the Outstanding Encumbrance Analysis results in the loss of accurate recording of awarded contracts and weakens the audit trail for reporting total contract value.~~

In addition, we found that contract files were incomplete. The Contract Administration Section maintains the contracts, authority to negotiate documents and change orders while project engineers control requests for proposals, invitations to bid, contractor response and the evaluation of the proposals. This method has resulted in the loss of the following documents:

	<u>Number</u>	<u>Dollar</u>
Complete contract documents	5	\$ 41,928
Authority to negotiate and/ or contract	9	2,558,050
Proposal evaluation	<u>3</u>	<u>8,116,298</u>
<u>Total documents</u>	<u>17</u>	<u>\$10,716,276</u>

It should be the function of the Contract Administration Section to control and maintain all contract documents. To strengthen control over contracts, the Contract Administrator should maintain a record of all awarded contracts including amendments to the original contracts. In addition, contract files should contain all original contract documents as well as the support for awarding the contract.

Recommendation No. 4

The Department of Administration (DOA) should adequately review and approve sole source contracts in compliance with applicable State statutes and administrative requirements.

Article 4, Uniform Purchasing, of the Fiscal Procedures Act gave DOA, in part, the responsibility for establishing contracting procedures and for monitoring compliance with those established requirements.

As part of those requirements, Section 8106 of the State Administrative Manual provides that, "... it is the State policy to solicit proposals from at least three potential vendors unless justified otherwise"

In addition, the 1982 Legislature enacted AS 36.98.030 which allows State agencies to contract by sole source if:

1. The contracting agency demonstrates that there is a single source of the expertise or knowledge required or that one person or firm can clearly perform the required tasks more satisfactorily because of the person's or firm's prior work; and
2. the head of the State agency has submitted a written request to the commissioner that details the reasons for the exemption; and
3. the commissioner or deputy commissioner has authorized in writing the State agency to enter contract negotiations with the single source.

During our review of APA's contracting procedures from inception in 1976 to March 31, 1983, we noted that there were ~~seventy-seven sole source contracts of which forty-four (57%) we did not feel adequately justified not soliciting competitive bids. We found that even though there was inadequate written justification, DOA approved thirty-six of these contracts.~~ These contracts totalled \$1,711,211. Three out of four contracts let during Fiscal Year 1983 were approved after AS 36.98.030 became effective.

This problem was also found in our previous audit dated August 23, 1982, which addressed statewide contracting procedures during the first seven months of Fiscal Year 1982. The audit tested eighty-two professional service contracts of which forty-eight contracts (58.5%) were either not advertised, did not obtain three proposals, or did not adequately justify negotiating with only one contractor.

The intent of requiring that sole source contracts be adequately justified is to ensure that the State is receiving the best product or service at the lowest reasonable cost.

Therefore, although it is incumbent that APA comply with applicable statutes and regulations, it is the responsibility of DOA to review the proposed contracts to ensure compliance with those statutes and regulations.

Recommendation No. 5

The Legislature, in conjunction with APA, should review the status of various projects to determine if unexpended project funds should be lapsed into the General Fund.

Since its inception in 1976, APA has received a total of \$590,180,059 in appropriations for projects throughout the State. As of June 30, 1983, APA has expended \$371,450,233 and has additional outstanding encumbrances totalling \$80,590,930. The total appropriation amount includes new funding from the Fiscal Year 1984 Appropriation Act and also

reflects funding repealed or reduced by Chapter 106, SLA 1983 (see Appendix B for a complete status listing of APA projects).

We reviewed 100 percent of APA's projects to determine their current status and to identify projects for legislative review of unexpended project balances. As a result, we have identified 28 projects with unobligated balances totalling \$14,148,445 for review.

Of that total, \$10,491,133 represents the June 30, 1983 balance of a \$53 million appropriation for the Solomon Gulch hydroelectric project. This facility has been in operation since September, 1982.

We recommend the Legislature, in conjunction with APA, review the following list of projects to determine whether the balances should remain with APA or be lapsed into the General Fund.

Alaska Power Authority
Projects For Review
as of June 30, 1983

<u>Projects</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Chapter 49, SLA 1979</u>					
Cordova Power Creek	\$ 250,000	\$ -0-	\$ -0-	\$ 250,000	Legislation specifies that loan monies intended for hydro, however, community wants diesel generators.
<u>Chapter 80, SLA 1979</u>					
Anchorage Energy Pooling	120,000	99,670	-0-	20,330	Completed study on the reliability of the Anchorage area electrical transmission system.
Gartina Creek Hydro Project	270,000	32,142	1,417	236,441	Feasibility study completed. No additional funds have been requested.
Thayer Creek Hydro Project	100,000	61,547	-0-	38,453	Feasibility study completed. Report available.
<u>Total Chapter 80, SLA 1979</u>	<u>490,000</u>	<u>193,359</u>	<u>1,417</u>	<u>295,224</u>	
<u>Chapter 50, SLA 1980</u>					
Scammon Bay Electricity	100,000	38,779	524	60,697	Feasibility studies completed. Results showed that hydro potential is marginal.
<u>Chapter 120, SLA 1980</u>					
Dillingham-Lake Elva	550,000	546,218	-0-	3,782	Part of Bristol Bay regional study. Project put on hold pending legislative action.
Larsen Bay	200,000	14,449	9,875	175,676	Reconnaissance study completed.
Togalak Village	40,000	29,000	-0-	11,000	Reconnaissance study completed. Additional funds to be requested for Fiscal Year 1985.
Goodnews Bay	45,000	29,016	-0-	15,984	Reconnaissance study completed. Based on the results no further work is expected.
Various Villages	200,000	197,016	-0-	2,984	Reconnaissance study completed. Report available.
Tuzimna	50,000	36,674	-0-	13,326	Part of Bristol Bay regional study. Funding denied for Fiscal Year 1983. Project on hold.

Alaska Power Authority
Projects For Review
as of June 30, 1983

<u>Projects</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Chapter 120, SLA 1980 (Cont.)</u>					
Northwest Coal Resources	\$ 250,000	\$ 249,025	\$ -0-	\$ 975	Feasibility study completed. Report available.
Kotzebue Geothermal	60,000	54,440	3,085	2,475	Feasibility study completed. Report available.
Old Harbor	990,000	31,829	-0-	958,171	Reconnaissance study completed. Additional funds to be requested for Fiscal Year 1985.
Central	200,000	-0-	-0-	200,000	Loan. Community wants 0% interest. APA not authorized to loan monies at 0%.
<u>Total Chapter 120, SLA 1980</u>	<u>2,585,000</u>	<u>1,187,667</u>	<u>12,960</u>	<u>1,384,373</u>	
<u>Chapter 90, SLA 1981</u>					
Craig-Klawock Transmission	750,000	666	-0-	749,334	Local utilities unsuccessful in negotiating power sales agreement. Per APA no agreement in sight.
Chester Lake	1,000,000	338,673	51,250	610,077	Feasibility study completed. Findings and recommendations to be presented to the Board of Directors.
Chakachamna Lake	1,000,000	995,061	-0-	4,939	Feasibility studies on-going. Susitna funding Chapter 101, SLA 1982 being utilized.
Tazimina Lake	2,000,000	1,700,298	242,981	56,721	Part of Bristol Bay regional study. Funding denied for Fiscal Year 1983. Project on hold.
Rural Community Reconnaissance	560,000	545,410	100	14,490	Reconnaissance study at thirty-six villages complete. Report available.
Delta Agricultural Project	2,155,000	1,921,847	179,737	53,416	Design and construction of 3-phase distribution line. Construction completed.
Kodiak Island Borough	100,000	81,232	9,100	9,668	Project complete and the report is available.

Alaska Power Authority
 Project For Review
 as of June 30, 1983

<u>Projects</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Chapter 90, SLA 1981 (Cont.)</u>					
Kotzebue District Heating	\$ 170,000	\$ 119,121	\$ -0-	\$ 879	Feasibility study completed. Report available.
Kotzebue Coal Utilization	100,000	97,341	100	2,559	Feasibility study completed. Report available.
<u>Total Chapter 90, SLA 1981</u>	<u>7,785,000</u>	<u>5,799,649</u>	<u>483,268</u>	<u>1,502,083</u>	
<u>Chapter 92, SLA 1981</u>					
Green Lake	85,000	45,041	-0-	39,959	Originally appropriated \$45 million for the acquisition. Reduced by Chapter 141, SLA 1982.
Solomon Gulch	53,000,000	42,451,600	57,267	10,491,133	Construction completed. Project in operation since September, 1982.
<u>Total Chapter 92, SLA 1981</u>	<u>53,085,000</u>	<u>42,496,641</u>	<u>57,267</u>	<u>10,531,092</u>	
<u>Chapter 101, SLA 1982</u>					
Cantwell-Electric Transmission	75,000	24	-0-	74,976	Community cannot decide if construction of transmission lines is warranted.
Anderson-Coal Conversion	50,000	-0-	-0-	50,000	Community does not want the funds.
<u>Total Chapter 101, SLA 1982</u>	<u>125,000</u>	<u>24</u>	<u>-0-</u>	<u>124,976</u>	
<u>Total Projects</u>	<u>\$64,420,000</u>	<u>\$49,716,119</u>	<u>\$555,436</u>	<u>\$14,148,445</u>	

(Intentionally left blank)

FINANCIAL MANAGEMENT SYSTEM

During April, 1983, at the request of the Board of Directors of the Alaska Power Authority, a cursory review of the status of Price Waterhouses' recommendations on APA's financial management system was performed. This review was a joint effort of the Division of Legislative Audit and the Office of Management and Budget. Its purpose was to determine the current status of twenty recommendations made to APA management in Price Waterhouses' three management letters dated October 26, 1981, November 19, 1982 and December 10, 1982.

In addition to the status of the recommendations and an APA general ledger system review, which are presented as Appendix C to this report, several issues for consideration were presented. Those issues are discussed below.

Planned Automated Financial System: APA has contracted with a software company to design and install a basic automated accounting system. However, the planned system cannot be considered a financial management system. It is, rather, a limited accounting system that tracks historical costs of APA financial transactions, predominantly on the cash basis. Unless APA changes to an accrual-based accounting system, data retrieved from the automated system will not be a representative picture of the status of a project.

Need for and Internal Auditor's Presence: Significant expansion of contracting for projects has placed the APA in a position of "delegating" their control of expending significant sums of monies to contractors. It is, therefore, critical that thorough on-site reviews of contractors' expenditures be conducted on a formal basis and in a timely manner by qualified auditors knowledgeable in the construction fields.

Standardization of Financial Reporting by Contractors: Specified reporting formats for expenditures reported to APA by contractors have not been standardized. Additionally, contractor charges are coded and charged to broad classifications during the construction phase of a project and distributed to the appropriate accounts once the project is completed. Considering that large hydroelectric projects take many years to complete, this practice will only increase the chances for errors and inaccuracies in the accounting records.

Current Events: Price Waterhouse is currently conducting a financial audit of APA's Fiscal Year 1983 activities. When available, we will review the auditor's report and accompanying management letters.

(Intentionally left blank)

PRIOR AUDIT RECOMMENDATIONS

Five of the seven recommendations presented to the Commissioner of Commerce and Economic Development in a previous audit report dated December 12, 1980 for the period September 28, 1976 to December 12, 1980 have been implemented. The following is the status of the remaining recommendations:

Prior Audit Recommendation No. 4

Employees' salaries should be properly allocated to reflect actual work assignments.

The previous audit found that three APA employees whose salaries were funded by capital projects were performing duties which were not related to those projects. Through discussions with APA staff it was found that employees funded by capital projects continue to work on other projects.

Legislative Audit's Current Position

Improper matching of work performed with projects charged results in distorted reporting of project costs and the use of capital project funds to supplement the operating budget. APA should develop a time reporting system in order to correctly allocate employees' time and to ensure that capital project appropriations are expended in accordance with legislative intent and the provisions of Title 37.

Prior Audit Recommendation No. 6

Internal accounting control over loan proceeds should be strengthened.

APA collects and transmits the proceeds of power project loans to the Department of Commerce and Economic Development. Due to the low volume of loans, APA has not developed a system of control for loan receipts.

Legislative Audit's Current Position

As of March 31, 1983, APA had not developed a system of control over loan receipts. However, APA has received approval by the Department of Revenue to institute a lock box system. We concur that the lock box system would strengthen internal accounting control over loan receipts.

APPENDIXES

APPENDIX A

Alaska Power Authority
Board of Directors
Inception to Date

Description of Members	4/77	1/79	6/80	9/81	1/83	6/83	7/93
At Large Members:							
Member	Charles Conway - - - - -			(reappointed) - - - - -		Lee W. Munn - - - - -	
Member	Frank Murkowski - - Arnold Espe - - - - -		John Schaeffer - - - - -		David Allison		
Member	Jack Wick - - - - -			Dr. Robert Weeden -(reappointed) -		Robert Huffman - - - - -	
Member	Robert Ward - - - - Charles Behlke- Thomas Kelly - - -						
Ex-Officio Members:							
Commissioner, Dept. of Commerce & Econ. Dev.	W. Phillip Hubbard- Charles Webber - - - - -			Richard Lyon - - - - -			
Director, Div. of Budget & Management				Dr. Ron Lehr -- Peter McDowell - - - - -			
Commissioner, DOT/PF				Robert Ward - - Daniel Casey - - - - -			
Commissioner, Dept. of Environmental Con.				Ernst Mueller--			
Commissioner, Dept. of Natural Resources						Esther Wunnicke - - - - -	

- Note 1: Ch. 278 SLA 1976 effective 9/28/76 establishes constitution of the Board as the Commissioner of Commerce and Economic Development and four public members.
- Note 2: Ch. 156 SLA 1978 effective 1/13/78 adds the Commissioners of Community and Regional Affairs, Natural Resources, Transportation and Public Facilities and Revenue as non-voting members.
- Note 3: Ch. 118 SLA 1981 effective 7/1/81 changes the constitution of the Board to the Director, Div. of Budget and Management, the Commissioners of three principal executive departments as appointed by the governor, and three public members. All terms of existing directors expired and a new Board was named.

STATE OF ALASKA

-27-

DIVISION OF LEGISLATIVE AUDIT

(Intentionally left blank)

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>A.E.L.P.</u>					
Chapter 152, SLA 1977	\$ 500,000	\$ 500,000	\$ -0-	\$ -0-	A.E.L.P. has applied for the remaining funds. The Board of Directors approved the loans in their July, 1983 meeting.
Chapter 80, SLA 1979	200,000	200,000	-0-	-0-	
Chapter 54, SLA 1980	1,500,000	1,000,000	-0-	500,000	
Chapter 90, SLA 1981	4,000,000	4,000,000	-0-	-0-	
Chapter 90, SLA 1981	3,000,000	-0-	-0-	3,000,000	
Chapter 141, SLA 1982	4,000,000	-0-	-0-	4,000,000	
<u>Total A.E.L.P.</u>	<u>13,200,000</u>	<u>5,700,000</u>	<u>-0-</u>	<u>7,500,000</u>	
<u>Akutan</u>					
Chapter 90, SLA 1981	500,000	416,013	83,987	-0-	Construction of electrical transmission lines is 85 percent complete. Expected to be completed by September, 1983.
Chapter 141, SLA 1982	127,000	125,641	-0-	1,359	
<u>Total Akutan</u>	<u>627,000</u>	<u>541,654</u>	<u>83,987</u>	<u>1,359</u>	
<u>Anchorage-Fairbanks Intertie</u>					
Chapter 50, SLA 1980	3,000,000	3,000,000	-0-	-0-	Construction of an electrical transmission system to connect the rail-belt. Construction began in May, 1983.
Chapter 92, SLA 1981	36,000,000	6,568,174	29,432,018	(192)	
Chapter 92, SLA 1981	40,000,000	501,000	15,463,161	24,035,839	
Chapter 107, SLA 1983	25,000,000	-0-	-0-	25,000,000	
<u>Total Anchorage-Fairbanks Intertie</u>	<u>104,000,000</u>	<u>10,069,174</u>	<u>44,895,179</u>	<u>49,035,647</u>	
<u>Anchorage Energy Pooling</u>					
Chapter 80, SLA 1979	120,000	99,670	-0-	20,330	Completed study on the reliability of the Anchorage area electrical transmission system.
<u>Anderson Coal</u>					
Chapter 101, SLA 1982	50,000	-0-	-0-	50,000	Community does not want the funds.
<u>Angoon Power Alternatives</u>					
Chapter 120, SLA 1980	250,000	11	35,000	214,989	Feasibility study of the energy alternatives at Angoon is ongoing.

Note 1: The information presented is from the Alaska Power Authority records. This information has not been audited by us and, accordingly, we express no opinion.

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>	
<u>Bethel Regional Study</u>						
Chapter 80, SLA 1979	\$ 80,000	\$ 80,000	\$ -0-	\$ -0-	Regional study incorporating the areas of Bethel and the Kuskokwim River. A draft report was issued January, 1983.	
Chapter 90, SLA 1981	1,000,000	979,169	7,080	13,751		
Chapter 90, SLA 1981	1,000,000	1,000,000	-0-	-0-		
Chapter 141, SLA 1982	500,000	17,445	10,800	471,755		
<u>Total Bethel Regional Study</u>	<u>2,580,000</u>	<u>2,076,614</u>	<u>17,880</u>	<u>485,506</u>		
<u>Black Bear</u>						
Chapter 80, SLA 1979	745,000	744,014	1,067	(81)	Feasibility studies near completion. Economic analysis to update FERC licence application ongoing. Design on hold until findings presented to the Board of Directors.	
Chapter 90, SLA 1981	1,400,000	1,309,871	87,439	2,690		
Chapter 141, SLA 1982	1,000,000	31,947	200,648	767,474		
<u>Total Black Bear</u>	<u>3,145,000</u>	<u>2,085,832</u>	<u>289,154</u>	<u>770,014</u>		
<u>Bradley Lake</u>						
Chapter 80, SLA 1979	80,000	79,790	-0-	210	Project has been authorized for construction. Design contract to be negotiated by December, 1983.	
Chapter 92, SLA 1981	5,000,000	160,399	1,643,018	3,196,583		
Chapter 92, SLA 1981	10,000,000	4,778	-0-	9,995,222		
Chapter 141, SLA 1982	3,000,000	-0-	20,300	2,979,700		
<u>Total Bradley Lake</u>	<u>18,080,000</u>	<u>244,967</u>	<u>1,663,318</u>	<u>16,171,715</u>		
<u>Brevig Mission</u>						
Chapter 50, SLA 1980	50,000	50,000	-0-	-0-	Grant provided to the community for construction of a distribution system. Construction has been completed.	
<u>Bristol Bay Area</u>						
Chapter 80, SLA 1979	80,000	80,000	-0-	-0-	Regional study incorporating the areas of Dillingham, Lake Elva and Tazimina Lake. Project has been put on hold pending legislative action.	
Chapter 50, SLA 1980	500,000	500,000	-0-	-0-		
Chapter 120, SLA 1980	40,000	29,000	-0-	11,000		
Chapter 120, SLA 1980	50,000	36,674	-0-	13,326		
Chapter 120, SLA 1980	300,000	300,000	-0-	-0-		
Chapter 120, SLA 1980	550,000	546,218	-0-	3,782		
Chapter 90, SLA 1981	961,000	961,000	-0-	-0-		
Chapter 90, SLA 1981	2,000,000	1,700,298	242,981	56,721		
Chapter 141, SLA 1982	15,000	15,000	-0-	-0-		
<u>Total Bristol Bay Area</u>	<u>4,496,000</u>	<u>4,168,190</u>	<u>242,981</u>	<u>114,829</u>		

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Cantwell</u>					
Chapter 101, SLA 1982	\$ 75,000	\$ 24	\$ -0-	\$ 74,976	Community cannot decide if construction of transmission lines is warranted.
<u>Central</u>					
Chapter 120, SLA 1980	200,000	-0-	-0-	200,000	Loan. Community wants 0% interest. APA not authorized to loan monies at 0%.
<u>Chakachamna</u>					
Chapter 90, SLA 1981	1,000,000	995,061	-0-	4,939	Feasibility studies ongoing. Susitna funding Chapter 101, SLA 1982 being utilized.
<u>Chester Lake</u>					
Chapter 90, SLA 1981	1,000,000	338,673	51,250	610,077	Feasibility study completed. Findings and recommendations to be presented to the Board of Directors.
<u>Chilkat Hydro</u>					
Chapter 80, SLA 1979	50,000	50,319	-0-	(319)	Reconnaissance study completed. Report available.
<u>Cordova Energy Supply Alternatives</u>					
Chapter 49, SLA 1979	250,000	-0-	-0-	250,000	Reconnaissance study completed. Feasibility studies are ongoing. Studies to be completed by March, 1984. In addition, Chapter 49, SLA 1979 appropriated monies to be loaned to Cordova for hydro studies. Cordova, however, wants to use the funds to purchase a diesel generator. Decision pending.
Chapter 80, SLA 1979	500,000	466,206	2,018	31,776	
Chapter 90, SLA 1981	700,000	559,191	104,921	35,888	
Chapter 50, SLA 1981	700,000	155,217	512,513	32,270	
Chapter 90, SLA 1981	300,000	301,886	-0-	(1,886)	
<u>Total Cordova Energy Supply Alternatives</u>	<u>2,450,000</u>	<u>1,482,500</u>	<u>619,452</u>	<u>348,000</u>	

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Craig-Klawock</u>					
Chapter 90, SLA 1981	\$ 750,000	\$ 666	\$ -0-	\$ 749,334	Local utilities unsuccessful in negotiating power sales agreement. Per APA no agreement in sight.
<u>Crooked Creek</u>					
Chapter 90, SLA 1981	62,500	-0-	-0-	62,500	Negotiating a grant agreement with the community for a waste heat project.
<u>Delta Agriculture</u>					
Chapter 90, SLA 1981	2,155,000	1,921,847	179,737	53,416	Design and construction of a 3-phase distribution line. Construction completed.
<u>Discretionary Funds</u>					
Chapter 120, SLA 1980	75,000	73,948	1,052	-0-	Funds used to cover costs of various projects.
<u>Eagle Village</u>					
Chapter 101, SLA 1982	25,000	21,561	3,439	-0-	Generator purchased and is online.
<u>Elfin Cove</u>					
Chapter 101, SLA 1982	25,000	-0-	-0-	25,000	Draft report of the energy needs of the community is being reviewed.
<u>Elim Village</u>					
Chapter 120, SLA 1980	25,800	25,747	-0-	53	Reconnaissance study completed. Report available.
<u>Fairbanks District Heat</u>					
Chapter 50, SLA 1980	35,000	35,000	-0-	-0-	Feasibility study 75 percent complete. Expected to be completed in September, 1983 at which time APA will extend the city a loan for \$4 million to engineer and design a boiler system.
Chapter 90, SLA 1981	440,000	277,879	123,991	38,130	
Chapter 90, SLA 1981	4,000,000	-0-	-0-	4,000,000	
<u>Total Fairbanks District Heat</u>	<u>4,475,000</u>	<u>312,879</u>	<u>123,991</u>	<u>4,038,130</u>	

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>False Pass</u>					
Chapter 107, SLA 1983	\$ 600,000	\$ -0-	\$ -0-	\$ 600,000	New appropriation effective July 29, 1983.
<u>Gartina Creek</u>					
Chapter 80, SLA 1979	270,000	32,142	1,417	236,441	Feasibility study completed. No additional funds have been requested.
<u>Goodnews Bay</u>					
Chapter 120, SLA 1980	45,000	29,016	-0-	15,984	Reconnaissance study completed. Based on the results no further work is expected.
<u>Grant Lake</u>					
Chapter 80, SLA 1979	40,000	40,000	-0-	-0-	Feasibility studies ongoing. A draft report issued February, 1983 is currently being reviewed by APA.
Chapter 90, SLA 1981	1,000,000	995,287	227	4,486	
Chapter 141, SLA 1982	1,000,000	386,352	218,307	395,341	
<u>Total Grant Lake</u>	<u>2,040,000</u>	<u>1,421,639</u>	<u>218,534</u>	<u>399,827</u>	
<u>Green Lake</u>					
Chapter 92, SLA 1981	85,000	45,041	-0-	39,959	Originally appropriated \$45 million for the acquisition. Repealed by Chapter 141, SLA 1982.
Chapter 141, SLA 1982	15,000,000	15,000,000	-0-	-0-	
<u>Total Green Lake</u>	<u>15,085,000</u>	<u>15,045,041</u>	<u>-0-</u>	<u>39,959</u>	
<u>Gunnuk Creek</u>					
Chapter 80, SLA 1979	140,000	103,214	35,802	984	Feasibility study for an alternative to the Kaku-Petersburg Intertie. Study is ongoing.
<u>Haines-Skagway</u>					
	10,000	10,000	-0-	-0-	Feasibility study completed. Report available.
<u>Hoonah Wood Study</u>					
	30,000	30,000	-0-	-0-	Feasibility study completed. Funds provided by the U.S. Forest Service.

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Kake-Petersburg</u>					
Chapter 90, SLA 1981	\$ 500,000	\$ 226,350	\$ 104,150	\$ 169,500	Feasibility study ongoing and is expected to be completed by December, 1983.
<u>Kaltag</u>					
Chapter 120, SLA 1980	20,000	24,000	-0-	(4,000)	Reconnaissance study completed. Report available.
<u>Kiana</u>					
Chapter 120, SLA 1980	38,400	38,400	-0-	-0-	Reconnaissance study completed. Report available.
<u>King Cove</u>					
Chapter 50, SLA 1980	200,000	200,000	-0-	-0-	Feasibility study completed. Report available.
<u>Kobuk-Shengnak</u>					
Chapter 90, SLA 1981	200,000	200,128	-0-	(128)	Reconnaissance study completed. Report available.
<u>Kodiak Island</u>					
Chapter 90, SLA 1981	100,000	81,232	9,100	9,668	Project complete and the report is available.
<u>Kodiak Waste Heat</u>					
Chapter 90, SLA 1981	N/A	219	-0-	(219)	Originally appropriated \$2.5 million. Repealed by Chapter 141, SLA 1982.
<u>Kotzebue District</u>					
Chapter 120, SLA 1980	60,000	54,440	3,085	2,575	Feasibility study of energy alternatives at Kotzebue completed. Report available.
Chapter 90, SLA 1981	120,000	119,121	-0-	879	
Chapter 90, SLA 1981	100,000	97,341	100	2,559	
<u>Total Kotzebue District</u>	<u>280,000</u>	<u>270,902</u>	<u>3,185</u>	<u>5,913</u>	

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Larsen Bay</u>					
Chapter 80, SLA 1979	\$ 80,000	\$ 80,000	\$ -0-	\$ -0-	Reconnaissance study completed. Stream gauging proceeding as part of the ongoing feasibility study.
Chapter 120, SLA 1980	<u>200,000</u>	<u>14,449</u>	<u>9,875</u>	<u>175,676</u>	
<u>Total Larsen Bay</u>	<u>280,000</u>	<u>94,449</u>	<u>9,875</u>	<u>175,676</u>	
<u>McGrath</u>					
Chapter 90, SLA 1981	<u>150,000</u>	<u>150,000</u>	<u>-0-</u>	<u>-0-</u>	Grant provided to the community for a waste heat system. Project completed.
<u>Nikolski</u>					
Chapter 107, SLA 1983	<u>200,000</u>	<u>-0-</u>	<u>-0-</u>	<u>200,000</u>	New appropriation effective July 29, 1983.
<u>Nome-Kotzebue Assessment</u>					
Chapter 80, SLA 1979	<u>80,000</u>	<u>79,951</u>	<u>-0-</u>	<u>49</u>	Feasibility study completed in May, 1980. Report available.
<u>North Slope Gas</u>					
Chapter 141, SLA 1982	<u>250,000</u>	<u>211,597</u>	<u>34,654</u>	<u>3,749</u>	Feasibility study as an alternative to Susitna is presently ongoing.
<u>Northwest Coal</u>					
Chapter 120, SLA 1980	<u>250,000</u>	<u>249,025</u>	<u>-0-</u>	<u>975</u>	Feasibility study completed. Report available.
<u>Nushagak</u>					
Chapter 120, SLA 1980	<u>150,000</u>	<u>150,000</u>	<u>-0-</u>	<u>-0-</u>	Grant provided to the community for a waste heat system. Project completed.
<u>Old Harbor</u>					
Chapter 120, SLA 1980	<u>950,000</u>	<u>31,829</u>	<u>-0-</u>	<u>958,171</u>	Reconnaissance study completed. Additional funds to be requested for fiscal year 1985.

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Organic Rankine</u>					
Chapter 90, SLA 1981	\$ 500	\$ 206	\$ -0-	\$ 294	Originally appropriated \$5 million for the acquisition of two generators. Repealed by Chapter 141, SLA 1982.
<u>Guzinkie Waste Heat</u>					
Chapter 90, SLA 1981	250,000	55,099	167,492	27,409	Construction of a waste heat system completed. Monitoring to be completed July, 1983.
<u>Pedro Bay</u>					
Chapter 101, SLA 1982	200,000	-0-	-0-	200,000	Reconnaissance study to begin during fiscal year 1984.
Chapter 107, SLA 1983	500,000	-0-	-0-	500,000	
<u>Total Pedro Bay</u>	<u>700,000</u>	<u>-0-</u>	<u>-0-</u>	<u>700,000</u>	
<u>Pelican</u>					
Chapter 90, SLA 1981	42,000	42,000	-0-	-0-	Feasibility study completed. Report available.
<u>Rural Community Feasibility</u>					
Chapter 90, SLA 1981	4,600,000	1,465,697	154,257	2,979,346	Feasibility studies being performed at twenty-eight communities.
<u>Rural Community Reconnaissance</u>					
Chapter 90, SLA 1981	560,000	545,410	100	14,490	Reconnaissance studies at thirty-six villages completed. Report available.
<u>Rural Energy Construction</u>					
Chapter 141, SLA 1982	5,000,000	230,004	2,597,145	2,172,851	Monies being used as loans or grants to construct waste heat systems.
<u>Rural Waste Heat</u>					
Chapter 120, SLA 1980	500,000	497,015	-0-	2,985	Construction of a waste heat system completed.

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Saint Mary Waste Heat</u>					
Chapter 90, SLA 1981	\$ 30,000	\$ 4,013	\$ -0-	\$ 25,987	Construction of a waste heat system completed.
<u>Savoonga</u>					
Chapter 120, SLA 1980	24,100	24,050	-0-	50	Reconnaissance study completed. Report available.
<u>Scammon Bay</u>					
Chapter 50, SLA 1980	100,000	38,779	524	60,707	Feasibility studies completed. Results show that hydro potential is marginal.
<u>Shungnak</u>					
Chapter 120, SLA 1980	10,600	39,446	-0-	(28,846)	Reconnaissance study completed. Report available.
<u>Skagway Wind</u>					
Chapter 120, SLA 1980	100,000	81,492	18,508	-0-	Construction of a wind demonstration unit completed.
<u>Solomon Gulch</u>					
Chapter 92, SLA 1981	53,000,000	42,451,600	57,267	10,491,133	Construction completed. Project in operation since September, 1982.
<u>Susitna</u>					
Chapter 76, SLA 1979	8,178,000	8,178,000	-0-	-0-	Feasibility study completed.
Chapter 76, SLA 1979	150,000	150,000	-0-	-0-	Application has been submitted to the
Chapter 50, SLA 1980	7,000,000	6,863,238	136,762	-0-	Federal Energy Regulatory Commission
Chapter 120, SLA 1980	3,095,800	3,095,800	-0-	-0-	for licensing approval.
Chapter 7, SLA 1981	2,540,000	2,540,000	-0-	-0-	
Chapter 90, SLA 1981	18,100,000	18,364,811	461,500	(726,374)	
Chapter 101, SLA 1981	25,600,000	18,605,715	6,951,285	43,002	
Chapter 107, SLA 1983	28,000,000	-0-	-0-	28,000,000	
<u>Total Susitna</u>	<u>92,663,800</u>	<u>57,797,564</u>	<u>7,549,608</u>	<u>27,316,628</u>	

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Swan Lake</u>					
Chapter 111, SLA 1978	\$ 335,000	\$ 335,000	\$ -0-	\$ -0-	Project is under construction.
Chapter 49, SLA 1979	3,115,000	3,115,000	-0-	-0-	
Chapter 25, SLA 1980	616,000	616,000	-0-	-0-	
Chapter 54, SLA 1980	18,000,000	18,000,000	-0-	-0-	
Chapter 92, SLA 1981	43,000,000	42,942,533	18,219	39,248	
Chapter 92, SLA 1981	10,000,000	9,557,898	142,940	299,162	
<u>Total Swan Lake</u>	<u>75,066,000</u>	<u>74,566,431</u>	<u>161,159</u>	<u>338,410</u>	
<u>Takatuk Creek</u>					
Chapter 90, SLA 1981	50,000	50,000	-0-	-0-	Reconnaissance study completed. Report available.
<u>Tanana Power Study</u>					
Chapter 50, SLA 1980	35,000	35,000	-0-	-0-	New appropriation for a power line extension effective July 29, 1983.
Chapter 106, SLA 1983	145,000	-0-	-0-	145,000	
<u>Total Tanana Power Study</u>	<u>180,000</u>	<u>35,000</u>	<u>-0-</u>	<u>145,000</u>	
<u>Tenakee</u>					
Chapter 101, SLA 1982	200,000	200,000	-0-	-0-	Construction of a distribution system completed.
<u>Terror Lake</u>					
Chapter 111, SLA 1978	100,000	100,000	-0-	-0-	Project is under construction.
Chapter 49, SLA 1979	90,000	90,000	-0-	-0-	
Chapter 49, SLA 1979	2,000,000	2,000,000	-0-	-0-	
Chapter 54, SLA 1980	1,050,000	1,050,000	-0-	-0-	
Chapter 54, SLA 1980	200,000	200,000	-0-	-0-	
Chapter 92, SLA 1981	1,400,000	174,039	11,691	1,214,770	
Chapter 92, SLA 1981	71,000,000	57,102,000	9,827,034	5,070,916	
Chapter 92, SLA 1981	10,500,000	2,891,588	8,436,999	1,171,443	
<u>Total Terror Lake</u>	<u>86,340,000</u>	<u>63,607,587</u>	<u>15,257,774</u>	<u>7,456,629</u>	
<u>Tetlin</u>					
Chapter 101, SLA 1982	50,000	15,000	35,000	-0-	Construction of a waste heat system is ongoing.

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>Thayer Creek</u>					
Chapter 30, SLA 1979	\$ 100,000	\$ 61,547	\$ -0-	\$ 38,453	Feasibility study completed. Report available.
<u>Tye Lake</u>					
Chapter 152, SLA 1977	40,000	40,000	-0-	-0-	Project is under construction.
Chapter 111, SLA 1978	65,000	65,000	-0-	-0-	
Chapter 49, SLA 1979	2,000,000	1,999,788	344	(132)	
Chapter 30, SLA 1979	60,000	60,000	-0-	-0-	
Chapter 120, SLA 1980	15,000,000	14,653,789	74,534	271,677	
Chapter 92, SLA 1981	40,000,000	35,962,586	2,144,116	1,893,196	
Chapter 92, SLA 1981	5,000,000	4,381,548	627,143	(9,001)	
Chapter 141, SLA 1982	20,000,000	19,373,815	139,501	486,684	
<u>Total Tye Lake</u>	<u>82,165,000</u>	<u>76,537,026</u>	<u>2,985,638</u>	<u>2,642,336</u>	
<u>Unalakleet</u>					
Chapter 120, SLA 1980	100,000	71,631	28,369	-0-	Construction of a wind system demonstration unit has been completed.
<u>Unalaska</u>					
Chapter 120, SLA 1980	100,000	91,778	8,222	-0-	Exploratory drilling geothermal energy is ongoing.
Chapter 90, SLA 1981	380,000	45,860	334,140	-0-	
Chapter 90, SLA 1981	5,000,000	2,137,322	2,556,393	306,285	
	44,259	-0-	19,260	24,999	
<u>Total Unalaska</u>	<u>5,524,259</u>	<u>2,274,960</u>	<u>2,918,015</u>	<u>331,284</u>	
<u>Various Villages</u>					
Chapter 120, SLA 1980	200,000	197,016	-0-	2,984	Reconnaissance studies at eighteen villages completed. Report available.
<u>Village Electrification</u>					
Chapter 120, SLA 1980	125,000	125,000	-0-	-0-	Completed study on the feasibility of a transmission system. Report available.

APPENDIX B

Alaska Power Authority
Project Status and Balances
Inception to Date

<u>Project</u>	<u>Authorizations</u>	<u>Expenditures</u>	<u>Encumbrances</u>	<u>Balance</u>	<u>Project Status</u>
<u>West Creek</u>					
Chapter 120, SLA 1980	\$ 400,000	\$ 399,981	\$ -0-	\$ 19	Feasibility study ongoing. APA is studying the feasibility of utilizing an existing Canadian transmission system.
Chapter 90, SLA 1981	1,000,000	998,238	-0-	1,762	
Chapter 141, SLA 1982	200,000	75,960	18,237	105,803	
<u>Total West Creek</u>	<u>1,600,000</u>	<u>1,474,179</u>	<u>18,237</u>	<u>107,584</u>	
<u>White Mountain</u>					
Chapter 120, SLA 1980	24,100	24,000	-0-	100	Reconnaissance study completed. Report available.
<u>Total Projects</u>	<u>\$590,180,059</u>	<u>\$371,450,233</u>	<u>\$80,590,930</u>	<u>\$138,138,896</u>	

APPENDIX C

Status of Recommendations by Price Waterhouse (PW)
in Management Report Dated 12/10/82

PW Recommendation	Status as of 04/01/83	Comments
RECOMMENDATION 1: **		
<u>Consideration should be given to the development of an integrated financial management and reporting system.</u>		
<p>The State of Alaska's financial reporting system which includes Alaska Power Authority's appropriations and related expenditures is primarily operated on a centralized basis with the major effort being carried out in Juneau. As commented upon in Recommendation No. 2, the State's system is primarily directed to overall financial control over general government expenditures and, therefore, the type of information generated is not directed toward providing the type of management reports required to enhance management of commercial type activities such as the construction and management of power generating facilities.</p>	<p>Partial capability to address this recommendation will be available through APA's new automated G/L system on April 15, 1983.</p>	<p>The new automated system will be an expenditure and funding tracking system for APA energy projects. It will produce accounting reports but it will not produce management reports such as those mentioned in this PW recommendation. The system is an accounting system not a management information or financial management system.</p>
<p>Further, the reports are prepared on the basis of expenditures and encumbrances with no recognition being accorded accounts receivable, accounts payable or other elements of the financial statements of the Alaska Power Authority. In addition, the cut-off date for data included in the reports is based upon a budget year rather than established to facilitate preparation of monthly or annual accrual basis financial statements. The above factors make the usefulness of the reports limited primarily to cash disbursements and budgetary control.</p>	<p>Not being addressed at the present time.</p>	<p>See Recommendation No. 4.</p>
<p>Further, during Fiscal Year 1982 the Authority issued \$115,000,000 and \$50,000,000 of variable rate demand notes for the Terror Lake and Tyee Lake Hydroelectric Projects, respectively. Under terms of the variable rate demand note resolutions, the Authority established special funds with the trustee into which the proceeds of the notes were deposited and subsequently invested. As discussed in Recommendation 13, these accounts are not afforded general ledger control.</p>	<p>Capability will be available 04/15/83.</p>	<p>See Recommendation No. 13.</p>
<p>During Fiscal Year 1982, the Authority acquired the Swan Lake Hydroelectric Project and retained the City of Ketchikan to act as agent to complete construction of the Project. The City has complete control over the proceeds from project financing arrangements, power project loans and State appropriations for construction, and maintains all accounting records for the project.</p>		
<p>In order to prepare financial statements in accordance with generally accepted accounting principles, the three recordkeeping systems identified above (State of Alaska General Fund expenditures, trustee accounts and the City of Ketchikan's Swan Lake Project records) must be merged to generate a trial balance of all of the Authority's financial activities. Further, as each system is actually a cash basis record, detail accruals must be prepared and transactions reversed at each reporting period.</p>		<p>Trial balances are being run only as the data is input into the computer system. No manual trial balances have been run since PW ran theirs in December. A manual general ledger system has been posted since PW's review but trial balance statements have not been prepared.</p>

** - Same Recommendations made in prior year management letter dated 10/26/81.

PW Recommendation	Status as of 04/01/83	Comments
RECOMMENDATION NO. 1 (cont'd)		
During our current year examination, we noted that management is unable to generate the following basic financial information <u>without significant manual efforts</u> :	Partial capability will be available 04/15/83 when new automated G/L system is scheduled to come on-line.	The points mentioned in this recommendation will generally be addressed by the new automated G/L system. However, the system will not provide all the information needed for some of these reports. For instance, one will be able to retrieve information of the expenditure history of a particular construction project. But the system will not produce all the information management needs to ascertain what the status of a construction project is. Thus, construction work-in-progress status reports will not be produced by the system. Furthermore, even the expenditure information on construction received from the system may not be correct due to the discrepancies caused by the lack of an accurate accrual system (see Recommendation No. 4).
<ul style="list-style-type: none"> - General ledger trial balances showing all assets, liabilities, revenues and expenses as of any particular date for the Authority's activities as a whole - Monthly or quarterly financial statements - Annual financial reports - Financial status reports for the Board of Directors' monthly meetings - Deferred project cost status reports - Construction work in progress status reports - Contract status reports - Power project loans (payable and receivable) trial balances including interest accruals - Invested cash and related interest accruals for various bank accounts restricted by terms of note resolutions - Trial balances of accounts payable, contract retainages and payroll related liabilities - Status of the Swan Lake Construction funds, investments and interest earnings as maintained by Ketchikan Public Utilities - Inventory and fixed asset reporting 	Subsystem is currently being planned to address this. The system development project has just begun and no implementation data has been established.	See Recommendation No. 3.
Accordingly, we stress the need for a comprehensive reporting system based upon the accrual method of accounting which would facilitate the establishment of rates to be charged to prospective users of electrical power as well as provide key reports to management for planning and control. We envision the following to be examples of the output of such a system:	Capability will be available 04/15/83.	
<ul style="list-style-type: none"> - Reporting of financial results by major power generating facility. 		See Recommendation No. 2.
<ul style="list-style-type: none"> - Reporting in detail, of costs of operation of departments within major responsibility areas (e.g., generation, transmission, maintenance, administration, etc.). 		
<ul style="list-style-type: none"> - Budgetary guidelines and control at all of the above levels. 	Not addressed.	Will not be addressed by planned system.
<ul style="list-style-type: none"> - Key item reporting of statistical and other data (e.g., kilowatt hours of power generated and used, overtime hours, equipment usage hours, etc.). 		

PW Recommendation	Status as of 04/01/83	Comments
RECOMMENDATION NO. 1 (cont'd)		
<p>Because of the factors described in the opening paragraphs of this recommendation, we believe that the present manual efforts could soon become inadequate for the Authority's purposes. Necessarily, therefore, consideration must also be given to the data processing method which will provide adequate interface with the State's accounting requirements. In this respect, it should be kept in mind that a number of desirable subsystems should be provided for. As more fully discussed in the recommendations following, it would be highly desirable to develop and/or computerize the following information needs:</p>		
<ul style="list-style-type: none"> - Fixed asset data base, including equipment maintenance schedules, cost and life cycle cost analysis. 	Not being addressed.	See Recommendation No. 3.
<ul style="list-style-type: none"> - Deferred project costs and construction work in progress. 	Capability available 04/15/83	See comments on deferred status reports stated above.
<ul style="list-style-type: none"> - Inventory control, including economic order quantities, automatic reorder capabilities, etc. 	Not being addressed.	See Recommendation No. 3.
<ul style="list-style-type: none"> - Accounts receivable and billing functions. 		See Recommendation No. 4.
<ul style="list-style-type: none"> - Accounts payable, including encumbrances. 		
<p>Our discussions with management have disclosed that a system is presently being installed and that disbursements reflected by the State's accounting system are being captured for record-keeping purposes. We applaud these efforts but stress the need to integrate all of the Authority's activities under one system on an accrual basis in accordance with generally accepted accounting principles.</p>	APA will have these capabilities on 04/15/83 when new system is scheduled to be operational.	The new system will have the capability to implement an accrual based system. Management will have to dictate whether or not that accrual-based system is adopted (see Recommendation No. 4).
<p>Further, as half of Fiscal Year 1983 has already transpired, we urge the Board to assess the present system's capabilities in terms of anticipated growth of the Authority and commit sufficient resources to the continued development and implementation of an integrated financial management system.</p>	Unknown.	It was beyond the scope of our audit to assess the anticipated growth of the Authority in order to determine the system's capability to addressing this growth.
RECOMMENDATION NO. 2: **		
<p><u>As the Authority begins to operate and maintain generation facilities, consideration should be given to developing enterprise fund accounting and budgeting methods.</u></p>	This capability will be available to APA through its new system on April 15, 1983.	There is only one operating entity under APA's control now. There were insufficient system generated reports to thoroughly determine whether or not all the points addressed in this recommendation will be included in the system. However, we generally feel that operating entities will be adequately accounted for through the FERC system on which the new G/L system is based.
<p>The current accounting and budgeting systems have an appropriation or governmental fund accounting and budgeting orientation. As the Authority becomes more involved in the operation and maintenance of various projects, consideration should be given to adopting budgeting and accounting methods designed to serve the needs of government owned enterprises.</p>		

RECOMMENDATION NO. 2 (cont'd)

Enterprise funds are generally established to account for the operation of self-supporting activities of governmental units which render revenue-producing services to customers. Regardless of the organizational pattern or the exact nature of the services rendered, the significant attribute of enterprise activities is that they are primarily financed by charges to customers and the accounting for them must make it possible to show whether they are operating efficiently and at a profit similar to comparable private enterprises. In this regard, all accounting should be done via one set of accounts or fund for each power generating facility operated (i.e., one enterprise fund or general ledger should be used to account for all transactions). Additional funds or accounts should be established to account for the Power Project Loan Fund, the Power Development Fund, the Power Cost Assistance Fund, the Rural Electrification Revolving Loan Fund, the Grant Fund, and the Operating Fund of the Authority. Below is a brief explanation of the accounting and budgeting method which should be employed in accounting via an enterprise fund.

Enterprise Fund Accounting

Accounting for governmental enterprise funds, like that for private profit-making business, should be on an accrual basis. This means that revenues should be recorded when earned and expenses recorded when liabilities are actually incurred. At the present time expenses are recorded when funds are paid or encumbered with appropriate audit adjustments at year-end dates.

Enterprise Fund Budgeting

Since enterprise funds are self-supporting, operational and commercial in nature, expenditures should not be controlled by means of detail or rigid appropriations. Due to the nature of the activities being performed, the expenditures will vary with the timing and demand for services. If expenditures are rigidly controlled, necessary expansion of activities and satisfactory performance may be impeded, or in anticipation of budget shortages, officials are likely to ask for a larger appropriation than is actually needed. In the interest of managerial flexibility and practicality it is recommended that formal budgetary appropriations be prepared; however, the flexible budgeting concept should be used so that modifications, based on changes in circumstances or project scopes, can be integrated into the budget process.

The system will have the capability to accrue; whether not that practice will be adopted is a management decision. (see Recommendation No. 4).

RECOMMENDATION NO. 3: **Fixed asset records and controls should be established.

At the present time, detail financial accounting records for fixed assets are maintained on worksheets for all assets related to power projects or used in the administrative process. While all of the Authority's property is presently contributed by the State, a more complete accounting system for fiscal assets should be established, if desirable accountability and control are to be attained.

Further, a system for calculating depreciation is a prerequisite in establishing appropriate

1. Items acquired and disposed of or replaced are properly recorded.
2. The status of construction in progress is readily determinable.
3. Construction in progress is transferred to fixed assets in a timely manner.
4. Lives assigned to assets are reasonable.
5. Assets are properly classified (as between land, power structures and improvements, production plant equipment, transmission and distribution equipment, special equipment items, etc.).
6. Supporting documentation for costs of all asset additions and authorization for disposals and transfers is easily obtainable.
7. Costs are properly allocated between assets purchased from State contributed monies and operating revenues.
8. Depreciation is properly calculated on a timely basis.
9. Transferred assets are properly documented, authorized and accounted for.
10. A physical inventory of fixed assets should be taken periodically and compared to detail property records.
11. A general policy regarding capitalizing or expensing of fixed asset expenditures should be formalized.

System development project to address this recommendation has been initiated. Scheduled implementation date of this system is September, 1983.

The planned system which will address this recommendation is not as comprehensive as Price Waterhouse would like it to be. It will include neither equipment maintenance schedules with cost and like cycle cost analysis nor inventory control functions such economic order quantities, automatic reorder capabilities, etc. (see Recommendation No. 1).

The system advocated by PW seems to be an inventory-fixed asset financial management system. The planned system will only be a tracking system of fixed assets.

The specific system requirements recommended by PW (items 2, 3, 4, 9, 10, and 11) will not be addressed by the planned system. Items 2 & 3 would probably be products of a financial revenue rates management system. Items 4, 9, 10, 11 are policy decisions which must be made by APA management and The system should ensure that: then integrated into the planned system design if management elects to do so.

RECOMMENDATION NO. 4: **

Procedures should be established to provide accurate and timely accounts payable accruals.

Has not been implemented at this time.

The system will have the capability to address the concern of PW relating to an accrual basis. Management has not established a formal policy requiring contractors to get bills into APA in a timely manner. This policy will be required to establish an accrual based accounting system. Until that policy is established, it does not really matter what the system's capabilities are. It is a management decision whether or not to initiate an accrual-based system; the system will accommodate this decision.

The current accounting system does not provide for an accurate cut-off or generate a complete accounts payable accrual at the end of the fiscal year. The State's accounting system provides that operating disbursements made in July or August related to the fiscal year ended on the preceding June 30th can be charged to the preceding year's appropriation. However, as the Authority's expenditures are primarily related to capital projects, no accrual is effectively made.

We recommend that the Authority utilize the State's disbursement reports as the source data for preparation of a monthly or annual accounts payable accrual (depending on frequency of in-house financial statement preparation). The procedures should ensure that:

1. An accurate cut-off of accounts payable, expenses or construction work in process is made to facilitate monthly or annual financial statement preparation.
2. Accounts payable are properly identified by vendor or account.
3. Contract retainages are properly accrued.
4. Payables are properly classified as to current and long-term liabilities.
5. Trial balances of the accounts payable subsidiary ledger are periodically reconciled to the general ledger control and such reconciliations are reviewed and approved by an appropriate accounting official.

RECOMMENDATION 5:

A formal accounting policy procedures manual should be prepared and utilized in connection with an integrated accounting system.

Expected completion date, June 30, 1983.

APA personnel have started preparing a formal accounting policy and procedures manual. The manual is expected to be completed by June 30, 1983.

Preparation of this manual should be performed with the direct participation of those employees responsible for financial systems and will ensure that employees understand financial systems. Use of a policy and procedures manual prevents duplication of work, overlapping or omission of important functions, misunderstandings, and other situations which might result in weakening internal accounting controls and inefficiencies. In addition, training new employees would be facilitated. Some of the items that are normally included in an accounting manual are:

- a. description of the basic account coding structure, a chart of accounts and a description of items to be included in the respective accounts;
- b. accounting policies including procedures for recording:
 1. items of a routine nature,
 2. items of an unusual nature,
 3. journal entries including required approval
- c. flowcharts of major accounting applications and a description of how each transaction should be documented and recorded;
- d. examples of computer printouts and documentation of how these reports work together.

RECOMMENDATION NO. 6:

The Authority should strive to generate monthly or quarterly financial statements.

Plan to be capable of generating quarterly reports by April 15, 1983.

The APA plans to be capable of producing quarterly financial reports as of April 15, 1983, when their general ledger system is operational. Because of late contractor billings, APA does not feel monthly reports are practical. If APA's system is capable of producing accurate quarterly reports then providing bond underwriters with "comfort letters" should not be a major problem.

After an integrated financial management system is in place, the Authority will have the capability of issuing monthly financial statements. Monthly financial reporting is considered essential to management's effective control of the organization and necessary in light of the Authority's intent to issue long-term revenue bonds at project completion. Current audited financial statements are routinely included in the official statements related to such bond offerings.

Additionally, the Authority may offer such revenue bonds with the assistance of an underwriting syndicate. Underwriter's routinely request "comfort letters" from the issuer's independent accountants which serve to assist the underwriters in their investigation of financial and accounting data reported by the issuer. In order to prepare offering circulars and related comfort letters it is essential that the accounting records be maintained on a current basis and subject to an adequate system of internal accounting and management controls.

RECOMMENDATION NO. 7:

The Board of Directors should consider the merits of receiving interim reports of financial activity from the Finance Department.

We recommend that consideration be given to providing the Board with summary key information on a monthly basis such as investment activity, construction work in progress and deferred project cost status, and budget to actual comparisons of revenue and expenditures. Such information should be prepared on an accrual basis and will facilitate the Board's review of available project funding and decision making regarding timing of proposed bond issues or requests from the State for additional project funding.

RECOMMENDATION NO. 8:

The Authority should consider obtaining a high level operational review of the data processing function in light of expected growth of the Authority.

As the Authority continues to grow and its various power generating facilities become operative, the Authority will, by necessity, increasingly rely on the use of electronic data processing methods. Accordingly, we believe that the Authority should consider obtaining a high level operational review of the data processing function to ensure that the system being developed is compatible with the anticipated growth of the Authority. Such a review is intended to highlight major areas for improvement, prioritize specific areas which should be modified, and prove useful in assisting the Authority in identifying and obtaining additional services as required. Such a review is generally termed a computer installation effectiveness review and generally would focus on the following points:

Computer Operations -

- Physical arrangement of facilities
- Approach to job scheduling
- Approach to data control
- Backup capabilities
- System/data security controls
- Disaster recovery plans
- Separation of duties

Application Systems Effectiveness -

- Satisfaction of user requirements
- Timeliness, accuracy, and reliability of reported information
- Cost/effectiveness of systems utilization
- Access to/control over master file information

Hardware and System Software -

- Capacity to meet future needs
- Capacity for average and peak loads
- Adequacy of system performance
- Adequacy of systems documentation.

In summary, such a review would assist management in evaluating user needs, prioritizing systems development and modification, enhance cost/benefit performance, and assist in identifying long-range necessities and goals in light of the ever expanding needs of the Power Authority. Additionally, it could ensure that financial reporting is accurate or highlight potential problem areas prior to the annual audit or preparation of the annual report.

APA management does not plan to implement.

APA does not intend to implement this recommendation as presented. It is APA's opinion that ad hoc information can be provided to the Board on major projects which will meet the Board's needs. APA is also looking to Board sub-committees regarding their needs.

Has not been implemented at this time.

APA has used a piecemeal approach. APA officials recognize the need for this review and would like to expand the scope of PW's recommendation to include all future operational needs. In addition, there is a need to look at what they have currently.

RECOMMENDATION NO. 9:

Consideration should be given to segregating the accounting department into functional groups.

At the current time, all accounting personnel are primarily responsible for contract maintenance. As the Authority begins to develop and implement a comprehensive reporting system, consideration should be given to segregating the contract maintenance and accounting and reporting functions. To accomplish this, we recommend that the Authority establish the following independent accounting groups:

- a. Invoice Processing - Responsible for contract disbursements including review and approval in accordance with contract terms.
- b. Financial Reporting Group - Responsible for generating all financial statements and reports and general ledger maintenance.
- c. Cost Control Group - Responsible for monitoring project costs in relation to project status.

Implementation of this recommendation would serve to clearly delineate employee responsibilities and adequately segregate duties in the areas of approval and recordkeeping functions. We understand the Authority is presently considering obtaining an organizational review, which we envision would include a review of the finance and accounting departments' organizational structure.

RECOMMENDATION NO. 10:

Consideration should be given to employment of an internal auditor to monitor adherence to accounting and operational policies and procedures.

We believe that the number of project locations and expanding operations of the Authority may well justify the employment of an internal auditor. The duties of an internal auditor should include such functions as periodic reviews and testing of accounting records and operational procedures associated with the Power Authority's various hydroelectric projects, agency and operation agreements, loans and grants. In addition, the activities of the internal auditor should include monitoring the Power Cost Assistance Fund and determining that grantees are in compliance with grant agreements. The internal auditor should have the ability to report directly to the Board of Directors; however, on a day-to-day basis, should function at the direction of the Executive Director.

Recommendation a. and b. complete. No plans to implement c. unless additional positions can be obtained.

Recommendations a. and b. have been implemented. Recommendation c. has not been implemented. APA officials recognize the need to establish a cost control group, but feel more staff would be required.

Has not been implemented at this time.

APA has no plans to hire an internal auditor. APA management does recognize the need for an internal auditor. It is APA's position that the internal auditor's scope of responsibility should be expanded beyond PW's recommendation.

RECOMMENDATION NO. 11:

Procedures should be established to ensure that disbursements from the Power Cost Assistance Fund are monitored.

Disbursements from the Power Cost Assistance Fund, as indicated on the monthly expenditure journals generated by the State of Alaska's financial reporting system, should be compared to the Authority's detail disbursement records by individual recipient to ensure that disbursements have been recorded properly. We recommend that the accounting department assume the responsibility of upkeeping the Power Cost Assistance detail accounting records and, as commented upon in Recommendation No. 10, that an internal auditor monitor this fund and the qualifications of program recipients, at least on a test basis. Management has informed us that the accounting department subsequently assumed the recordkeeping function as of November 1, 1982.

Recommendation partially implemented at this time.

This recommendation has been partially implemented. The monitoring and qualifications of program recipients is accomplished by an accountant rather than an internal auditor. Perform desk audits but no on site audits which APA feels are unnecessary.

RECOMMENDATION NO. 12:

Certain detailed responsibilities assumed by the controller should be delegated to other appropriate individuals.

The expanding operations and resulting increased volume of transactions have made it necessary to give more concentrated attention to key operating and accounting matters by responsible and knowledgeable individual in the areas that will continue to require increased attention as the Power Authority advances planning and subsequent implementation, accounting and related system changes to meet the expanding volume and complexity of transactions. Delegation of routine accounting functions presently performed by the controller could provide additional time for this planning function.

Has not been implemented at this time.

This recommendation has not been implemented. APA's rationale for not implementing the recommendation is a shortage of accounting staff. We were told an additional two accountants would be needed before the controller could effectively delegate all routine accounting functions and conduct advanced planning.

RECOMMENDATION NO. 13:

All investments and bank accounts should be held in the Authority's name, or held jointly in the case of agency agreements, and subject to general ledger control.

Presently, there are various trust accounts associated with the Solomon Gulch, Terror Lake, Swan Lake, and Lake Tyea Hydroelectric Projects that are not afforded general ledger control. To ensure that all cash disbursements and investment activities are recorded and monitored and to ensure that all cash balances are recorded and monitored, and to ensure that all cash balances are reflected in the financial statements of the Authority, we recommend that all activity be recorded in a general ledger. Further, routine account reconciliations should be prepared at least on a monthly basis by staff accountants and reviewed by appropriate supervisory personnel.

Except for Solomon Gulch plan to implement by April 15, 1983.

The APA's general ledger system is capable of controlling all investment and bank accounts. It is APA's plan to account for all cash disbursement and investment activities in sufficient detail for monthly reconciliations. The only exception will be the Swan Lake Project which will be reflected in APA's general ledger as total expenditures. The APA feels the City of Ketchikan is the appropriate agency to maintain detail general ledger control of the Swan Lake Project.

PW Recommendation	Status as of 04/01/83	Comments
<p>In connection with our review of procedures surrounding the Swan Lake Hydroelectric Project we offer the following specific recommendations:</p>		
<p><u>RECOMMENDATION NO. 1:</u></p>		
<p><u>Alaska Power Authority should take joint custody of cash and invested assets of the Swan Lake Construction Fund now administered solely by KPU.</u></p>	<p>APA management does not plan to implement.</p>	<p>Touche Ross audited thru 1981. PW audited in 1982.</p> <p>Monthly reports are submitted to APA.</p> <p>Board agrees with this relationship.</p> <p>Was a Ketchikan project from the start. APA management feels KPU is a responsible public entity.</p>
<p>In our opinion, adequate segregation of duties does not presently exist in that the Finance Director of KPU has complete control over the safe-keeping of securities and the execution and recording of security transactions. Additionally, the Finance Director is an authorized check signer and approver of the majority of KPU's (and the Swan Lake Construction Fund) disbursements and reviews all bank and general ledger account reconciliations. Thus, the Finance Director is responsible for the execution and recording of transactions, custody of assets and is secondarily responsible for the reporting of information to APA, which as indicated above, has not been accurate in the past.</p>		
<p>Additional control over APA's project funds would be ensured by requiring that all bank accounts and investment be held in the joint custody of APA and KPU. The implementation of other control procedures at KPU may not be feasible; the size of the organization may preclude segregation of certain duties.</p>		
<p><u>RECOMMENDATION NO. 2:</u></p>		
<p><u>Project disbursements should be made from the Swan Lake Construction Fund only.</u></p>	<p>APA management disagrees with dual approval of project expenditures.</p>	<p>See comments above.</p>
<p>Presently, project disbursements are made from the City's General Fund (on behalf of KPU) and the City is reimbursed periodically by a transfer from the Swan Lake Construction Fund. Project disbursements should be segregated from KPU's operating disbursements to provide for an adequate segregation of funds. Additionally, we recommend that APA consider co-signing disbursement checks with KPU officials to ensure dual approval of project expenditures.</p>		
<p><u>RECOMMENDATION NO. 3:</u></p>		
<p><u>Accounting records related to the Swan Lake Hydroelectric Project should be prepared on an accrual basis.</u></p>	<p>APA management agrees but its doubtful KPU has implemented.</p>	
<p>Presently, all records related to the project are maintained on the cash basis except at KPU's year-end (December 31st) when accruals are made. We recommend that project disbursements, interest income and interest expense be recorded on an accrual basis to facilitate APA's review of project status and available funding.</p>		

PW Recommendation	Status as of 02/01/83	Comments
<p><u>RECOMMENDATION NO. 4:</u></p> <p><u>Cash invested on behalf of APA in KPU's "Note Fund" should be segregated and transferred to the Swan Lake Construction Fund.</u></p> <p>It is our understanding that KPU's "Note Fund" investments represent the unexpended cash remaining from Power Project Loans made by APA to KPU, which under terms of the acquisition agreement was to be applied to pay project costs (excluding an amount attributable to the SCADA grant made to automate existing facilities). We recommend KPU identify and transfer non-SCADA related fund to the Swan Lake Construction Fund to full segregate APA's funds from KPU's funds.</p>	<p>Has not been implemented at this time.</p>	
<p><u>RECOMMENDATION NO. 5:</u></p> <p><u>APA should perform periodic audits of the accounts and records of the Swan Lake Hydroelectric Project maintained by KPU.</u></p> <p>We recommend that APA perform or obtain an independent audit of the Swan Lake Project at least annually (preferably as of June 30th to facilitate the annual audit of APA's accounts) to ensure the propriety of information reported to KPU. We understand that APA is in the process of establishing procedures to perform this function in-house, with which we concur. Additionally, APA should request and evaluate the financial statements and any related management recommendation letters related to KPU's independent annual audit.</p>	<p>Has not been implemented at this time.</p>	<p>APA plans on sending down at least one, if not two people in early May for a review.</p>
<p><u>RECOMMENDATION NO. 6:</u></p> <p><u>APA should determine the allowability of interest expense incurred on a loan from the City of Ketchikan to KPU in connection with the project.</u></p> <p>A short-term loan of \$3,850,930 was made by the City of Ketchikan to KPU in 1981 and related interest expense of \$133,607 has been charged to the Project. Apparently the source of the loan to the City was from a State Agency; however, we are uninformed as to the need for or the circumstances surrounding the loan to KPU and, therefore, the propriety of the interest expense incurred by the Project.</p>	<p>Has not been implemented at this time.</p>	<p>See above Comments.</p>
<p><u>RECOMMENDATION NO. 7:</u></p> <p><u>APA should obtain sufficient detailed information from KPU on a monthly basis in order to summarize the activity and record the transactions in the accounts of APA.</u></p> <p>Swan Lake project activity is not currently reflected in the accounts of APA. The monthly project status reports sent by KPU to APA should be sufficiently detailed to allow APA to record all project activity on a monthly basis including cash disbursements, accounts payable, investment activity, interest income, and expense.</p> <p>Bringing all project transactions under general ledger control will facilitate control of project funds, monitoring project status and preparation of monthly financial statements.</p>	<p>APA is presently receiving more detail from KPU, but still getting less detail than from other projects.</p>	<p>APA presently receives a monthly statement updating expenditures, both direct/indirect, and interest income.</p>

Background

During the summer of 1982, the Alaska Power Authority developed and implemented a General Ledger Accounting System. The Authority undertook the project because its manual accounting system was not meeting the needs of the Authority. Since 1980, the Authority has realized the need to establish a more sophisticated accounting system.

Reasons for Automation and System Benefits

The reasons for establishing the automated General Ledger System and the benefits of the new system are discussed below:

Prior to automation, the accounting functions of the Power Authority were performed exclusively through the State system, with supporting manual schedules prepared by APA. The State accounting system is set up to account for each authorization. Alaska Power Authority had a need to account for each project, not authorization. With the new General Ledger System, accounting will be by project. All authorizations, appropriations and expenditures will be tracked by the energy project for which it applies.

The Power Authority needs to account by project for each and all authorizations and expenditures which are accumulated through the various phases of each project. The expenditures are classified as deferred costs. If a project is proved not feasible and the pertinent deferred costs are written off and expended; if a project is feasible and construction of the project is approved, all feasibility and construction costs are deferred through completion and then capitalized.

The manual accounting system was growing too cumbersome to be used as an accurate historical tracking system. The Power Authority is currently managing 85 projects funded by 170 State authorizations totalling approximately \$570 million and note proceeds totalling another \$200 million. The note proceeds could not be accounted for using the State system.

Projects such as Terror Lake, Swan Lake, Tye Lake, Susitna, Bradley Lake, Cordova, and Bristol Bay are each funded through 5-7 State authorizations. The Power Authority had done its best to maintain cumulative manual schedules for each project showing, by project, each authorization and pertinent expenditures. This manual accounting system, even if accurate, did not

respond to the need for immediate reporting at any given time because of the lag time between invoice processing and manual posting to project schedule. The computerization of an internal system will allow for immediate posting to project ledgers at the time an invoice is processed.

The State system used prior to automation was not set up to maintain records over a long-range period. Authorization balances and expenditures are brought forward on a fiscal-year basis in the State system. It is difficult to track expenditures pertinent to a particular authorization if the authorization balance was expended during prior fiscal years.

APA needed a system which could track all authorizations and expenditures for a particular project over a span of 5-7 years. This is the average time required to carry a project from feasibility through construction. The new automated General Ledger System will meet this need that the State system could not meet.

APA is just beginning accounting practices aimed at operating entities rather than feasibility and construction projects it has managed in the past. In expanding its management responsibilities to operating entities, APA needed an accounting system which adhered to generally accepted accounting principles for public utilities. Thus, a system using the Federal Energy Regulatory Commission (FERC) chart of accounts was necessary. FERC's chart of accounts is the chart most used by the electric utilities and represents the standard accounting language of the industry.

The FERC chart of accounts for operating entities is far more detailed than the chart of accounts used in the former manual accounting system. It would not have been feasible if automation had not been initiated.

To summarize the preceding paragraphs, the benefits accruing to the Authority from the implementation of the new system will include:

1. Ability to track expenditures and appropriations by project. Using the State system, this was only available through extensive manual efforts.
2. There will now be a method of accounting for non-State sources of funding, such as bond proceeds. All sources of funding for a particular project will be accounted for. The State system used prior to automation only accounted for State appropriations; extensive manual efforts were required to account for non-State funding.

3. Will create the base for reporting of revenue and expenditure on any project at any time.
4. Will facilitate accounting methods required of operating entities in compliance with generally accepted accounting principles for utilities.

→ Structured Methodology Was Not Followed in Development of System

The Alaska Power Authority did not follow structured development standards in the development of its automated General Ledger System. As a result, the System may not be able to meet future requirements of the Authority. Additionally, its use as a management tool is impeded by a lack of system capabilities.

There was no feasibility study, needs assessment, general design or detailed design prepared for the automated General Ledger System. If these development steps had been accomplished, future requirements of the System would have been identified. We were told by APA officials that this system would not handle a project of the scale of the proposed Susitna Hydroelectric Project. There is no long-range plan which established data processing requirements and system development/implementation contingencies in the event that Susitna is initiated. This should have been fully and formally explored prior to any automation.

→ Inadequate Long-Term Needs Analysis Led to Development of Incomplete System

There was no formal needs analysis done for the system. The system developers, prior to submitting a proposal, spent time talking to APA accounting officials and determined what was wanted and needed from an accounting standpoint. No formal data processing needs for the Authority as a whole has been done.

The System is primarily a historical record of appropriations and expenditures on APA projects. The System does not have an accounts receivable function which would facilitate billings for power sales by operating entities and administering of loans. APA officials stated that this function was not needed because APA had so few operating entities for which it would generate power sales invoices. For that reason, it was decided prior to system development that the accounts receivable functions would remain manual.

We believe that the decision to keep manual accounts receivable functions may not have been wise. In late 1984, there will be enough operating entities under APA's control to render the current manual accounts receivable method too cumbersome to manage without automation. Although APA officials have stated that an accounts receivable program can be

interfaced into the current General Ledger System, we have seen no evidence that this can be done or that the programs will meet all of the Authority's accounts receivable requirements or that the program interface will be cost effective. We believe that, if indeed, APA management planned to interface accounts receivable (and accounts payable) functions into the System at a later date, a long-range plan with anticipated costs should have been developed before the General Ledger System was developed. This would have given management the tools to decide if the System would meet future needs within acceptable cost limits.

Inadequate Needs Analysis Led to Development of System Which is Limited for Management Reporting

The automated General Ledger System is a historical record of expenditures and revenues. Expenditures for a project are recorded at the time that the invoice is processed at APA. There is no accounts payable system which records when the actual payment is made by the Department of Administration. Thus, all financial statements for APA's activities reflect encumbered expenses for APA projects, not actual expenses. Management must keep this in mind when interpreting project cost statements and APA financial statements.

Furthermore, the project cost information may not be a true representation of costs on that project. This is because there is no accrual function in the System. Accruals are made once a year and posted by journal entry. APA contract reporting procedures are lacking in that their firms and sub-contractors until several months after the work has been performed. Thus, for the major part of the year, the project accounting ledgers do not reflect the status of the project. A construction project may be 1/2 complete; yet, the project financial activity could show 1/10 of the appropriate funds have been expended. An accrual method of accounting, at least on a quarterly basis, should be established to eliminate these discrepancies.

System Cost

The total system cost and cost components for the development, installation and operation of the General Ledger Accounting System to date is shown below:

1. Hardware and Installation Costs	\$35,692.95
2. Maintenance and G E Time-Sharing Costs	64,835.36
3. APA Personnel Costs Relative to Development and Implementation	<u>16,984.00</u>
Total Cost To Date	<u>\$117,512.31</u>

These costs have been incurred to date in the development and installation of the System. The hardware and installation costs (#1) are one-time costs which include the terminal, printer and other hardware costs as well as contract costs of \$21,400 paid to the System developers. This figure also includes \$8,500 expended to purchase an IBM Personal Computer. This computer will be used for initial input for data. Any data that needs to be edited or purged will be done while it is in the IBM system before being sent to the G E Time-Sharing System. APA officials told us that this will save storage and line time in the G E System.

The maintenance and G E Time-Sharing costs (#2) include monthly charges for the line time necessary to process data for the General Ledger System. It also includes a periodic maintenance fee for hardware. These costs are ongoing costs. The period covered by this analysis ranged from April of 1982, to February of 1983. The ongoing monthly operating costs varied from \$7.56 in May of 1982 to \$28,089.54 in February of 1983. Because the system is not yet operational, it is difficult to predict what the average monthly costs will be.

The APA Personnel Costs (#3) include the costs of APA accounting personnel in the development and implementation of the System. Not included in this cost analysis are the personnel costs which will be needed to operate and maintain the System once it is operational. APA officials estimate that the System will require approximately 6-8 days per month for the data processing clerk as well as two weeks at the end of each fiscal year. Additionally, approximately one week per month will be required of the General Ledger Accountant. This additional expenditure required for future operations totals approximately \$15,000 annually.

Cost-Benefit Analysis Was Not Accomplished Prior to System Development

For the month of February, 1983, G E Time-Sharing costs for the General Ledger System totalled \$28,745.52. We realize this was a high-use month due to comprehensive data input activity. However, we are concerned that future costs of the System have not been thoroughly analyzed. As the APA project activity grows, we are unsure that the G E Time-Sharing System will be the most cost-effective system. A thorough cost-benefit analysis may have shown that an in-house mini computer would have been more cost-effective in the long-range.

STATE OF ALASKA

JAY S. HAMMOND, GOVERNOR

Pouch 7-028
Anchorage, Alaska 99510
274-9681

DEPARTMENT OF NATURAL RESOURCES

February 1, 1983

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

Mr. Eric P. Yould
Executive Director
Alaska Power Authority
334 West 5th Avenue
Anchorage, Alaska 99501


Eric
Dear Mr. Yould:

The Division of Geological and Geophysical Surveys, Department of Natural Resources has just completed a preliminary appraisal of the undiscovered oil and gas resource potential of the Cook Inlet Basin. The area assessed is outlined in Attachment "A". Attachment "B" presents the resource distributions for oil, gas and their sum, barrels of oil equivalent (BOE), in place. That is, these "in place" distributions reflect total quantities of fluids trapped in reservoir rock; no adjustment is made to account for any economic considerations such as what proportion of in place resources in a reservoir are actually recoverable.

However, in response to your request, in the November 5, 1982 letter to Commissioner Katz, for estimates of "economically recoverable" resources we have developed a method for adjusting the in place resource distributions to approximate what proportion might be economically recoverable. This approximation method applies two assumptions regarding what proportion of the resources in a reservoir would actually be recovered and what size a reservoir would have to be to be commercial. By assumption we have used recovery factors of 0.5 for oil and 0.9 for gas and minimum commercial deposit sizes of 50 million bbl. for oil and 200 billion cubic feet for gas. Based on these assumptions Attachment "C" presents our preliminary estimate of the undiscovered but economically recoverable oil and gas resources in the Cook Inlet Basin. Summarizing Attachment "C", the expected (average) amount of undiscovered but economically recoverable natural gas remaining in the Cook Inlet Basin is two trillion cubic feet, with a 5 percent chance that it could be as much as five trillion cubic feet.

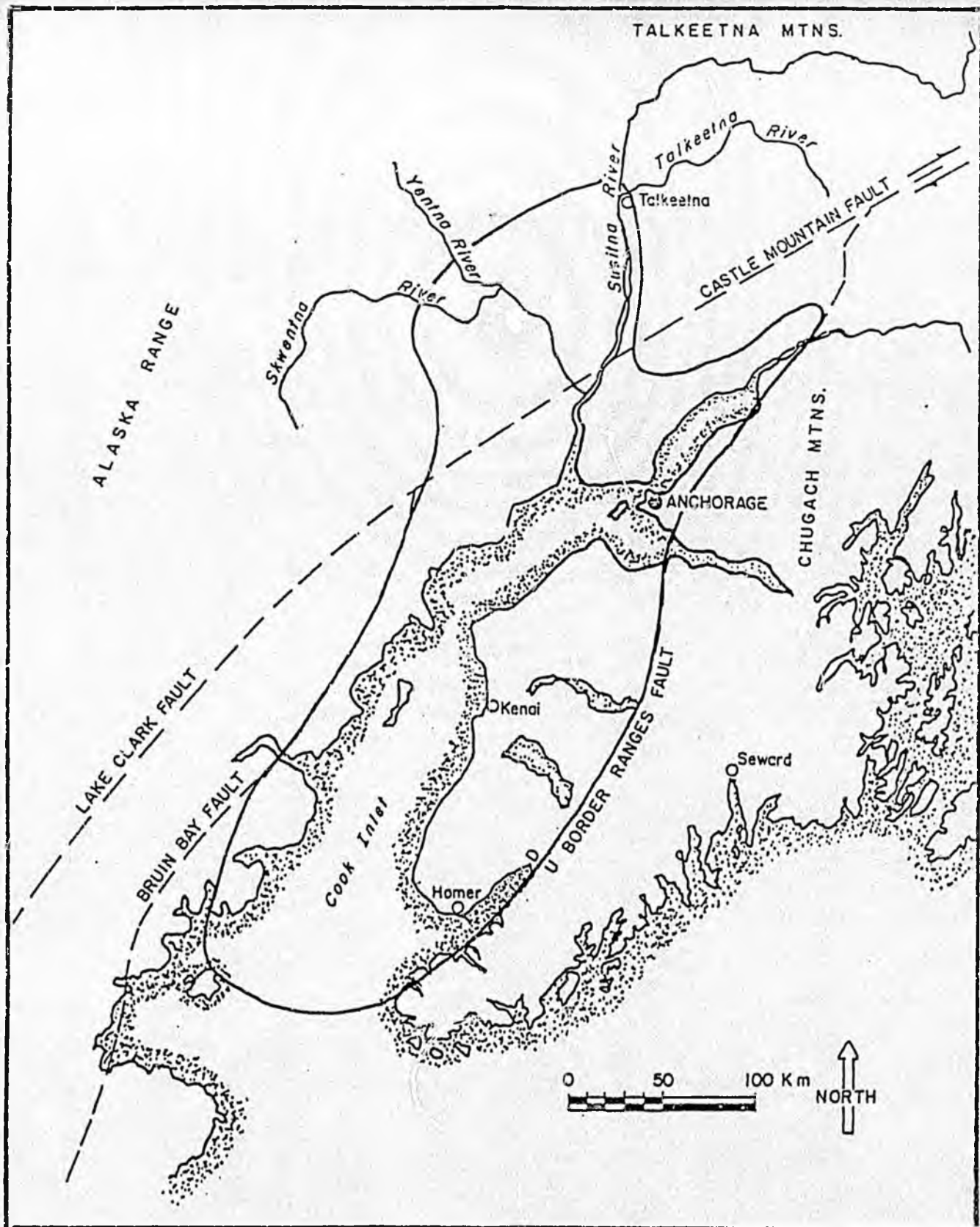
A full report on these assessments is in preparation and will be published as a DGGs Open File Report in the near future. Should you have any questions regarding these preliminary assessments please contact Red White of my staff.

Cordially yours,


Ross G. Schaff
State Geologist

cc: Commissioner Wunnicke, DNR.

RGS/plc



PRELIMINARY ESTIMATES OF UNDISCOVERED OIL AND GAS RESOURCES IN PLACE

FOR THE COOK INLET BASIN

Division of Geological and Geophysical Surveys
 Department of Natural Resources
 State of Alaska
 January 28, 1982

RESOURCES IN PLACE ^a (barrels of oil equivalent)		DEPOSIT SIZE ^b		OIL IN PLACE		GAS IN PLACE ^a	
Probability that quantity is at least the given value (%)	Billions of barrels of oil equivalent	Conditional probability that size is at least the given value (%)	Billions of Cubic Feet	Probability that quantity is at least the given value (%)	Billions of barrels	Probability that quantity is at least the given value (%)	Trillions of cubic feet
99	.13	99	1.5	99	.00	99	.47
95	.28	95	5.2	95	.00	95	.93
90	.38	90	9.6	90	.03	90	1.24
75	.61	75	26.8	75	.13	75	1.98
50	.96	50	76.0	50	.36	50	3.07
25	1.43	25	203.3	25	.73	25	4.38
10	2.02	10	475.2	10	1.20	10	5.84
5	2.49	5	761.7	5	1.62	5	6.93
1	3.76	1	1688.2	1	2.72	1	9.06
Average BOE	1.12	Average Deposit Size	191.6	Average Oil	0.53	Average Gas	3.36

^aBecause the distribution of each resource is estimated independently, "Gas in Place" after conversion to barrels of oil equivalent, cannot be added to "Oil in Place" to get "Resources in Place (barrels of oil equivalent)" at any probability level except at the expected value (average).

^bConditional upon the existence of oil and gas deposits in the Cook Inlet Basin, this column presents the estimated distribution of deposit size measured in cubic feet of gas.

PRELIMINARY ESTIMATES OF UNDISCOVERED OIL AND GAS ECONOMICALLY RECOVERABLE RESOURCES

FOR THE COOK INLET BASIN

Division of Geological and Geophysical Surveys
 Department of Natural Resources
 State of Alaska
 January 28, 1983

ECONOMICALLY RECOVERABLE RESOURCES ^a (barrels of oil equivalent)				DEPOSIT SIZE ^b		ECONOMICALLY RECOVERABLE OIL		ECONOMICALLY RECOVERABLE GAS ^a	
Probability that quantity is at least the given value (%)	Billions of barrels of oil equivalent	Conditional probability that size is at least the given value (%)	Billions of Cubic Feet	Probability that quantity is at least the given value (%)	Billions of barrels	Probability that quantity is at least the given value (%)	Trillions of cubic feet		
99	.00	99	202	99	.00	99	.00		
95	.09	95	211	95	.00	95	.22		
90	.15	90	223	90	.00	90	.43		
75	.28	75	266	75	.00	75	.93		
50	.50	50	373	50	.14	50	1.76		
25	.78	25	597	25	.32	25	2.78		
10	1.12	10	993	10	.55	10	4.04		
5	1.39	5	1358	5	.78	5	4.90		
1	2.01	1	2353	1	1.31	1	6.83		
Average BOE	0.58	Average Deposit Size	525	Average Oil	0.22	Average Gas	2.04		

^aBecause the distribution of each resource is estimated independently, "Economically Recoverable Gas" after conversion to barrel of oil equivalent, cannot be added to "Economically Recoverable Oil" to get "Economically Recoverable Resources" (barrels of oil equivalent)" at any probability level except at the expected value (average).

^bConditional upon the existence of oil and gas deposits in the Cook Inlet Basin region, this column presents the estimated distribution of deposit size measured in cubic feet of economically recoverable gas.



ALASKA

REVIEW OF SOCIAL AND ECONOMIC CONDITIONS

UNIVERSITY OF ALASKA, INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH, FEBRUARY 1983, Vol. XX, No. 1

Sustainable Spending Levels from Alaska State Revenues

INTRODUCTION

In November 1982 the citizens of Alaska, fearing that state government was growing out of control, passed a referendum limiting state spending. This spending limit, which will become law in fiscal year 1984, puts a ceiling on the state budget and limits its growth to changes in population and prices. The initiative sponsors felt that limiting the growth of state spending would eliminate the problems associated with an overwhelming dependence on the soon-to-be-depleted tax base of Prudhoe Bay petroleum.

However, falling world oil prices during the past

18 months and an anticipation of stable prices for the next several years, have rapidly reduced, if not eliminated, whatever effectiveness the spending limit may have had in holding the level of spending below total revenues. The state, therefore, knowing that the current revenue level is derived largely from a dwindling tax base and cannot be sustained, must again address the question of how best to limit spending of current revenues.

This *Review* demonstrates that the spending limit as presently structured will be ineffective in either (1) producing savings out of current revenues

Shortly after the state began collecting revenues from production of Prudhoe Bay oil, an issue of the *Review* entitled "Alaska's Revenue Forecasts and Expenditure Options" (1978) showed that the then-prevailing trend in the growth of state spending would result in a current account deficit in 1989 and the elimination of the general and permanent fund balances by 1993. That *Review* laid out the policy options available to the state for dealing with the eventual decline in petroleum revenues.

Between 1979 and 1981, estimates of expected petroleum revenues increased dramatically, primarily because of the increase in oil prices. State spending for existing and new programs correspondingly increased, causing the state to become even more dependent on oil revenues for the support of government programs and the provision of jobs in the private sector than in 1978. Thus, despite dramatic oil price increases since 1978, the fiscal outlook for the state has not improved; in fact, unless new spending policies are enacted, it will have worsened.

In illustrating Alaska's dependence on oil, the following tabulation shows that no other state economy comes close to being as petroleum dependent as Alaska:

Percent of State Revenues Provided
Directly by Petroleum

	Severance Taxes, Rents, Royalties	Corporate Petroleum Property Tax	Total
Texas (1978)	19.6	NA	NA
Louisiana (1978)	29.2	NA	NA
Oklahoma (1978)	15.0	NA	NA
Alaska (1982)	66.8	19.7	86.5

NA: Not available.

This dependence upon petroleum revenues is of particular concern due to the projections of falling revenues which have become the pattern in the last year. This *Review* re-examines long-run state spending options in light of changing conditions affecting state revenues and expenditures. It discusses the implications of the newly passed spending limit initiative, contrasting it with a sustainable spending limit and, in so doing, demonstrates the range of spending options available to the state as petroleum revenues decline.

ALASKA REVIEW OF SOCIAL AND ECONOMIC CONDITIONS

VOL. XX, No. 1, February 1983

Published by

Institute of Social and Economic Research
University of Alaska
Anchorage • Fairbanks • Juneau

Jay Barton—President, University of Alaska
E. Lee Gorsuch—Director, Institute of Social and Economic Research

Institute Editor: Ronald Crowe
Editorial Assistant: K. Lee Crowe
907-278-4621

Main Institute Office:
707 "A" St., Suite 206
Anchorage, Alaska 99501

FEATURE

Scott Goldsmith

Sustainable Spending Levels from Alaska State Revenues

Scott Goldsmith is an associate professor of economics with the Institute of Social and Economic Research in Anchorage.

or in (2) preventing a substantial long-term decline in government services and associated economic activity when oil revenues begin to fall. Since state expenditures must not exceed revenues over the whole cycle of petroleum extraction, it is the level of petroleum revenues measured over this cycle which should guide the establishment of a spending limit. Because petroleum revenues will decline in the next decade, even with new discoveries, a spending policy which will avoid severe budget reductions in the future must allow for the current investment of substantial revenues to cushion the decline. Consequently, the amount of future spending which can be supported depends not on an arbitrarily established limit, but on future petroleum revenues and a policy for current savings and investment.

After reviewing revenues from petroleum and other traditional and potential sources, this *Review* examines the future effects of the spending limit voted into law in 1982. It clearly demonstrates that because the limit is not based on anticipated levels of revenues and will not produce any significant savings or investment, it will not work. Indeed, it cannot work because revenues in the next few years will just about equal the current limit, and in later years will fall substantially short.

If the current spending limit will not work, then

what, if anything, will? The author suggests an alternative spending rule based upon sustainable revenues. Specifically, his proposed limit would base allowable spending upon the sum of renewable revenues plus the annual real earnings of state assets. Under this rule, after an initial downward adjustment, state expenditures would be insulated from the decline in petroleum revenues. This rule would require both a substantial cutback in the state budget to approximately \$1.5 billion and a large ongoing program of savings and investment of petroleum revenues over and above those currently flowing into the Permanent Fund.

The present spending limit and the proposed alternative set the bounds within which future state spending may occur. Contrasting the two clearly demonstrates the tradeoff Alaskans face when current spending exceeds the level which can be sustained in the long run.

ALASKA STATE REVENUES

For reasons set forth below, Alaska petroleum revenues will peak in the late 1980s and steadily decline throughout the 1990s. This will cause an accelerating loss of revenue and by the end of the decade pose a serious fiscal crisis, the solution to which must be reached within the next few years.

Petroleum

Revenues collected by Alaska state and local governments come overwhelmingly from the production of crude oil. Between 1977, the initial year of production from the Prudhoe Bay field on the North Slope, and 1982, petroleum revenues rose from 5.1 percent to 87 percent of total state general fund revenues. In recent years, transfers from the state general fund have become an increasingly important element of local revenues. Consequently, petroleum revenues support a large portion of local government as well as state government activity.

About 95 percent of Alaska crude oil production in recent years has come from a single "super giant" field¹—the Prudhoe Bay field on Alaska's North Slope. This field ranks as the twelfth largest field ever discovered in the world and the largest ever discovered in North America (Table 1). The 10 billion barrels of recoverable oil at Prudhoe Bay make it a super giant. By comparison, only two other fields discovered in the United States—East Texas and Wilmington—initially held recoverable reserves in excess of 2 billion barrels. Except for these two, more oil has been removed from the Prudhoe Bay field during its first 4.5 years of production than any other North American field.

The Cook Inlet basin has accounted for the remainder of Alaska crude oil production since statehood. Production levels since statehood from Cook Inlet and Prudhoe Bay are shown graphically in Figure 1. Soon after the Prudhoe Bay field began production in 1977, the state production total jumped over 600 percent. Nearly 1 billion barrels of oil have been produced from Cook Inlet in the 23 years between statehood and the end of 1981. It now takes less than 2 years to produce the same amount of oil from Prudhoe Bay.

Less dramatic than the increase in total production in the late 1970s, but just as important, has been the decline in production from the Cook Inlet basin during the same period. This decline reflects the fact that every oil province follows a foreseeable cycle of growth, peak, and eventual decline. In 1981, Cook Inlet production had declined to 40 percent of its peak attained in 1970.

This pattern of growth, stabilization, and decline in annual production is characteristic of petroleum-producing areas as well as individual fields. It can be

¹A "giant" oil field in North America is defined as containing at least 100 million barrels of recoverable oil. Although giant oil fields contain about 75 percent of all reserves, they are relatively rare because only about 1 percent of fields are large enough to be classified as giants. Yet, the "super giant" Prudhoe Bay field is 100 times larger than a giant.

Table 1

Prudhoe Bay Oil Field in Perspective

A. World's Largest Oil Fields

Name	Location	Size (Billions of Barrels)
Burgan	Kuwait	68.980
Ghawar	Saudi Arabia	60.278
Safania	Saudi Arabia	17.851
Kirkuk	Iraq	16.320
Samotlorskoye	USSR	14.600
Romashkino	USSR	14.040
Rumala	Iraq	13.835
Gachsaran	Iran	11.435
Marun	Iran	10.887
Lagunillas	Venezuela	10.782
Agha Jari	Iran	10.084
Prudhoe Bay	USA	10.014

B. North America's Largest Oil Fields

Name	Location	Size (Billions of Barrels)
Prudhoe Bay	USA	10.014
Chiapas	Mexico	6.513
East Texas	USA	5.999
Wilmington	USA	2.418
Poza Rica	Mexico	2.028
Pembina	Canada	1.742
Midway Sunset	USA	1.683
Yates	USA	1.600
Wasson	USA	1.508
Kerr River	USA	1.453
Panhandle	USA	1.415
Swan Hills	Canada	1.315
Ebano Panuco	Mexico	1.304
Sho Vel Tom	USA	1.300
Elk Hills	USA	1.296
Naranjos Cerro Azul	Mexico	1.177
Huntington Beach	USA	1.076
Santa Ynez	USA	1.000

Source: "The Search Goes on for Giant Fields," *Oil and Gas Journal*, August 1977, p. 102. Since this table was compiled, significant discoveries made in Mexico have increased the estimated ultimately recoverable reserves from some fields. One field, Chicotepec, could rival Prudhoe Bay in size, but there is some controversy over the official Pemex estimate of its recoverable reserves of 10.96 billion barrels. See "World Oil Flows Slumps, Reserves Up," *Oil and Gas Journal*, December 29, 1980, pp. 75-82; and "Giant Chicotepec Given 42 Percent of Mexican Oil Reserves," *Oil and Gas Journal*, August 20, 1979, pp. 82-85.

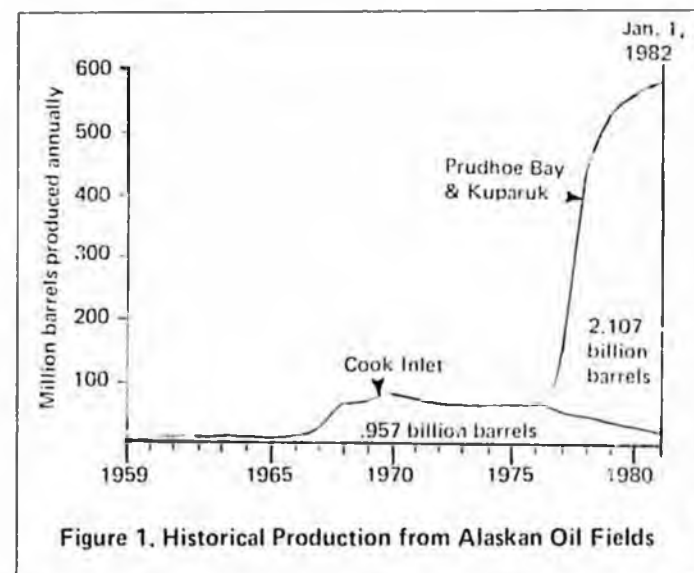


Figure 1. Historical Production from Alaskan Oil Fields

identified in every major oil-producing state. Texas, which has historically had the highest production rate of any state, by 1981 was producing at about 73 percent of the post-World War II peak it reached in 1972. Oklahoma is producing at 70 percent of its peak. In Louisiana, current production is now only about 48 percent of its peak. In Kansas and New Mexico the percentages are 53 percent and 55 percent, respectively. The same pattern holds in the other major producing states, except for California, which in 1981 surpassed its previous peak year of 1968 by 2 percent.

Because one supergiant field overwhelmingly dominates current Alaska production, the eventual production decline may be more abrupt in Alaska than elsewhere. Based upon current levels of proved reserves, including (in addition to Prudhoe Bay) Kuparuk, Endicott (Point Thomson), and state leases in the Beaufort Sea as well as Cook Inlet, the production peak will occur in the mid-1980s, and the subsequent decline will be rapid. This is illustrated in Figure 2, which projects through 2005 oil production from proved reserves in Alaska.

This projection illustrates two important points. First, Prudhoe Bay production will fall to one-third of its current level in little more than 10 years. Second, the introduction of proved reserves from new fields such as Kuparuk (which, at 1.125 billion barrels, is itself a large "giant" by North American standards) will have only a modest impact on either the number of years over which peak production can continue or the subsequent slope of the decline in aggregate oil production. Both are dominated by the absolute size of Prudhoe Bay. Thus, a field containing an estimated 600 million barrels of reserves, such as Endicott (Point Thomson), will provide only enough

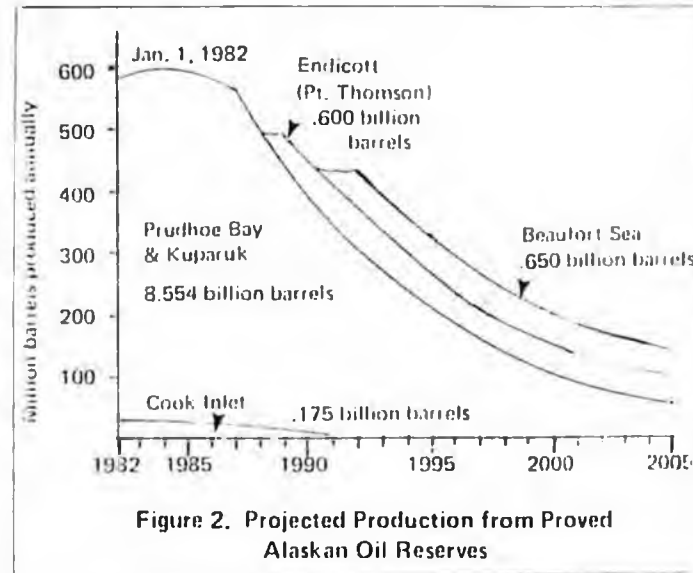


Figure 2. Projected Production from Proved Alaskan Oil Reserves

oil to fill the Alyeska pipeline for one year, or to postpone the production decline by one year.

We underestimate ultimate recoverable reserves by basing projections upon estimates of proved and probable reserves on currently leased state lands because the process of exploration and development is ongoing in the relatively unexplored Alaska frontier regions. Proved reserves are, in a sense, only the current inventory of the oil industry. Additions to that inventory continuously occur through exploration and development which both bring new fields into production and increase the ultimate production of existing fields.

A crude oil inventory including proved reserves and an estimate of recoverable undiscovered resources is shown in Table 2. As of January 1, 1982, proved reserves were 8.729 billion barrels, located mostly on the North Slope at Prudhoe Bay and Kuparuk, both of which are now producing. Additional state lands (Endicott and the Beaufort Sea) which are currently under lease and where exploration activity is ongoing are estimated to contain 1.250 billion barrels. These areas are also on the North Slope. Estimates of potential reserves in areas of the state currently not yet leased, both onshore and offshore, are speculative in nature. The most recent estimate for these unexplored regions is 21.5 billion barrels, the majority of which is estimated to be on federal lands on the North Slope or offshore in the Beaufort Sea.

Long Lead Time for New Discoveries

The amount of oil which will be discovered and ultimately produced from these regions depends upon the expected cost of field development in relation to the expected market price of the oil, both of which must be estimated many years into the future because

Table 2
Alaskan Crude Oil Resources Inventory

	Billion Barrels
Cumulative Production since 1959 (Jan. 1, 1982)	3.054
Prudhoe Bay	2.107
Cook Inlet	.957
Proved Reserves ^a (Jan. 1, 1982)	8.729
Prudhoe Bay	7.429
Kuparuk	1.125
Cook Inlet	.175
Probable Reserves on Currently Leased State Lands ^d (July 1982)	1.250
Endicott (Point Thomson)	.600
Beaufort Sea	.650
Economic Undiscovered Resources ^b (Dec. 1981)	21.5
North Slope onshore	2.1
Beaufort Shelf	8.2
Arctic National Wildlife Refuge	2.3
National Petroleum Reserve Alaska	2.1
Central Chukchi Shelf	1.6
Navarin Basin Shelf	2.3
St. George Basin	1.1
Bristol Basin	.6
Norton Basin	.3
Onshore South of Brooks Range & Offshore South of Aleutian Chain	.9

^aState of Alaska, Department of Natural Resources, Proved and Probable Oil and Gas Reserves, North Slope, Alaska, July 1982.

^bNational Petroleum Council, *U.S. Arctic Oil and Gas*, December 1981 was utilized for estimates north of Aleutian Chain offshore and north of the Brooks Range onshore. Economic undiscovered oil was based upon an economic evaluation of recoverable reserves using a 10 percent real rate of return, p. 39. Other Alaska reserves were taken from U.S. Department of the Interior, U.S. Geological Survey, 1981.

of the very long lead times required for field development in the Arctic, estimated to be 10 to 15 years. Consequently, although it is safe to say that production from currently undeveloped fields will occur, it is impossible to project when it will occur and in what volumes. Smaller fields, fields requiring new technologies, and fields farther from existing pipelines will be more expensive to develop than Prudhoe

Bay. Some discoveries may remain undeveloped if the costs are too high, even though they may be "giant" fields. The pace at which future discoveries are converted into production will slow down as more frontier provinces are explored. Consequently, the oil industry agrees that continued exploration and production from new fields will be unlikely to close the gap left by the decline of Prudhoe Bay production. Exploration chief Roger Herrera of the Sohio Alaska Petroleum Company, in discussing the decline in Prudhoe Bay production beginning after 1988, has stated, "We would need to find a new field each year to make up the difference . . . That's not very likely, and that's when the crunch may come."²

Importance of Oil Field Location

State revenues from petroleum also depend upon where that petroleum is located. Currently, virtually all proved reserves of crude oil lie under state lands. From this production, the state receives a royalty share and collects taxes on production and profits. In addition, it taxes petroleum-related property. Table 2 shows that most of the oil yet to be discovered is believed to lie onshore under federal lands or offshore under the outer continental shelf. Although the state will be able to tax petroleum production, property, and profits on federal onshore lands, it will receive only a share of the federal royalties earned. Offshore, beyond the 3-mile limit, the state has no taxing authority and will collect no royalties. Property taxation of shore-based exploration, development, and production facilities is currently the only method by which the state could collect revenues from outer continental shelf production. As a result, the state will be receiving a smaller share of the revenues from the development of most new fields.

The state's exact share is impossible to estimate accurately since the "rules of the game" for dividing the profits are always changing. Experience in dividing the profits from Prudhoe Bay production suggests that there will be continuing negotiations among the parties³ over the distribution of profit shares, because the reward for changing the allocation formula is so great.⁴ Consequently, it may be misleading to try to predict future revenues under current distribution rules. It is safe to say, however, that the oil compan-

²Alaska Growth Policy Council, 1981 Report to the Governor, p.24.

³In the case of Prudhoe Bay, the federal government, state government, local governments, and the oil companies.

⁴Rewriting the corporate income tax law, placing a ceiling on the severance tax, etc.

ies and federal government will not be predisposed to change the rules governing the sharing of outer continental shelf revenues to favor the state of Alaska.

In summary, nearly all Alaska production and revenues come from the single largest "super giant" field ever discovered in North America. A decline in production from this field will begin in 5 years and continue into the next century. Production from proved reserves in other fields and new discoveries will not be sufficient to fill the gap left by the declining Prudhoe Bay production. The decline in state revenues will proceed more rapidly than the production decline because a large portion of new reserves is likely to be located on the federally controlled outer continental shelf where the state has no taxing authority.

Petroleum as a Nonrecurring Tax Base

Prudhoe Bay oil can appropriately be viewed as an asset worth \$36 billion in 1982 dollars.⁵ At current rates of expenditure, Alaska is rapidly depleting this asset, and it has no equivalent asset to meet future needs.

The preceding analysis suggests that the overwhelming dominance of crude oil production in the Alaska tax base is a transitory phenomenon. If one element of the state's tax base is nonrecurring, it should be explicitly identified as such and revenues derived from that base treated differently from recurring revenues from a permanent tax base.

State oil revenues are proceeds from the sale of a part of the state's tax base—the state government's tax and royalty "share" of the oil. Of the five major categories of petroleum revenues, lease bonuses and royalty income most clearly represent the sale of a state asset. The other three revenue sources—the severance tax, the corporate income tax, and the property tax on oil and gas production and transportation-related property represent taxation of a non-renewable resource. The state will receive these revenues only as long as oil is being produced and sold. In contrast, most other industries do not depend on a dwindling resource base. For them, current production does not preclude future production; they can generate a continuous flow of revenues from a continuous level of production. In the oil industry, however, if reserves are produced today, they will not be available as a tax base in the future.

⁵When comparing the value of any asset at different points in time, the use of nominal dollars not corrected for inflation can yield very misleading results. Consequently, in the text of this report, all figures are presented in 1982 dollars unless specifically identified otherwise.

Petroleum as a Capital Asset

Oil in the ground, therefore, particularly in such unusually large and likely unique fields as Prudhoe Bay, represents a capital asset owned by the state, similar to money in the general fund, state-owned land, or a state-owned office building. A rough estimate of the value of this capital asset can be calculated by multiplying the proved reserves of oil (at the start of the fiscal year) by the current per-barrel level of petroleum revenues. Thus, if as was true at the beginning of the 1983 fiscal year (July 1, 1982), there were 7.007 billion barrels of proved reserves of oil in the ground at Prudhoe Bay, and the current per-barrel state revenue from all petroleum taxes and royalties was \$5.40, then the value of the state's share of the oil in the ground at that time was \$37.838 billion (Table 3).

This estimate entails two simplifying assumptions. First, we assume that real per-barrel revenues in future years will be the same as they are today. Second, we assume that there is no discounting of those revenues which will not be collected until some future year. Inflation aside, a dollar received today is worth more than a dollar received in the future, because the dollar received today can be invested to earn a positive return, and consequently will be worth more than one dollar next year. To compare a dollar received in the future with a dollar received today, we must discount the future dollar by the earning potential of the dollar invested today. The discounted value is that amount which one would be willing to pay today in return for receiving a dollar at some time in the future. Banks, businesses, and individuals commonly apply discount rates to future revenue streams based on their investment opportunities, and the state should do the same. If the state can earn an average 2 percent annually (after accounting for inflation), then the future petroleum revenue stream should be discounted at that rate. This reduces the present value of the Prudhoe Bay tax base at the start of the 1983 fiscal year to about \$31 billion, which represents the value today of the future stream of revenues the state will receive.

Changing Value of State's Share

The value of the state's share of the oil in the ground at Prudhoe Bay changes annually because (1) oil is being withdrawn from the field at the rate of 547 million barrels per year, (2) the real market value of oil fluctuates, (3) tax law modifications change the per-barrel tax liability, and (4) inflation changes the price of oil. The combination of these factors has caused the value of Prudhoe Bay oil in the ground to vary dramatically from year to year.

Table 3
Value to the State of Oil in the Ground at Prudhoe Bay

Fiscal Year (ending in calendar year)	Initial Oil in Place (billion barrels)	Production (billion barrels)	Production Related Petroleum Revenues (billion \$)		State Revenues per Barrel		Undiscounted Value to the State of Oil in the Ground at Prudhoe Bay (billion \$)	
			(Current \$)	(1982 \$)	(Current \$)	(1982 \$)	(Current \$)	(1982 \$)
1978	9.356	.314	.630	.892	2.01	2.84	18.806	26.650
1979	9.042	.433	.979	1.259	2.26	2.91	20.435	26.288
1980	8.609	.508	2.141	2.499	4.21	4.92	36.244	42.311
1981	8.101	.547	2.914	3.126	5.33	5.71	43.178	46.325
1982	7.554	.547	3.998	3.998	7.30	7.30	55.144	55.144
1983 (est.)	7.007	.547	2.956	2.763	5.40	5.05	37.838	35.362
1984 (est.)	6.460	.547	3.010	2.629	5.50	4.81	35.530	31.033

Source: Oil in Place from Alaska Oil and Gas Conservation Commission, *Statistical Report*, annual, converted to fiscal year basis, Prudhoe Bay field only.

State Revenues per Barrel is calculated as total production related petroleum revenues including Permanent Fund contributions and ANCSA payments (Royalty, Severance Tax, Property Tax, Oil and Gas Income Tax from Alaska Department of Revenue, *Revenue Sources*, annual) divided by annual production. The reserves tax is netted out of 1977 and the credit added into 1978 and 1979. These figures are a slight overestimate since they include Cook Inlet Oil Revenues. Bonuses are not included for 1980.

Value of state share of Prudhoe Bay oil is calculated as oil in place multiplied by per barrel tax revenue.

Anchorage consumer price index for 1982 assumed to be 265. Inflation from 1982 to 1984 assumed to be 7 percent annually.

The components of the year-to-year change in the asset value of Prudhoe Bay oil are presented individually in Table 4. At the start of each year, the initial value is determined as the product of quantity in place and average per barrel revenues. As the market price for oil fluctuates and the laws change, average per-barrel revenues increase or decline. This changes the value of oil in place (inventories). Over the course of the year, oil is withdrawn from the field; this generates revenues for the state. These revenues can be divided into the sale of assets and the conversion of assets. The sale of assets is that portion of petroleum revenues which goes into the general fund and is subsequently spent. Conversion of assets consists of that portion of petroleum revenues which is converted into a different form of asset—either physical or financial capital.

Looking at year-to-year changes in the real asset value of Prudhoe Bay oil in the ground, we see that holding wealth in the form of oil was a good investment from 1978 until late 1981 because, in spite of the annual withdrawal of 547 million barrels, the real value of oil in the ground grew from \$28.96 billion in 1978 to \$59.17 billion in 1981. Since then, however, the reverse has been true. The asset value of the state share of Prudhoe Bay oil fell by more than 20 billion dollars between 1981 and 1982 to \$37.84 billion. This is primarily the result of a fall in per-barrel revenues from \$7.30 to \$5.05. In 1983, the value of the oil will decline by more than \$2 bil-

lion, primarily because of the withdrawal of 547 million barrels from the field.

Prudhoe Bay oil is not the only component of state wealth. Other assets consist of natural resources on state lands and in state waters, both renewable and nonrenewable; and capital, both physical and financial. The monetary value of each asset in the state portfolio is equal to the present value of the future revenues expected to flow from it. The value of the state's natural resources and physical capital is not currently known. On the other hand, the value of the financial capital of the state is equal to its current balance. The Alaska Permanent Fund and the state general fund are the main elements of state financial capital. The net worth of semi-autonomous state agencies such as the Alaska Housing Finance Corporation and the Alaska Power Authority represent another element of the financial wealth of the state.

Table 4 includes the conversion of petroleum assets into financial assets in the Permanent Fund. This underestimates total asset conversion and overestimates the sale of oil in the ground because it does not show conversions to resources which do not have readily quantifiable values—such as the net worth of public agencies and additions to physical capital. However, it is clear that in each year since production began at Prudhoe Bay, the conversion of petroleum assets into alternative assets of readily identifiable value has been modest. In the early years,

Table 4

Components of Change in Undiscounted Value to the State of Oil in the Ground at Prudhoe Bay
Billion \$

	1978	1979	Fiscal Year (ending in)			1983	1984
			1980	1981	1982		
Value of Oil in Ground (July 1)							
Current \$	18.806	20.435	36.244	43.178	55.144	37.838	35.530
1982 \$	26.650	26.288	42.311	46.325	55.144	35.362	31.033
Add: Change in Value of Inventories ^d							
Current \$	2.259	16.788	9.074	14.880	-13.326	.648	NA
1982 \$	3.201	21.596	10.593	15.966	-13.326	.606	NA
Deduct: Total Sale & Conversion of Assets (Petroleum Revenues)							
Current \$	.630	.979	2.140 ^b	2.914	3.980	2.956	3.010
1982 \$	.893	1.259	2.498	3.126	3.980	2.763	2.629
Net Sales of Assets ^c							
Current \$	.580	.895	1.910	1.629	2.771	2.317	NA
1982 \$	.822	1.151	2.229	1.748	2.771	2.165	NA
Conversion of Assets ^d (Contributions to Permanent Fund)							
Current \$	.050	.084	.230 ^b	1.285	1.209	.639	.326
1982 \$	.071	.108	.269	1.379	1.209	.597	.285
Equals: Value of Oil in Ground (June 30)							
Current \$	20.435	36.244	43.178	55.144	37.838	35.530	NA
1982 \$	28.959	46.625	50.406	59.170	37.838	33.206	NA

^aChange in value of reserves due to changes in both crude oil market price and state tax laws (calculated as the residual of year end value plus sales and conversions minus year start value).

^bLease sale bonus revenues not included.

^cTotal petroleum revenues net of Permanent Fund contributions.

^d\$4 million contributed to the Permanent Fund in fiscal year 1977 is not included here. Includes the amounts transferred in 1981 through 1983 under the special appropriations made in 1981 and 1982.

Source: Petroleum revenues consist of royalties, severance taxes, property taxes, and oil and gas income tax including Permanent Fund contributions and ANCSA payments. The reserves tax is netted out of 1977 and added into 1978 and 1979 figures. Petroleum revenues are on a fiscal year basis.

transfers into the Permanent Fund averaged less than 10 percent of petroleum revenues. When special Permanent Fund appropriations were made in fiscal years 1981, 1982, and 1983, the conversion to financial assets still averaged only 32 percent of petroleum revenues.

Historical Fluctuation in State Wealth

By defining state wealth to include both the state's share of oil in the ground at Prudhoe Bay and the balance in the Alaska Permanent Fund, we can trace the historical fluctuation in total state wealth

(Table 5). We see that in 1978, the combined value of these two assets was \$29.035 billion, essentially all in the form of oil in the ground. In January 1983, state wealth was estimated to be \$36.585 billion, with the proportion held in the Alaska Permanent Fund close to 10 percent. The growth of the Permanent Fund balance has been dramatic. When viewed in dollars corrected for inflation, however, we see that, absent further special appropriations to the Permanent Fund, its real value will increase much more slowly in future years. If nominal earnings are withdrawn from the Permanent Fund, a substantial portion of

new, regular fund contributions will be required just to maintain the real value of the fund.⁶ Assuming withdrawal of all earnings, the Permanent Fund balance is estimated to increase by only \$64 million in 1982 dollars between 1983 and 1984 in spite of a contribution of \$285 million over that period. Most of the fund contribution will be needed just to offset inflation which continuously erodes the real value of the Permanent Fund balance.

The Recurring Tax Base

Recurring state revenues are miniscule compared to current levels of state spending and cannot be realistically viewed as an answer to the state's impending fiscal crisis, unless a radically new approach is taken to the savings and investment of current state revenues.

State general fund revenues can be divided into six categories—four major and two minor. The first two—the sale of assets and income from investments—relate primarily to petroleum and have already been

⁶Under current law, a portion of Permanent Fund earnings must be retained for the purpose of capital preservation. This increases the estimated growth in the Permanent Fund balance. Current interpretation of the law, however, appears to define retained earnings as net of distribution of 50 percent of the fund earnings under the Permanent Fund dividend program. Consequently, at historical inflation rates, the real value of the fund will still decline without continuous large contributions.

discussed. Recurring revenues collected from individuals and businesses constitute the other two major categories. The personal and corporate income taxes have historically been the most important of these recurring revenues. A small proportion of general fund revenues comes from the two remaining sources—federal transfers and user fees. Federal transfers are usually restricted to particular purposes such as capital investments for transportation and health projects or transfers to individuals. Ferry system receipts constitute the largest revenue in the category of user fees, which also includes court fees.

Table 6 presents a historical review of recurring state revenues in relation to nonrecurring petroleum revenues and investment earnings. Business revenues consist of the corporate income and gross receipts tax as well as business licenses. Revenues from individuals are defined as nonbusiness taxes plus nonbusiness licenses. The miscellaneous category includes both federal shared revenues and user fees as well as other small categories of government receipts.

In the current fiscal year of 1983, fully 86 percent of revenues are directly from nonrecurring petroleum activity; 7 percent of general fund revenues come from recurring revenues not directly related to petroleum. An equal proportion is contributed by investment earnings. However, most of the reported Permanent Fund earnings are more appropriately classified as the sale of an asset since earnings are calculated before inflation. The real earnings are just

Table 5

Combined Asset Value: Undiscounted State Share of Prudhoe Bay and Alaska Permanent Fund
(In billions of 1982 \$)

	1978	1979	Fiscal Year (ending in calendar year)			1983	1984
			1980	1981	1982		
July 1, Assets							
Oil in Ground	\$26.650	\$26.288	\$42.311	\$46.325	\$55.144	\$35.362	\$31.033
Perm. Fund Bal.	.006	.069	.161	.518	1.768	2.782	3.158
Total	\$26.656	\$26.357	\$42.472	\$46.843	\$56.912	\$38.144	\$34.192
Change in Assets							
Oil in Ground	\$2.309	\$20.337	\$8.095	\$12.845	\$-17.306	\$-2.156	NA
Perm. Fund Bal.	.071	.108	.403	1.379	1.209	.587	.285
Total	\$2.380	\$20.445	\$8.498	\$14.224	\$-16.097	\$-1.839	NA
June 30, Assets							
Oil in Ground	\$28.959	\$46.625	\$50.406	\$59.170	\$37.838	\$33.206	NA
Perm. Fund Bal.	.076	.178	.564	1.897	2.977	3.379	3.443
Total	\$29.035	\$46.803	\$50.970	\$61.067	\$40.815	\$36.585	NA

Note: All Permanent Fund earnings (nominal as well as real) transferred to General Fund.

^{*}Includes proceeds of \$114 million from Beaufort Lease Sale.

Table 6
Sources of State Revenues
(millions of 1982 dollars)

Year	UNRESTRICTED GENERAL FUND REVENUES										CONVERSION OF ASSETS			
	Total (Nominal \$)		Business Revenues (Inc-oil)		Investment Earnings Before Inflation		Investment Earnings After Inflation ^e		Petroleum Revenues Sale of Assets		TOTAL PETROLEUM REVENUES ^g		Petroleum Revenues ^h Gross Fund Withdrawals ⁱ	
	1982 \$	1982 \$	Individual Revenues	Misc. Revenues ^d	Before Inflation	After Inflation ^e	Total	Total	\$0	\$0	\$0	\$0	\$0	\$0
1974	2,255	5512	554	566	593	521	5159	5159	0	159	159	50	562	
1975	333	584	71	78	68	17	154	154	0	154	154	0	51	
1976	710	1,154	106	56	52	13	628	628	0	628	628	0	39	
1977	874	1,331	122	55	53	13	720	720	0	720	720	6	40	
1978	787	1,115	116	61	63	16	609	609	0	680	680	71	47	
1979	1,179	1,516	109	75	76	19	1,053	1,053	0	1,161	1,161	108	57	
1980	2,633	3,073	67	69	140	35	2,630	2,630	0	3,032	3,032	402	105	
1981	3,718	3,989	88	74	244	61	3,540	2,573	967	3,952	3,952	1,379	183	
1982 (pre.)	4,105	4,105	91	80	323	81	3,556	2,756	800	3,965	3,965	1,209	242	
1983 (est.)	3,444	3,220	26	85	220	55	2,778	2,498	280	3,095	3,095	597	165	
1984 (est.)	3,212	2,804	85	69	87	NA	2,514	2,514	0	2,789	2,789	285	NA	
1985 (est.)	3,243	2,647	85	66	82	NA	2,366	2,366	0	NA	NA	NA	NA	

^aIncludes Native Land Claims payments in 1978 through 1980. In 1984 and 1985 Permanent Fund dividends not included in general fund revenues.

^bCorporate income tax, gross receipts tax, business licenses.

^cNon-business taxes, non-business licenses.

^dFederal shared revenues, state resource revenues excluding petroleum (composed primarily of ferry charges, miscellaneous user fees, and sales of state property).

^eGeneral fund and permanent fund earnings net of amounts required to maintain real value of these funds. We assume that, due to inflation, 75 percent of nominal earnings is necessary to maintain asset value.

^fSpecial Permanent Fund contributions.

^gIncluding mandatory Permanent Fund contributions.

^hTotal Permanent Fund contributions.

ⁱGeneral and Permanent Fund earnings before inflation minus earnings after inflation. (This ignores general fund deposits in some years which may have an offsetting effect.)

Source: Alaska Department of Revenue, Revenue Sources, annual.

a small portion of the nominal return.

In contrast, almost 53 percent of revenues in 1974 were collected from individuals, nonpetroleum businesses, and miscellaneous sources. Over the last several years, primarily because of the elimination of the personal income tax, there has been a dramatic fall in both the real amount as well as the percentage of revenues derived from individuals, and this has occurred at a time of rapid population and income growth. In 1983, only an estimated \$51 million will be collected from individuals, compared with \$381 million as recently as 1977. Similarly, there has been a decline in real revenues from non-oil-related business, but it has not been as precipitous as the decline in individual revenues. Whereas taxes and other revenues collected from individuals were more than double those collected from non-oil businesses in 1977, non-oil business receipts were almost double those of individuals by the early 1980s. The expansion of investment earnings during this period has only partially offset the decline in revenues from individuals and non-oil businesses. After correcting for inflation, we find that real investment earnings remain a modest source of revenues.

Future Revenues: Actual and Potential

Even if Alaska's personal income tax is reinstated and its corporate tax rate increased, Alaska's revenue gap—the difference between projected revenues and state expenditures under the current spending limit—will approach \$1 billion by 1991.

Figure 3 shows a projection of future revenues based upon likely petroleum production (including natural gas) from leased areas as well as current trends in recurring (individual, non-oil business, and miscellaneous) general fund revenues. A revenue gap appears in 1989 at about the time production from Prudhoe Bay begins to decline. Revenues then fall

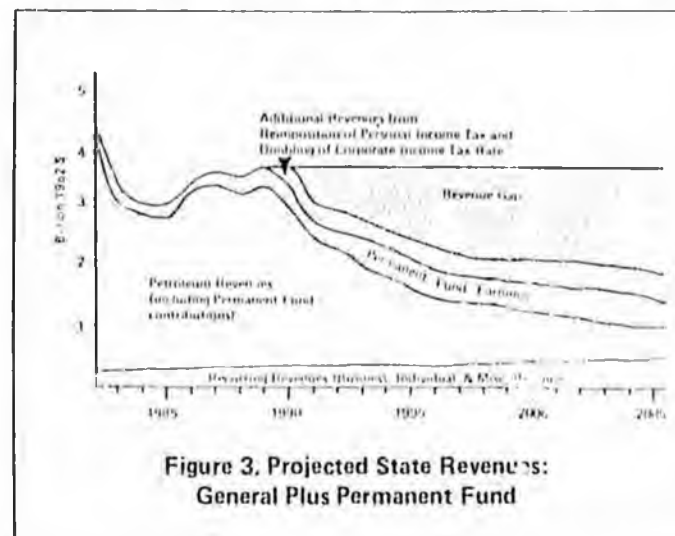


Figure 3. Projected State Revenues: General Plus Permanent Fund

during each succeeding year. Neither investment earnings nor business, individual, or miscellaneous revenues will be large enough by 1990 to offset the fall in petroleum revenues.

Several strategies have been suggested for dealing with this projected revenue gap:

1. Increase the flow of petroleum revenues. This could result from raising the per-barrel tax rate or increasing production on state lands. However, tax increases could only temporarily compensate for declining production and could accelerate it. To fully replace the revenue which the state will lose from the decline in the Prudhoe Bay field would require development of a new field on state lands every year. We have shown, and all knowledgeable sources agree, that this is virtually impossible.
2. Rely on the development of nonpetroleum natural resources. Comparing the value of natural resource industry outputs in Alaska indicates that no alternatives could expand enough in a few years to generate the level of sales necessary to provide a tax base comparable to petroleum (Table 7). In 1981, petroleum (crude oil plus natural gas) accounted for 92.5 percent of natural resource sales; seafood contributed 5.9 percent. All others combined totaled only 1.6 percent.

For example, just to match the value of petroleum output, the fishing industry would need to expand 1,600 percent. Profitability in the industry would also need to increase. The resource base will not allow this.

Alternatively, coal, of which Alaska has large reserves, is often suggested as a successor to petroleum. Many deposits are not now economically attractive because of their location, but fields such as the Beluga and Nenana have a definite potential for development and expansion during the coming decade. If the state royalty and related taxes were to total \$1 per ton of coal (which is higher than current state revenues per ton of coal produced), then an annual production of 4 billion tons would be required to equal the nearly \$4 billion in petroleum revenues collected by the state in fiscal year 1982. Four billion tons is about 4,000 times current production and is also approximately the total demonstrated reserves in these fields.⁷

⁷Alaska Department of Natural Resources, Open File Report, No. 51, 1975.

Table 7

Market Value of Unprocessed Alaska Natural Resources, 1981

	Million \$	Percentage
Crude Oil	\$12,396	91.9%
Seafood	792	5.9
Timber	120	.9
Natural Gas	83	.6
Gold	54	.4
Coal	18	.1
Agriculture	12	.1
Furs	6	.1
Other Minerals	4	.1
Total	\$13,485	100%

Note: Petroleum value calculated at wellhead. All others calculated at Alaska market price.

Source: Crude oil, natural gas, and gold from Division of Budget and Management, Office of the Governor, *Alaska Statistical Review*, 1982. Coal, other minerals, furs, timber, estimated by author by extrapolation. Seafood from Alaska Department of Fish and Game (preliminary). Agriculture from *Alaska Agricultural Statistics*, 1982.

Thus, it would be physically impossible to generate the same amount of revenues from coal as from oil. Development of the coal industry may produce a stable number of jobs and a flow of revenues, but it cannot replace the magnitude of revenues generated by petroleum.

3. Rely on downstream processing of, or value added to, Alaskan resources. Currently, revenues from such downstream processing are primarily obtained from the corporate income tax. At current tax rates, the corporate tax base would need to grow to over 100 times its current size to replace the revenues from petroleum in 1982.

4. Reimpose the personal income tax and increase corporate tax rates. Reimposing the personal income tax and doubling the corporate income tax rate would increase individual and business taxes only modestly, as shown in Figure 4. This strategy would fill the revenue gap for only one year and would subsequently reduce it by only a small percentage.

Clearly, no one of these strategies is capable of

filling the gap. In addition, adopting all of them would likely yield revenues no higher than those estimated to result from increased taxation of income, because tax increases tend to restrict the growth of the tax base. The revenue gap thus presents the state with a difficult choice regarding future expenditures. On the one hand, the revenue gap can be ignored. This would mean adjusting to continuously declining revenues beginning in 5 years. On the other hand, investment strategies using a portion of current revenues could be devised to provide a future stream of earnings to replace declining petroleum revenues.

THE SPENDING LIMIT

By 1988, state revenues will fall below the state spending limit and set the stage for a run on the state's accumulated surpluses, including the Permanent Fund.

Beginning with the fiscal year 1984 budget, the state will limit expenditures by placing a ceiling on appropriations which changes from year to year with population and inflation. The ceiling, established at \$2.5 billion for the base fiscal year 1982, exempts only debt service, Permanent Fund dividend payments, voter-approved capital expenditures and supplementary Permanent Fund appropriations. The limit also specifies that at least 3 percent of appropriations must be allocated to capital expenditures and loans.

The spending limit of \$2.5 billion will not be a real constraint on appropriations in any future year because general fund revenues are projected to at most equal or fall short of allowable spending under the formula limit every year (Figure 4). This projec-

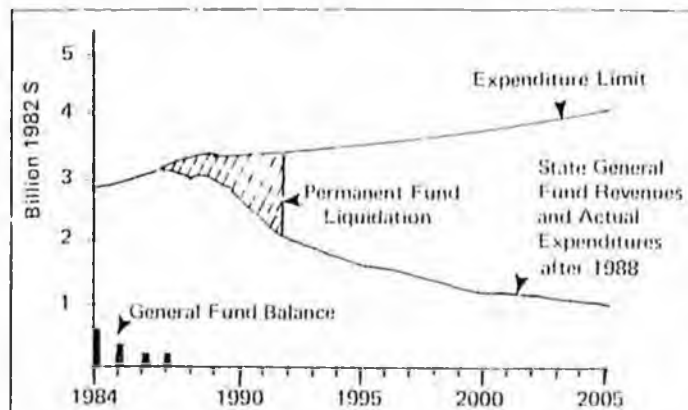


Figure 4. State Fiscal Situation: \$2.5 billion Constitutional Spending Limit*

*The expenditure limit grows in constant 1982 dollars due to population growth which is projected at the rate of 2 percent annually. Without population growth, the expenditure limit ceiling would be a flat line.

tion is based upon the assumptions summarized in Table 8.⁸ Spending up to the limit can occur during the first 4 years, beginning in FY 1984, only by drawing upon the accumulated balances in the general fund. Rather than generating savings by limiting spending, the limit permits the liquidation of the modest general fund balance.

By 1988, the spending limit ceiling will have become ineffective because the rising ceiling will have surpassed revenues. By 1991, revenues will have fallen \$1 billion below the limit, and in subsequent years, the revenue gap will continuously increase (Figure 5). By 1995 it will equal \$2 billion—half the

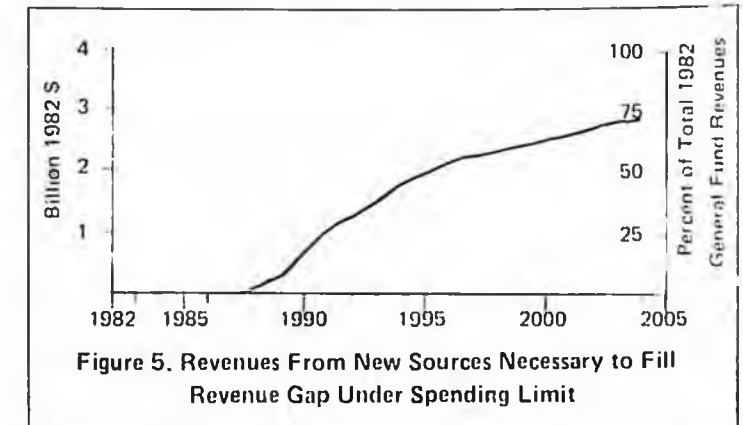


Figure 5. Revenues From New Sources Necessary to Fill Revenue Gap Under Spending Limit

⁸The projection also assumes that oil and gas exploration, development, and production remain important basic activities, and growth occurs in fish harvesting and processing, mining, timber, manufacturing, and tourism. The state budget is divided as follows: capital spending is assumed to be one-third of the total and to be divided equally between construction projects and subsidies to housing and industry. All capital expenditures are paid from the general fund. Consequently, the only expenditure items not covered by the ceiling consist of Permanent Fund dividends at the rate of one-half of nominal Permanent Fund earnings and debt service payments which decline each year as outstanding bonds are paid off. The Permanent Fund receives its constitutionally mandated share of petroleum royalties and bonus payments, while all other excess current account revenues remain in the general fund where they earn interest until spent.

level of 1982 revenues. Although the growth of this gap between spending and revenues will subsequently slow down, in 10 more years it will still reach \$3 billion. This gap represents the amount of revenues that would be required from new sources to keep state spending up to the ceiling defined by the limit formula.

The Permanent Fund is the only financial asset which the state could draw upon to fill the revenue gap created by falling revenues and a growing spending limit ceiling. When revenues fall below the ceiling, however, the Permanent Fund balance will be about \$4.5 billion, a modest amount because of the annual

Table 8

Principal Assumptions of Projections

STATE REVENUES

Petroleum

- Royalties: Approximate Dept. of Revenue, Dec. 1982, 50% probability forecast with 2% annual decline after 1998.
- Severance Tax: Approximate Dept. of Revenue, Dec. 1982, 50% probability forecast with 2% annual decline after 1998.
- Corporate Tax: 20% of severance tax.
- Property Tax: Dept. of Revenue, June 1982 forecast with 4% annual growth after 1984.
- Bonuses: Zero.

Recurring Revenues

All Revenues determined by MAP econometric model at currently existing tax rates.

RETURN ON INVESTMENT

- Real rate of return on general fund balances: 2% annually.
- Real rate of return on Permanent Fund balance: 3% annually.

SPENDING LIMIT

- Inflation: 7.4 percent long-run average annual rate.
- Population: 2 percent annual growth.

Royalties and severance taxes are the June 1982 30-percent probability forecast of the Department of Revenue. The undiscounted sum of petroleum revenues as projected by the Department of Revenue were 8 percent lower in September 1982 than in June and are expected to be again lower in December. Thus, we estimate the 30-percent probability forecast of June to approximate the December 50-percent probability forecast.

withdrawal of both real and nominal earnings to fund the Permanent Fund dividend program, and to supplement general fund revenues.⁹ Because of these withdrawals, the real value of the accumulated balance in the Permanent Fund (before annual contributions) will have been eroding about 7.4 percent annually (the inflation rate), and contributions from royalties and bonuses equal to 7.4 percent of the accumulated balance will be necessary each year just to keep abreast of inflation.

Although the Alaska constitution prohibits withdrawal of principal from the Permanent Fund, the emergence of a revenue gap would generate tremendous pressure to open it up. If the Permanent Fund were opened at this time to maintain spending levels, it would be completely spent within 4 years. At the end of that time, the state would find itself with no sources of funds with which to replace falling revenues, and state expenditures would have to be cut sharply and abruptly.

The spending limit will not serve to avoid a revenue gap because it will ineffectively restrict spending in the early years. It establishes no framework for determining the proper levels of investment out of petroleum revenues and, consequently, will generate an insufficient level of recurrent earnings from investment. The major asset the state will have as revenues fall is the Permanent Fund, the earnings and principal of which will be insufficient to fill the gap for long.

Figure 6 shows that with the present spending limit in place, the assets of the state, defined as the sum of oil in the ground plus the Permanent Fund, will rapidly dissipate. (Other assets such as home mortgages are not included because we have no information on the current or projected state holdings of these assets. Regardless, even a portfolio of these assets worth \$5 billion would not significantly alter the picture.) Petroleum cannot be converted to other forms of wealth quickly enough under the present spending limit to maintain the asset portfolio from which earnings are generated. Thus, as the state portfolio declines, so will asset earnings.

In the coming years, public sector demands for providing basic services in education, health, social services, resource management, public protection, and transportation will continue to grow with the economy and real incomes. However, by the end of the century only about \$1 billion annually (1982 dollars) will be available to fund all government programs. The cutbacks required to live within a \$1 billion budget constraint will be drastic and will

⁹Reinvestment of Permanent Fund earnings would only marginally change the conclusions.

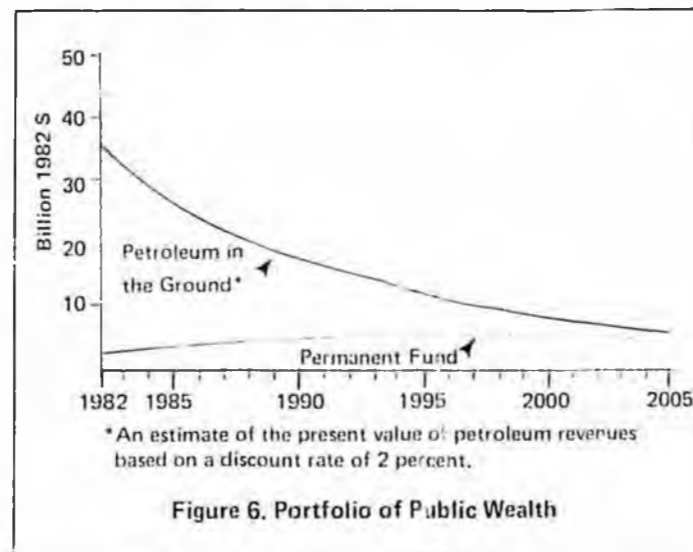


Figure 6. Portfolio of Public Wealth

undoubtedly eliminate many programs considered necessities.¹⁰

A second consequence of a cutback in state spending will be a large economic contraction, resulting from decreased government spending in the economy. Currently, operating budget appropriations are used to pay the wages and salaries of over 15,000 state government employees as well as support a large number of the 24,000 local government employees through various local revenue transfer programs. Thus, about one in six of the 200,000 jobs in the state economy directly result from state operating appropriations. In addition, the capital budget directly provides employment to a significant portion of the construction industry. Also, the Permanent Fund dividend program and state loan programs pump income into the economy on a scale similar to the payroll of a major industry like construction or manufacturing. Overall, about one-third of current personal income can be traced, directly or indirectly, to state government spending. Like other industries, state spending has a "multiplier" effect in the trade, service, finance, and other support sector industries of the state. A forced reduction in spending would cause a contraction of private support sector activity because the "multiplier" works in a negative as well as in a positive direction.

A more optimistic projection of petroleum revenues does not appreciably alter our conclusions. This becomes evident when we compare the accumulated balance in the general fund in 1988 under present

¹⁰Future expenditure flexibility is further limited by the spending limit requirement that at least one-third of appropriations be for capital projects, about twice the historical proportion. The operation and maintenance of this new capital stock will place added demands on shrinking revenues in future years.

revenue projections with higher revenue projections. Under current projections, the general fund balance in 1988 would be \$68 million. A 20-percent increase in petroleum revenues (an approximate increase from \$20 to \$25 billion in nominal dollars) would result in the accumulation of \$2.4 billion (in 1982 dollars) in the general fund. This would fill the revenue gap until 1992.¹¹

By lowering the spending limit ceiling, we can reduce and delay the revenue gap but not eliminate it. If the initial ceiling were set at \$1.5 billion, state expenditures would more closely balance with revenues (Figure 7). The state would be able to sustain a surplus on current account in the general fund through 1995. Through the accumulation and investment of these surpluses, the general fund would grow dramatically to a peak of \$8 billion (1982 dollars) by 1992.¹² In this case, when the decline in petroleum revenues reduced current account revenues below the expenditure limit, the general fund balance could be used to cover the revenue gap and sustain spending. Withdrawals would not exhaust the general fund until 2003. At this point there would again be tremendous pressure to open up the Permanent Fund, despite a state constitutional prohibition. If the state were to withdraw from the Permanent Fund, its balance would be used up in about 4 years. Thereafter, the state would again be facing a revenue gap with no means of filling it.

The lower spending limit would help the state to both live within its means and accumulate a fund which could be drawn upon to sustain spending for 10 years after petroleum revenues begin to decline. However, it would not eliminate the revenue gap problem, only postpone it. Because state spending under this limit would be allowed to grow more rapidly than nonpetroleum revenues, the growth of spending would eventually outstrip the growth of nonpetroleum revenues. This problem can be handled only by restructuring the spending limit.

THE SUSTAINABLE STATE EXPENDITURE LEVEL

A spending rule that would hold annual appropriations at or below the level of sustainable revenues would allow the state to live within its means and

¹¹Which is approximately comparable to a movement from the 50-percent to 70-percent level of the cumulative frequency distribution of the Department of Revenue petroleum revenue forecasts.

¹²During the interval from 1993 to 1995, a positive general fund current account balance would be increasing the nominal value of the general fund balance, but not fast enough to offset the erosion of real value due to inflation.

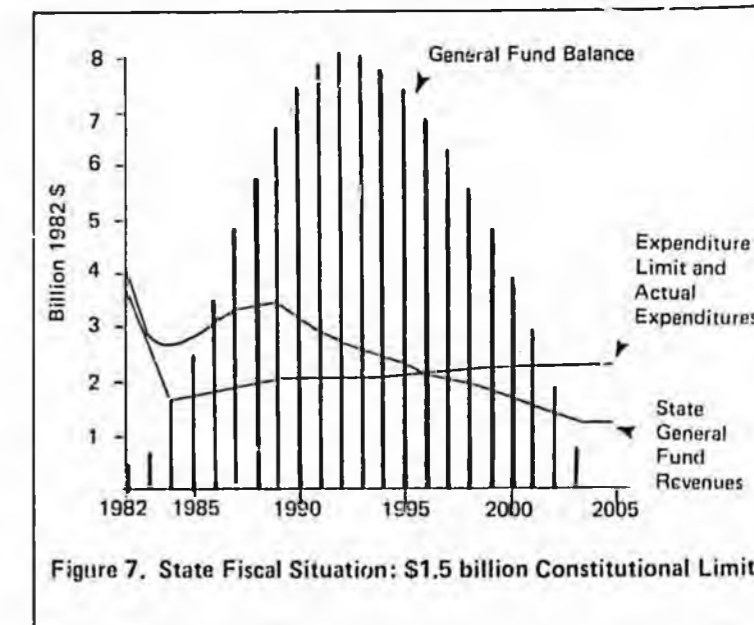


Figure 7. State Fiscal Situation: \$1.5 billion Constitutional Limit

avoid the future need for sharp and massive cuts in expenditures as oil revenues decline.

Because the current spending limit does not generate savings outside the Permanent Fund, public services must fall dramatically when petroleum revenues decline. Preferable therefore would be an alternative spending rule that prevents a precipitous decline in government spending with its attendant negative impact on the private sector. One possibility would be a level of spending that could be sustained in the future independent of year-to-year fluctuations in petroleum revenues.

A sustainable expenditure level is one which can be maintained at a constant or growing level in "real" terms (corrected for inflation) when petroleum revenues decline. It must incorporate two elements. First, each year a savings/investment decision must be made simultaneously with the spending decision rather than treating savings as the residual left after spending. In other words, spending each year should be guided by long-range fiscal considerations rather than by the amount of revenues available for the current year. Second, spending must not grow faster than recurring revenues—revenues independent of dwindling resources.

Implementing this strategy first requires that the level of sustainable revenues be calculated, because this will determine the sustainable spending level. Sustainable revenues consist of the sum of all recurring revenues¹³ plus the earnings on the

¹³In practice, there is no clear distinction between a recurring and a nonrecurring revenue because, on the one hand, revenues (Footnote 13 continued)

portfolio of state wealth. While it is relatively easy to estimate recurring revenues based upon past trends in nonpetroleum business and personal taxes as well as miscellaneous revenues, it is more complicated to estimate the value of the state portfolio of wealth. However, there is no doubt that it now consists primarily of Prudhoe Bay oil and the Permanent Fund balance (Table 5). The annual real return on these assets, which consists of a portion of annual petroleum revenues and real fund earnings, is the earnings on the state portfolio.

The real monetary earnings on the assets held by the state in 1982, both in the form of oil in the ground at Prudhoe Bay and in financial assets, totaled approximately \$750 million. This was the earnings, at a 2.5 percent real rate of return, on assets with a present value of \$30 billion. Recurrent revenues were about \$450 million, including petroleum revenues from fields other than Prudhoe Bay. Thus, total sustainable revenues equaled about \$1.2 billion.¹⁴ In nominal dollars, this would be about \$1.475 billion in 1984 (Table 9).

These revenues of \$1.475 billion in 1984 would cover not only operating and capital expenditures, but also debt service and Permanent Fund distributions (which are outside the current spending limit). The difference between actual revenues collected and sustainable revenues spent under the limit would go into savings/investment for maintenance of the sustainable revenue level in future years. As the level of recurring revenues, inflation, and earnings on the portfolio of state assets changed, the spending limit ceiling would also change.

The result of implementing the sustainable spending strategy without reimposing the personal income tax is illustrated in Figure 8.¹⁵ We assume

¹³(Continued)

from depletable resources may continue for such a long time that they become, in effect, recurrent; and recurrent revenue sources may disappear with shifts in economic activity. The most obvious example of a dwindling revenue is the proceeds of a one-time bonus lease sale. Consequently, in this analysis, we treat Prudhoe Bay revenues as a one-time windfall that is dwindling and other petroleum revenues as well as all revenues from other sources as recurring. In fact, our analysis is relatively insensitive to a shift in the definition of other petroleum revenues between recurring and nonrecurring.

¹⁴Reimposing the personal income tax could raise this limit by about \$200 million.

¹⁵We phase out the Permanent Fund dividend program, local government grants from the capital budget, and all loan subsidization over a period of three years through 1986. A downward adjustment of the economy occurs in 1984 in response to the imposition of the sustainable spending limit. Expenditure growth after 1984 is determined by the rate of inflation and by the absolute growth in recurring revenues. Because

A. Components of Annual Sustainable State Revenues (million 1982 \$)						
Recurring Revenues						\$450
Recurring Petroleum (excluding Prudhoe Bay)					\$250	
Current Nonpetroleum					200	
Investment Earnings (see below)						750
Total Sustainable Annual Revenue Flow						\$1,200
Equals: Total Sustainable Annual Expenditures						\$1,200
Total Sustainable Annual Expenditures (1984 fiscal year)						\$1,475

Real Return on Investments	Present Value of State Investment Holdings (Prudhoe Bay plus Fund Balances) (billion 1982 \$)					
	\$10	\$20	\$30	\$40	\$50	\$60
0%	\$0	\$0	\$0	\$0	\$0	\$0
1%	100	200	300	400	500	600
1.5%	150	300	450	600	750	900
2%	200	400	600	800	1,000	1,200
2.5%	250	500	750	1,000	1,250	1,500
3%	300	600	900	1,200	1,500	1,800
3.5%	350	700	1,050	1,400	1,750	2,100
4%	400	800	1,200	1,600	2,000	2,400

that expenditures would gradually fall over a 3-year period from their current level to the sustainable limit, after which they would grow indefinitely with recurring revenues. State general fund spending would be less than general fund revenues from the initiation of this strategy until 2005. Each year, revenues in excess of recurring revenues would be saved and invested. We assume this savings would go into the general fund, although it could go into the Permanent Fund. In a short time, the general fund would grow larger than the Permanent Fund. Earnings from the general fund would become an increasingly important component of total revenues. After 1997, the general fund balance would begin to fall in real

¹⁵(Continued)

recurring revenues are projected to grow slowly under current tax laws, the growth of expenditures is much slower than in the case of the spending limit formula.

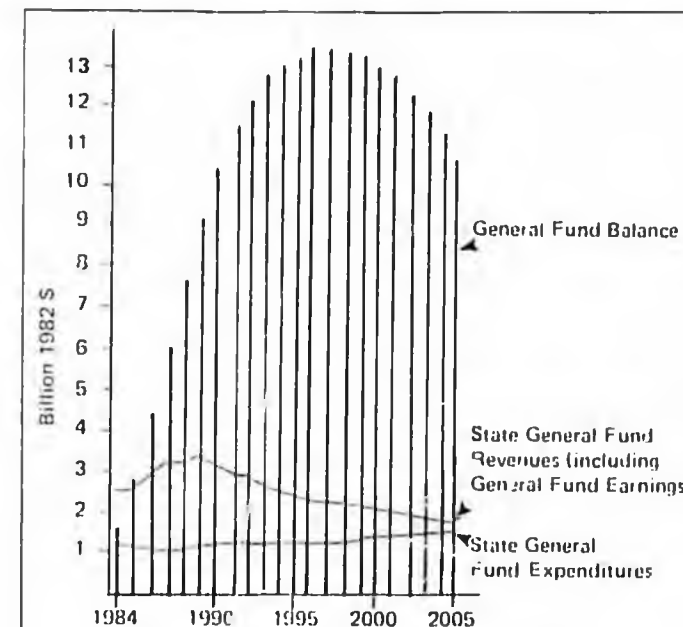


Figure 8. State Fiscal Pattern: Sustainable Spending Strategy

dollars, due to withdrawals, even though it continued to grow in nominal dollars. Because we assume in this case that Permanent Fund earnings would be reinvested until needed, the value of the fund would grow much more rapidly than in the previous examples. In 2005, the balance would be \$12.1 billion rather than \$5.3 billion (in the case where all earnings are withdrawn). Eventually, the real earnings of the Permanent Fund would become the main source of state revenues. At some point after 2000, as Prudhoe Bay petroleum revenues ran out, actual revenues would be no greater than sustainable revenues, and at that time, expenditures would be set to equal actual revenues.

This strategy provides both a savings and a spending formula. The savings and investment necessary to maintain the level of sustainable revenues in future years is the difference between actual revenues and sustainable revenues. The year-by-year allocation between spending and savings/investment is shown graphically in Figure 9. In the early years, savings and investments, not including investments in the Permanent Fund, must be greater than spending if a sufficient asset base is to be built up to avoid the revenue gap.

The portfolio of public wealth would evolve over time, as shown in Figure 10. As the value of oil in the ground declined with extraction, it would be replaced by a growing value of financial capital in the form of the general and Permanent funds. Earnings from financial assets would replace petroleum revenues as the primary funding source for state govern-

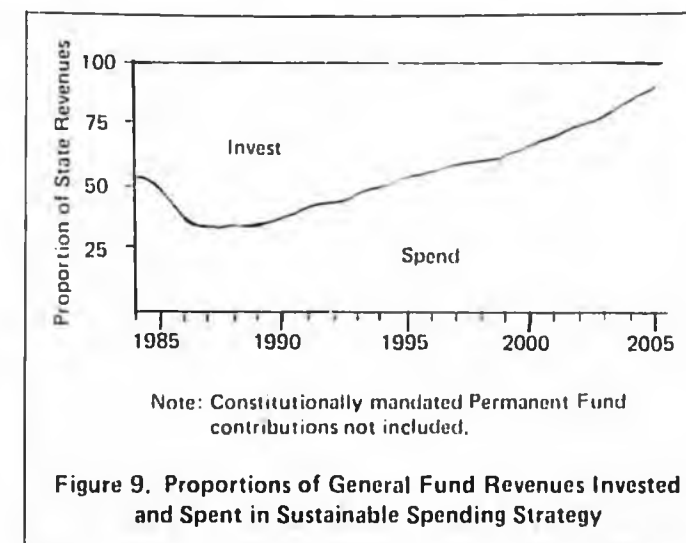


Figure 9. Proportions of General Fund Revenues Invested and Spent in Sustainable Spending Strategy

ment. This conversion plan and its maintenance would require a particular type of discipline and restraint. The state portfolio of assets would be composed of discretionary assets rather than the current nondiscretionary oil reserves; maintenance of the asset value would require considerable prudence and orientation to long-term needs. After the initial expenditure adjustment, dramatic year-to-year variations in spending and the attendant dislocations could be eliminated under this plan. Recurring revenues change modestly from year to year. The earnings potential of assets in the state's portfolio would vary from year to year, for example, due to proceeds from a lease sale, from adjustments in the value of existing assets, or from an adjustment in the real rate of return on the portfolio. Although each of these factors could significantly affect earnings in the short run and create considerable uncertainty in the long run, prudence suggests using some combination of past values for these variables in

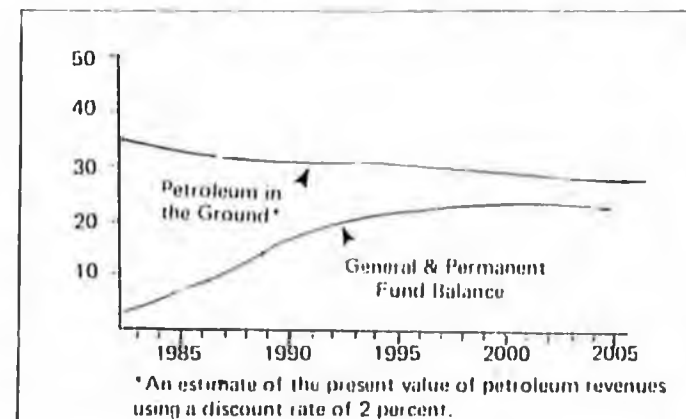


Figure 10. Portfolio of Public Wealth: Sustainable Spending Strategy

*An estimate of the present value of petroleum revenues using a discount rate of 2 percent.

estimating earnings from assets. This would smooth out any year-to-year variation.

The amount of sustainable spending in any year is primarily a function of three variables. They are (1) the real return on state assets, (2) the level of petroleum revenues, and (3) the level and growth of revenues from recurring sources.

The real return on state assets is the most important determinant of the sustainable spending level. This can be seen clearly in Table 9, part B, which shows, for various state portfolio levels and real rates of earnings, the annual contribution to sustainable spending (real earnings) from the asset portfolio. For example, we have assumed a real return of 2 percent on the general fund and 3 percent on the Permanent Fund, for a combined rate of approximately 2.5 percent. At this rate, a \$30 billion portfolio would produce \$750 million in sustainable spending annually. A change in the interest rate of .5 percent would change sustainable spending by \$150 million.

About 90 percent of state assets are currently held as petroleum (Table 5). If the present value of petroleum revenues is double current estimates (the estimated December 1982 50-percent confidence level of the Department of Revenue), then annual spending of \$1.5 billion rather than \$750 million could be sustained from them, and the spending ceiling could be raised to \$1.95 billion (1982 dollars). Smaller portfolios would produce smaller annual earnings.

When petroleum revenues are received is also important. The rate of return on oil in the ground is the increase in its value as its real price rises. Projections of petroleum revenues in past years assumed the real price at the wellhead to be rising about 2 percent annually. In such a case, the state would gain as much by holding its assets as oil in the ground as it would by holding them in the form of a financial asset earning a 2-percent real return. However, if the oil in the ground is not increasing in value each year, the state should prefer to hold its wealth in the form of a financial asset earning a 2-percent real annual return. Of course, the state has relatively little control over the timing of Prudhoe Bay oil production, but it must recognize that if it holds an asset which earns no positive rate of return, the present value of that asset is less; consequently, the level of sustainable revenues is less.

The sustainable spending strategy is independent of the rate of population growth, unlike the recently enacted spending limit. The advantage of this independence is that the revenue gap does not appear sooner if population growth accelerates as would be the case under the present spending limit. It is a

disadvantage because government services are primarily provided to individuals, and a larger population requires a larger budget if it is to receive the same quality of public services.

The Investment Portfolio

Sustainable revenues from a state portfolio of investments are only possible if those assets generate a positive net flow of revenues into the general fund.

Implementation of a state spending strategy linked to sustainable revenues would require very substantial savings/investments over the next 10 years. Up to this point, for simplicity, we have analyzed that portfolio in terms of only two alternatives—oil in the ground and financial assets (the Permanent and general funds). In reality, there is a broad range of assets in which the state could invest. The primary consideration in any investment choice is the earning potential of the investment because sustainable revenues depend upon real positive earnings, as was demonstrated in Table 9.

To judge its appropriateness as an investment for generating sustainable revenues,¹⁶ the rate of return on any asset—be it a natural resource or a piece of physical capital—can be measured against the return available on financial capital. For this purpose, the proper measure of the rate of return is the net flow of revenues into the general fund. For example, if general fund investments earn a 10-percent return (of which 8 percent is the result of inflation and 2 percent represents a real return on investment), then to be equivalent, a state investment of \$1 billion in infrastructure would need to produce at least \$20 million in recurring state tax revenues annually over and above operations, maintenance, and replacement costs. Accordingly, all state investments earning anything less represent a cost and should be viewed as such.

State investment policy may have objectives other than maximizing asset earnings, such as subsidizing certain activities or creating jobs. Without addressing the question of the most appropriate means for meeting these objectives, it is clear that a state portfolio consisting of such investments could not sustain the maximum flow of annual revenues.

Suppose, for example, that the state chose to invest the general fund in a portfolio of investments consisting of subsidized loans, earning a positive nominal but zero real rate of return. It would find

¹⁶Public capital expenditures are normally made not to produce public revenues but to serve a public purpose. All such capital purchases are defined in this analysis as spending since they do not represent the creation of a revenue-producing asset.

that an otherwise sustainable spending level of \$1.475 billion could not be maintained because the investment portfolio would return its initial value in inflated dollars but would provide no positive return and thus could contribute nothing to sustainable revenues.¹⁷

Figure 11 shows the combined balance in the general and Permanent funds at different real rates of return on fund balances with adoption of the sustainable spending strategy. If the portfolio of state investments were earning a below-market rate of return, fund withdrawals would reduce the portfolio value and the spending level would be found to have been set too high. In the extreme, if the real rate of return on the combined general and Permanent Fund balances were zero, then no sustainable revenues would be generated from the asset portfolio. Figure 11 shows that the danger of holding assets which generate no real earnings would not become apparent until the 1990s, when asset earnings would become the primary revenue source. During the 1980s, when the primary source of spending was petroleum revenues, which were unaffected by the level of financial earnings, the gap between the value of the portfolio at market rates and at subsidized rates would be small.

Policy Initiatives for Attaining Sustainable Spending

As recently as 1980, the state's budget was under the sustainable limit, and a rollback to that level would be easier today than the elimination of essential services in the future.

Figure 12 compares the pattern of future general fund spending under the current spending limit with

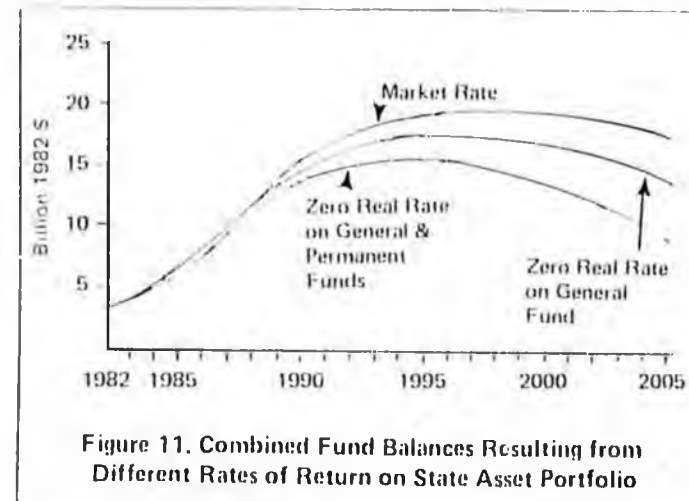


Figure 11. Combined Fund Balances Resulting from Different Rates of Return on State Asset Portfolio

¹⁷A further consideration is that the maturation dates on these investments would need to be chosen so that they could be liquidated in the sequence necessary to fund operations when petroleum revenues declined.

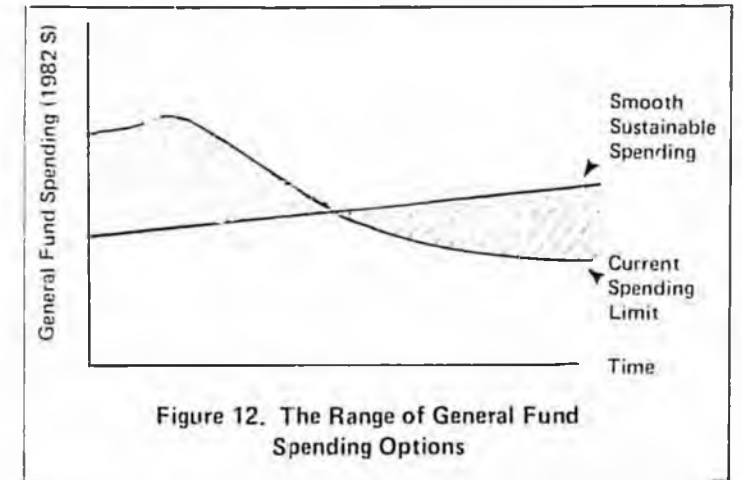


Figure 12. The Range of General Fund Spending Options

our sustainable spending alternative. These two alternatives define the range of options available for structuring state expenditures in future years.

The current spending limit allows considerably more spending in the near term and less in the future, as spending in early years is determined by the limit and in later years by declining revenues. With the sustainable spending strategy, however, spending starts lower and rises slowly over time as recurring revenues grow. Between these two extremes, a large number of alternatives is possible, representing different amounts of current savings consistent with increased spending in future years.

The tradeoff between present and future public spending implicit in the current spending limit is clearly illustrated. If spending in any year exceeds the sustainable level by, say, \$1 billion, then in some future year spending must be under the sustainable limit by \$1 billion. For example, if we choose a current \$2.5 billion budget instead of a \$1.5 billion one, then we must pay for that \$1 billion difference with a future budget reduced from \$1.5 billion to \$0.5 billion. If on the other hand, we establish a sustainable baseline budget of \$1.5 billion, then future budgets could continue at or above that level indefinitely.

Because the current budget contains many nonessential items, a one-time rollback in current government spending by \$1 billion would be much easier to accomplish today than would annual budget reductions over a period of decades during the era of declining petroleum revenues. In fact, as recently as 1980, state spending was within the sustainable budget level, and it has been only in the last 3 years, primarily due to new programs, that appropriations have exceeded the sustainable level.

In the wake of higher oil prices which increased state revenues over 200 percent between 1979 and 1981, state spending expanded dramatically, and a

* * * *

Established in 1961 by the Alaska Legislature, the Institute of Social and Economic Research operates as a principal research organization within the University of Alaska system. Since its early beginnings on the Fairbanks campus, ISER has developed into a full-scale economic and social science research institute, dedicated to applying its multi-disciplinary skills to the problems of social and economic change in Alaska. Presently headquartered in downtown Anchorage at 707 A Street, with offices in Fairbanks and Juneau, the institute now comprises a select staff of professionals, whose academic backgrounds and research experiences encompass a broad spectrum of professional disciplines and policy issues.

ISER investigates such issues as the economics of natural resource development, principally petroleum and fisheries, and multiple-use land management; the social and economic impacts of resource developments such as oil and gas pipelines, petrochemical facilities, and hydroelectric projects; the state's transportation and energy requirements; the development of human resources; and the effects of modernization on Alaska Native peoples and cultures and on the quality of life in Alaska.

Other important ISER objectives are to:

- *Provide professional assistance to public and private organizations to help meet socioeconomic needs of Alaska's population.* Staffmembers serve as advisors to or members of the Alaska Native Foundation, the Cook Inlet Native Foundation, the Women's Resource Center, the Alaska Permanent Fund, and the Alaska Census Advisory Committee.
- *Sponsor discussion of public issues.* Examples: the Alaska Growth Policy Symposium, the Alaska Constitutional Review (both co-sponsored by the Alaska Humanities Forum), and the Alaska Science Conference.
- *Contribute to the academic program of the University of Alaska and assist in the establishment of graduate programs in the Social Sciences.* In addition to their institute responsibilities, staffmembers often teach within their disciplines. Correspondingly, members of the University's teaching faculty are affiliated with ISER and participate in its research activities.
- *Promote the exchange of information between the University of Alaska and other institutions.* Examples: sponsoring faculty exchanges and visiting professors; exchanging institute publications with other research institutes in the U.S. through membership in such professional organizations as the Association for University Business and Economic Research (AUBER); and exchanging information with the USSR Academy of Sciences.

* * * *

Dear Reader,

For Alaska, the 1980s may best be characterized as a decade of critical policy choices. Our state is regarded by many to be the most promising, albeit largely unexplored, energy storehouse in the nation. Thus, policies guiding the exploration and development of Alaska's energy resources, mostly oil and gas, will continue to be of prominent concern throughout the eighties. And anticipated shortages in the nation's supply of energy sources ensure that national interest will continue to be an important factor in the state's energy development.

The State of Alaska, eager to achieve a measure of long-term economic security, will focus many of its policy debates on the management of its natural resources and oil wealth: how fast should Alaska exploit its nonrenewable resources and how can it convert oil revenues into sustaining sources of economic activity? Alaska Native organizations, multi-national oil companies, labor unions, and national and local environmental organizations—all of which have a direct interest in these policies—will be active participants in these debates.

It is within this context that the Institute of Social and Economic Research (ISER) pursues its primary goals of studying the important issues confronting the state's economy, population, and social and political institutions and informing both public and private decisionmakers and Alaskans in general of our research efforts.



Lee Gorsuch
Director

RECENT INSTITUTE PUBLICATIONS

The Institute of Social and Economic Research was established in 1961 for the purpose of conducting interdisciplinary research in the social sciences and related fields. The institute is part of the University of Alaska and has branches in Anchorage, Fairbanks, and Juneau. In addition to the *Alaska Review of Social and Economic Conditions*, the institute publishes *ISER Reports*, *Occasional Papers*, *Research Summaries*, and other special publications. Recent institute publications include:

REVIEWS

(Free subscription upon request)

- "Vocational Education in Alaska: Central Issues and Problem Areas," Judith Kleinfeld and Lynn Wright.
- "Prospects for a Bottomfish Industry in Alaska," Michael J. Scott.
- "Alaska's Unique Transportation System," John Gray.
- "Different Paths of Inupiat Men and Women in the Wage Economy," Judith Kleinfeld.
- "Prices and Incomes—Alaska and the U.S., 1967-1980," ed. Linda Leask.
- "The Alaska Railroad: Overview and Operational Alternatives," John Gray and John T. Givens.
- "Federal Revenues and Spending in Alaska," Scott Goldsmith and J. Phillip Rowe.
- "The Demand for Labor in Alaska," Theodore Lane.
- "Reflections on the End of the OPEC Era," Arlon R. Tassing.

REPORTS

- *The Subarctic Athabascans: A Selected Annotated Bibliography*, Arthur E. Hippler and John R. Wood \$15.00
- *Alaska's Constitutional Convention*, Victor Fischer \$1.00
- *Energy Development and the North Slope Inupiat: Quantitative Analysis of Social and Economic Change*, Jack Kruse, et al. \$6.50
- *North Slope Borough Government and Policy-making*, Gerald A. McBeath. \$6.50
- *The Dynamics of Alaska Native Self Government*, Thomas A. Morehouse and Gerald A. McBeath \$7.50
- *A Century of Servitude—Peabody Alerts Under U.S. Rule*, Dorothy K. Jones. \$9.00
- *An Alaska Census of Transportation*, Joan T. Gray and J. Phillip Rowe \$7.50
- *Subsistence and the North Slope Inupiat: the Effects of Energy Development*, John A. Kruse \$1.66



For further information on institute publications, contact the Anchorage office of the Institute of Social and Economic Research, 707 "A" Street, Suite 206, Anchorage, Alaska, telephone 278-1621.

INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH
University of Alaska
Lee Gorsuch, Director
707 "A" Street, Suite 206
Anchorage, Alaska 99501

Non Profit Org.
U.S. Postage
PAID
Anchorage, AK
Permit No. 540

ALASKA STATE LEGISLATURE

SENATE STATE AFFAIRS COMMITTEE

SENATOR VIC FISCHER, CHAIRMAN

POUCH V, JUNEAU 99811

(907) 465-4954



HYDRO/SUSITNA HEARINGS (revised 2-18-83)

Senate Bills 68, 69, 70, and 71

February 24, 1:30-5:00, Court Room A, Court Building, Juneau. BACKGROUND BRIEFING. Review and analysis of processes and considerations involved in the development of hydroelectric projects.

-- Eric Yould, Executive Director, Alaska Power Authority: APA's role in developing projects, determining feasibility and capital costs, financing plans, construction schedules, marketing, and operational costs; summary of projects' status and plans

-- Ernst Mueller, Environmental Services, Lmtd. and former APA board member: history of the APA

-- Governor's Office: Administration policies and proposals

-- William Wakefield, FERC: federal review process

-- Dept. of Law: interim financing

-- all participants, including OMB and representatives of the cities of Petersburg and Wrangell: Tyee -- case study of a project

February 26, 9:00-4:00, Anchorage Westward Hilton, Alaska Room, Anchorage. PUBLIC HEARING ON SUSITNA AND HYDRO DEVELOPMENT IN GENERAL. Those who wish to testify are asked to sign up in advance at the Anchorage Legislative Information Office. Public testimony will follow introductions by Mr. Yould and bill sponsors.

March 1, 1:30-5:00, Senate Finance Room, Capitol, Juneau. INVITED TESTIMONY -- SUSITNA. This meeting will be teleconferenced to all major sites for listening only.

George W. Rogers: Strategies, parameters, and criteria that might be considered by the legislature in examining Susitna and other major hydroelectric projects.

SUSITNA FEASIBILITY: What factors are involved in determining feasibility? How sensitive is the feasibility to changes in those factors? What have the Susitna feasibility and alternative studies shown? How accurate is the \$5.2 billion cost estimate? How do different Susitna dam configurations compare with Watana/Devil Canyon? How have recent developments in oil and gas prices and in economic growth affected feasibility? How are those developments being factored into the Susitna update and FERC application?

-- Eric Yould and a representative from Acres American: summary of the feasibility findings and on-going work

-- Gregg Erickson, Erickson & Associates: review of the Acres study and recent developments

-- Office of Management and Budget: review of studies, alternatives, demand forecasts

SUSITNA FINANCING: What is the best financing plan for Susitna? How much state appropriation is necessary to ensure the marketability of Susitna power? What do the plans presented in SB 68 and SB 70 represent in terms of commitments of state funds, and how would they affect the cash flow available for other capital projects? What would the effect be of the bonding plan in SB 71 on the state's credit and ability to bond for other projects? What should the timing be for appropriations and bonds? How will the bond market respond to Susitna revenue or "double-barrel" bonds? Will the bonds qualify as tax-deductible? How equitable, in terms of state subsidy, are the plans presented?

-- APA financial/bonding advisors: review of Acres plan, recommendations

-- Eileen Titmuss, bond analyst: considerations in the bond market, factors affecting public power bonds

-- Milt Barker, Legislative Finance: relationship of capital requirements to projected revenues

-- Dept. of Revenue: relationship of capital requirements to state bonding capacity and credit rating

March 3, 1:30-5:00, Senate Finance Room, Capitol, Juneau. INVITED TESTIMONY, CONTINUED. This meeting will be teleconferenced to all major sites for listening. If time allows, public testimony will be taken following the scheduled witnesses.

SUSITNA MARKETABILITY: Will Susitna power be marketable? What factors might affect marketability? What costs/rate structures are contemplated? How will marketability be ensured? What type of power purchase commitments can be obtained prior to construction? What is the role of the APUC? Might available power attract new industry?

-- Yould and APA marketing advisor: status of marketing situation

-- Harrison Call, marketing specialist: power sales agreements

-- Alaska Public Utilities Commission: its role in approving contracts and rates

-- utility representatives who wish to address the issue

-- Office of Management and Budget: review of the SRI study of the effect of electricity price and availability on industrial development

SUSITNA READINESS: Has the Governor's "Susitna checklist" been followed? What further requirements must be met, and in what order? Has the sequence laid out in statute been followed? Have the FERC requirements been met? Are land ownership conflicts resolved? Have the utilities agreed to purchase Susitna power?

-- Governor's Office: presentation of the "checklist"

-- David Rogers (Senate Advisory Council) and Yould: review of identified "obstacles" and how they are being addressed

-- Yould: schedule for proceeding, incorporating new data

STATE OF ALASKA

THE LEGISLATURE

BUDGET AND AUDIT COMMITTEE

FINANCE DIVISION
POUCH WF-STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3795

February 23, 1983

MEMORANDUM

TO: Honorable Vic Fischer, Chairman
Senate State Affairs Committee

FROM: Milt Barker MB
Fiscal Analyst

SUBJECT: SB 70

As requested by you, I have prepared the attached tables which show:

1. the annual contributions to the Alaska Energy Dividend Fund, in both actual and FY 1984 dollars (Table I);
2. the number of per capita grants those amounts would fund, taking account of annual escalation of grant amounts for inflation though not taking account of variation in grant amounts for regional cost differences (Table I);
3. state funding for Susitna under "Option D" of the January 1983 Acres financing plan, in both actual and FY 1984 dollars (Table I);
4. the amount that would be available for capital projects that have been proposed excluding power projects (Table II and graph).

The attached Legislative Finance computer runs labelled SB 70 show the entire fiscal picture for the State under SB 70 in both actual and FY 1984 dollars. It should be noted that under the assumptions used, general fund deficits would be incurred in FY 1990 and all subsequent years even without any capital budget. Should these conditions prevail, it might be difficult to maintain funding for the Alaska Energy Dividend Program.

If the Alaska Energy Dividend Program were discontinued after FY 1989, the amount of funding that would have accrued for the program would be \$1,965.0 million (or \$1,635 in FY 1984 dollars). These amounts are less than the State funding called for under "Option D" of Acres for Susitna.

All of the above analysis is based on the January 1983 revenue estimates of the Department of Revenue and could be subject to major revision depending on oil price developments.

SB 70

You have also requested an estimate of the impact of Section 2 of SB 70.

It is impossible to project the impact, not knowing what "energy project service districts" will be formed, what projects undertaken, their scale, their financing, the residential share of power consumption, the retail price of electricity and its effect on monthly residential consumption, etc. However, as an example of how Sec. 2 might work, the Sitka utility district and their Green Lake project are analyzed.

If one assumes that in the absence of SB 70, Green Lake would have been financed 90% with 35 year debt at 10% interest and 10% with equity which earned 12%, then the capital charges for Green Lake would have been \$6.2 million per year.¹ With sales from Green Lake estimated at 59 million kwh annually,² the capital charges would have been 10.5¢ per kwh for Green Lake at the busbar.

It is implicitly the intent of SB 70 that no charges for recovery of Energy Dividend Fund grants be included in electricity rates. This should probably be stated in the bill.

It is also the intent of SB 70 that no charges for recovery of any other invested funds or return thereon be allowed in the residential rate for the first 1,000 kilowatt hours. The legislation needs to clarify that neither return of nor return on invested funds will be allowed.

-
1. \$59 million cost for Green Lake excluding any transmission costs multiplied by $(.9 \times .10369)$, the debt service per dollar borrowed at 10% for 35 years + $.1 \times .12$.
 2. 37.8 million kwh generated from Green Lake for first seven months at FY 83 extrapolated to 12 months and multiplied by 91% for line losses, utility's consumption, etc.

The effect of these two elements of intent would be that the residential customer pays no charges for the capital cost of a project if there is any grant money at all in the project. Other customers would pay the entire charges for invested funds (though nothing for grant funds).

Assuming residential customers would have borne their pro-rata share of capital charges in the absence of SB 70,³ SB 70 in this case would result in a 10.5¢ per kwh savings to residential customers on their first 1,000 kwh's. With current average monthly consumption in Sitka of 783 kwh per residential customer, the average customer's benefit would be \$82 per month or \$986 per year. Sitka has 2,480 residential customers and a population of 8,221. Thus, the average benefit per person would be \$297 per year.

For commercial and industrial customers, there could be either an increase or a decrease in rates depending on the amount of grant funds in a project. Commercial and industrial consumption in Sitka is currently 71.8% of total consumption. If these customers picked up all Green Lake capital charges (in the absence of any SB 70 grants), their cost per kwh would increase from 10.5¢ to 14.6¢. A grant of \$16.6 million would keep commercial and industrial charges at 10.5¢. If Sitka got \$5,000 for each of its 8,221 persons it would have received a grant of \$41 million which would have lowered commercial and industrial charges for Green Lake to 4.5¢ per kwh. Of course, a grant covering 100% of project costs results in a 10.5¢ per kwh saving for all customers, commercial and industrial as well as residential.

If Sec. 2 should result in an increase in commercial rates, businesses may well pass on the cost increase through price hikes. Should this occur, it would mean some dilution of the direct benefits to residential customers.

You have asked for an assessment of the efficiency of SB 70 as a mechanism for distribution of state wealth to residents. With a grant of \$16.6 million which would keep commercial and industrial users at their existing rate, SB 70 provides a benefit estimated above at \$297 per person. This benefit can be compared to the possible earnings on \$16.6 million divided among the 8,221 people. This would be \$202 per person if the funds earned 10% interest. SB 70 provides a greater benefit to residential customers for the money because of the subsidy from commercial and industrial customers paying the project costs not funded by grants.

-
3. Some utilities, of which Sitka is one, provide a rate break to residential customers vis-a-vis commercial and industrial customers. Others may give a better rate to commercial and industrial users often through declining block rates.

If keeping commercial and residential rates constant while letting residential customers off the hook is the test, then this example would argue for \$2,000 per capita grants. Of course, one can be even more efficient by giving even smaller grants, still letting residential customers off under Sec. 2 and hitting commercial and industrial users for the capital costs. Or one could just pass a bill forbidding residential charges for capital costs under any circumstances for the first 1,000 kwh per month.

At the \$5,000 per capital level, the Green Lake example would suggest that individuals could receive more if the grants were invested. They would then receive \$500 at 10%. At the \$5,000 grant level in the Green Lake example much of the benefit goes to reduce commercial and industrial rates as shown above.

If the benefit under SB 70 is compared to the amount that individuals would receive under the Permanent Fund dividend program, the SB 70 benefits would look more favorable because individuals only receive 50% of the five year average income. But that is a matter of policy; individuals could be given the entire earnings off amounts deposited in the Permanent Fund. The full amount of earnings represents the opportunity cost of using funds for other purposes, such as SB 70 grants. Note too, that because of inflation-proofing, Permanent Fund dividends increase over time in nominal terms while the capital charges the electricity customer forgoes under SB 70 are a fixed amount for the life of the project.

attachments

cc: Senator Halford

MB:ro

TABLE I
ALASKA ENERGY DIVIDEND FUND (SB 70)

<u>Fiscal Year</u>	(1) Annual Contribution to Energy Dividend Fund (50% of Permanent Fund Income) (\$ Millions)	(2) Thousands of Per Capita \$5000 Grants	(3) State Funding for Susitna "Option D" (\$ Millions)	(4) Annual Contribution to Energy Dividend Fund (Millions FY 84 \$)	(5) State Funding for Susitna "Option D" (Millions FY 84 \$)
1984	226	47.2	--	236	--
1985	268	50.1	806.8	251	658.0
1986	304	53.1	413.3	265	318.0
1987	342	55.8	475.3	279	345.0
1988	385	58.7	552.1	294	378.0
1989	430	61.3	156.4	310	101.0
1990	480	64.0	--	320	--
1991	540	67.3	--	330	--
1992	590	68.7	--	340	--
1993	650	70.7	--	350	--
1994	700	71.2	--	360	--
1995	760	72.2	--	360	--
1996	830	73.7	--	370	--
1997	890	73.9	--	370	--
1998	970	75.2	--	370	--
1999	1040	75.3	--	380	--
2000	<u>1120</u>	<u>75.9</u>	<u>--</u>	<u>380</u>	<u>--</u>
	10535	1114.3	2403.9	5565.0	1800.0

Notes: 1 & 4. From attached Legislative Finance computer runs labelled "SB 70";
2. Col. 1 + (5 x 1.07^N) where N = Fiscal Year - 1984; grants increased 7% per annum for inflation;
3 & 5. "Option D" from Susitna Hydroelectric Financing, Task 11: Financing Options, Acres, January 1983; from Table 4 and Table 3 respectively; FY 83-85 summed and shown as FY 85.

PREPARED BY:
LEGISLATIVE FINANCE
2-22-83

TABLE II
FUNDS AVAILABLE FOR CAPITAL PROJECTS
UNDER SB 70
(\$ Millions)

<u>FISCAL YEAR</u>	(1)	(2)	(3)	(4)	(5)	(6)
	<u>General Funds</u>	<u>GO Bonds</u>	<u>Total</u>	<u>Loan Program Appropriations</u>	<u>Governor's Si. Year Capital Budget</u>	<u>Total Capital Projects</u>
<u>Actual Dollars</u>						
1985	546.0	--	546.0	300.0	2035.0	2335.0
1986	580.0	300.0	880.0	300.0	742.9	1042.9
1987	415.0	90.0	505.0	300.0	961.2	1261.2
1988	481.0	125.0	606.0	300.0	1066.2	1366.2
1989	250.0	--	250.0	300.0	?	300.0+
1990	--	50.0	50.0	300.0	?	300.0+
1991	--	140.0	140.0	300.0	?	300.0+
1992	--	--	--	300.0	?	300.0+
1993	--	--	--	300.0	?	300.0+
Total	2272.0	705.0	2977.0	2700.0	4805.3	7505.3+
<u>FY 1984 Dollars</u>						
1985	511.0	--	511.0	280.0	1901.9	2181.9
1986	507.0	262.0	769.0	262.0	648.9	910.9
1987	339.0	73.0	412.0	245.0	784.7	1029.7
1988	367.0	95.0	462.0	229.0	813.4	1042.4
1989	180.0	--	180.0	214.0	?	214.0+
1990	--	33.0	33.0	200.0	?	200.0+
1991	--	87.0	87.0	187.0	?	187.0+
1992	--	--	--	175.0	?	175.0+
1993	--	--	--	163.0	?	163.0+
Total	1904.0	550.0	2454.0	1955.0	4148.9	6103.9+

PREPARED BY:
LEGISLATIVE FINANCE
2-22-83

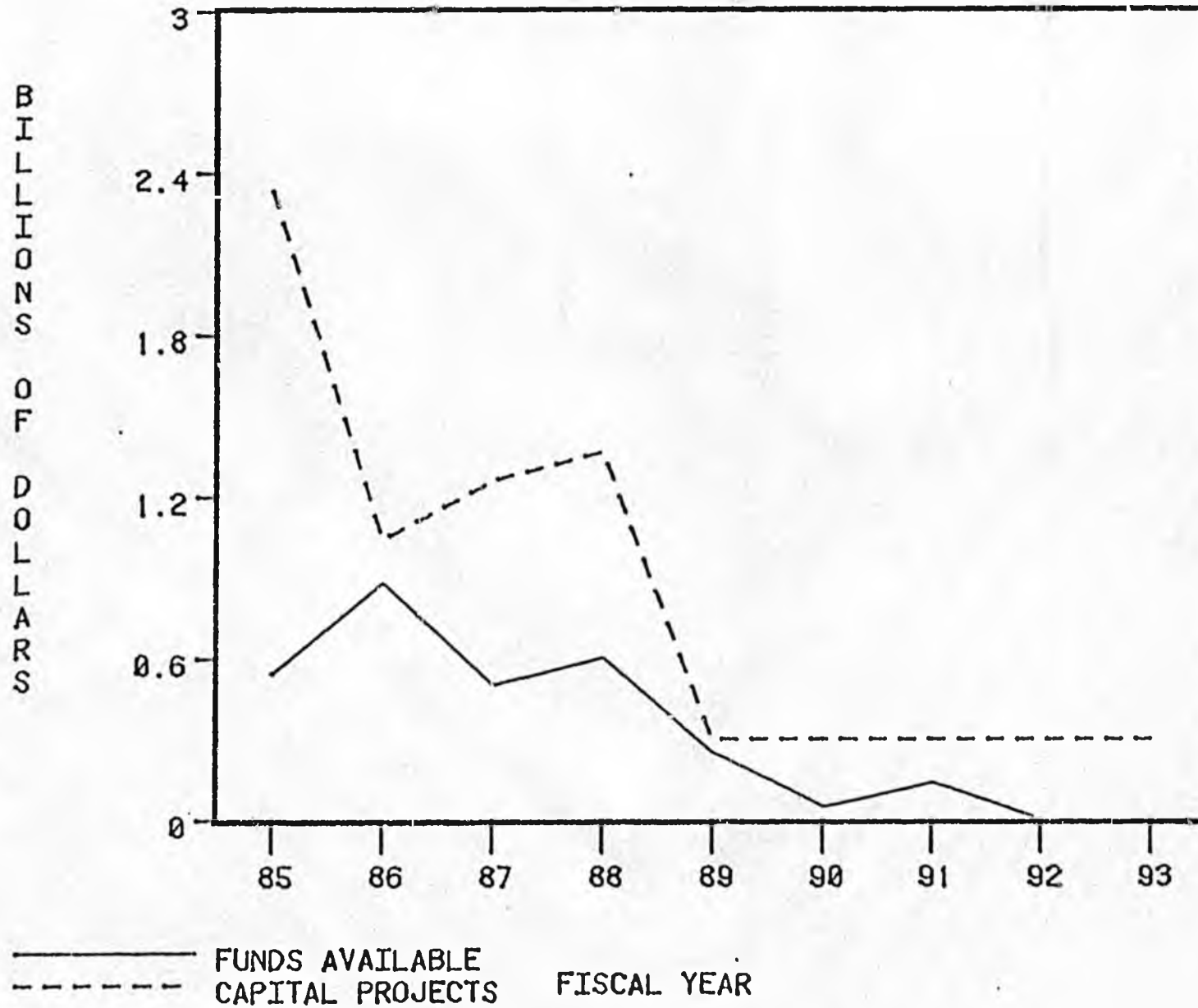
TABLE II

- Notes:
1. From attached Legislative Finance computer run labelled "SB 70";
 2. From Table 1, Susitna Hydroelectric Project, Task 11; Financing Options, Acres, January 1983;
 4. Assumes loan appropriations at roughly the Governor's FY 84 budget level, \$294.5 million;
 5. Total of general fund capital projects (including voter approval) contained in Executive Budget, Book 2, Capital Budget and Six Year Capital Program, FY 83, Jay Hammond, Governor; FY 85 amount is sum of FY 83-85 amounts less amounts appropriated for capital and loans for FY 83 and less the amount of capital projects proposed by Governor Sheffield for FY 84.

FY 84 \$ amounts are based on a 7% inflation factor: the Acres Susitna numbers appear to be on a calendar year basis and are thus adjusted for an extra 1/2 year.

PREPARED BY:
LEGISLATIVE FINANCE
2-22-83

FUNDS AVAILABLE FOR CAPITAL PROJECTS
UNDER SB 70



STATE OF ALASKA
 LEGISLATIVE FINANCE WORKING DOCUMENT
 BUDGET FORECASTING MODEL

*** ACTUAL DOLLARS IN MILLIONS ***

JAN 83 DEPT OF REVENUE ESTIMATES
 OPERATING BUDGET AT SPENDING LIMIT
 SPENDING LIMIT INCREASES 10% PER ANNUM
 SURPLUS SPENT ON CAPITAL
 INFLATION 7% PER ANNUM
 DIVIDENDS GO TO ALASKA ENERGY DIVIDEND FUND
 PERMANENT FUND INFLATION-PROOFED
 PERMANENT FUND EARNS 12% PER ANNUM
 GO BONDS PER ACRES JAN 83 SUSITNA FINANCING PLAN

FISCAL YEAR	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
1983										3790	88		
1984	2703	370	3072	1987	770	167	236	3161	-88	4321	0	0	0
1985	2775	389	3164	2185	546	164	268	3164	0	4892	0	0	0
1986	3029	422	3451	2404	580	163	304	3451	0	5532	0	0	0
1987	3112	456	3568	2644	415	166	342	3568	0	6222	0	0	0
1988	3456	499	3954	2909	481	179	385	3954	0	6998	0	0	0
1989	3540	540	4080	3200	250	190	430	4080	00	7860	00	00	00
1990	3300	580	3870	3520	00	190	480	4190	-320	8750	00	320	320
1991	3000	620	3620	3870	00	180	540	4580	-960	9650	00	960	960
1992	2890	670	3560	4260	00	160	590	5000	-1440	10600	00	1440	1440
1993	2700	740	3430	4680	00	160	650	5490	-2050	11570	00	2050	2050
1994	2610	810	3420	5150	00	130	700	5990	-2560	12590	00	2560	2560
1995	2520	880	3390	5670	00	130	760	6560	-3170	13650	00	3170	3170
1996	2380	950	3330	6240	00	120	830	7190	-3850	14760	00	3850	3850
1997	2440	1030	3470	6860	00	80	890	7830	-4360	15950	00	4360	4360
1998	2510	1120	3630	7540	00	60	970	8570	-4940	17210	00	4940	4940
1999	2660	1210	3870	8300	00	40	1040	9380	-5510	18570	00	5510	5510
2000	2800	1310	4110	9130	00	30	1120	10280	-6170	20040	00	6170	6170
TOTAL	48410	12590	61000	80550	3050	2300	10550	96440	-35440			35350	35350

STATE OF ALASKA
 LEGISLATIVE FINANCE WORKING DOCUMENT
 BUDGET FORECASTING MODEL

*** FY 1984 DOLLARS IN MILLIONS***

JAN 83 DEPT OF REVENUE ESTIMATES
 OPERATING BUDGET AT SPENDING LIMIT
 SPENDING LIMIT INCREASES 10% PER ANNUM
 SURPLUS SPENT ON CAPITAL
 INFLATION 7% PER ANNUM
 DIVIDENDS GO TO ALASKA ENERGY DIVIDEND FUND
 PERMANENT FUND INFLATION-PROOFED
 PERMANENT FUND EARNS 12% PER ANNUM
 GO BONDS PER ACRES JAN 83 SUSITNA FINANCING PLAN

FISCAL YEAR	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERMANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF \$ MIL
1983										3790	88	
1984	2703	370	3072	1987	770	167	236	3161	-88	4321	0	0
1985	2594	364	2957	2042	511	154	251	2957	0	4572	0	0
1986	2645	369	3014	2100	507	143	265	3014	0	4832	0	0
1987	2540	372	2913	2159	339	136	279	2913	0	5079	0	0
1988	2636	380	3017	2219	367	137	294	3017	0	5338	0	0
1989	2520	390	2910	2280	180	140	310	2910	00	5610	00	00
1990	2200	380	2580	2350	00	130	320	2790	-210	5830	00	210
1991	1870	380	2260	2410	00	110	330	2850	-600	6010	00	600
1992	1680	390	2076	2480	00	90	340	2910	-840	6170	00	840
1993	1470	400	1870	2550	00	90	350	2990	-1120	6290	00	1120
1994	1330	410	1740	2620	00	70	360	3040	-1300	6400	00	1300
1995	1190	420	1610	2690	00	60	360	3120	-1500	6490	00	1500
1996	1060	420	1480	2770	00	60	370	3190	-1710	6560	00	1710
1997	1010	430	1440	2850	00	30	370	3250	-1810	6620	00	1810
1998	970	430	1410	2930	00	20	370	3320	-1920	6670	00	1920
1999	960	440	1400	3010	00	10	380	3400	-2000	6730	00	2000
2000	950	440	1390	3090	00	10	380	3480	-2090	6790	00	2090

TOTAL 30330 6800 37130 42520 2680 1550 5580 52320 -15190 15100

MSG

MSG 83-00012026 PRTY 1 03/01/83 17:08:36 ORIG: LF20 IN= 0009 OUT= 0005
FROM: LYNDA/FBX TO: JNU T/C
TARGET: LJ20 SUBJ: FINAL STATS FOR JNT ST AFFAIRS T/C (3/1) PAGE 0001

IN FAIRBANKS TO OBSERVE:

1. DENISE DANIELLO, 143 CLARKSON DR. APT. 60 FBX. #479-3005
2. JIM OLNEY, 1009 SECOND AVE., FBX. #452-6551
3. RON POUCHIONE, TANANA CHIEFS CONF., 201 FIRST ST., FBX. #452-8251
4. DOUG MCKEE, 221 PINE ST., FBX. #456-6420
5. JEFF WELTZIN, 143 CLARKSON DR. APT. 60, #479-3005

ALSO, ONE OF THESE PARTICIPANTS WOULD LIKE A COPY OF THE WRITTEN TESTIMONY SUBMITTED BY A NEW YORK BOND CONSULTANT (DREXEL??) WHICH WAS TO BE SUBMITTED TO THE COMMITTEE, IF POSSIBLE, REGARDING THE WASHINGTON STATE POWER SUPPLY SYSTEM. PLEASE LET ME KNOW IF YOU CAN SEND ME A COPY. THANKS.

-----EOM

NXT MSG U/R/S _ PREV MSG U/R/S _ RESEND _ CANCEL _

MSG 83-00011963 PRTY 1 03/01/83 14:59:16 ORIG: LA08 IN= 0014 OUT= 0013
FROM: INEZ IN ANCHORAGE TO: TIM IN JNU
TARGET: LJ20 SUBJ: JOINT H & S STATE AFFAIRS COMM T/C PAGE 0001

WE HAVE ANOTHER OBSERVER

2. JERRY BURRELL 3716 WESLEYAN , ANCHORAGE 99504 333-9658

-----EOM

NXT MSG U/R/S _ PREV MSG U/R/S _ RESEND _ CANCEL _

MSG 83-00011930 PRTY 1 03/01/83 13:37:00 ORIG: LA08 IN= 0011 OUT= 0015
FROM: INEZ IN ANCHORAGE TO: TIM IN JNU
TARGET: LJ20 SUBJ: JOINT S & H STATE AFFAIRS COMM T/C PAGE 0001

TO OBSERVE

1. JUDY ZINICHI / NAEC 833 GAMBELL ST. #B, ANCHORAGE, 99501 277-2134

-----EOM

NXT MSG U/R/S _ PREV MSG U/R/S _ RESEND _ CANCEL _

STATE OF ALASKA

THE LEGISLATURE

BUDGET AND AUDIT COMMITTEE

FINANCE DIVISION
POUCH WF--STATE CAPITOL
JUNEAU, ALASKA, 99811
PHONE: (907) 465-3795

MEMORANDUM

DATE: February 21, 1983

TO: Honorable Vic Fischer
Chairman
Senate State Affairs Committee

FROM: Milt Barker, ^{MB} Fiscal Analyst
Legislative Finance Division

SUBJ: Funds Available for Capital Projects

Through the end of the next decade, under current law, total capital projects are almost four times the amount available for capital. Even if Permanent Fund earnings were to be entirely utilized for capital, total projects would still exceed the amount available by almost 50%.

The amount proposed for Susitna alone would consume all funds available under current law. Together with other hydro projects, hydro would require over half of the funds available if Permanent Fund dividends and inflation-proofing are repealed.

Tables I and II (attached) compare the amount of general funds and general obligation bonds available for capital projects with proposed capital projects. The "amount available for capital projects" from the general fund is assumed to be all funds remaining after providing for the operating budget. These amounts were calculated in the attached computer runs using the Department of Revenue's January 1983 revenue estimates at the 30th percentile.

The only difference between Tables I and II is in the amount available for projects. The main source of this difference is that Table I assumes no change in current statutes while Table II shows more funds available as a result of repealing Permanent Fund dividends and inflation-proofing. Table II reflects the entire amount of Permanent Fund earnings in arriving at the amount available figure.

Two other differences between Table I and II are:

- 1) Table I assumes operating budgets at the spending limit (\$1986.7 million in FY 84) while Table II assumes the Governor's FY 84 budget of \$1911.8 million (including longevity bonus and municipal aid); operating budgets are assumed to increase 10% per annum in both cases;
- 2) because of greater unrestricted revenues in Table II, a greater amount of G.O. bond issues are assumed; the amounts of G.O. bonds in both tables are based on the statements of the PA's financial advisers in the January 1983 Susitna financing plan (see footnotes to Tables).

The amount of capital projects shown in the Tables includes traditional capital projects, in the form of the last year's Governor's Six Year Capital Budget, only through FY 88. No amounts have been estimated for legislative capital projects nor has any amount been included for purchase of the Alaska Railroad or cashing out interim financing on Tyee, Swan, and Terror Lakes (\$200 million).

attachments

MB:ro

cc: Honorable Al Adams
Honorable John Sackett
Honorable Don Bennett

FUNDS AVAILABLE FOR CAPITAL PROJECTS
UNDER CURRENT LAW
(\$ Millions)

FISCAL YEAR	(1) FUNDS AVAILABLE FOR CAPITAL PROJECTS		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	GENERAL FUND	GO BONDS	TOTAL	SB 68 STATE FUNDING FOR SUSITNA	OTHER APA CAPITAL PROJECTS	TOTAL HYDRO PROJECTS	LOAN PROGRAM APPROPRIATIONS	GOVERNOR'S SIX YEAR CAPITAL BUDGET	TOTAL CAPITAL PROJECTS	
ACTUAL DOLLARS										
85	593.0	--	593.0	403.7	244.5	648.2	300.0	2035.0	2983.2	
86	611.0	300.0	911.0	472.7	282.3	755.0	300.0	742.9	1797.9	
87	447.0	90.0	537.0	479.7	125.8	605.5	300.0	961.2	1866.7	
88	503.0	125.0	628.0	499.5	--	499.5	300.0	1066.2	1865.7	
89	280.0	--	280.0	938.3	--	938.3	300.0	?	1238.3+	
90	--	50.0	50.0	738.4	--	738.4	300.0	?	1038.4+	
91	--	140.0	140.0	--	--	--	300.0	?	300.0+	
92	--	--	--	--	--	--	300.0	?	300.0+	
93	--	--	--	--	--	--	300.0	?	300.0+	
Total	2434.0	705.0	3139.0	3532.3	652.6	4184.9	2700.0	4805.3	11690.2+	
FY 84 DOLLARS										
85	554.0	--	554.0	364.5	228.5	593.0	280.0	1901.9	2774.9	
86	534.0	262.0	796.0	398.9	246.6	645.5	262.0	648.9	1556.4	
87	365.0	73.0	438.0	378.3	102.7	481.0	245.0	784.7	1510.7	
88	384.0	55.0	479.0	368.2	--	368.2	229.0	813.4	1410.6	
89	200.0	--	200.0	646.4	--	646.4	214.0	?	860.4+	
90	--	33.0	33.0	475.4	--	475.4	200.0	?	675.4+	
91	--	87.0	87.0	--	--	--	187.0	?	187.0+	
92	--	--	--	--	--	--	175.0	?	175.0+	
93	--	--	--	--	--	--	163.0	?	163.0+	
Total	2037.0	550.0	2587.0	2631.7	577.8	3209.5	1955.0	4148.9	9313.4+	

(Notes to Table I on next page.)

NOTES TO TABLE I

1. From attached Legislative Finance computer run labelled "current law"; beginning GF balance based on 2/9/83 schedule of amount available per Senate Finance of \$918.3 million reduced by \$230 million for the Rainy Day Fund and \$600 million for the Permanent Fund that has been appropriated but was included in the \$918.3 million; includes Permanent Fund undistributed income;
2. From Table I, Susitna Hydroelectric Project, Task II: Financing Options, Acres, January 1983; amount of GOB's based on statement of First Boston Corporation, John Nuveen & Co., and First Southwest Co. which assumed higher projected revenues at the 30th percentile than the current January 1983 Department of Revenue estimates; thus the estimate of GOB's must be somewhat high;
4. From Table 18.4.7, Susitna Hydroelectric Project, Task II Reference Report, Acres; this is the \$2.3 billion (January 1982 \$) state contribution case; SB 68 proposes \$2.3 billion in January 1983 dollars; if the Acres funding schedule is intended it would be necessary to adjust SB 68; otherwise the estimated Susitna costs shown here would be 4% to 7% too high as measured by various "Engineering News Record" construction cost indices;
5. From Table I, "Acres", January 1983;
7. Assumes loan program appropriations remain at roughly the Governor's FY 84 budget level, \$294.5 million;
8. Total of general fund capital projects (including voter approval) contained in Executive Budget, Book 2, Capital Budget and Six Year Capital Program, FY 83, Jay Hammond, Governor; FY 85 amount is sum of FY 83-85 amounts less amounts appropriated for capital and loans for FY 83 and less the amount of capital projects proposed by Governor Sheffield for FY 84.

FY 84 \$ amounts are based on a 7% inflation factor: the Acres Susitna numbers appear to be on a calendar year basis and are thus adjusted for an extra 1/2 year.

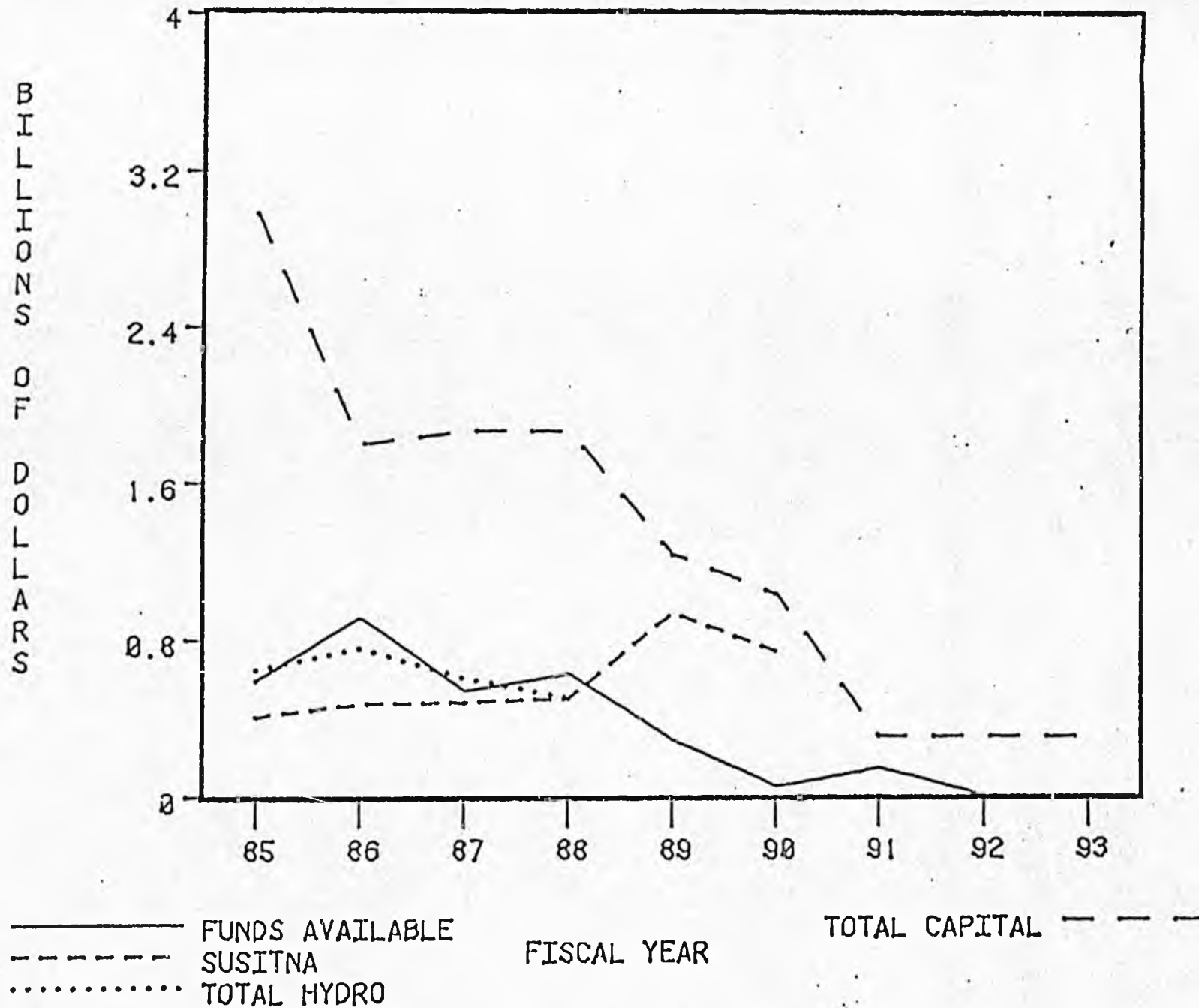
FUNDS AVAILABLE FOR CAPITAL PROJECTS
WITH REPEAL OF DIVIDENDS & INFLATION-PROOFING
(\$ Millions)

FISCAL YEAR	(1) FUNDS AVAILABLE FOR CAPITAL PROJECTS GENERAL FUND	(2) GO BONDS	(3) TOTAL	(4) SB 68 STATE FUNDING FOR SUSITNA	(5) OTHER APA CAPITAL PROJECTS	(6) TOTAL HYDRO PROJECTS	(7) LOAN PROGRAM APPROPRIATIONS	(8) GOVERNOR'S SIX YEAR CAPITAL BUDGET	(9) TOTAL CAPITAL PROJECTS
ACTUAL DOLLARS									
85	1196.0	350.0	1546.0	403.7	244.5	648.2	300.0	2035.0	2983.2
86	1281.0	190.0	1471.0	472.7	282.3	755.0	300.0	742.9	1797.9
87	1157.0	95.0	1252.0	479.7	125.8	605.5	300.0	961.2	1866.7
88	1269.0	235.0	1504.0	499.5	--	499.5	300.0	1066.2	1865.7
89	1110.0	50.0	1160.0	938.3	--	938.3	300.0	?	1238.3+
90	580.0	25.0	605.0	738.4	--	738.4	300.0	?	1038.4+
91	--	160.0	160.0	--	--	--	300.0	?	300.0+
92	--	35.0	35.0	--	--	--	300.0	?	300.0+
93	--	170.0	170.0	--	--	--	300.0	?	300.0+
Total	6593.0	1310.0	7903.0	3532.3	652.6	4184.9	2700.0	4805.3	11690.2+
FY 84 DOLLARS									
85	1118.0	327.1	1445.1	364.5	228.5	593.0	280.0	1901.9	2774.9
86	1119.0	166.0	1285.0	398.9	246.6	645.5	262.0	648.9	1556.4
87	944.0	77.5	1021.5	378.3	102.7	481.0	245.0	784.7	1510.7
88	968.0	179.3	1147.3	368.2	--	368.2	229.0	813.4	1410.6
89	790.0	35.6	825.6	646.4	--	646.4	214.0	?	860.4+
90	390.0	16.7	406.7	475.4	--	475.4	200.0	?	675.4+
91	--	99.6	99.6	--	--	--	187.0	?	187.0+
92	--	20.4	20.4	--	--	--	175.0	?	175.0+
93	--	92.5	92.5	--	--	--	163.0	?	163.0+
Total	5329.0	1014.7	6343.7	2631.7	577.8	3209.5	1955.0	4148.9	9313.4+

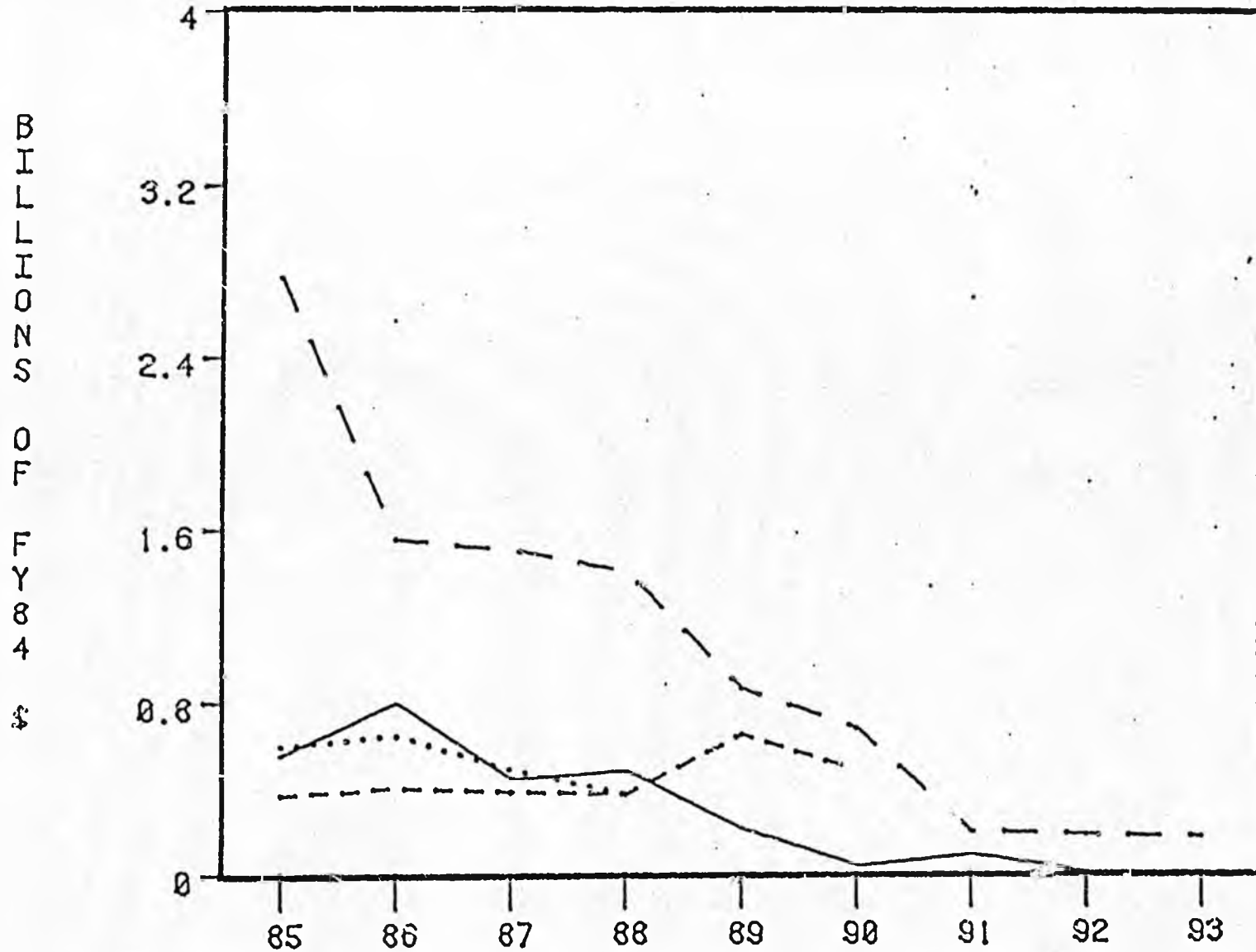
- NOTES: 1. From attached Legislative Finance computer run labelled "Repeal of Dividends and Inflation-Proofing"; see note 1 to Table I;
2. See note 2 to Table II; amount of GOB's based on estimates of revenues at the 50th percentile made prior to the current January 1983 estimates; those revenues are higher than the January 1983 estimates even including monies that would have been used for dividends and inflation-proofing; thus, the estimate of GOB's is somewhat high;

For other items see notes to Table I.

FUNDS AVAILABLE FOR CAPITAL PROJECTS
CURRENT LAW



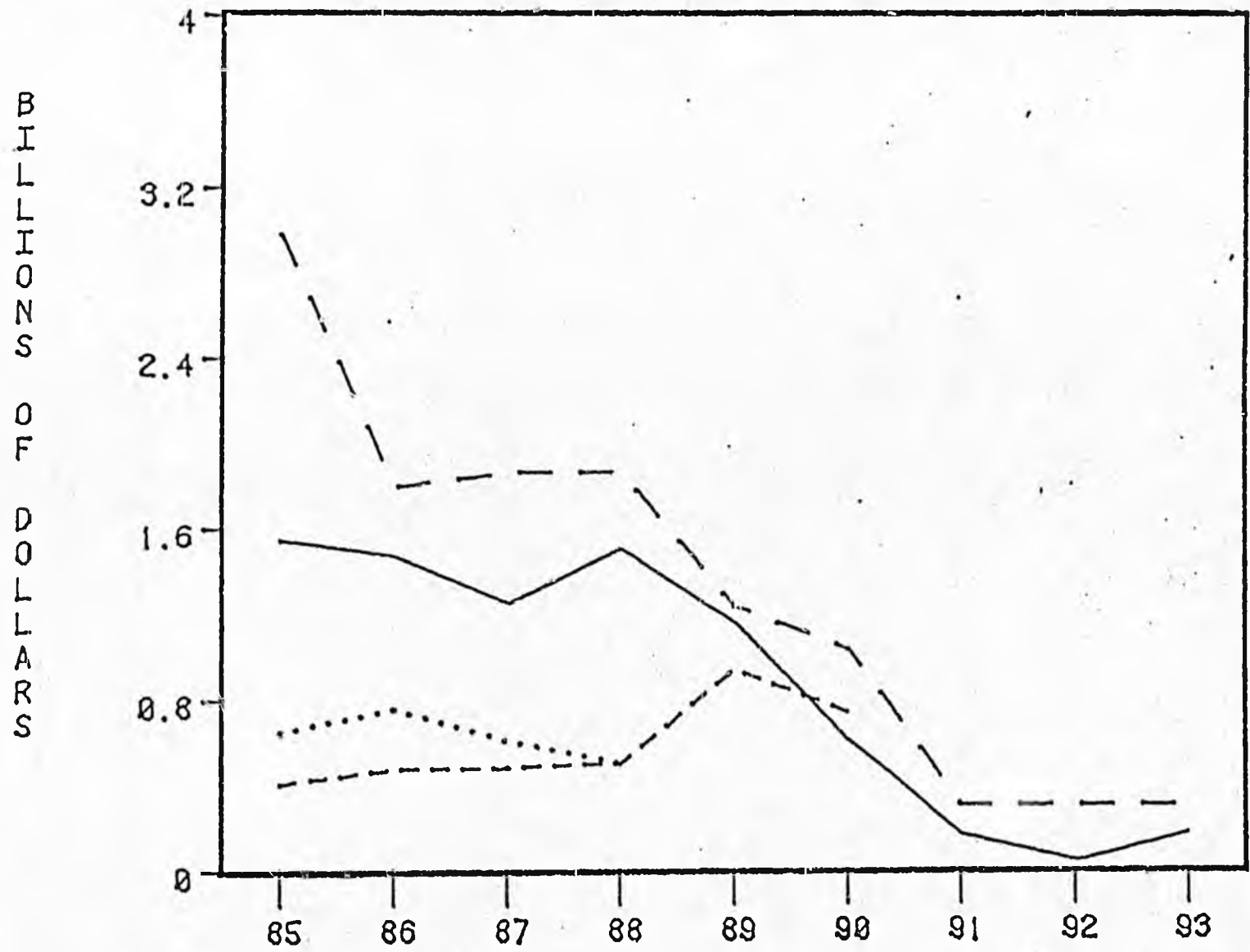
FUNDS AVAILABLE FOR CAPITAL PROJECTS (FY84 \$)
CURRENT LAW



_____ FUNDS AVAILABLE
 - - - - - TOTAL CAPITAL
 TOTAL HYDRO

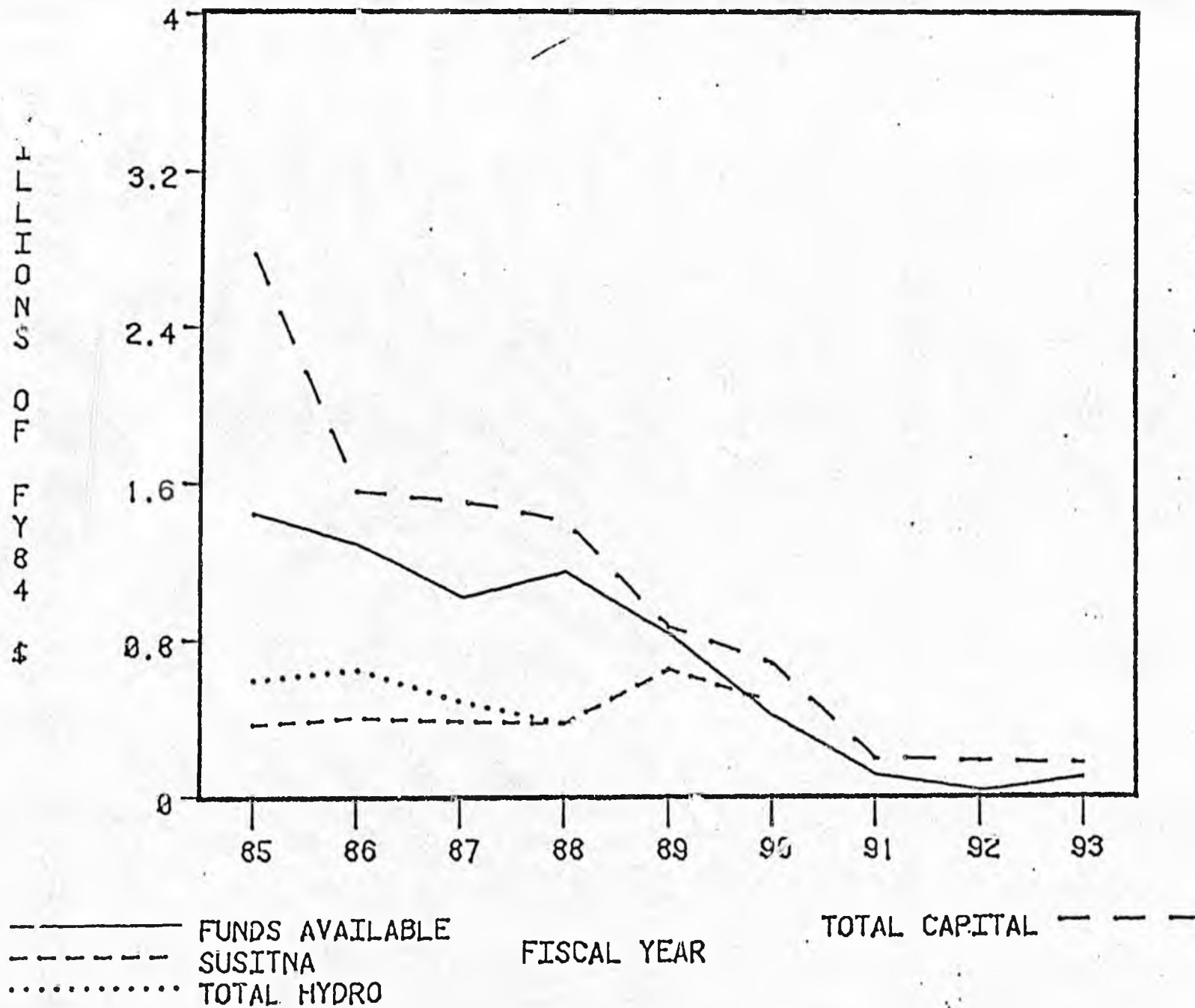
FISCAL YEAR

FUNDS AVAILABLE FOR CAPITAL PROJECTS
 REPEAL DIVIDENDS & INFLATION-PROOFING



————— FUNDS AVAILABLE
 - - - - - SUSITNA
 TOTAL HYDRO
 FISCAL YEAR
 TOTAL CAPITAL - - - - -

FUNDS AVAILABLE FOR CAPITAL PROJECTS (FY84 \$)
 REPEAL DIVIDENDS & INFLATION-PROOFING



STATE OF ALASKA
 LEGISLATIVE FINANCE WORKING DOCUMENT
 BUDGET FORECASTING MODEL

*** ACTUAL DOLLARS IN MILLIONS ***

JAN 83 DEPT OF REVENUE ESTIMATES
 OPERATING BUDGET AT SPENDING LIMIT
 SPENDING LIMIT INCREASES 10% PER ANNUM
 SURPLUS SPENT ON CAPITAL
 INFLATION 7% PER ANNUM
 PERMANENT FUND INFLATION-PROOFED
 PERMANENT FUND EARNS 12% PER ANNUM
 GO BONDS PER ACRES JAN 83 SUSITNA FINANCING PLAN

FISCAL YEAR	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERMANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF \$ 0 MIL
1983										3790	88	
1984	2703	333	3036	1987	837	167	134	3124	-88	4361	0	0
1985	2775	352	3127	2185	593	164	185	3127	-0	4979	0	0
1986	3029	381	3410	2404	611	163	231	3410	0	5676	0	0
1987	3112	410	3522	2644	447	166	265	3522	0	6433	0	0
1988	3456	448	3904	2909	503	179	313	3904	-0	7287	0	0
1989	3540	490	4030	3200	280	190	360	4030	00	8250	00	00
1990	3300	520	3810	3520	00	190	400	4110	-300	9240	00	300
1991	3000	550	3560	3870	00	180	450	4500	-940	10270	00	940
1992	2890	610	3500	4260	00	160	510	4920	-1430	11350	00	1430
1993	2700	670	3360	4680	00	160	570	5410	-2050	12480	00	2050
1994	2610	740	3350	5150	00	130	630	5920	-2570	13680	00	2570
1995	2520	810	3320	5670	00	140	690	6500	-3180	14950	00	3180
1996	2380	890	3270	6240	00	140	760	7140	-3870	16280	00	3870
1997	2440	970	3410	6860	00	90	830	7780	-4380	17710	00	4380
1998	2510	1060	3570	7540	00	80	910	8530	-4960	19240	00	4960
1999	2660	1160	3820	8300	00	50	990	9340	-5530	20900	00	5530
2000	2800	1260	4060	9130	00	50	1080	10250	-6190	22690	00	6190
TOTAL	48410	11640	60060	80550	3270	2390	9320	95530	-35470			35380

STATE OF ALASKA
 LEGISLATIVE FINANCE WORKING DOCUMENT
 BUDGET FORECASTING MODEL

*** FY 1984 DOLLARS IN MILLIONS***

JAN 83 DEPT OF REVENUE ESTIMATES
 OPERATING BUDGET AT SPENDING LIMIT
 SPENDING LIMIT INCREASES 10% PER ANNUM
 SURPLUS SPENT ON CAPITAL
 INFLATION 7% PER ANNUM
 PERMANENT FUND INFLATION-PROOFED
 PERMANENT FUND EARNS 12% PER ANNUM
 GO BONDS PER ACRES JAN 83 SUSITNA FINANCING PLAN

FISCAL YEAR	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERMANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR CF BAL OF \$	0 MIL
1983										3790	88		
1984	2703	333	3036	1987	837	167	134	3124	-88	4361	0	0	0
1985	2594	329	2923	2042	554	154	172	2923	-0	4653	0	0	0
1986	2645	333	2978	2100	534	143	202	2978	0	4957	0	0	0
1987	2540	335	2875	2159	365	136	216	2875	0	5251	0	0	0
1988	2636	342	2978	2219	384	137	239	2978	-0	5559	0	0	0
1989	2520	350	2870	2280	200	140	250	2870	00	5880	00	00	00
1990	2200	340	2540	2350	00	130	270	2740	-200	6160	00	200	200
1991	1870	340	2220	2410	00	110	280	2800	-590	6390	00	590	590
1992	1680	350	2030	2480	00	90	300	2870	-830	6610	00	830	830
1993	1470	360	1830	2550	00	90	310	2940	-1110	6790	00	1110	1110
1994	1330	370	1700	2620	00	70	320	3010	-1300	6960	00	1300	1300
1995	1190	380	1580	2690	00	60	330	3090	-1510	7100	00	1510	1510
1996	1060	390	1450	2770	00	60	340	3170	-1720	7230	00	1720	1720
1997	1010	400	1410	2850	00	40	350	3230	-1820	7350	00	1820	1820
1998	970	410	1380	2930	00	30	350	3310	-1920	7460	00	1920	1920
1999	960	420	1380	3016	00	20	360	3390	-2000	7570	00	2000	2000
2000	950	430	1380	3090	00	20	370	3470	-2100	7690	00	2100	2100

TOTAL 30330 6240 36570 42520 2870 1580 4790 51760 -15190 15100

STATE OF ALASKA
LEGISLATIVE FINANCE WORKING DOCUMENT
BUDGET FORECASTING MODEL

*** ACTUAL DOLLARS IN MILLIONS ***

JAN 83 DEPT OF REVENUE ESTIMATES
GOVERNOR'S OPERATING BUDGET (INCLUDES LONGEVITY & MUNICIPAL AID)
OPERATING BUDGET INCREASES 10% PER ANNUM
SURPLUS SPENT ON CAPITAL
INFLATION 7% PER ANNUM
NO PERMANENT FUND DIVIDENDS
NO PERMANENT FUND INFLATION-PROOFING
PERMANENT FUND EARNS 12% PER ANNUM
GO BONDS PER ACRES JAN 83 SUSITNA FINANCING PLAN

FISCAL YEAR	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERMANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF \$	0 MIL
1983										3790	88		
1984	2703	629	3332	1912	1341	167	0	3420	-88	4085	0		0
1985	2775	688	3463	2103	1196	164	0	3463	0	4388	0		0
1986	3029	741	3770	2313	1281	176	0	3770	0	4724	0		0
1987	3112	784	3896	2545	1157	194	0	3896	0	5072	0		0
1988	3456	833	4288	2799	1269	221	0	4288	-0	5462	0		0
1989	3540	880	4420	3080	1110	230	00	4420	00	5890	00		00
1990	3300	910	4210	3390	580	240	00	4210	00	6300	00		00
1991	3000	910	3910	3730	00	230	00	3960	-50	6660	00		50
1992	2890	910	3800	4100	00	210	00	4310	-510	7020	00		510
1993	2700	950	3650	4510	00	220	00	4730	-1080	7350	00		1080
1994	2610	1000	3610	4960	00	200	00	5150	-1540	7660	00		1540
1995	2520	1050	3560	5450	00	200	00	5660	-2100	7960	00		2100
1996	2380	1090	3470	6000	00	160	00	6160	-2690	8250	00		2690
1997	2440	1140	3580	6600	00	130	00	6730	-3150	8530	00		3150
1998	2510	1190	3700	7260	00	110	00	7370	-3680	8830	00		3680
1999	2660	1240	3900	7990	00	70	00	8060	-4160	9150	00		4160
2000	2800	1290	4100	8780	00	60	00	8840	-4750	9500	00		4750
TOTAL	48410	16240	64650	77510	7940	2990	00	88440	-23790				23700

STATE OF ALASKA
 LEGISLATIVE FINANCE WORKING DOCUMENT
 BUDGET FORECASTING MODEL

*** FY 1984 DOLLARS IN MILLIONS***

JAN 83 DEPT OF REVENUE ESTIMATES
 GOVERNOR'S OPERATING BUDGET (INCLUDES LONGEVITY & MUNICIPAL AID)
 OPERATING BUDGET INCREASES 10% PER ANNUM
 SURPLUS SPENT ON CAPITAL
 INFLATION 7% PER ANNUM
 NO PERMANENT FUND DIVIDENDS
 NO PERMANENT FUND INFLATION-PROOFING
 PERMANENT FUND EARNS 12% PER ANNUM
 GO BONDS PER ACRES JAN 83 SUSITNA FINANCING PLAN

FISCAL YEAR	REVENUE	INTEREST	TOTAL REVENUE	OPERATING BUDGET	CAPITAL BUDGET	DEBT SERVICE	PERMANENT FUND DIVIDENDS	TOTAL BUDGET	SURPLUS OR DEFICIT	PERMANENT FUND	GENERAL FUND END OF YEAR	REVENUE REQ FOR GF BAL OF \$ 0 MIL
1983										3790	88	
1984	2703	629	3332	1912	1341	167	0	3420	-88	4085	0	0
1985	2594	643	3237	1965	1118	154	0	3237	0	4101	0	0
1986	2645	648	3293	2021	1119	154	0	3293	0	4126	0	0
1987	2540	640	3180	2077	944	158	0	3180	0	4140	0	0
1988	2636	635	3272	2135	968	168	0	3272	-0	4167	0	0
1989	2520	630	3150	2200	790	170	00	3150	00	4200	00	00
1990	2200	610	2800	2260	390	160	00	2800	00	4200	00	00
1991	1870	560	2440	2320	00	140	00	2460	-30	4150	00	30
1992	1680	530	2210	2390	00	120	00	2510	-300	4090	00	300
1993	1470	520	1980	2450	00	120	00	2570	-590	4000	00	590
1994	1330	510	1840	2520	00	100	00	2620	-780	3890	00	780
1995	1190	500	1690	2590	00	100	00	2690	-1000	3780	00	1000
1996	1060	490	1540	2660	00	70	00	2740	-1190	3660	00	1190
1997	1010	470	1480	2740	00	50	00	2790	-1310	3540	00	1310
1998	970	460	1430	2820	00	40	00	2860	-1430	3420	00	1430
1999	960	450	1410	2890	00	30	00	2920	-1510	3320	00	1510
2000	950	440	1390	2980	00	20	00	3000	-1610	3220	00	1610
TOTAL	30330	9360	39690	40920	6670	1920	00	49510	-9820			9740

March 1

introductory comments

George Rogers: strategies, parameters. and criteria to consider in examining Susitna and other hydro projects

FEASIBILITY

1:45 Yould: summary of feasibility work

2:00 ^{2:00} Matz
2:00 ^{2:30} Gregg Erickson: review of studies and new developments

2:45 ^{3:15} Lee Gorsuch, ISER: economic forecast revisions

3:00 George Matz, OMB: review of studies, alternatives, forecasts

FINANCING

3:30 Eileen Titmuss (Tight-muss), bond analyst with Drexel, Burnham, and Lambert, NYC: considerations in the bond market, factors affecting public power bonds

4:15 APA financial/bonding advisors: financing recommendations

4:30 Milt Barker: review of the 2 memos he prepared for the committee (in today's folders)

4:45 Commissioner Heatn, Dept. of Revenue: relationship of capital requirements to state bonding capacity and credit rating

ALASKA STATE LEGISLATURE

SENATE STATE AFFAIRS COMMITTEE

POUCH V, JUNEAU 99811

SENATOR VIC FISCHER, CHAIRMAN

(907) 465-4954



HYDRO/SUSITNA HEARINGS (revised 2-18-83)

Senate Bills 68, 69, 70, and 71

February 24, 1:30-5:00, Court Room A, Court Building, Juneau. BACKGROUND BRIEFING. Review and analysis of processes and considerations involved in the development of hydroelectric projects.

-- Eric Yould, Executive Director, Alaska Power Authority: APA's role in developing projects, determining feasibility and capital costs, financing plans, construction schedules, marketing, and operational costs; summary of projects' status and plans

-- Ernst Mueller, Environmental Services, Lmt'd. and former APA board member: history of the APA

-- Governor's Office: Administration policies and proposals

-- William Wakefield, FERC: federal review process

-- Dept. of Law: interim financing

-- all participants, including OMB and representatives of the cities of Petersburg and Wrangell: Tye -- case study of a project

February 26, 9:00-4:00, Anchorage Westward Hilton, Alaska Room, Anchorage. PUBLIC HEARING ON SUSITNA AND HYDRO DEVELOPMENT IN GENERAL. Those who wish to testify are asked to sign up in advance at the Anchorage Legislative Information Office. Public testimony will follow introductions by Mr. Yould and bill sponsors.

March 1, 1:30-5:00, Senate Finance Room, Capitol, Juneau. INVITED TESTIMONY -- SUSITNA. This meeting will be teleconferenced to all major sites for listening only.

George W. Rogers: Strategies, parameters, and criteria that might be considered by the legislature in examining Susitna and other major hydroelectric projects.

SUSITNA FEASIBILITY: What factors are involved in determining feasibility? How sensitive is the feasibility to changes in those factors? What have the Susitna feasibility and alternative studies shown? How accurate is the \$5.2 billion cost estimate? How do different Susitna dam configurations compare with Watana/Devil Canyon? How have recent developments in oil and gas prices and in economic growth affected feasibility? How are those developments being factored into the Susitna update and FERC application?

-- Eric Yould and a representative from Acres American: summary of the feasibility findings and on-going work

-- Gregg Erickson, Erickson & Associates: review of the Acres study and recent developments

-- Office of Management and Budget: review of studies, alternatives, demand forecasts

SUSITNA FINANCING: What is the best financing plan for Susitna? How much state appropriation is necessary to ensure the marketability of Susitna power? What do the plans presented in SB 68 and SB 70 represent in terms of commitments of state funds, and how would they affect the cash flow available for other capital projects? What would the effect be of the bonding plan in SB 71 on the state's credit and ability to bond for other projects? What should the timing be for appropriations and bonds? How will the bond market respond to Susitna revenue or "double-barrel" bonds? Will the bonds qualify as tax-deductible? How equitable, in terms of state subsidy, are the plans presented?

-- APA financial/bonding advisors: review of Acres plan, recommendations

-- Eileen Titmuss, bond analyst: considerations in the bond market, factors affecting public power bonds

-- Milt Barker, Legislative Finance: relationship of capital requirements to projected revenues

-- Dept. of Revenue: relationship of capital requirements to state bonding capacity and credit rating

March 3, 1:30-5:00, Senate Finance Room, Capitol, Juneau. INVITED TESTIMONY, CONTINUED. This meeting will be teleconferenced to all major sites for listening. If time allows, public testimony will be taken following the scheduled witnesses.

SUSITNA MARKETABILITY: will Susitna power be marketable? What factors might affect marketability? What costs/rate structures are contemplated? How will marketability be ensured? What type of power purchase commitments can be obtained prior to construction? What is the role of the APUC? Might available power attract new industry?

-- Yould and APA marketing advisor: status of marketing situation

-- Harrison Call, marketing specialist: power sales agreements

-- Alaska Public Utilities Commission: its role in approving contracts and rates

-- utility representatives who wish to address the issue

-- Office of Management and Budget: review of the SRI study of the effect of electricity price and availability on industrial development

SUSITNA READINESS: Has the Governor's "Susitna checklist" been followed? What further requirements must be met, and in what order? Has the sequence laid out in statute been followed? Have the FERC requirements been met? Are land ownership conflicts resolved? Have the utilities agreed to purchase Susitna power?

-- Governor's Office: presentation of the "checklist"

-- David Rogers (Senate Advisory Council) and Yould: review of identified "obstacles" and how they are being addressed

-- Yould: schedule for proceeding, incorporating new data